Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
9467	0	0	0	0	This chapter does not take the effects of Bilateral and Internationl Investment Treaties on the climate and climate policies into account, even though investment protection is likely to impede future climate policies, in particular those to regulate or phase-out fossil fuels. As CAN Europe we are particularly concerned about the regulatory chill effect of ISDS because attempts to regulate or phase-out fossil fuels could be challenged in private arbitration courts, which have the power to direct states to pay an uncaped sum in compensation, for actual and even future losses of an investor. A recent example (Sep 2019) is that a German utility company Uniper is threatening the Netherlands with a compensation claim for their decision to phase-out the use of coal for electricity production by 2030 under the Energy Charter Treaty. Such threats create legal and fiscal uncertainty for policy makers, which poses the risk to slow down the transition to clean energy and to make policies unaffordable for poorer countries. ISDS or the EU's reformed Investor Court System (ICS) are included for instance in the Energy Charter Treaty, which deserves special attention because it specifically protects investments in the energy sector and is about to be extended to countries in the developing world, multiple newer generation EU agreements, the TPP and thousands of Bilateral Investment Agreements. For further discussion of the problems associated with ISDS in genearl and the ECT in particular, please see: Kyra Bosa, Joyeeta Gupta (2019). Stranded assets and stranded resources: Implications for climate changemitigation and global sustainable development. Energy Research & Social Science, Volume 56, October 2019, p. 8. // Tienhaara, Kyla (2018). Regulatory Chill in a Warming World: The Threat to Climate Policy Posed by Investor-State Dispute Settlement. Transnational Environmental Law, 7:2 (2018), pp. 229–250. // OpenExp (2019). The Energy Charter Treaty (ECT). Assessing its geopolitical, climate and financial impacts. September 2019.	Taken into account. Wording has been added in the section on public finance as well as current status of climate finance and investment patterns. We have also forwarded your comment to our colleagues in the policies chapter	Cornelia Maarfield	Climate Action Network (CAN) Europe	Germany
11521	0	0	0	0	It would be great to see some discussions on the relationships/connections between climate finance (in this case mitigation finance) and economic transformation. This chapter did not address on these, definitely in the case of developing/least developed countries.	Taken into account. Many thanks for this very valuable comment. Unfortunately AR6 does not include a chapter on CC economics. We cover some selected aspects in our subsection on national climate finance.	Rawshan Ara Begum	Universiti kebangsaan Malaysia (UKM)	Malaysia

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
12953	0	0	0	0	This chapter needs higher precision and quantification in its statements. For example, what are the required levels for climate funding, what is meant by modest growth, and so on.	Noted. More quantitative analysis has been added and wording has been revisited	Prashant Goswami	Institute of Frontier Science and Application	India
27543	0	0	0	0	It is really good to see a dedicated chapter on climate finance. It provides an opportunity to dig into the issue in far greater depth than is typically done in WG3 reports. It also means that the authors will have to be really careful about possible minefields in this very charged conversations. A few highlights that I thought really worked well: broad conceptual framing about different approaches to cliamte action and implications for finance in Table 15.10; highlighting Africa as an area of focus; laying bare the complexity of estimating what climate finance needs are and the different implications of different definitions. Areas that may need more focus: addressing the scope of climate finance and consistency with other chapters (1, 4, 16) on defining climate action as actions that affect mitigation whether mitigation is the entry point or not; caution about anointing or being seen to anoint a NUMBER for finance needs that then gets shorn of nuance and complexity; some occasional sections that are too theory heavy and could be made lighter and more focused on policy relevance; slightly tighter hewing to the broad three part storyine of scale, progress and gap.	Noted. Will be considered in SOD	Navroz Dubash	Centre for Polcy Research	India

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
40291	0	0	0	0	The report is very rich in information but I have two main concerns: 1) The document is unbalanced: Section 15.3 'Current flows, commitments and initiatives' is way too long in comparison with the others and the clarity of its message would benefit from rationalizing it and shortening it. 2) The document neglects a main area of policy-relevant research in climate finance, i.e. the assessment of climate-related financial risks. Indeed, Section 15.6 should focus on the main area of discussion for academics, policy makers and practitioners (see TCFD 2017, HLEG 2018, NGFS 2019), i.e. the quantitative assessment of climate-related financial risks. This section could build on academic research and focus on: (i)approaches to classify investors' exposure via sectors of economic activities (at NACE 4 digit level), i.e. the Climate Policy Relevant Sectors (CPRS, Battiston et al. 2017, see my comment n.2), now used by central banks and regulators, e.g. ECB (ECB Financial Stability Report 2019) and EIOPA (EIOPA Financial Stability Report 2019), (ii)climate financial pricing models to assess how climate shocks affect the probabilities of defaults (PD) of financial contracts and securities (equity holdings, corporate and sovereign bonds, loans, Battiston et al. 2019a), and calculate the Climate Spread for bonds (i.e. the change in the spread of a corporate or sovereign bond contract conditional to a given Climate Policy Shock Scenario, Battiston and Monasterolo 2019), (iii)climate-scenarios conditioned quantitative metrics of financial risks (e.g. Climate Value at Risk (VaR), Dietz et al (2016), Battiston et al. (2017)); (iv)Climate Stress-test rooted in financial network models to assess the drivers of individual and systemic climate-related financial risk (Battiston et al. 2017, Roncoroni et al. 2019). For a review of academic research focusing on climate risk assessment across asset classes, investors' types and (low and	Accepted. 1) only, chapter has been revised	Irene Monasterolo	Vienna University of Economics and Business (WU)	Austria

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
47755	0	0	0	0	In this comment, I provide a motivation why climate-related financial risk can lead to potential massive welfare effects and therefore why the exposure of the financial sector to physical and transition risk should be discussed more in detail in the chapter. The nature and characteristics of finance, i.e. complexity and interconnectedness, represents a source of risk for investments (both brown and green) and overall for financial stability. The financial network literature emerged in the aftermath of the last financial crisis showed that financial interconnectedness is a driver of systemic financial risk and that the increasing complexity of the network of contracts among institutions comes with the price of increasing inaccuracy in the estimation of systemic risk (Battiston et al. 2016). It is important to take into account, under certain conditions (which however are relevant to climate risk), can greatly amplify economic losses would lead us, on the one hand, to overestimate the ability of the finance sector to mobilise the investments needed to achieve the climate targets, and, on the other hand, to underestimate the barriers and new sources of risk for financial stability that finance could introduce. Thus, modelling finance and its complexity in climate mitigation scenarios is fundamental to identify feasible energy transition pathways to achieve the Paris Agreement targets (Battiston and Monasterolo 2018). •Battiston, S., Farmer, J. D., Flache, A., Garlaschelli, D., Haldane, A. G., Heesterbeek, H., … Scheffer, M. (2016). Complexity theory and financial regulation. Science, 351(6275), 818–819. https://doi.org/10.1126/science.aad0299 •Battiston, S., Caldarelli, G., May, R. M., Roukny, T., & Stiglitz, J. E. (2016). The price of complexity in financial networks. Proceedings of the National	Noted. Will be considered in SOD	Stefano Battiston	University of Zurich	Switzerland
1921	0				In the next draft it will be important for Chapter 15 to clearly define the chapter's metrics associated with investment and finance in order to assess the literature, and extend from the assessment provided in the AR5. The chapter could revisit the topic of what is climate finance and provide an assessment of any change since the AR5 FAQ 16.1 answer to this question. The chapter could define its use of the term so that it could be self-consistent and comparable with the AR5 (this would involve interpretation of the literature which may not share this definition). Without clear definitions the information provided in the chapter will be both difficult to review and difficult to use.	Taken into account. Additional clarification is provided in a new box at the very beginning of the chapter	Haroon Kheshgi	ExxonMobil Research and Engineering Company	United States of America

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
1939	0				An important topic to strive to assess in this chapter is the comparison of the recent magnitude, trend and effectiveness (in terms of mitigation) of climate finance compared to that implied in model-generated pathways/scenarios. Such a comparison could 1) be used to validate investment flows in pathways, and 2) provide information about what climate finance might be sufficient and what might be inconsistent with climate goals.	Taken into account. Thanks for this comment. We have tried to address a part of this question in our assessment of IAM outputs and have also forwarded your comment to our colleagues in the cross-sectoral chapter with a focus on costs and potentials	Haroon Kheshgi	ExxonMobil Research and Engineering Company	United States of America
3219	0				This chapter is too narrow because it addresses investment and finance primarily from the perspective of least developed countries as those depend primarily on public foreign finance from developed countries and countries that are in a position to support them. However, from a global perspective the main investments and financial means have to come from the private sector which controls around 4/5 of all global finnacial means.	Noted. This was clearly not our intention and we hope that the revised SOD reads more balanced	Klaus Radunsky	retired from Umweltbundesamt	Austria
3291	0				It is noted that the chapter does not reflect on the more basic methodological work that is under way, within the Paris Agreement, and outside related, e.g. to reporting, defining etc of climate finance. In this context it might also be relevant to reflect on recent developments under ISO, the international standardization organization, given the importance of private finance.	Noted. The SOD will include recent development of international activities on climate finance.	Klaus Radunsky	retired from Umweltbundesamt	Austria

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
3293	0				It is my fear that the whole chapter will not really help to change the current level of investment to reduce climate change risks significantly because the chapter does not really invite policy makers to make the decisions that would be helpful. I include a recent statement of the governor of the Bank of England to better explain what I mean: To decarbonise the global economy to net zero emissions, every bank, every business and every investor will have to adjust its business model. For Mark Carney, governor of the Bank of England and incoming UN special envoy on climate action and finance, that leaves a simple - but no less ambitious - goal ahead of this year's critical UN climate summit in Glasgow: ensuring every private finance decision takes climate change into account. Moving the dial on finance could turn an existential risk into "the greatest commercial opportunity of our time," he told businesses and investors at the launch of Cop26's private finance agenda. As global politics continues to be bogged down in nationalist interests, trade wrangling and a worldwide virus, the pressure on cities, regions, companies, banks, investors and other non-state actors to step up to the challenge of decarbonisation has gone up a gear. That means rethinking the interaction between national governments and non-state actors, warned Nigel Topping, the UK's climate action champion and former CEO of We Mean Business. "We need to recognise that climate change is a collective leadership problem," he told Climate Home News in an interview.	Noted. We agree that the FOD included ony few concrete policy options and have strengthened this aspect in the FOD	Klaus Radunsky	retired from Umweltbundesamt	Austria
3295	0				It would be helpful to identify in which countries/regions the per capita invetments into mitigation and adaptation are the highest and what have been the reasons/the drivers of such high specific m the The chapter should identify what works and what does not work and what might be steps in the right direction - from the various stakeholders, e.g. at policy level, investors, companies, communities, regions. Such information from the IPCC could make a real difference in the real world.	Taken into account. The section on gaps include some additional comparative analysis on by region and economic indicators.	Klaus Radunsky	retired from Umweltbundesamt	Austria

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
3297	0				Chapter 16 on technology might be a good model how to address finance in a manner that is more fruitful for actors.	Noted. The finance chapter is also considering the point on how to address finance in a manner that is more fruitful for actors.	Klaus Radunsky	retired from Umweltbundesamt	Austria
3307	0				It is suggested to better link chapters 16 and 15. Rapid and strong mitigation needs both: technology and finance but also capacity. As capactiy/capacity building has not been given space in a chapter of iuts own it should be addressed more prominently in oth, chapter 15 and chapter 16.	Taken into account. Section 15.6.7 development of local capital markets does include discussion of capacity building which can be in the form of support provided by donor countries.	Klaus Radunsky	retired from Umweltbundesamt	Austria
16427	0				Consider adding an analysis of the global military sector to the analysis of the chapter, specific to its associated financial ties and mechanisms. The military sector is a driver of manufacturing, transport and food provisioning emissions and a key to their mitigation. Likewise, there exists a potential for eliminating warfare altogether as a means of addressing climate change. Global war diminishes the human potential for a sustainable and just future, such that increasing alliances globally for the purpose of climate mitigation may reduce the military sectors of all countries and lead to further benefits. But the ties of the financial industry to military operations makes transition difficult. Chapter 15 would be strengthened with a clear description of these ties and opportunities.	Noted. Good point. However, if the supporting literatures are availble, that might be considered.	Daniel Helman	College of Micronesia-FSM	Micronesia, Federated States of
17869	0				It would be great to see some discussions on the relationships/connections between climate finance (in this case mitigation finance) and economic transformation. This chapter did not address on these, definitely in the case of developing/least developed countries.	Taken into account. The comments are well taken and reflected in the SOD.	Rawshan Ara Begum	Universiti kebangsaan Malaysia (UKM)	Malaysia
40019	0				A discussion of the role of international carbon market mechanisms (CDM, JI) for finance and investment as well as their interaction with othe financing streams should be added (possibly in section 15.6)	Noted. CDM and its role in stimulating emission reductions and by allowing industrialized countries to implement emission-reduction projects in developing countries to meet their own emission targets mentioned	Axel Michaelowa	University of Zurich	Switzerland
43523	0				Consider exploring the possible role of market mechanisms as providing the underpinnings for e.g. results-based climate finance.	Taken into Account. We agree the point and have strengthened this aspect in the SOD.	Matthias Honegger	Perspectives Climate Research gGmbH	Germany

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
45023	0				The chapter, or at least the executive summary, seems to use the term "climate funding" as interchangeable with "climate finance" (or at least the term "climate funding" isn't defined). I find this deeply problematic because these two terms are not the same, and the topic to be addressed by this chapter is finance, not funding (which in my books is a rather narrower subset of finance where money is provided to receipients in grant form. A key point from previous assessments, that this chapter should build on, is that there is a large difference between the amount and type of existing financial flows that need to be influenced/re-directed to support a transition towards zero emissions, as compared to the additional funding that needs to be provided. Please avoid confusing readers by being consistent and clear in your terminology.	Accepted. Terminology has been sharpened and is now also introduced in a new box at the very beginning of the chapter	Andy Reisinger	NZAGRC	New Zealand
47745	0				Congratulations for the large amount of work that has been already put into the chapter! The topic is complex and the fact that this chapter only exists since AR5 adds to the challenge. Currently the chapter focus much attention on the financing gaps and how to address them. Based on the available scientific literature, it seems that the dimension of climate-related financial risk deserves substantially more attention in the chapter because: 1)climate-related financial risk (and its underestimation in particular) is a crucial factor concurring to the financing gaps and currently not recognized as such in the chapter, and 2)climate-related financial risk is at the origin of potential massive welfare effects. At the same time, several sections would benefit from a substantial streamlining. In the next comments I provide more details on reason 1) and 2) and I comment on possible revisions to the structure of the chapter.	Accepted. Comments are well taken, reflected in the SOD.	Stefano Battiston	University of Zurich	Switzerland

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
47757	0				In this comment, I offer some thought about the importance of the appropriate use of IAM scenarios for assessing climate transition risk. The assessment of climate-related financial risk is closely related to the choice (and number) of climate mitigation scenarios used, and this leads to a second point that I would recommend to include in the chapter, i.e. the discussion of the scenarios used for financial risk assessment. Given the scientific and policy use of IAMs' scenarios for financial risk valuation, it is important to discuss their characteristics in order to inform who to correctly use them. The Climate stress-test methods based on (Battiston ea. 2017) compute disorderly transition shocks using as input trajectories of variables from climate transition scenarios computed with IAMs and included both in the LIMITS (Kriegler et al. 2013) and in the CD-LINK (Mc Collum et al. 2018) scenario databases. In contrast, the NGFS (2019) has introduced 4 qualitative climate transition scenarios and is moving towards IAM scenarios. One limitation of IAMs scenarios is that they allow for fast switching from an energy technology to another one, without considering the political and economic feasibility of the investments. This is due to the cost minimisation approach used in the models and the fact that the financial sector is absent in the models. Indeed, funding is always available to firms (usually a representative agent in each sector) to carry out the investments. Further, current IAMs scenarios assume that countries are going to deliver on their NDCs. This may lead to underestimating the challenges of financing the low-	Accepted. Comments are well taken, reflected in the SOD.	Stefano Battiston	University of Zurich	Switzerland
10565	1		10		Overall, the Executive summary provide good information but it often confuse me whether the paper talks about private sector or public sector.. Maybetter to distinguish clearly.	Accepted. We hope that the SOD reads more easily	Noriko Shimizu	Research Institution	Japan
34839	1		17		More graphical plots are required to show the general relationships between finance, investment and climate change across the continents	Accepted. More charts have been incorporated in both, the section on current flows and gaps	Onema Adojoh	Missouri University of Science and Technology, Rolla, USA	United States of America

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
15193	1		143		This chapter is very thorough and contains a lot of information. However, I find very difficult to read and extract conclusions in sections 15.1 and 15.2.. Sentences are long, language complex and inferencing messages is difficult. There are sections that don't seem to be complete or conclusive. It would benefit from some trimming in some sections and from reorganising others. It often jumps from funding (sources of finance) to financing (use of funds) and may bring confusion. I also think the chapter is not balanced in reflecting the progress that has ocurred in the climate finance landscape since AR5 (2013-2014) which, albeit still insufficient, it has been very significant. It is not clear either the period of analysis that it is covering: sometimes references go back to very early years and sometimes, references are very current. Finally, the chapter does not address a very important topic, which is the fragmentation of funding sources and the inflation of financial initiatives that add another layer of complexity to project promoters and countries trying to access these funds. All comments below try to address these general points.	Noted. The chapter has been revised	Esther Badiola	European Investment Bank	United States of America

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
14145	1	1	144	23	It is a bit surprising that this chapter is solely focused on the monetary investments related with the transition, without taking into account that behind them lie energy and material investments, especially since recent research has shown the importance of these factors with relation to the financing and the feasibility of the transition (EROI, availability of minerals and potential supply bottlenecks, etc.). Follow some key references: Carbajales-Dale, M., Barnhart, C.J., Brandt, A.R., Benson, S.M., 2014. A better currency for investing in a sustainable future. Nature Clim. Change 4, 524–527. https://doi.org/10.1038/nclimate2285 Capellán-Pérez, I., de Castro, C., Miguel González, L.J., 2019. Dynamic Energy Return on Energy Investment (EROI) and material requirements in scenarios of global transition to renewable energies. Energy Strategy Reviews 26, 100399. https://doi.org/10.1016/j.esr.2019.100399 Sers, M.R., Victor, P.A., 2018. The Energy-missions Trap. Ecological Economics 151, 10–21. https://doi.org/10.1016/j.ecolecon.2018.04.004 Hall, C.A.S., Lambert, J.G., Balogh, S.B., 2014. EROI of different fuels and the implications for society. Energy Policy 64, 141–152. https://doi.org/10.1016/j.enpol.2013.05.049 Fizaine, F., Court, V., 2016. Energy expenditure, economic growth, and the minimum EROI of society. Energy Policy 95, 172–186. https://doi.org/10.1016/j.enpol.2016.04.039 Brandt, A.R., 2017. How Does Energy Resource Depletion Affect Prosperity? Mathematics of a Minimum Energy Return on Investment (EROI). Biophys Econ Resour Qual 2, 2. https://doi.org/10.1007/s41247-017-0019-y Valero, Alicia, Valero, Antonio, Calvo, G., Ortego, A., 2018. Material bottlenecks in the future development of green technologies. Renewable and Sustainable Energy Reviews 93, 178–200.	Noted. Will be considered in SOD	Iñigo Capellán-Pérez	University of Valladolid	Spain
37079	1	1	144	23	In reference to climate action in the USA, I have the feeling everything that is being said is very negative. And probably it should be. I wonder if we should report and reference a bit more the efforts by the private sector, because certainly in this country, private sector (Tesla) and RDI (Carbon capture and storage) is moving much faster than publoic sector. i wouldnt be surprised that major technological breakthoughs come from US pivate sector (direct air capture is receiving a lot of attention).	Noted. This chapter covers many initiatives and programs from private sector from the perspective of finance. Chapter 16, technology will capture most of the points and arguments raised by the reviewrs.	Esther Badiola	European Investment Bank	United States of America

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
37835	1	1	144	45	Overall the FOD is a big improvement over ZOD, but the chpater still reads like a draft and in some sections it seems to be simply copied from emails and lack the backing of literature citations (which makes these sections seem like opinions rather than assessements of the literature). The final section on the scenarios is a case in point. It is promising in some of the proposed ways to organise the thinking around financial scenarios but it is unclear how much of this is corroborrated in the literature. Moreover, the 3 scenarios proposed do not cover all possible outcomes in financial terms. For example, a scenario in which fragmented and/or late action could still lead to favourable temperature outcomes but at much higher costs that are unevenly distributed across geographies, demographies and sectors. An example of such a scenario may be the 3rd scenario proposed by the Bank of Engalnd for the BES2021 (late action).	Accepted. We hope that the SOD reads more easily	ALEXANDRE KOBERLE	COPPE/UFRJ	Brazil
2561	1	1	144	47	The structure of the chapter looks quite good. It treats all the main aspects regarding climate finance. I would just probably recommend clearer and neater exposition of the ideas throughout, as well as consistency of arguments. Neater text and clearer arguments. For instance what is really the role of institutional investors and why is there so much skepticism around their actual contribution to climate mitigation? How do renewables falling costs affect climate finance needs? These messages are scattered around the chapter, but not really clear or backed by evidence/references.	Accepted. We hope that key messages are clearer in the SOD	Lilia Caiado Coelho Beltrao Couto	University College London	United Kingdom (of Great Britain and Northern Ireland)
28381	1		144		The first sentence of 15.7. "Political leadership is central, financial sector can only do so much." is critical to the entire issue of climate finance. This should be properly reflected througout the chapter including the Executive Summary. This could help to avoid the misconception that the estimated "funding gap" for climate action could somehow be closed by "marshalling" (quote chapter 15.7) the financial sector.	Accepted. We have further stressed this argument.	Jochen Harnisch	KfW	Germany
28387	1		144		Duruing their further work the authors should try to generate "iconic figures" as the main results of this chapter e.g. for inclusion in the Summary for Policy Makers, Technical Summary and Sythesis Report. These should convey a clear and simple political message but be based on sound scientific analysis.	Accepted. Done	Jochen Harnisch	KfW	Germany

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
46045	1	1			Suggest this chapter begin with a clear distinction between climate finance and sustainable finance and the chapter as a whole be reviewed to make consistent. Climate Finance to be all finance which is eligible under the $100 B target under the Paris Agreement. https://unfccc.int/topics/climate-finance/the-big-picture/introduction-to-climate-finance Sustainable Finance all other finance in developed countries be it for mitigation or adaptation.	Accepted. Terminology has been sharpened and is now also introduced in a new box at the very beginning of the chapter	Celine Bak	IISD	Canada
46357	1	1			Steele, Graham, Confronting the “Climate Lehman Moment”: The Case for Macroprudential Climate Regulation (February 22, 2020). Available at SSRN: https://ssrn.com/abstract=	Noted. We consider this point in SOD revision	Celine Bak	IISD	Canada
46359	1	1			This section should refer to Steele, Graham (2020), Confronting the "Climate Lehman Moment: The Case for Macroprudential Climate Regulation.	Noted. We consider this point in SOD revision	Celine Bak	IISD	Canada
1349	1				There is a great deal within the draft of adapation, this is all good stuff however it is not within the scope of the Chapetr or WG3 Report. A mechanism needs to be devised whereby the material throughout the chapter can be transferred to WG2 and the authors recognised for their great work.	Accepted. We argue that A/M finance need to be assessed together for various reasons. Also, WGII will only have a 4 page box on A finance with some more finance-related messages being spread across their contribution. We have tried to find a better balance in the SOD though	David Viner	Mott MacDonald	United Kingdom (of Great Britain and Northern Ireland)
1367	1				There is a great deal within the draft on adapation, this is all good stuff however it is not within the scope of the Chapter or WG3 Report. A mechanism needs to be devised whereby the material throughout the chapter that refers to adaptation and resilience can be transferred to WG2 and the authors of this chapter recognised for their great work.	Accepted. We argue that A/M finance need to be assessed together for various reasons. Also, WGII will only have a 4 page box on A finance with some more finance-related messages being spread across their contribution. We have tried to find a better balance in the SOD though	David Viner	Mott MacDonald	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
43615	1				Isn't the rapid fall of prices for solar PV a main message for the executive summary? While it is true that more needs to be done ln less years, compared to AR5 assessments, it is also true that splar PV became much more affordable on large scale. This counters the "more expensive" message, and should be thoroughly assessed.	Noted. We have used the PV example int he context of increased RE finance volumes and the positive outlook for a further acceleration of deployment of funds. Also, we have forwareded your comment to our colleagues in the energy and cross-sectoral chapter, the latter discussing costs and potentials	Felix Creutzig	MCC Berlin	Germany
43629	1				Behavioral climate mitigation options, such as those related to nudging and information, are zero or very low costs. Could this a bit explored in this chapter? Possibly in coordination with Chapter 5.	Accepted. The behavioral change is well covered in the SOD with appropriate references.	Felix Creutzig	MCC Berlin	Germany

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
24491	2	1	2	34	This is a critical chapter to inform policy, and kudos to the author team for the hard work that has gone into the draft. The single most useful thing for this chapter is to evolve the narrative and evidence provided so that it is not "merely" a cautionary tale aimed at contemporary notions of climate finance (it is expensive, investment is insufficient for the needs, the costs will only grow if climate change is not aggressivenly mitigated)--all of that is broadly supported by AR5 and yet all of that is not sufficient to inform policy at this juncture. To make appropriate decisions about climate finance in the future, it would be more useful to understand what it will take for finance to be transformational—instead of focusing on “how much money is needed for transformational mitigation and adaptation?” what would be far more useful would be to address “what would the finance and investment landscape need to look like so that transformational finance flowed towards mitigation and adaptation?”. Restructuring of information presented in this valuable chapter could be a way to evolve the narrative to answer the more important question (what the finance system needs to look like for transformational resources to flow to mitigation and adaptation). It could look like 1. main message: this decade is THE investment opportunity window (zero interest rates make public debt isn't as expensive (find the right wording) and investing in proven positives such as public infrastructure upon which society builds)/ unprecedented liquidity the system / there has never been somuch cash looking for a place to be invested 2. the challenges a) external: climate risks are growing rapidly b) today's financial system from multilateral donors and their institutions, central banks, private banks, stock markets incentivize / favor carbon and unsustainable practices so transformational resources immediately face system obstacles c) the ethical and philosophical challenge that the solutions are generally understood enough to ask and in spite of that decision makers may not make appropriate transformational investments in	Taken into account. This is a fair but challenging comment. I think we should make an effort to take into account and to respond convincingly, also in the interest of the perception of chapter.	Koko Warner	UNFCCC	Germany
27545	3	1	3	1	How do you deal with boundary questions around climate finance? Ch 1, 4 and 13 all treat climate action that has the effect of mitigation as salient to the dicussion of climate mitigation, not just actions defined primarily as climate mitigation. Are the definitions of climate finance used here consistent with that broader perspective? This broader perspective does not come through, for example, in Fig 15.5	Noted. Will be considered in SOD	Navroz Dubash	Centre for Polcy Research	India
27547	3	2	3	3	It would be very helpful to also link paras to specific sections of the FOD, by specific references to sections.	Accepted. Done	Navroz Dubash	Centre for Polcy Research	India

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
2537	3	2	3	32	These paragraphs don't read well, it is hard to understand what are the main messages in sentences, which are normally too long.	Accepted. We have reworked wording	Lilia Caiado Coelho Beltrao Couto	University College London	United Kingdom (of Great Britain and Northern Ireland)
15195	3	3	3	3	"... compared to AR5 levels driven by [suggest insert: a better understanding of low carbon pathways, cost modelling and adaptation to climate change impacts]	Noted. We will check again the wording.	Esther Badiola	European Investment Bank	United States of America
46639	3	3	3	3	Starting with such a conceptual wording may raise a lot of questions. "climate finance" per se is a confusing term that gathers a lot of critics. Quickly: initially it was considered as public money from gvts of the North/rich countries, now it includes flows of money from private financial markets. See for instance Chenet, Zamarioli et al. 2019 and references therein.	Taken into account. fair point. We have now acknowledged the different uses of the term climate finance in the literature and practice and we have compiled a list of definition that we use throughout the chapter in order to avoid misunderstandings.	Hugues Chenet	University College London — Institute for Sustainable Resources	France
37691	3	3	3	4	What does it mean by "shorter period remaining until 2030/2050". Could you explain why this would increase finance needs?	Taken into Account. (shorter period remaining means if X capital required in period T, and time passes so that we are left with T-tile elapsed, then annual finance investment required in remaining period has to go up)	Michiel Schaeffer	Climate Analytics	Netherlands
11597	3	3	3	11	English punctuation and grammar needs reviewing throughout this chapter. In some cases it is poor and does not read well: a final editorial check from someone with first language English would be beneficial to avoid small errors in language.	Accepted. Native English speaker has revised chapter	Sarah Jones	JBA Risk Management	United Kingdom (of Great Britain and Northern Ireland)
35083	3	3	3	12	The second paragraph seems more suited to start the narrative instead of the current first paragraph.	Taken into Account. Noted with thanks. The SOD is restructured.	Marco Heredia-Fragoso	National Institute of Ecology and Climate Change	Mexico

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
36531	3	3	3	12	Does finance demand for adaption means incremental cost or include all in cost? What is the definition and what is the assumption of climate change impact including timeline is crucial for the analysis. Magnitude of climate finance is a major issue of international debate there is a big gap between international debate and project/company level. IPCC report is expected to sort out the difference of definition.	Taken into Account. The comments are considered in the SOD. The section for adaptation finance covered the comments.	Takashi Hongo	Mitsui & Co. Global Strategic Studies Institute	Japan
33531	3	5	3	6	The average mitigation cost is required to meet what goal?	Addressed. Language of executive summary has been changed	Debra Roberts	EThekwini Municipality	South Africa
11599	3	5	3	16	Is it possible to reduce the word count so that the Executive Summary may fit to two pages, maximum?	Noted. The SOD executive summary is in line with IPCC standards	Sarah Jones	JBA Risk Management	United Kingdom (of Great Britain and Northern Ireland)
36819	3	6	3	8	Will you also mention loss and damage costs?	Revised and concerns addressed	Zinta Zommers	United Nations Office for Disaster Risk Reduction	Germany
33533	3	8	3	11	If possible, consider quantifying these costs and indicate the region that has experienced the most loss?	Addressed . The SOD will consdier the point raised by the reviwer.	Debra Roberts	EThekwini Municipality	South Africa

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
45625	3	8	3	11	Does this need a reference of two. Quite broad statements on extreme weather i.e. are all different types of weather extremes increasing in frequency and intensity? It seems to be more nuansed than this statement implies. Especially, as it includes the 'related to cimate change' comment. Detection and Attribution science is more uncertain that this line expresses, for example with Tropical cyclones, much of the literature reviews aspects of TC activity that might be related to Climate change but many of them have only low confience (Knutson, T., Camargo, S.J., Chan, J.C., Emanuel, K., Ho, C.H., Kossin, J., Mohapatra, M., Satoh, M., Sugi, M., Walsh, K. and Wu, L., 2019. Tropical Cyclones and Climate Change Assessment: Part I: Detection and Attribution. Bulletin of the American Meteorological Society, 100(10), pp.1987-2007). Suggest demphasising this comment, but maintaining the arguemen of uncertainity being a strong rationale for mitigation/adaptaion measures. Arguable it is not the extremes that are most dangerous as they will always occur to a greater or lesser degree, perhaps this point would be stronger with the chrnoic changes that are expected such as sea level rise, and temperature changes and biovidversity loss.	Rejected. This topic is not covered in chapter 15	Geoffrey Saville	Willis Towers Watson	United Kingdom (of Great Britain and Northern Ireland)
40021	3	11	3	11	Add after "resilient action across countries": "Moreover, financial flows not aligned with the objectives of the Paris Agreement, e.g. funding of carbon intensive infrastractures, counteract climate finance efforts contributing to the carbon lock in." Reason: need to reflect the importance of not only ramping up climate finance but also phasing out finance to PA-incompatible activities.	Noted. Respective message has been strengthened	Axel Michaelowa	University of Zurich	Switzerland
43525	3	11	3	11	Add: Further, financial flows not aligned with the objectives of the Paris Agreement, e.g. funding of carbon intensive infrastractures, contribute to carbon lock in.	Noted. Now mentioned in executive summary	Matthias Honegger	Perspectives Climate Research gGmbH	Germany
15197	3	12	3	12	remove word "modestly"	Removed . Revised	Esther Badiola	European Investment Bank	United States of America
33535	3	12	3	12	What is considered 'most increase' is highly fluid and could be interpreted to mean many things by different people. Quantification of the increase (or possible range) will convey a clearer message	Addressed . The SOD will consider the point raised by the reviwer.	Debra Roberts	EThekwini Municipality	South Africa
36529	3	12	3	12	Two languages, funding and finance, are used as the key words. Do you use these two with the same meaning or different? In general, finance's definition is narrower. There is no definition of funding.	Noted. Terminology has been sharpened and is now also introduced in a new box at the very beginning of the chpter	Takashi Hongo	Mitsui & Co. Global Strategic Studies Institute	Japan

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
46643	3	12	3	12	same remark for "climate funding". Is it the same than "climate financing"? If so, better to use same consistent wording.	Noted. Terminology has been sharpened and is now also introduced in a new box at the very beginning of the chpter	Hugues Chenet	University College London — Institute for Sustainable Resources	France
46645	3	12	3	12	While 1st paragraph seems to address gvt /cross-border finance to developping countries, the 2nd paragraph seems to address financial markets (banks and investors)	Taken into account. Content of executive summary has been revised	Hugues Chenet	University College London — Institute for Sustainable Resources	France
46647	3	12	3	12	"funders" or "financing" should refer to banks, not investors, while the paragraph is talking about investors and investments (not financing) : this is confusing.	Noted. Terminology has been sharpened and is now also introduced in a new box at the very beginning of the chpter	Hugues Chenet	University College London — Institute for Sustainable Resources	France
47711	3	12	3	21	The alternative approach proposed here seeks to replace taxes on carbon and other GHG emissions with an inherently dynamic, incentive-based strategy. This alternative proposal includes two interlocking components: 1) the first component consists of an excise duty applied on the extraction of fossil fuels and primary production of products with global warming potential (GWP) both synthetic and non-synthetic, including fluorocarbons and methane; 2) The second component involves a scalable refund that would make it possible to reclaim the excise duty levied upstream, in whole or in part. Refunds would be granted in exchange for a reduction in, or complete elimination of, emissions linked to the use of substances with a global-warming potential. Compared to the immediate sources of GHG emissions that are innumerable, there are indeed much fewer sources of extraction/production of GHG-emitting materials. Once adopted, the excise duty principle would be intrinsic in all participating countries and therefore more readily implemented.	Noted. The points you raise are valid and important but difficult to put into executive summary due to limited space	Jacques de Gerlache	GreenFacts	Belgium

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
47713	3	12	3	21	https://www.euractiv.com/section/climate-environment/opinion/mondaycop21-goals-an-alternative-path-to-success/	Noted. The points you raise are valid and important but difficult to put into executive summary due to limited space	Jacques de Gerlache	GreenFacts	Belgium
10555	3	13	3	15	It is not very clear what "translate" here means. If you want to say impact of finance, it is better to say "impact".	Accepted. Wording has been changed	Noriko Shimizu	Research Institution	Japan
15199	3	16	3	16	remove word "objectives and"	Accepted. Wording has been changed	Esther Badiola	European Investment Bank	United States of America
15201	3	17	3	17	"as well as business as usual intertia". Delete the rest of the sentence. It does not add.	Accepted. It is deleted.	Esther Badiola	European Investment Bank	United States of America
32069	3	17	3	17	foot dragging (pejorative term, fails to recongise facts of private investing - see above regarding need for returns - for private capital this is paramount - Guernsey Fiance published a report on family office financing climate change migitation (october 2019) and 51% of responsdents (that is family offices, ie private owners of capital of $100m+) were NOT considering increasing their exposure to green finance on account of lack of returns (or belief thereof)	Accepted. Foot dragging term has been removed	Andy Sloan	Guernsey Finance	United Kingdom (of Great Britain and Northern Ireland)
33287	3	17	3	18	The reference to "Inertia and foot-dragging" is pejorative, but also indicates a misunderstanding of the way in which the financial markets operate. They are rarely proactive in any situation, but rather respond to the incentives of the opportunity. The way to bring more private finance into climate positive investments is to address costs and risks in financial allocation in sectors such as renewables such that those sectors become financially advantageous to investors, at which point finance will flow automatically to these investments, in preference to climate negative ones.	taken into account.	Richard Threlfall	Global Head of Infrastructure and Global Head of Public Transport at KPMG. Vice-President, Institution of Civil Engineers	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
33289	3	18	3	20	The sentence starting "The absence..." is an example of the confusion between the target of the chapter, whether directed towards states, with the power to address regulation and direct funding, or to private financial markets, which are largely driven by direct financial incentives rather than morals. It is fine for the chapter to address both, but it needs to separate them and develop the argument separately for each.	Taken into account. Language of executive summary has been changed	Richard Threlfall	Global Head of Infrastructure and Global Head of Public Transport at KPMG. Vice-President, Institution of Civil Engineers	United Kingdom (of Great Britain and Northern Ireland)
10553	3	18	3	21	I think "The absence of concerted investment action and policies" is not true, as there have been a plenty of investment actions and policies to achieve 2 or 1.5 targets such as EU susftainable finance action plan and many investors and institutions now introduced ESG factors into their investment decision. So, more appropriate to say "insufficient of concerted investoment action and policies"	Taken into account. Language of executive summary has been changed	Noriko Shimizu	Research Institution	Japan
15203	3	18	3	21	I would change the word "concerted" by "significant". I would be careful with the idea in this paragraph because cumulative emissions to date are very similar in the US (~25%) and Europe (~22%). Instead of leaveing it vague, I would mention the two economic blocks by their names to avoid frictions and missunderstandings with other countries (China, India...). And I would also make reference to the " US intention/announcement to withdraw from the Paris agreement" because until November 2020 we will not know if they finally depart or not.	Taken into account. Content of executive summary has been changed	Esther Badiola	European Investment Bank	United States of America
46649	3	19	3	19	"historical contributors": not clear if it's countries or companies. Here we're talking about financial institutions, so does it refer to financial institutions' historical contributions?	Taken into account. Content of executive summary has been revised	Hugues Chenet	University College London — Institute for Sustainable Resources	France
33537	3	21	3	21	Recommended to find a more suitable phrasing for this. Perhaps, phrase along the line that withdrawal from the Paris Agreement is reversiing the gains in mobilising the international community for a coordinated response to climate change	Taken into account. Content of executive summary has been revised	Debra Roberts	EThekwini Municipality	South Africa

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
33539	3	22	3	23	What does 'significant gap' mean? A more compelling message will be to state the actual gap between the actual commitment and the expected climate change funding.	Noted. More quantitative analysis has been added and wording has been revisited	Debra Roberts	EThekwini Municipality	South Africa
18371	3	23	3	24	Shifting existing capital investment is more important than additional funding to close the gap. Scaling up climate finance has less to do with new/additional funding, rather it is an issue of shifting existing large capital investment to more low carbon technologies. See: Granoff, Ilmi, J. Ryan Hogarth, and Alan Miller. "Nested barriers to low-carbon infrastructure investment." Nature Climate Change 6.12 (2016): 1065-1071.	Taken into account. The issue of shifting versus new investment is an important point. We will examine the proposed reference and others related and mention debate on the relative importance of the two aspects. Literature is included.	Kazuhiko Hombu	Graduate School of Public Policy, The University of Tokyo	Japan
10557	3	24	3	26	Rather than emphasizing "additional" funding, it may be more feasible and pausible to say "shifting" from brown to green, especially given the limited amount of public resources.	Taken into account. Content of executive summary has been revised	Noriko Shimizu	Research Institution	Japan
33541	3	24	3	26	This is not concise enough. Possibly consider specifying the actual climate change finance per annum between now 2030, 2050…Policymakers will need to understand the monetary implications of the message you are conveying here.	Taken into account. Content of executive summary has been revised	Debra Roberts	EThekwini Municipality	South Africa
15205	3	24	3	27	"…public climate finance will be crucial to catalyse investments and will need to flow in greater quantity…". I would remove the developed countries because the reality is that developing countries are also investing massively their own resources. And public resources from developmed countries alone are not sufficient to close the gap: all sources of funding are necessary both from developed and developing countries and from public and notably, private sector. I would aslo remove the following sentence "This would be in alignmnet with the intention and sentiments expressed in the Paris agreement." for the same reason.	Revised. Its has been revised accordingly	Esther Badiola	European Investment Bank	United States of America
4807	3	27	3	29	Given its relevance in most recent international climate policy and finance debate, I would add at least a brief citaation in the summary to the potential role of Article 6 in raising parties' ambitions, hence in enhancing demand for (mainly private) finance. By a matter of fact, assuming for the Article 6 to leading to clubs formation, these shall include higher ambitions for mitigations, hence granting investors with higher certainty and clarity in terms of requested financial flows.Given for such potential pledges to being additional to NDCs of those parties adhering to the Article 6 mechanisms, I strongly believe it is relevant giving space to such aspect since the very early stages of this Chapter.	Noted. The points you raise are valid and important but difficult to put into executive summary due to limited space	michele stua	APE-FVG	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
15207	3	29	3	32	Rewording proposed: "...viable interventions. This will only be possible if there is political will, ownership and leadership at country level. The financial sector and investors require a sufficient business environment, sectoral long term strategies, political certainty and the institutional framework and capacity to be able to attract funding to investments."	Revised. It has been revised accordingly	Esther Badiola	European Investment Bank	United States of America
33291	3	30	3	32	This rather misses the point. Private finance flows are predominately dependent on the economics of the particular opportunity. Political uncertainty etc are broader factors that may play a role but not the critical ones	Noted. Content of executive summary has been revised	Richard Threlfall	Global Head of Infrastructure and Global Head of Public Transport at KPMG. Vice-President, Institution of Civil Engineers	United Kingdom (of Great Britain and Northern Ireland)
33293	3	33	3	33	An example of funding and financing being used interchangeably in two immediately related sentences	Noted. Terminology has been sharpened and is now also introduced in a new box at the very beginning of the chpter	Richard Threlfall	Global Head of Infrastructure and Global Head of Public Transport at KPMG. Vice-President, Institution of Civil Engineers	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
24493	3	33	3	39	"The abilityto mobilize funding varies on a country basis". This statement and the following sentences are an opportunity to evolve the narrative of the chapter. A better narrative would emphasize that a) the finance system needs to change to unlock transformative investments in mitigation and adaptation, otherwise the conversation stays "stuck" in the old narrative of polluter pays and how much is needed for projects in the contemporary world. An evolved chapter framing will facilitate critical thinking about how finance ministries might think about transformational finance, what should be incentivised and what should not be invested in at all, etc. The chapter was likely framed and given to the author team, so moving from the FOD to the SOD is a prime time to move the investigation beyond the typical "how much is this all going to cost" to "how does the system need to evolve to make the necessary investments possible?" That literature can be found across accounting, commodity markets, labor markets, social protection and social programming, the value of public infrastructure long-term literature, ecological economcis, transactional finance, critical political economy analysis of the incentives the current financial system gives to activities (this will reveal bias towards unsustainable and carbon-intensive investments). Examine the literature and methods informing the TCFD as a window into how central banks, accounting, financial regulation are evolving to make "brown" and "green" investments and stranded assets much more apparent. Happy to help out in any way that is constructive and helpful in terms of pulling such literature.	Noted. Content of executive summary has been revised	Koko Warner	UNFCCC	Germany
10559	3	36	3	36	It may be more right to say "risk" rather than "risk perception" which represent a major challenge for commercial funding.	Noted. Content of executive summary has been revised	Noriko Shimizu	Research Institution	Japan
33295	3	36	3	36	There is no "home bias" in private finance. It flows to where the balance of risk and reward are the most attractive against the objectives of the provider, in a globally open market	Noted. Various literature points to existence of home bias	Richard Threlfall	Global Head of Infrastructure and Global Head of Public Transport at KPMG. Vice-President, Institution of Civil Engineers	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
24495	3	44	3	46	Unclear sentence. This seems important, but the meaning is completely unclear	Wording revised to ensure clarity	Koko Warner	UNFCCC	Germany
46651	3	44	3	46	not clear	Addressed . sentence revised to ensure clarity	Hugues Chenet	University College London — Institute for Sustainable Resources	France
15209	3	33	4	5	In these two paragraphs, we need to insist that (public) funding need to tacke both. On one side, improved business environment, regulations and legilation, country ownership, coupled with insitutional capacity and quality NDCs and long term strategies to produce bankable projects that are able to attract financing (mainly from private sector). On the other side, risk mitigating interventions so that again, projects are able to attract sufficient investment.	Noted. Content of executive summary has been revised	Esther Badiola	European Investment Bank	United States of America
3023	3	1	5	15	Executive Summary: It is unclear whether the ES is based on the assessed literature or a collection of views and readings of the authors?. There is a need at least to cite references to sectios in the chpater so the reader can follow and verify the ES statements and conclusions.	Accepted. The SOD exec sum is in line with IPCC standards	Mustafa Babiker	Aramco	Saudi Arabia
3025	3	1	5	15	Executive Summary: 1- The focus seems to be more on Paris agreement and the 1.5C report, yet this chapter should have broader focus in relation to mitigation finance including climate targets and warmings beyond those under the Paris agreement. 2-In contrast, there seems to be more focus on adaptation and loss and damages than one would expect to be addressed in WGIII report, i.e. other issues than mitigation should be addressed only as cross-cutting or in the context of synergies and trade-offs.	Noted. Content of executive summary has been revised	Mustafa Babiker	Aramco	Saudi Arabia
33529	3	1	5	15	For a chapter on finance, there is very little quantitative information in the Executive Summary. In preparing the SOD, efforts must be made to bring forward relevant quantative information from the underlying chapter.	Accepted. More quantitative analysis has been added, however these numbers need to be carefully framed and explained	Debra Roberts	EThekwini Municipality	South Africa

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
43583	3	1	5	15	many fo the findings of chapter 15 are based on IAM findings. Unfortunately, IAM findings are strongly distorted due to wrong solar PV cost (compare Krey et al. (https://www.sciencedirect.com/science/article/pii/S0360544218325039) and Vartiainen et al. (https://onlinelibrary.wiley.com/doi/full/10.1002/pip.3189) - 2050 cost assumptions in IAMs are twice the present solar PV cost) and the inability of IAMs to model modern energy systems, which have a key characteristic in electricity-based solutions, such as power-to-fuels (beyond hydrogen), power-to-heat, power-to-chemicals, etc. - all this is not possible to model in IAMs as documented in annex C - supplementary. Mainly ignored Energy System Models are able to show that such power-based solutions are beneficial. Ram et al. (http://energywatchgroup.org/wp-content/uploads/EWG_LUT_100RE_All_Sectors_Global_Report_2019.pdf) has even shown that a cost-neutral transition to a 1.5C energy system is possible, but despite the fact that this scenario is part of the AR6 scenario database, it is ignored in the AR6 and also in chapter 15. Please reinvestigate the shortcomings of IAMs and the solutions which are offered in modern and latest ESMs. The latest global ESMs are summarised in Breyer et al. (https://www.iaee.org/eeep/article/305).	Taken into account. We will coordinate with Ch3	Christian Breyer	LUT University	Finland

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
43759	3	1	5	15	This is editorial & substantive. I think it would be better to re-edit the Exec Summary after the chapter is completed to reflect the key issues and to take out unclear terminology (if unclear it then unfortunately reads like jargon). At present it has a lot of detail in some areas (for example, re economic headwinds p4 lines 12-24) and less in others. It would also benefit from picking a phrase for 'climate finance' and clearly set out the definition. At present in the Exec Summary alone the following phrases are used: 'Climate financing' (p3, l 1); 'Climate funding' (p3, l 12; p5 l10); 'public climate financing' (p4 l 9); 'global climate investment' (p 4, l25). As the chapter is entitled 'Investment and finance' it is warranted to define how the climate part of that will be considered (e.g. the definition on p7 l 7-10) but set that in the context of overall investment and finance. I note that one challenge is when a phrase is open to broad or narrow definition (even 'support mitigation and adaptation actions that will address climate change' (line 9)): some people may use the phrase but mean only a subset of those actions. To side-step this chapter authors will have to say to what they are refering when they use the phrase (including whether they are referring to public or private finance). Page 33 lines 14-17 make the point on the 'relative small size of current climate finance flows' in the context of overall investment flows and stocks. Lines 18-24 also discuss the definition of climate finance.	Accepted. The SOD exec sum is in line with IPCC standards	Kirsty Hamilton	Chatham House (Associate Fellow, unpaid)	United Kingdom (of Great Britain and Northern Ireland)
25349	3	2	5	15	Executive Summary to have key messages presented as in other chapters.	Accepted. The SOD exec sum is in line with IPCC standards	Eleni Kaditi	Organization of the Petroleum Exporting Countries (OPEC)	Austria
3289	3	3	5	15	It is strongly recommended to include the precise reference to the main body of the text in order to trace the findings included in the Executive Summary.	Accepted. The SOD exec sum is in line with IPCC standards	Klaus Radunsky	retired from Umweltbundesamt	Austria
36273	3	3	5	15	The executive summary requires serious revision	Accepted. The SOD exec sum is in line with IPCC standards	Youba Sokona	South Centre	Switzerland

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
46641	3	3	5	15	Strange not to have a single explicit mention of Paris Agreement Art. 2.1.c in the summary. It's one of the most important reference and framework for the financial sector and governmental spendings/finance.	Taken into account. Fair point.	Hugues Chenet	University College London — Institute for Sustainable Resources	France
47747	3	3	5	16	I suggest that the following argument is made clear it the executive summary: The public and private financial sector plays a key role in climate-mitigation and adaptation. However, this role is not limited to the dimension of being an enabling factor. •First, if climate-related risks are not recognized or if they are underestimated, then the financial sector can become a barrier to aligning investments to climate targets. •Second, as highlighted by the literature on financial stability, in the presence of high financial leverage and mispricing of large portions of assets, the financial sector can become a channel of amplification of both physical and transition risks, as we have experienced in the 2008 financial crisis and as we may experience in the current CoVid-19 crisis. Therefore, it is key that policy makers understand these additional and very different dimensions of finance in relation to climate change. A complete strategy about climate finance includes strengthening the enabling role of finance while mitigating the dimensions related to investment barriers and risk amplification. Based on existing studies, there is a series of considerations that are very relevant to the chapter and for the climate action in the next decade.	Taken into account. Your point is considered	Stefano Battiston	University of Zurich	Switzerland

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
47749	3	3	5	16	In this comment I discuss why climate-related financial risk (and its underestimation in particular) is a crucial factor concurring to the financing gaps in support of the previous comment about why a revision to the structure of the chapter could be beneficial and why this topic should be mentioned also in the executive summary. There is empirical evidence that until now carbon-intensive assets are perceived as having lower or comparable risk than low carbon assets across asset classes (equity, bonds and loans) and markets (US, EU) (Monasterolo and De Angelis 2019; Karpf and Mandel 2017; De Greiff et al. 2019). If climate-related risks are not recognized by the market or underestimated, then the financial sector becomes a barrier to aligning investments to climate targets. For instance, if the forward-looking transition risk of carbon-intensive technologies is not taken into account, then financial investors do not have sufficient incentive to reallocate capital towards low-carbon technologies. Two main factors can explain why climate risk is not properly assessed. The first reason is that asset pricing models are essentially backward looking. While many investors use forward looking strategies when it comes to geopolitical risk or market intelligence, climate-related risk are currently not integrated in the risk models. Until losses do not materialize and appear in the historic data they are not considered. Since climate-risk is mostly yet to materialize, they are not reflected in prices. This means that the current mainstream financial models are not adequate to handle climate risk. This is a fundamental challenge that is recognized by most stakeholders both in the private and public sector. See e.g. the recent NGFS report (NGFS 2019) and BIS report (BIS 2019). As such, this challenge should be recognized and reported.	Taken into account. Your point is considered	Stefano Battiston	University of Zurich	Switzerland

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
47751	3	3	5	16	The chapter focuses on the role that finance can play to scale up low-carbon and climate-aligned investments and indeed it is well acknowledged that a massive flow of both public and private finance is needed to achieve the low-carbon transition and climate targets (HLEG 2018, EC Sustainable Finance Action Plan 2019). However, the chapter neglects two major point of discussion among policy makers and financial supervisors (and academics) i.e. (i) to what extent finance is exposed to climate risks, and (ii) under which conditions finance could be a barrier to achieving the climate targets (e.g. by mispricing climate risks and by introducing new source of risk in the low-carbon transition). Addressing these points is fundamental to understand how to close the financing gap. Thus, climate-related financial risks should represent a key research question in the chapter and it should consider (i) quantitative and transparent methods to assess climate related financial risks, (ii) how to use climate mitigation scenarios in financial risk analysis and (iii) the interplay between investors' climate sentiments and climate policy feasibility and outcomes. This topic should deserve a section on its own.	Taken into account. Your point is considered	Stefano Battiston	University of Zurich	Switzerland
16023	3		5		Despite the well-noted need for private finance, the chapter focuses too much on public finance	Noted. This was clearly not our intention and we hope that the SOD reads more balanced	Jason Patrick	New Zealand Green Investment Finance	New Zealand
28367	3		5		The current "Executive Summary" paints a somewhat gloomy picture. Part of that gloom results from the fact the current flows are compared to the mitigation needs for the very ambitious set of international long-term targets in the Paris Accord and the long-term adaptation needs for stronger warming than the targets under the Paris Accord. The respective chapter 16 of the WGIII AR5 report calculated the change of investments required to a meet a significantly less ambitious set of emission pathways (430-530 ppm). It did not include costs for adaptation which even today remain highly speculative. A revised Executive Summary should clearly separate estimated mitigation from adaptation costs and be very explicit to which climate change / emission pathways its respective investment need / cost estimates are refering to. There is limited use in combining these numbers as they occur in diffent spaces and times.	Taken into account. Content of executive summary has been revised	Jochen Harnisch	KfW	Germany
28369	3		5		The Executive Siummary needs further work to comply with the high standards of IPCC: There needs to be a proper link of each statement to the underlying chapter using calibrated IPCC uncertainty language.	Accepted. The SOD exec sum is in line with IPCC standards	Jochen Harnisch	KfW	Germany

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
28397	3		5		The current "Executive Summary" still provides to few policy relevant recommendations. What options are available for national governments, central banks, regulators, financial institutions, etc.? What would be the impact if the respective options were taken?	Accepted. Fair point.	Jochen Harnisch	KfW	Germany
46003	3	1	21		Could the writer include citations?	Accepted. The SOD exec sum is in line with IPCC standards	Celine Bak	IISD	Canada
46005	3	46	45		reference to "patient" capital appears inconsistent with Chapter 4, page 31 starting at line 24: "As discussed in Chapter 3, global models reveal that deep, rapid GHG emissions reducitons are needed to limit global temperature increase. A reasonable (66%) chance of limiting global temperature increases to well below 2C depends on global energy-related carbon emissions peaking by 2020 and falling by more than 70% during the next 35 years. This implies, globally a trippling of the annual rate of energy efficiency improvement, retrofitting the entire builidng stock, cutting industry CO2 emissions by 65 to 90% from 2020 levels, generating 70 -95% of electricity from low carbon sources by 2050, and shifting almost entirely to electic cars."	Noted. Fair point.	Celine Bak	IISD	Canada
33525	3	1	103	15	While the chapter has explored the various climate change funding instruments, what has not been addressed is the capacities of countries to access these funds. Some of these instruments are characterised by high transaction costs (see page 30 line 6) that deters some countries from accessing.	Noted. We made this point in various sections of the chapter but have tried to strengthen it further in the SOD.	Debra Roberts	EThekwini Municipality	South Africa
33527	3	1	103	15	This chapter is completely silent on indigeneous communities. The treatment of gender, vulnerable groups and indigenous groups should be given more attention in the preparation of the SOD	Noted. Chapter makes numerous references to vulnerable groups	Debra Roberts	EThekwini Municipality	South Africa
6471	3		103		The chapter doesn’t touch the need to transform the financial system and its structural issues to align finance with climate goals (Please note that the executive summary highlights standardized financial products, financial markets’ liquidity, transparency/disclosures and private-public cooperation as the main areas of intervention). The main missing point (narrative) is how we need to transform/restructure the financial system to meet Article 2.1(c) of the Paris Agreement (mobilise the finance needed and its alignment to sustainable goals).	Noted. Chapter has been revised.	Nadia Ameli	University College London	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
6473	3		103		To that end, some key issues in the financial markets not analysed are: - Financial markets are dominated by relatively short-termism. Several studies have suggested that in practice investors have an investment horizon ranging from less than 1 to 5 years, which is quite short compared with the potential materialisation of significant climate-related financial risks. Investment portfolios' typical turnover of about 1–2 years (Bernhardt et al. 2017), and the horizon of financial analysis does not usually exceed 3–5 years (Dupré and Chenet 2012; Naqvi et al. 2017), while most asset managers' incentives are based on an annual performance (Thomä et al. 2015). Moreover, at the employee level, portfolio managers are explicitly or implicitly benchmarked on much shorter-term performance, quarterly, monthly or even weekly (Naqvi et al. 2017). Risk information seems to be the main key to break the tragedy of the horizons, however the short-termism and misalignment of interests of financial market participants themselves are not challenged and this point should be touched in the Chapter. - Lack of clarity on stewardship with respect to ESG issues. In most jurisdiction, rules/laws do not exhaustively prescribe how investors should consider ESG factors in their investment decisions, and on the timeframes over which they define investment goals. In most cases, it is left to investors to determine the approach that will enable them to meet their legal obligations (PRI 2015). - Lack of clarity on fiduciary duty in investors' mandates. The uncertainty surrounding the application of fiduciary duty by investment managers lead their performance to being assessed frequently and short-term. This would not allow investors to factor climate risks into their investment decisions, as climate change is way beyond their investment timeframe. - Investors' portfolios heavily concentrated in carbon-intensive assets. Finance will likely continue to target these assets and not move to low-carbon	Noted. Chapter has been revised.	Nadia Ameli	University College London	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
6475	3		103		The key narrative/message that could be highlighted is that Finance and Financial markets are the crucial means to ensure a better capital allocation towards a low-carbon economy. Key points are: - The profound short-termism of the current financial system must be tackled at its root by financial regulation. To that end, authors should report current discussion around the role of macro-prudential and financial regulation (e.g. differentiated reserve and capital requirements), monetary policy (e.g. screening requirements, quantitative easing), fiduciary duty/expanding mandates, accounting rule as new tools to reform the financial markets. These tools are more pivotal propositions then self-regulation and disclosure initiatives (e.g. green taxonomy, green bond standards, ecolabel for funds, rules on green financial benchmarks, or climate-related disclosures). - Meeting the Paris goals means not only to scale up a growing “green” niches (e.g. green bonds), but stop financing carbon-intensive assets that are not compatible with Paris pathways. Institutions/investors that have started divestment of some coal assets rarely initiated similar plans for their broader ownership in fossil-fuel companies nor carbon-intensive assets outside the fossil fuel industry. - It is missing a narrative for developing countries, which goes behind the use of public finance and the mobilisation of 100billions from developed countries. New pathways focused on the development of local financial markets, new forms of blended finance, as well as the role of central banks and financial regulations to re-orient financial flows towards their green economic priorities could be mentioned for developing countries (especially in light of ‘the home bias finance’ and the higher cost of capital in such markets).	Taken into account. With respect to new pathways specifically focused on the development of local capital markets in the developing countries universe - this is covered in section 15.6.7 (SOD revised structure)	Nadia Ameli	University College London	United Kingdom (of Great Britain and Northern Ireland)
6477	3		103		The Chapter doesn’t touch the Chinese reforms, so far China has been one of the most active places for green finance. In particular, the authors should mention the approach taken by China on guiding markets, with a clear focus on ‘green’ financial products (“green lending”, “green investment”, “green development funds”, “green insurance”, “environmental rights trading markets and related financing instruments”). The Chinese Guidelines have been published before European initiatives.	Taken into account. The Chinese Guidelines element is discussed in section 15.6.7 development of local capital markets	Nadia Ameli	University College London	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
43757	3	1	105	12	This is a comment on the whole chapter. It is quite dense and difficult to read with repetition in some areas - I'm sure the authors are intending to edit it once the final content is included. I note that Chapter 6 (page 7 lines 19-20) explicitly has an intention to 'provide guidance that might be valuable for national decision-making' and I strongly commend this as an approach for this chapter - as an aid to authors re content and editing, envisaging a policymaker seeking insight on specific questions relating to investment and finance. One specific area relating to policy (content still to come, as per page 3 line 1) is that it has to be clear what the term 'policy' is refering to: policy or regulation seeking to influence the overall operation of the financial sector in line with Paris goals (including strategies to increase the availability of capital for outcomes - the supply side of capital), or 'policy' to deliver climate outcomes on the ground (the demand side for capital - attracting deployment into sector-level / mitigation or adaptation/resilience, including through the use of public financing tools). This is pertinent when addressing issues around a modelled financing 'gap' - there is not a direct trickle down between the first - available capital (whether called 'green', 'sustainable' or mainstream) and an actual climate outcome - the latter requires consideration of the risk profiles of actual investment opportunities on the ground (sector-based policy influences that risk profile, along with a range of other factors). Cross-referencing with other chapters is needed: e.g. renewables / renewables policy examples are presented in Ch6 as energy; Ch16 as innovation; Ch15 as climate finance - but overlapping. I will also copy across a comment from Ch16 on the 'project pipeline' question. Finally, I note that WG2 (Professor David Viner) is organising a roundtable to assist with input for a WG2 'Cross Chapter Box on Finance for Adaptation and Resilience' [The physical meeting has been postponed due to Covid-19]. I was due to attend and intend to find out more about what kind of content was	Taken into account. Chapter has been revised for improved readability and improved content.	Kirsty Hamilton	Chatham House (Associate Fellow, unpaid)	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
33279	3		106		Whilst there is much good material in the chapter, its message is undermined, and in my view will not be understood by a large section of the financial markets, unless the following substantive issues are addressed. I have restricted my references to the Executive Summary, but the points are relevant across the chapter.	Noted. We hope that the SOD is much easier to read and offes a more coherent storyline	Richard Threlfall	Global Head of Infrastructure and Global Head of Public Transport at KPMG. Vice-President, Institution of Civil Engineers	United Kingdom (of Great Britain and Northern Ireland)
33281	3		106		1. There is a confusion throughout the report between "funding" and "financing". This is evident within the first two paragraphs on page 3, the first of which begins with the words "Climate financing" and the second with the words "Climate funding" but evidently referring in both cases to the same thing. It is generally accepted that funding means the ultimate source of payment for an asset, from users or taxpayers. Finance is debt and equity used to allow an asset to be purchsaed when funding is not available or not chosen to be used, but ultimately time-limited and repaid by funding in due course. The failure to distinguish between the two properly in the chapter is a fundamental weakness as it is not clear whether the estimates of need, progress and gap, and the pathway solutions, are ones which relate to the economic capacity of countries to fund climate investments, or failures of financial mechanisms to provide finance, or both. The two should be clearly distinguished and addressed separately throughout the report.	Accepted. Terminology has been sharpened and is now also introduced in a new box at the very beginning of the chpter	Richard Threlfall	Global Head of Infrastructure and Global Head of Public Transport at KPMG. Vice-President, Institution of Civil Engineers	United Kingdom (of Great Britain and Northern Ireland)
33283	3		106		Where we wish to refer to the overall need for money to flow into climate related assets, the chapter should refer to "climate investments" as this would cover both public funding and private finance.	Noted. Terminology has been sharpened and is now also introduced in a new box at the very beginning of the chapter	Richard Threlfall	Global Head of Infrastructure and Global Head of Public Transport at KPMG. Vice-President, Institution of Civil Engineers	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
33285	3		106		2. The term "Climate financing" is not meaningful, in the sense that in the financial sector investments are rarely categorised as such, and if we focus on investments which are deliberately termed as addressed to climate, eg green bonds, they will represent only a tiny proportion of the finance which may already be going into investments with positive climate impact. The chapter in my view is fundamentally misconstrued as it gives the impression of seeking to identify "climate financing" as a subset of investment generally, and argue it is insufficient. Instead we should recognise that there is a vast volume of private finance available which is capable of being incentivised both towards climate positive investments (eg solar farms) and away from climate negative investments (eg extractive industries) but is usually allocated to neither until the point of investment. Ideally the chapter would then focus on the mechanisms by which such incentivisation could occur.	Noted. For the purpose of designating financing which seeks to support climate change mitigation and adaptation actions, climate financing is a useful term.	Richard Threlfall	Global Head of Infrastructure and Global Head of Public Transport at KPMG. Vice-President, Institution of Civil Engineers	United Kingdom (of Great Britain and Northern Ireland)
36269	3	3		8	Here missing temperature/emission levels for the period 2030/2050 to be meaningful	Noted. Executive summary has been revised	Youba Sokona	South Centre	Switzerland
36271	3	12		13	Could you please give some figures? How you define the required level?	Noted. Executive summary has been revised	Youba Sokona	South Centre	Switzerland
35085	3	21			The Paris climate finance commitment should be spelled out: mobilising 100 billion USD.	Rejected. It's not necessary in executive summary	Marco Heredia-Fragoso	National Institute of Ecology and Climate Change	Mexico
1923	3				The FOD of the ES is not traceable and is in many places seems prescriptive. Suggest that each statement provide a reference to the section where the basis for the statement can be found to provide traceability. The many statements on the need for finance I suggest be associated with the definition of both "need" and "finance" to help the reader interpret the statement and avoid these statements from being interpreted as policy prescriptive.	Accepted. The SOD exec sum is in line with IPCC standards	Haroon Kheshgi	ExxonMobil Research and Engineering Company	United States of America

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
24497	4	1	4	5	Consider addressing the financial system at least as much as the actual financial flows. Providing insights from a diversity of literature (not only narrow environmental economics which has provided the traditional narrative in WG2 and WG3, additional literature will provide additional and complementary / deeper relevant insights than the old "climate change is bad for your economy and it is hard to finance". Consider providing deeper insights into how the current international monetary and development funding systems affect contemporary climate finance, and in what ways these systems might evolve in order to align policy objectives more effectively. For example, some forms of contingency credit can disincentivize long term investments in risk reduction and leave a country further in debt. It is more nuanced than that, but this chapter could provide a critical analysis of how the current system works (it does not yet do that), and assess literature that documents perhaps more optimal ways for the finance system to change so that transformational resources can flow towards mitigation and adaptation.	Noted. The chapter has been revised	Koko Warner	UNFCCC	Germany
33297	4	4	4	5	Climate finance institutions, to the extent that terms is meaningful, do not provide "funding"	Noted. Terminology has been sharpened and is now also introduced in a new box at the very beginning of the chpter	Richard Threlfall	Global Head of Infrastructure and Global Head of Public Transport at KPMG. Vice-President, Institution of Civil Engineers	United Kingdom (of Great Britain and Northern Ireland)
6507	4	6	4	9	It may be useful to compare climate finance to the size of the financial system	Taken into account. We now mention the issue of size in Section TODO	Nadia Ameli	University College London	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
32071	4	6	4	9	for sure small to global incomes but firstly this assessment is using the lower bound of need (later in the chapter several time is is explained that likely investment required is a factor of between 3 to 5 times this level used here) and secondly this is a false comparsion, one has to consider relative to global investment levels and general capital spending. it is a must larger figure on this basis, one is unlikely to immediately substitute investment for consumption expenditure it is much more likley investment for investment	Taken into account. The comment well taken in SOD	Andy Sloan	Guernsey Finance	United Kingdom (of Great Britain and Northern Ireland)
38255	4	6	4	11	Figures should be included in ths paragraph to allow readers to understand the scale of investments needs. Highly recommend also comparing investment needs to subsidies of fossil fuels. See IMF, OECD, IEA reports which provide up to date data on subsidies	Taken into account. A new figure illustrates current sector flows to needs and the relation to total needs	Yamina Saheb	OpenExp, Ecole des Mines de Paris	France
10551	4	7	4	7	GFCF is better to explain as the abbriviation of Gross fixed capital formation, instead of merely refer to 'investment'	Noted. Executive summary has been revised	Noriko Shimizu	Research Institution	Japan
27549	4	9	4	11	This prospective formulation on expectations of future finance is a bit unusual for an Exec Sum and may generate some push back as over-stepping an assessment mandate. A statement phrased around thnigs that are empirically observable bnow, such as "Current conditions are not favourable..." may work better.	Taken into account. The SOD exec sum is in line with IPCC standards	Navroz Dubash	Centre for Polcy Research	India
15211	4	12	4	24	I am not sure I like these predictions. It could happen or not. It is too general and at the same time, too grim, too prescriptive. I would just indicate in a sentence saying that we are already witnessing how climate change is having an impact in the growth of some economies, supply chains, fiscal unbalances ...	Noted. Executive summary has been revised	Esther Badiola	European Investment Bank	United States of America
10561	4	25	4	25	Maybe typo? "global climate investment needs policies"	Accepted. Revised to: 'global climate investment needs, policies and opportunities '	Noriko Shimizu	Research Institution	Japan
15213	4	26	4	27	remove the reference (UNEP…)	Accepted. Executive summary has been revised, now contains no direct references	Esther Badiola	European Investment Bank	United States of America
27551	4	27	4	27	This explicit reference to Africa is a very useful spotlight to shine and may be worth picking up across Chapters. Ch 13 currently does not focus adequately on Africa which is also under-studied in policy terms and we will take a cue from you and re-engage this question and would be happy to have a conversation.	Noted. Development of local capital markets in section 15.6.7 includes a discussion of Africa as a region as part of the developing countries universe	Navroz Dubash	Centre for Polcy Research	India

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
25351	4	27	4	37	Reference to the need for capacity-building and technology advancement through increased financial support in developing countries should be made.	Noted. References to [Paris Agreement MRV Support] which includes activities such as capacity-building and technology advancement for developing countries - are made in 15.6.7 development of local capital markets	Eleni Kaditi	Organization of the Petroleum Exporting Countries (OPEC)	Austria
24499	4	35	4	37	This sentence provides an example of not yet addressing the systemic opportunities. This sentence staring with "policies centered around the accelerated development of….with support grom external grants, supra-national guarantees…" is fully oriented to the contemporary world and how to get more finance out of the current system. What would be more helpful would be to analyse literature that shows instead the opportunity to change the system in ways that facilitate transformational finance. The stakes are that the contemporary discussion of "not enough climate finance" misses the point of the valuable investment opportunities (and what will be lost individually and collectively) if the system does not evovle to facilitate these transformational resources towards mitigation and adaptation. The point is to address the system, as the system channels where the trillions are invested.	Rejected. Chapter 15 provides discussion of the systemic changes for example under macroeconomic considerations, pathways for finance sector, enabling conditions. However, as most of the low carbon infrastructure required is in developing countries - the literature discussion on mobilising the USD trillions held by institutional investors through development of local capital markets is included in section 15.6.7. Literature points to the need for external grants, supra-national guarantees as part of risk reduction policy measures (Citations included in FOD)	Koko Warner	UNFCCC	Germany
32061	4	38	4	39	see above - is is recogntion that returns are requried - the chapter poo poos views of economics later regarding carbon pricing but the points are that the costs are external, returns internal, non matching of the two leads to major underinvestment, no amount of second best policy coercions on disclosure requirements on the basis of financial stability risks (questionable) or otherwise will substitute for this point.\	Noted. Executive summary has been revised	Andy Sloan	Guernsey Finance	United Kingdom (of Great Britain and Northern Ireland)
35087	4	38	4	43	Something needs to be said about the costs of infrastruture for electricity and transportation which are the major costs of projects.	Noted. Executive summary has been revised	Marco Heredia-Fragoso	National Institute of Ecology and Climate Change	Mexico

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
33299	4	44	4	46	The stated "two major challenges" imply a lack of understanding of how financial markets operate. They do not generally create themselves for a purpose and signal that to policy makers, rather they respond to the incentives that policy makers and businesses create	Noted. Executive summary has been revised	Richard Threlfall	Global Head of Infrastructure and Global Head of Public Transport at KPMG. Vice-President, Institution of Civil Engineers	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
40149	4	44	4	46	The sentence should be revised because it sounds at odd with available research results and the status of the current policy debate. One the one hand, it has been argued that "given the right information, markets will be able to deliver the solution" (Bloomberg and Carney 2016). On the other hand, research has shown that markets alone are not able to scale up the green investments needed to achieve the climate targets, and that they are not yet pricing climate risks and opportunities in their investment decisions (Monasterolo and de Angelis 2020, Morana and Sbrana 2019). In line with these findings, early and time-consistent public policies and regulations aimed to signal investors by leveraging on incentives, have been advocated in several studies by policy makers and investors (Stiglitz et al. 2017, IMF 2019, Krogstrup and Oman 2019) and by academics (see Monasterolo et al. 2019 for a review). In this spirit, the EC launched its Action Plan on Sustainable Finance (COM(2018) 97 final), delivered its final report on the EU taxonomy (9.03.2020) and introduced the Green Deal to signal the market. REF: 1. Monasterolo, I., de Angelis, L. (2020). Blind to carbon risk? An analysis of stock market's reaction to the Paris Agreement. Ecological Economics, 170, 1-10. 2. Morana, C., & Sbrana, G. (2019). Climate change implications for the catastrophe bonds market: An empirical analysis. Economic Modelling, 81, 274-294. 3. Monasterolo, I., Roventini, A., Foxon, T. (2019). Uncertainty of climate policies and implications for economics and finance: an evolutionary economics approach. Ecological Economics, 163, 1-10. 4. Stiglitz, J. E., Stern, N., Duan, M., Edenhofer, O., Giraud, G., Heal, G. M., ... & Shukla, P. R. (2017). Report of the high-level commission on carbon prices.	Noted. Executive summary has been revised	Irene Monasterolo	Vienna University of Economics and Business (WU)	Austria

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
40151	4	44	4	46	There are two other and major challenges for finance to mobilize investments, which come logically before the two challenges discussed here. They are (i) Understanding to what extent investors and investments are exposed to climate risks and (ii) Mainstreaming a standardized definition of "green" assets and their shades of green to decrease market uncertainty, avoid green bubbles and greenwashing. They are discussed separately below. (i) Understanding to what extent investors and investments are exposed to climate risks, and thus the need to mainstream consolidated and science-based assessment of climate related financial risks in investors' portfolios. Addressing this challenge is crucial for investors to price climate risks in their investment decisions and to assess the largest climate-related financial losses that could lead to individual and systemic financial risk. In this regard, Battiston et al. (2017) have developed the first science-based, transparent tool to assess investors' exposure to Climate Policy Relevant Sectors (CPRS), i.e. economic activities that could be affected positively or negatively (including "stranded assets") in a disorderly low-carbon transition (i.e. arising from limited investors' anticipation of the timing of the introduction of policies or limited anticipation of their impact). The CPRS has been used by the European Insurance and Occupational Pensions Authority (EIOPA) in their Financial Stability Review (EIOPA Dec. 2018, Section CLIMATE-RELATED EXPOSURES, p. 51) in order to conduct a first analysis of the exposure of the EU Insurance sector to climate transition risk. The CPRS has also been used by the European Central Bank in their Financial Stability Review (ECB, June 2019, Section 3.3 Euro area financial institutions' exposures to transition risk) in order to analyse the exposure of the EU financial sector to transition risk in equity and bond holdings. Finally, the CPRS has been used by the European Commission Joint Research Center in their financial impact assessment of the	Noted. Executive summary has been revised	Irene Monasterolo	Vienna University of Economics and Business (WU)	Austria
15215	4	38	5	5	Maybe these two paragraphs should be broguht up to page 3 line 33, because this point on how to movilise and stimulate private sector interventions is mentioned there. I fell we are repeating the same idea again in this paragrpah.	Noted. Will be considered in SOD	Esther Badiola	European Investment Bank	United States of America

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
33301	4	46	5	2	This point would benefit from reference to the role of regulation which is ultimately what will drive eg transparency	Noted. Executive summary has been revised	Richard Threlfall	Global Head of Infrastructure and Global Head of Public Transport at KPMG. Vice-President, Institution of Civil Engineers	United Kingdom (of Great Britain and Northern Ireland)
46007	4	21	24		Chapter 4 contains references to Keynesian policies. Could this section do the same?	Noted. Will be considered in SOD	Celine Bak	IISD	Canada
46009	4	33	37		Could an example of a supra-national guarantee be included? For example could International Financial Institutions create backstops for African national development banks for renewable energy projects. Could this result in a decline in the cost of capital?	Taken into account. Risk reduction policy measures such as supra-guarantors for infrastructure projects are discussed in detail in section 15.6.7 development of local capital markets. Examples including IFIs and instituitional investor players acting as guarantors to bring down the cost of capital are provided in Tables 15.8/Table 15.9. To note that the flow for section 15.6.7 is be re-ordered so the positioning of diagrams/tables may change	Celine Bak	IISD	Canada
38863	4	9			Seems to be over-reaching in terms of projecting what will happen, unless there are reports/literature to confirm this prognostication. Moreover, this is pretty policy-prescriptive and unbalanced without describing non-public financing options.	Noted. Executive summary has been revised	Julian Reyes	Personal Capacity	United States of America

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
30733	5	1	5	2	What is extremely crucial going forward is to standardise financial products as a means to avoid and combat greenwashing activities by the investment community. The realocation of capital to low-carbon activities is essential, but equally we need to identify financial services firms that disguise financial products under a green umbrella, whereby not contributing to capital shifts in the real economy. A common taxonomy and definitions such at the EU level (that is however dynamic to adapt to changing trends and methodologies) will greatly enhance such efforts. I believe that it is very important for the IPCC community to specifically name "greenwashing" so as to deter investors from that activity, given the wieght the panel carries in the scientific community.	Noted. Specifically with respect to the standardisation of financial products aspect of the comment: this is a key ask covered in literature by instituitional investors. For example, Japan's biggest pension fund - Governnment Pension Investment Fund investment chief has expressed concerns about greenbonds being "complicated, cumbersome, costly" (Ref:https://on.ft.com/gift_link). Aviva has also cited lack of standardisation as a barrier (Ref: https://www.avivainvestors.com/en-gb/views/aiq-investment-thinking/2019/09/three-steps-to-improve-the-green-bond-market/). Section 15.6.7 develppment of local capital markets provides a discussion of possible policy solutions discussed in literature.	Constantine Pretenteris	Engaged Tracking	United Kingdom (of Great Britain and Northern Ireland)
46653	5	5	5	9	The robust carbon risk management narrative is taken without any nuance nor question. It is crucial to challenge the neo-liberal framework at stake which week after week becomes weaker even at central bank and financial regulator/supervisor levels. Indeed it appears more and more strongly that regulation is key and that voluntary /self-regulation from financial institutions themselves will not make it at the sufficient pace. Cf. e.g. Bolton et al 2020 (BIS, the green swan) or Chenet, Ryan-Collins and vanLerven 2019	Noted. Executive summary has been revised	Hugues Chenet	University College London — Institute for Sustainable Resources	France
40153	5	10	5	12	This sentence sounds incomplete: "would result in carbon lock-ins and stranded assets..if climate policies are introduced and markets trust the policy announcements."	Noted. Executive summary has been revised	Irene Monasterolo	Vienna University of Economics and Business (WU)	Austria

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
38257	5	10	5	15	This paragraph should emphasises the lock-in effect risk of infrastructure	Noted. Executive summary has been revised	Yamina Saheb	OpenExp, Ecole des Mines de Paris	France
40155	5	12	5	14	This sentence could be completed for sake of clarity as: "have massive negative and in the mid-term hardly reversible effects on mitigation potentials and will further increase INDIVIDUAL AND systemic risks within the financial sector, WITH IMPLICATIONS ON ECONOMIC COMPETITIVENESS AND SOCIAL COHESION."	Noted. Executive summary has been revised	Irene Monasterolo	Vienna University of Economics and Business (WU)	Austria
46011	5	38	43		This seems a general statement: Categories for attracting private capital may include energy efficiency, retrofitting the building stock, cutting industrial emissions, generating renewable energy, electric mobility.	Noted. Executive summary has been revised	Celine Bak	IISD	Canada
2539	6	2	6	2	Do you mean "AR5 was the first IPCC report to include a separate chapter on Finance." ? Maybe non-IPCC audiences will have difficulties to understand it as it stands.	Ediorial. OK	Lilia Caiado Coelho Beltrao Couto	University College London	United Kingdom (of Great Britain and Northern Ireland)
24501	6	2	6	13	Consider changing the order of the questions: Most important question first (transformational finance), followed by scale of global needs and finally assessing progress.	Editorial. OK	Koko Warner	UNFCCC	Germany
33543	6	2	6	32	This should be an introductory section then follow with section 15.1 after line 32	Editorial. OK	Debra Roberts	EThekwini Municipality	South Africa
33545	6	33	6	35	SROCC & SRCCL not considered?	Noted. Not considered in Chapter 15	Debra Roberts	EThekwini Municipality	South Africa
17385	6	35	6	36	According to discussions held during COP25 and lack of international consensus in IPCC special report on the impacts of global warming of 1.5 °C above pre-industrial levels, the mentioned texts should appear to be reviewed.	Rejected. IPCC special report was published	Zeyaeyan Sadegh	Islamic Republic of Iran Meteorologic al Organization (IRIMO)	Iran
46659	6	42	6	43	ref to Chenet, Zamarioli et al 2019 would be useful	Rejected. (Could not find peer-reviewed citation. Will look further)	Hugues Chenet	University College London — Institute for Sustainable Resources	France

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
2541	6	1	7	11	While the name of the section is "Key findings from AR5", this part sounds very descriptive and reads more as an introduction to the AR5 chapter rather than actually raising key findings.	Accepted. Yes, CLA's had conflated introduction and recent findings into one section. We are amending	Lilia Caiado Coelho Beltrao Couto	University College London	United Kingdom (of Great Britain and Northern Ireland)
28371	6		10		The purpose and scope of section "15.1 Key findings from AR5 and other IPCC publications" is somewhat unclear. The section on AR5 mainly reports the structure rather than the content of its WG III chaper 16 on "Investment and Finance" . The section then moves on to report findings of UNFCCC surveys and UNEP reports. This seems to go beyond the scope of this section. Most of the respective information should by moved to other parts of this chapter.	Accepted. Heading is being amended. Since section is summary of findings to date, relevant data is gathered. UNFCCC and UNEP remains relevant on this data gathering.	Jochen Harnisch	KfW	Germany
37833	6	1	103	15	This is a comment on the entire chapter. It reads like an advanced draft. There are high numbers of incomplete sentences, unclear passages, questionable logic, unsubstantiated claims and arguments, grammar errors. In addition, the structure lacks cohesion and flow. It is difficult to read and much longer than the assigned page length.	Noted. Chapter has been revised	ALEXANDRE KOBERLE	COPPE/UFRJ	Brazil
46059	6	1			This section is incomplete without a substantive discussion of the TCFD status report which has found that companies are addiing to disclosures of material risks (physical and transition) aligned with TCFD recommendations at a rate of 1 per year with the average number of disclosures currently being 3.7. (TCFD Progress Report June 2019)	Rejected. TCFD is discussed elsewhere.	Celine Bak	IISD	Canada
37815	6	2			The first sentence in this section 15.1 mentions AR5. It then immediately goes into what seems to be a description of what the current Chapter 15 in AR6 will do. It then reverts to findings since AR5. It would be best to separate the two.	Accepted. See earlier comment	ALEXANDRE KOBERLE	COPPE/UFRJ	Brazil
36275	6	4		7	Could you please give some figures? This is too vague	Accepted. Figure is included in SOD	Youba Sokona	South Centre	Switzerland
38259	7	1	7	15	On definition of financial flows , see the work done by EEFIG available at: http://www.eefig.com/ and the EU work on sustanable finance available at: https://ec.europa.eu/info/publications/sustainable-finance-technical-expert-group_en	Taken into account. Will consider it in SOD	Yamina Saheb	OpenExp, Ecole des Mines de Paris	France
15217	7	2	7	2	"(...) which [pls add "to some extent"], continues to the present day." as there has been significant progress in methodologies, initiatives and principles to align definitions and concepts. This needs to be recognised.	Editorial. Will consider it in SOD	Esther Badiola	European Investment Bank	United States of America
15219	7	11	7	11	I wonder if we should also clarify here what parts of the oceans and blue economy finance are we covering, if any. Or just estate that these fall out of the scope of this chapter.	Noted. SOD is not covering this topic	Esther Badiola	European Investment Bank	United States of America

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
2543	7	14	7	34	Although the overall message of the box is clear, text could be much neater.	Noted. Text will be improved	Lilia Caiado Coelho Beltrao Couto	University College London	United Kingdom (of Great Britain and Northern Ireland)
24503	7	14	7	34	What is now Box 15.1 is very valuable, the authors may consider taking it out of the box / or whatever makes it more visible. The framing (that mitigation and adaptation must be considered together) is important and supported by literature. This could help provide the framing for the whole chapter and emphasize the suggested narrative about what the financial system would need to look like / how it would need to evolve to facilitate transformative mitigation and adaptation. There are many policies that central banks among G20 countries are considering and implementing right now that give communities, cities, etc. tools to build long-term climate resilience spanning mitigation (like public transportation investments, building design) and adaptation (organized coastal retreat, investments in community stabilization through social policy, labor and education market investments so people can better manage climate impacts).	Accepted. This is a much broader issue raised on transforming the financial system versus Box which is on narrower question. We can insert a sentence).	Koko Warner	UNFCCC	Germany
12741	7	15	7	15	"aim" needs to be replaced with e.g. "contribute", because private investments usually do not "aim" to cut emissions. They contribute to it, but their primary aim is return on investment.	Noted. Wording will be changed	Jan Kowalzig	Oxfam Germany	Germany
37693	7	15	7	25	This is a useful box. It would also be interesting to bring loss and damage finance into the equation (e.g. links with disaster finance). The links between mitigation, adaptation, loss and damage and sustainable development are considered in chapter 14 (14.3.2) from an international cooperation viewpoint; it would be useful here to have these links from a finance perspective.	Accepted. Will look at wording to see if 14.3.2 can be referred	Michiel Schaeffer	Climate Analytics	Netherlands
32073	7	15	7	34	whilst it may be pedagogically elegant to consider these financing mitigation and adaptation in the aggregate - given the relationship expounded here and for policy purposes an understanding of total needs is useful, in terms of financing, for private capital in particular the two are viewed differently in in terms of investment opportunity, making them appropriate for different routes of strucutring (a point which is picked up and confimed later in the chapter) and this points warrants mention	Rejected. Not simply padagogical. It is based on decision-making that public and private finance both do routinely on allocating finance to different categories. Not simply for private capital.	Andy Sloan	Guernsey Finance	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
36821	7	15	7	34	Watch the use of terminology. Is disaster finance humanitarian finance? Or do you mean finance for response or disaster risk reduction? The authors discuss "funding to mitigation, adaptation and disaster-risk"? Should this rather be "funding to mitigaiton, adaptation including disaster risk reduction"?	Accepted. The point will be taken in SOD	Zinta Zommers	United Nations Office for Disaster Risk Reduction	Germany
37695	7	18	7	23	It could also be argued that ineffective / delayed mitigation can raise adaptation financing costs, e.g. due to poor credit ratings of vulnerable countries hit by extreme events	Accepted. Precisely	Michiel Schaeffer	Climate Analytics	Netherlands
6737	7	23	7	25	It is great to see the integtration of climate-related finance considerations in this chapter and this box. It would be helpful if authors could set disaster finance into relation with loss and damage - how do they relate? At the same time, it would be great to further flesh out the interrelated nature of mitigation, adapatation and loss and damage. Is the quantum of loss and damage the same across time and mitigation scenarios or does it vary? Similarly, do adaptation limits shift over time, that is: does adaptation become more or less feasible with higher warming and/or belated mitigation? While there might not be explicit literature making this assessment, it should form part of the expert assessment that the IPCC provides (see also e.g. Box SPM.2 Table 1 in the AR5 WG2 SPM).	Accepted. Disaster financing, humanitarian financing, loss and damage all have different connotations. A balance will be needed in a sentence or two. This Box cannot answer all issues.	Oliwia Serdeczny	Climate Analytics gGmbH	Germany
44427	7	27	7	27	it should read disaster risk reduction, as actions comprised by this are varied, such as mitigation and adaptation actions	Accepted. See earlier comment	Urbano Fra Paleo	University of Extremadura	Spain
37697	7	30	7	32	The statement that "resources prioritizing climate at the cost of non-climate development finance increases the vunerability of a population" needs context. This blanket statement ignores the possibility for synergies between climate-related and other development objectives, and the need to mainstream climate considerations into investments.	Accepted. Will reword	Michiel Schaeffer	Climate Analytics	Netherlands
6739	7	30	7	33	This statement appears out of line with findings on the co-benefits of climate mitigation for other SDG goals (see e.g. SR1.5) and could be more nuanced.	Accepted, moderately. Main issue is clear: while co-benefits exist, there are choices as to the primary end-objectives, and when climate is emphasized over other primary objectives, such as poverty or health, then even with co-benefits, not enough within a limited resource allocation decision.	Oliwia Serdeczny	Climate Analytics gGmbH	Germany

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
25353	7	33	7	34	Delete "Policy coherence … on fossil fuels", as the statement is unclear.	Rejected. Clear that policy-makers can't be both trying to achieve climate goals and subsidizing fossil fuels since that is policy incoherent	Eleni Kaditi	Organization of the Petroleum Exporting Countries (OPEC)	Austria
15221	7	34	7	34	"… brown to green issues [including social aspects of a just transition,]	Editorial. Unclear	Esther Badiola	European Investment Bank	United States of America
36533	7	36	7	45	Finance demand depends on technological innovation, energy market trends and policies, and so it has many assumptions. It is natural that there are a variety of different analysis results, and it is useful for policymakers and industries to list these numbers and their conditions in literature analysis. In AR5, $ 345-385 billion is introduced as medium confidence, but if the assumptions are different, the numbers will be different, therefore in AR6, the range of numbers and conditions of the numbers is better to be shown. Since it is not based on scientific evidence, what does “confidence” mean? Mean etc. as the statistical language based on the distribution are better to use.	Rejected. All models are based on assumprtions, as are all scientific assessments. These certainly change over time. When confidence is used, it is a measure of confidence at that time on the probability of that finding. Mean is also useful if the intervals and frequency are not too large, i.e., standard deviations.	Takashi Hongo	Mitsui & Co. Global Strategic Studies Institute	Japan
12743	7	39	7	41	The 100bn goal was set in 2009, not as part of the Paris Aagreement. If you want to be absolutely correct you'd have to word it like "… towards the goal set by developed countries in 2009 to mobilise jointly 100 billion USD a year …". In Paris the COP decision adopting the Paris Agreement also included a paragraph that the goal would be extended to 2025 (i.e. maintaining the 100bn level over 2020-2025) - but that was not part of the Paris Agreement as such.	Rejected. The wording is absolutely clear in the Paris Agreement, not the wording proposed here by commentator.	Jan Kowalzig	Oxfam Germany	Germany
15223	7	41	7	41	…-a narrower issue than the overall climate finance [needs]	Accepted. Fine	Esther Badiola	European Investment Bank	United States of America
32075	7	44	7	44	dispute the use of the word 'moderate'	Rejected. Moderate is moderate. Interpretation is ours, by definition.	Andy Sloan	Guernsey Finance	United Kingdom (of Great Britain and Northern Ireland)
46013	7	33	34		The global crash in oil & gas prices should be discussed here. The sharp reduction in investment in oil & gas companies presents and opportunity. How do the authors propose this opportunity be seized upon?	Noted. Point will be considered	Celine Bak	IISD	Canada

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
17387	8	1	8	22	According to discussions held during COP25 and lack of international consensus in IPCC special report on the impacts of global warming of 1.5 °C above pre-industrial levels, the mentioned texts should appear to be reviewed.	Rejected. See earlier comment	Zeyaeyan Sadegh	Islamic Republic of Iran Meteorological Organization (IRIMO)	Iran
25355	8	11	8	13	Delete "The reported global absolute total mitigation finance … and coal mining", as this figure is out of context.	Rejected. It is relevant to cite fossil fuel investments versus low-carbon investments	Eleni Kaditi	Organization of the Petroleum Exporting Countries (OPEC)	Austria
15225	8	11	8	15	Redrafting suggestion: "Meanwhile, for comparison purposes, annual investment in the fossil and fuel industries, upstream …". Maybe we should expand this idea a bit more, with data. For example: the average annual level of fossil fuel finance from 2016-2018 is nearly twice the annualized amount of sustainable finance commitments. (WRI , https://www.wri.org/blog/2019/10/how-are-banks-doing-sustainable-finance-commitments-not-good-enough)	Rejected. WRI data in a blog cannot be cited	Esther Badiola	European Investment Bank	United States of America
18373	8	15	8	15	Table 15.1 gives an impression that the funding gap is expanding every year, but it is misleading because the required flows are not estimated under the same definition through the year. From 2010 to 2012, required flows are estimated based on the necessary amount mainly for achieving 2-degree target, but in 2016 and 2017 they are necessary amount for 1.5-degree target. This table is inappropriate summary because of the fluctuating benchmark targets. If the target is fixed, say at 2 degree, which is within the scope of the Paris target, through 2017, "Total Flows Required" would remain at 635 billion and "Total Flows Actual" increases, which implies that "Financing Gap" is closing.	Rejected. We are explicit about the sources and assumptions. If the 1.5C report becomes available and raises the gap in financing required versus actual flows, that remains relevant, even if the compariuson between when it was done under 2C assumptions versus 1.5C goals are different, which we note explicitly. It is up to the reader to consider how relevant.	Kazuhiko Hombu	Graduate School of Public Policy, The University of Tokyo	Japan
24505	8	15	8	15	Nancy Duarte's book DataStory may provide some helpful insights about how to draw out the main message of this figure--the point is to highlight the main message from the data to allow accurate interpretation and increase understanding / the audience gains greater access to the meaning of the underlying literature through effective data organization.	Noted. Will take a look	Koko Warner	UNFCCC	Germany

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
32079	8	15	8	15	the discontinuity covering years 12/13/14 needs better explanation	Accepted. Will be revised in SOD	Andy Sloan	Guernsey Finance	United Kingdom (of Great Britain and Northern Ireland)
10563	8		8		It is not clear whether Table 15.1 includes both public and private finance.	Accepted. Will be revised in SOD	Noriko Shimizu	Research Institution	Japan
25357	8		8		Table 15.1 - delete last two rows that relate to "global investment in oil gas, upstream" and "Coal mining and infrastructure", as these figures do not refer to climate finance.	Rejected. See earlier comments	Eleni Kaditi	Organization of the Petroleum Exporting Countries (OPEC)	Austria
2545	8	1	20	33	This part is quite interesting, I believe it is what the section is really about. So perhaps I could suggest that the section had a clearer focus on this part.	Accepted. Will be considered in SOD	Lilia Caiado Coelho Beltrao Couto	University College London	United Kingdom (of Great Britain and Northern Ireland)
18923	8	15			Table 15.1 description: climate finance "for" mitigation. Please add "for".	Editorial. Accepted.	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea
28393	8	15			Table 15.1 in itself is very interesting but needs a more thorough discussion of the drivers of the increase of the estimated funding gap. The conclusion that the increase of cost estimate simply reflects the price of prior inaction is only partly correct. There has also been a ramping up on the level of ambition of mitigation targets by the Paris Accord and an inclusion of highly uncertain adaptation costs.	Editorial. Space limitations cannot provide all the details needed	Jochen Harnisch	KfW	Germany
46015	8	26			The Biennial Assessment 2918 (UNFCCC 2018) reports a 'High-Bound' estimate of 681 billion = note 2918 should be 2018	Editorial. Already included	Celine Bak	IISD	Canada
46017	9	1	2		"USD and 'Low-Bound' estimate of about 456 billion USD. The divergence is primarily due to the higher bound inclusion of energy efficient investments." = Suggest that energy efficiency be included. See proposed classification of investments types above	Editorial. Already included	Celine Bak	IISD	Canada

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
33547	9	4	9	5	What is the intention of this figure? To indicate the climate finance needs / gaps per region? Current climate funding? Finance flow? All of the above?	Accepted. Figure is revised in SOD	Debra Roberts	EThekwini Municipality	South Africa
36535	9	7	9	20	Chapter 6 points out that construction costs for PV and wind power have fallen to one fourth in the last decade. What is the implication of comparing the size of finance and investment amount historically? Isn't it necessary to provide at least a supplementary explanation if it shows the amount? It is common for Industry to show trends not by money amount but by installed capacity(Mw) or power generation(Mwh).	Accepted. Details will be cited to later sections of chapter or other chapter on installed capacity	Takashi Hongo	Mitsui & Co. Global Strategic Studies Institute	Japan
15227	9	14	9	14	This sentence talks about investments (financing) in different sectors. I would remove the reference to the green bonds labelling from here or alternatively, make this reference in another sentence or paragraph, dedicated to funding from green bonds issuances.	Accepted. Text will be revised in SOD	Esther Badiola	European Investment Bank	United States of America
6741	9	14	9	18	The relatively high costs of financing in developing countries is an important point that should be systematically considered in the section on loss and damage finance, because it indicates the rising challenges for disaster and/or risk finance with rising impacts and thus limitations of risk finance instruments under high levels of warming / frequency / severity of impacts. See for example the Global Assessment Report 2019 chapter 13.1.: "The 2018 IPCC special report Global Warming of 1.5°C (IPCC SR1.5) projects that, based on Member States' current NDCs, the climate system is heading off track into the territory of 2.9°C to 3.4°C warming. If this happens, it would take future hydrometeorological hazard extremes well outside the known range of current experience and alter the loss and damage equations and fragility curves of almost all known human and natural systems, placing them at unknown levels of risk. This would render current strategies for CCA and DRR, in most countries, virtually obsolete"	Accepted. Text will be revised in SOD	Oliwia Serdeczny	Climate Analytics gGmbH	Germany

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
43761	9	20	9	22	See comment on Executive summary re definition of climate finance and noting "chapter authors will have to say to what they are refering when they use the phrase' (including whether they are referring to public or private finance)". The sentence "Progress in climate finance within developed countries became more uncertain as some large countries sought to exit their climate commitments and increase their fossil fuel reliance." - needs explained. Does this mean, in plain english, that the US ['some large countries'] reduced its UNFCCC-related contributions e.g. to GCF, or does it mean that domestic public and private financial flows associated with mitigation/adaptation actions were reduced in those countries? Similarly in lines 24-26 "High income developed countries...were neither investing adequately at home nor across borders in developing countries" - is this public finance from those countries, or is it refering to all public and private flows include investment and trade? the challenge is that to help policymakers understand the chapter it needs to be clear what is being referred to. Apologies if this is being pernickety and it may be an issue with how sources are describing things. I will not make further comments like this in this chapter.	Accepted. Will spell these out	Kirsty Hamilton	Chatham House (Associate Fellow, unpaid)	United Kingdom (of Great Britain and Northern Ireland)
15229	9	21	9	22	I would delete the reference to the US withdrawing from the Paris agreement, because this decision was announced late in 2016 and will only be effective in November 2020. Meanwhile, a significant share of the US corporate and sub-federal government is "still in" and working to align to Paris agreement. If we decide to maintain it, we should openly mention the United States. If we say "some" it indicates that there are others who have decided to withdraw. We should name them, because they are just a very few. In this sentence, we should maybe redraft as follows ""...climate finance flows slowed down due to a combination of factors, among which, retroactive changes in renewable energy regulatory frameworks, restricted access to finance and fiscal constraints following the financial crisis in 2011 and the political impact of the announcement to withdraw the Paris agreement by a major polluter, the United States."	Rejected. Naming is not the issue. Issue is the collective goal and whether that is being realized or not, and weaknesses in the same.	Esther Badiola	European Investment Bank	United States of America
25359	9	22	9	22	Delete "and increase their fossil fuel reliance", as this is not evident.	Rejected. Factual	Eleni Kaditi	Organization of the Petroleum Exporting Countries (OPEC)	Austria

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
36537	9	35	9	40	It is better to explain why necessary amount I bigger than that of AR5. Dees it come from the change or difference of climate scenario, including magnitude and timing of emergence of climate change, or different methodology for calculation of investment demand? Following WG 1, it takes longer time for emerging the clear difference of weather by climate change. Industry takes measures for extreme weather events as BCP and it is often confused the difference of measures as BCP and future climate change. It would be appreciate if AR6 explain such difference.	Accepted. Will look at the details of footnotes again if not clear.	Takashi Hongo	Mitsui & Co. Global Strategic Studies Institute	Japan
11601	9	36	9	37	Change sentence to remove "affecting all and…", and replace with "affecting developing countries most."	Accepted. Wording has been revised	Sarah Jones	JBA Risk Management	United Kingdom (of Great Britain and Northern Ireland)
44429	9	36	9	37	It should read climate extremes to refer to disasters caused by extreme weather conditions or as the result of their exacerbation by climate change, or climate-induced disasters as used later in the text	Accepted. Sentence has been revised	Urbano Fra Paleo	University of Extremadura	Spain
6743	9	36	9	40	The rising costs of disasters and relatively high costs of financing in developing countries is an important point that should be systematically considered in the section on loss and damage finance, because it indicates the rising challenges for disaster and/or risk finance with rising impacts and thus limitations of risk finance instruments under high levels of warming / frequency / severity of impacts.	Accepted. For later sections to address	Oliwia Serdeczny	Climate Analytics gGmbH	Germany
1369	9		9		For the TSU: Any definitions need to be appropriate across WGs and In the Glossary.	Accepted. Glossary will be included	David Viner	Mott MacDonald	United Kingdom (of Great Britain and Northern Ireland)
46019	9	20	22		Progress in climate finance within developed countries became more uncertain as some large countries sought to exit their climate commitments and increase their fossil fuel reliance. = This idea could be further developed with reference to the Production Gap Report (UPEP 2019) https://www.unenvironment.org/resources/report/production-gap-report-2019	Accepted. Will look at suggestion	Celine Bak	IISD	Canada
36277	9	20		22	Could you please give a source?	Accepted. Will be included	Youba Sokona	South Centre	Switzerland

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
37817	9	20			The Micale et al 2018 reference seems to only address adaptation finance but here it is used to support a claim for mitigation finance. Please make sure it is correct	Accepted. Will do so	ALEXANDRE KOBERLE	COPPE/UFRJ	Brazil
11603	10	1	10	1	Figure 15.1 and 15.2: Include y-axis label.	Accepted. OK	Sarah Jones	JBA Risk Management	United Kingdom (of Great Britain and Northern Ireland)
15231	10	3	10	33	Are these two paragraphs key findings from AR5 or IPCC reports? If not, they are repeated later in the chapter, maybe we don't need to include them here again. I have the same perception for this entire section, i.e. that it mixes key findings from past reports and new conclusions of the new report. I wonder if this is the goal.	Accepted. Editorial will be rechecked.	Esther Badiola	European Investment Bank	United States of America
32077	10	8	10	9	potential returns could be high' - if this was the case then it would be easy, the issue is that presently they are not, as the investment would more likely have taken place, the climate finance leadership initiative repoert (sept 2019) reported that annual global investments in clean energy has remained broadly constant over the last ten years...	Accepted. Will recheck. Not just returns but risk-return calculations, in often distoryted markets	Andy Sloan	Guernsey Finance	United Kingdom (of Great Britain and Northern Ireland)
6745	10	11	10	16	This is an important point that should be systematically considered in the section on loss and damage finance, because it indicates the rising challenges for disaster and/or risk finance with rising impacts and thus limitations of risk finance instruments under high levels of warming / frequency / severity of impacts.	Accepted. OK	Oliwia Serdeczny	Climate Analytics gGmbH	Germany
2547	10	11	10	18	The list of headwings is very interesting, but what is the difference between "slowing GDP growth" and "slowing macroeconomic growth" for you? Considering that GDP growth is itself a measure for macroeconomic growth. Is the first related to structural change due to climate impacts creating losses? And does the latter refer to current and near-term economic outlook? It would be nice to see a clear explanation in the text.	Accepted. Will edit. Slowing GDP growth is very specific to one series. Macroeconomic growth could include other sustainable issues for growth, such as savings, investment, consumption, debt, public finances which all feed into the overall growth story.	Lilia Caiado Coelho Beltrao Couto	University College London	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
11605	10	11	10	20	List these out as bullet points so the text is easier to read, and it breaks up a long paragraph.	Editorial. Maybe	Sarah Jones	JBA Risk Management	United Kingdom (of Great Britain and Northern Ireland)
32081	10	11	10	33	discussion of macroeconomic headwinds could better be described as end of long bull market, recongition of lowering structuring rates of long term growth, increasing costs of capital driven by regulatory changes, and obviously the global demand and supply side shock of the impact of Covid 19 will need to be referencedas this could set momentum back years	Rejected. No. This one is not about 'end of a long bull market'. Its about repeated shocks and cycles. Throughout the period after the GFC. Covid 19 discussion will expand that issue.	Andy Sloan	Guernsey Finance	United Kingdom (of Great Britain and Northern Ireland)
17389	10	17	10	20	According to discussions held during COP25 and lack of international consensus in IPCC special report on the impacts of global warming of 1.5 °C above pre-industrial levels, the mentioned texts should appear to be reviewed.	Rejected. Same point raised earlier	Zeyaeyan Sadegh	Islamic Republic of Iran Meteorological Organization (IRIMO)	Iran
2549	10	21	10	25	Message is unclear. What does this really mean for low'carbon investment itself? Does it mean that higher macroeconomic growth would increase investor appetite for low carbon investment? How?	Accepted. OK, will talk about logic. Parri passu, higher growth that means higher resource availability is always positive for more investment, and usually positive for long-run dynamics of new sectors with faster growth potential, such as low-carbon, unless policies are not supportive, technology, and other factors	Lilia Caiado Coelho Beltrao Couto	University College London	United Kingdom (of Great Britain and Northern Ireland)
4809	10	25	10	25	Typo: double use of climate in "climate financing gap in climate over a decade". Suggested rephrasing: "climate financing gap over a decade".	Accepted. Will be fixed	michele stua	APE-FVG	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
43763	10	25	10	33	This final section reads like an editorial conclusion.	Accepted. Section has been edited	Kirsty Hamilton	Chatham House (Associate Fellow, unpaid)	United Kingdom (of Great Britain and Northern Ireland)
4811	10	27	10	27	Typo: "While a project-by-project" to be changed with "While project-by-project".	Accepted. Will be fixed	michele stua	APE-FVG	United Kingdom (of Great Britain and Northern Ireland)
46061	10	17	33		Global economic headwinds have turned to a global recession due to COVID 19, reduced fossil fuel demand and geopolitical conflict resulting in a price war on oil & gas. What challenges and opportunities does this present? Could Keynesian policies that provide banks with a preferred capital cost for mitigation-oriented loans be a way of kick starting the economy while at the same time closing the financing gap and providing investors with a place to "fly to safety"?	Accepted. Will be discussed in SOD	Celine Bak	IISD	Canada
46977	10	11			Slowing down economic growth is only considered as a problem as it reduces income and thus financing capacity. Yet, economic growth is also a strong driver of climate change. This ambivalence needs to be acknowledged. Given the macroeconomic insecurities surounding economic growth, e.g. secular stagnation, it is important to also think about decoupling of economic growth from the ability to fund activities that are important for the low-carbon transition and climate change mitigation and adaptation. This is directed at high-income countries. There is an incresing literature on post-growth/degrowth economics which provides important insights, e.g. Jackson, Tim (2017). Prosperity Without Growth. 2nd Edition. London: Earthscan; Kallis, Giorgos (2012). 'The Economics of Degrowth', Ecological Economics 84: 172-18; Raworth, Kate (2017) Doughnut Economics; Cosme, Ines, Santos, Rui, Beca, Pedro and O'Neill, Dan (2017). 'Assessing the degrowth discourse: a review and analysis of academic degrowth policy proposals', Journal of Cleaner Production 149: 321-334.	Accepted. Will be discussed in SOD	Elena Hofferberth	University of Leeds	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
25361	11	3	11	3	Delete "Quantitative Assessment for Financial Needs", it is repeated twice.	Accepted . We deleted the repeated words.	Eleni Kaditi	Organization of the Petroleum Exporting Countries (OPEC)	Austria
43765	11	4	11	4	Would it be easier to start with NDC-related; or alternatively have section 15.2.2 first and go from quantitative modelling linked to 1.5C and then actual needs at NDC/national or sector level? The starting definition (opening paragraph) is quite complicated. I'm not sure why it is 'only' renewables, SMEs and transport that have been selected subsequently (and fairly superficially, at least in the case of renewables).	Accepted . We have revised the whole sections by focusing on Characteristics of financing needs in renewable energy, transport, agriculture and other sectors in the context of developing, LDCs, developed & emerging: Characteristics of financing needs. We also focus on Levels of actions by government or system, SME, and household.	Kirsty Hamilton	Chatham House (Associate Fellow, unpaid)	United Kingdom (of Great Britain and Northern Ireland)
15233	11	13	11	14	... to be able to use at their discretion to finance mitigation and adaptation...". We should avoid creating confusion between funding (origin of funds) and financing (use of funds)	Accepted . The confusing terms have been removed.	Esther Badiola	European Investment Bank	United States of America
15235	11	16	11	16	"... needed by by communities to finance their mitigation...". Change word "aid"by "finance"	Accepted . We addressed this issue. We carefully used the terms in the improved version	Esther Badiola	European Investment Bank	United States of America
12745	11	17	11	29	This para should at least briefly reflect on that financial needs arise in two distinct categories - investements that need to be mobilised (e.g. in renewable energy), with those investments usually aiming for a return; and costs that will have to be covered. The distinction is important - for instance, you might need to cover costs to directly finance adaptation interventions that do not generate financial returns. Or you might need to spend public money to mobilise investments (e.g. by lowering capital costs for investments to take place). While the former (investments) can be covered by private investors, the latter (costs) cannot and need to be shouldered by the public, e.g. in the form of domestic budget allocations or climate finance support from developed countries to developing countries.	Addressed . We do agree with those two distinct categories - investments that need to be mobilized (e.g. in renewable energy), with those investments usually aiming for a return; and costs that will have to be covered. However, we focused on the qualitative needs in the revised version. Your concerns have been addressed in quantitative section	Jan Kowalzig	Oxfam Germany	Germany

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
6479	11	17	11	38	Here it seems to emerge an old narrative, namely that public finance and developed countries need to provide the investment needed in developing countries (this links to my general point of new narrative for developing countries that goes beyond this message). Last studies on financial flows suggest that a strong home bias tendency, along with national policies and settings, and the development of local capital markets, determine the uptake of low-carbon investments. It’d be more useful to inject this message/idea in this section, re-framing it along the lines that there is a need to develop appropriate local conditions for finance to flow.	Addressed . We revised those arguments by focusing country-specific remedies ”Finance and bankability challenges can be addressed by taking the right measures in the national and global goals into local implementations in the context of developing and LDCs. SMEs has a number of potentials in promoting renewable energy due to their knowledge of local markets, and minor financial and technical obstacles. Besides, SMEs have the potential to be involved in the entire value chain of renewable energy technologies, particularly small equipment manufacturing activities, installation, civil works, retail and maintenance.	Nadia Ameli	University College London	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
4813	11	25	11	29	Whilst it is important stressing developing countries' issues, I believe that it is equally important reminding that current economic truggles and huge public depts in some developed countries, with special reference to some European countries, may potentially lead to similar risks in there too. Hence, I suggest adding at least one sentence concerning the limits of a 'developed countries' generalisation. At the same time, given the wide array of economic realities between so-called developing countries, with some of them registering limited public debt (i.e.: China), I suggest to further discriminate between categories of countries. An excessive generalisation may be misleading for readers.	Addressed . In the revised version, we focused on Region wise, developing, LDCs, developed & emerging. We agree with the point that an excessive generalization may be misleading for readers. For instance, the main obstacles of thriving renewable energy in developing or least developed countries (LDCs) are the shortfalls of endowments including skilled labour, infrastructure, investment capital, project execution and operational risk, and business models to make full use of the development potential. Besides, the promotion of renewable energy is still disintegrated with the national development strategy to provide economic perspectives and co-benefit in developing and least developed countries. Developing and LDCs emphasise more on the economic gain over the environmental benefit by reallocating resources towards relatively higher yield projects. Land tenure is found to be another detrimental factor in promoting the renewable energy setup due to unclear or weak law and rules of land	michele stua	APE-FVG	United Kingdom (of Great Britain and Northern Ireland)
15237	11	26	11	26	"Developing countries have significant financial needs and public funding is often constrained by debt carrying capacity. Public debt…"	Accepted . Section has been edited	Esther Badiola	European Investment Bank	United States of America
6747	11	28	11	29	This (debt) is an important point that should be systematically considered in the section on loss and damage finance, because it indicates the rising challenges for disaster and/or risk finance with rising impacts and thus limitations of risk finance instruments under high levels of warming / frequency / severity of impacts.	Addressed . We do agree. We have improved this section	Oliwia Serdeczny	Climate Analytics gGmbH	Germany

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
38261	11	28	11	29	It will be good here to make a reference to the fact it's easier for developing countries to borrow money for carbon intensive infrastructures than for decarbonised infrastracture due to international and developed countries borrowing rules, teh complexity of desigiing low carbon projects and the lack of technical capacity in developing countries. Basically, making financing available without a prior capacity building make the access to finance harder achievable.	Addressed . We focused those issues in the revised version. Based on the existing literature, we proposed a number of remedies in the context of different regions	Yamina Saheb	OpenExp, Ecole des Mines de Paris	France
12747	11	30	11	30	Ist not only developing countries urging developed countries. Developed countries have a legal obligation under the UNFCCC Article 4.3 and 4.4 (that got confirmed in the Paris Agreement's article 9.1) to provide financial resources to assist.	Addressed . In the revised version, we highlight the local remedies for the local problems	Jan Kowalzig	Oxfam Germany	Germany
11607	11	30	11	31	Clarify who are responsible for the developed countries. Do you mean bodies such as the UN?	Noted. Will be considered in SOD	Sarah Jones	JBA Risk Management	United Kingdom (of Great Britain and Northern Ireland)
15239	11	30	11	38	This paragraph needs redrafting. Please note also that this is again mentioned in section 15.3.3.1 and box 15.3. First, the Paris agreement reflected the goal adopted in 2009, by which developed countries pledged to mobilize jointly $100 billion a year in climate finance by 2020 for developing countries. Second, we need to raise the two sides of the same issue: on one side, funds flowing from developed countries to developing countries are still limited. This gap is in part being fulfilled by developing countries, who are financing mitigation and adaptation themselves. On the other side, there is a need to decrease the risk perception of investments in developing countries and improve the enabling and business environment so that international funds can flow at the scale needed.	Addressed . We have improved the revised version throughly	Esther Badiola	European Investment Bank	United States of America
12749	11	33	11	34	see comment 2.	Addressed . comment 2 has been addressed	Jan Kowalzig	Oxfam Germany	Germany
38869	11	36	11	37	This sentence about the U.S. withdrawal is unscientific, and the tone is policy prescriptive.	Accepted . This sentence has been removed and the section has been edited.	Julian Reyes	Personal Capacity	United States of America

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
15241	11	36	11	38	This sentence is not conclusive. We should finalise this paragraph by indicating how far are we from this 100bn milestone. For example: the Standing Committee on Finance (SCF), in its third Biennial Assessment of Climate Finance 2016, indicated that public climate finance from developed to developing countries reached $55.7 billion in 2016, a 30 percent increase over 2014 levels. About 60 percent of this money flowed went through bilateral and regional channels, 35 percent through the multilateral development banks (or MDBs, pro-rated to account only for the share that developed countries contribute to these institutions), and four percent through multilateral climate funds such as the Green Climate Fund. Including private sources of finance, the Assessment shows that total climate finance provided and mobilized by developed countries for developing countries reached over $70 billion in 2016. At just over half way to go to 2020, this suggests that developed countries were on track to reach the $100 billion goal. (Source: https://www.wri.org/blog/2018/11/new-un-assessment-delivers-good-news-climate-finance-no-time-complacency)	Accepted . However, we focused on the qualitative needs in the revised version. Your concerns have been addressed in quantitative section	Esther Badiola	European Investment Bank	United States of America
15243	11	36	11	38	Another good source is https://climatepolicyinitiative.org/publication/global-landscape-of-climate-finance-2019/.	Addressed . I have gone over the link carefully	Esther Badiola	European Investment Bank	United States of America
15245	11	37	11	38	In the reference to the GCF, we should not just indicate what Australia has done because other countries have doubled their pledges and the result of the replenishment phase of the GCF has been higher than the original pledges, even with the absence of the USA. Please remove or complete this sentence at it sends the wrong message as it is at the moment.	Accepted . This wording has been removed and the section has been edited.	Esther Badiola	European Investment Bank	United States of America
6509	11	41	11	42	Please replace “high risk and less return” with “unattractive risk-return profile”	Addressed . Section has been edited	Nadia Ameli	University College London	United Kingdom (of Great Britain and Northern Ireland)
16025	11	42	11	44	A significant factor in lower gross investment in renewable power generation is the fall in cost of that generation technology. You may wish to report in terms of capacity additions	Addressed . We have mention shortfalls of endowments including skilled labour, infrastructure, investment capital, project execution and operational risk, and business models to make full use of the development potential	Jason Patrick	New Zealand Green Investment Finance	New Zealand

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
2551	11	39	12	5	Use of English could be more careful throughout.	Addressed . The revised version is greatly improved in term language	Lilia Caiado Coelho Beltrao Couto	University College London	United Kingdom (of Great Britain and Northern Ireland)
11609	11	40	12	5	I would argue that within certain areas of the financial sector that divestment from coal is now prevalent (e.g. insurance) and private sector, multi-national companies are turning to renewable energies and sustainable practices as investment choices. Allianz is one example of an insurance body divesting from coal with the aim of moving towards a carbon-neutral economy. Aviva is another prime example of a company making low-carbon, responsible investments. In 2019, it assigned £717m of new investment in renewable energy and continues to invest in low carbon infrastructure.	Accepted . We agree, the money investment issue has been shifted to quantitative assessment	Sarah Jones	JBA Risk Management	United Kingdom (of Great Britain and Northern Ireland)
37699	11	40	12	5	This section describes how renewable energy projects carry greater risks - could authors explain this further? Is this an increased perception of risk because it can take longer to accrue returns on investment, and because financial institutions may have less experience? Does the risk derive from policy uncertainty? (Perhaps this is covered later - if so, a reference to the section would be useful)	Addressed . We have revised the whole sections by focusing on Characteristics of financing needs in renewable energy, transport, agriculture and other sectors in the context of developing, LDCs, developed & emerging: Characteristics of financing needs. We also focus on Levels of actions by government or system, SME, and household.	Michiel Schaeffer	Climate Analytics	Netherlands
43767	11	40	12	5	This section needs revised if it is continued with. It is not an accurate generalisation to say: "many investors are sceptical in investing in RE production due to high risk and less return". I'm not sure what it means to say: "better harmonisation between different types of finance" is required - by whom? Yes different financiers have different mandates for different levels of risk, but what does 'harmonising' that mean in practice? Also why just cover renewables - what about energy efficiency and range of technologies involved in the energy sector transition?	Addressed . We found this statement from an empirical study. However, we tone down our writing. We revised the statement “A sustainable source of financing in renewable energy requires a well-functioning financial market coupled with willingness to invest in renewable energy projects.” Indeed, but this section is devoted to renewable energy	Kirsty Hamilton	Chatham House (Associate Fellow, unpaid)	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
15247	11	39	15	37	This section is very incomplete. It mentions just a few sectors while others are missing. I think we should (I) refrain from trying to indicate a sectoral berak up or (II) include all sectors -maybe as detailed in the other chapters of the report, i.e. buidings, cities, industry, energy... My suggestion is to (delete or shift to other parts of the chapter and) go directly to page 15 line 40 on the quantitative assessment of financial needs. I would move the qualitative assessment of financial needs, to the gap section where we can raise the challenges for increasing finance flows.	Accepted . The revised version is greatly improved focusing on sector-wise needs and actions by different stakeholders	Esther Badiola	European Investment Bank	United States of America
38865	11	9			Is the State Flood Assessment international, or just focused on one country? Very unclear here, and if only for one country seems inappropriate to make generalizations based on one country's or one state's assessment.	Accepted . in the revised version, we focused different regions	Julian Reyes	Personal Capacity	United States of America
36279	11	15		16	Do we have any idea of the financial need? Any figure will be helpful	Accepted . It would be nicer, however, in the revised version we focused on the Characteristics of financing needs in renewable energy, transport, agriculture and other sectors in the context of developing, LDCs, developed & emerging: Characteristics of financing needs. We also focus on Levels of actions by government or system, SME, and household. Perhaps, it should be added to the quantitative assessment section	Youba Sokona	South Centre	Switzerland
36281	11	16		17	There is no linkage between this sentence and the previous. Why Debt? How it became part of the finance and why it is a challenge? It is not clear to undertand the issue	Addressed . We have improve this section	Youba Sokona	South Centre	Switzerland
38867	11	24			"curving the greenhouse gas concentrations..." -> Is this referring to "curbing" GHG?	Addressed . We addressed this issue. We carefully used the terms in the improved version	Julian Reyes	Personal Capacity	United States of America
46021	11	24			change mitigation projects for curving the greenhouse gas concentrations = Change "curving" to "curbing"	Addressed . We addressed this issue. We carefully used the terms in the improved version	Celine Bak	IISD	Canada

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
46023	11	26			while the government fund is insufficient, as they heavily indebted per capita. = missing verb	Accepted . We addressed this issue. We carefully used the terms in the improved version	Celine Bak	IISD	Canada
36283	11	34		36	I may be wrong but this has been decided long before the PA in Copenhagen	Taken into account. Will be checked and revised	Youba Sokona	South Centre	Switzerland
36285	11	41		42	Could you please elaborate what you mean by high risk and low return? Are those the case anywhere?	Accepted . Both in emerging and developed countries, apparently there is no lack of capital. Nevertheless, the main concern remains on bankable projects to attract investment as the issuance of a loan depends on the banks of an internal investment committee where they care about the profitability of the proposed project over the financing period	Youba Sokona	South Centre	Switzerland
32345	12	1	12	5	Will it be possible to produce graphs that show the financing needs for renewable energy per country	Addressed . It would be nicer, however, in the revised version we focused on the Characteristics of financing needs in renewable energy, transport, agriculture and other sectors in the context of developing, LDCs, developed & emerging: Characteristics of financing needs. We also focus on Levels of actions by government or system, SME, and household. Perhaps, it should be added to the quantitative assessment section	Penny Apostolaki	Barclays	United Kingdom (of Great Britain and Northern Ireland)
38263	12	1	12	5	Here you should make a reference to fossil fuels subsidies in both developed and developing countries. See IMF, OECD, IEA and IRENA reports on subsidies.	Addressed . We have gone over the those reports very carefully.	Yamina Saheb	OpenExp, Ecole des Mines de Paris	France

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
11611	12	2	12	3	English language correction needed. Refrain from use of "Till" and instead use "Until".	Accepted . We have improved the language	Sarah Jones	JBA Risk Management	United Kingdom (of Great Britain and Northern Ireland)
25363	12	2	12	5	Delete "Till today, investment … into the RE direction", as this statement is policy prescriptive.	Accepted . We have deleted that statement	Eleni Kaditi	Organization of the Petroleum Exporting Countries (OPEC)	Austria
36539	12	6	12	29	Needless to say, SMEs also need to make efforts, and promoting them provides a positive impact on the nation's efforts. But it is also needed to know about its impact on national emission reduction. The definition of SMEs varies from country to country. For example, Japanese SMEs include those classified as large scale companies in developing countries. Data are limited, but SMEs account for 12% of energy-related CO2 emissions in Japan, according to Japanese 2007 data. It should not be denied the importance of supporting SMEs reduction efforts, but AR6 should also explain the impact on reduction （Energy related CO2 Emission from SMEs） https://www.chusho.meti.go.jp/pamflet/hakusyo/h22/h22/html/k212100.html	Accepted . We highlighted the role of SME "SMEs has a number of potentials in promoting renewable energy due to their knowledge of local markets, and minor financial and technical obstacles. Besides, SMEs have the potential to be involved in the entire value chain of renewable energy technologies, particularly small equipment manufacturing activities, installation, civil works, retail and maintenance. In the case of developed countries, it is required to provide financial support schemes for upscaling of grid infrastructures and associated specialized education programs supporting innovation in SMEs."	Takashi Hongo	Mitsui & Co. Global Strategic Studies Institute	Japan
38267	12	7	12	7	It's the first time fossil fuels subsidies are mentioned. This should be meantioned earlier and figures need to be included to make the reader aware of the scale of the damage subsidies are causing	Noted. Will be considered in SOD	Yamina Saheb	OpenExp, Ecole des Mines de Paris	France

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
4815	12	7	12	29	The paragraph contains multiple typos. An editorial review is strongly suggested.	Accepted. We thoroughly improved the revised version.	michele stua	APE-FVG	United Kingdom (of Great Britain and Northern Ireland)
25365	12	17	12	17	Sentence that starts with "Therefore" to be completed.	Accepted. We thoroughly improved the revised version.	Eleni Kaditi	Organization of the Petroleum Exporting Countries (OPEC)	Austria
45627	12	17	12	17	Missing word after long	Addressed . we addressed this comment	Geoffrey Saville	Willis Towers Watson	United Kingdom (of Great Britain and Northern Ireland)
45629	12	21	12	29	Because the benefit of good eco-firnedly practices (new views on ESG) is not financially recongnised. Perhps here it is worth mentioned the potential benefit of TCFD to thiese kind of issues. While currently in the developed world, the principlaes should be filters from banks and insurance throuhg corporates in the developed world to investments and private enterprise in the developing world.	Accepted. We agree, we focused on this issue briefly. "the promotion of renewable energy still disintegrated with the national development strategy to provide economic perspectives and co-benefit in developing and least developed countries. "	Geoffrey Saville	Willis Towers Watson	United Kingdom (of Great Britain and Northern Ireland)
45631	12	31	12	33	Citations for the figures are missing	Noted. In the revised version, we didn't focus the monetary needs	Geoffrey Saville	Willis Towers Watson	United Kingdom (of Great Britain and Northern Ireland)
45633	12	34	12	34	Use of the word obviously assumed a position taken by the reader. Simply stating that "due to these high GHG contributions transport should be targetted" is clearer.	Addressed . The comment has been addressed	Geoffrey Saville	Willis Towers Watson	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
37701	12	34	12	35	Please refer to the Paris Agreement goal correctly (it is not to keep warming at 2 deg, but to limit it to well below 2 AND (simultaneously) pursue the 1.5°C limit)	Accepted. Will revise accordingly	Michiel Schaeffer	Climate Analytics	Netherlands
4817	12	35	12	35	When stating "keeping climate warming at 2°C as agreed upon by the international community in 2015" refer to the 2-1.5°C threshold objective.	Accepted. Will revise accordingly	michele stua	APE-FVG	United Kingdom (of Great Britain and Northern Ireland)
2553	12	35	12	42	This is a seven line sentence which meaning I struggle to understand. Chapter 15 would read better if this kind of long unclear sentence was avoided.	Taken into account. SOD will be revised	Lilia Caiado Coelho Beltrao Couto	University College London	United Kingdom (of Great Britain and Northern Ireland)
4819	12	35	12	42	The length of the phrase, the inclusion of a variety of information, the absence of a year reference when citing "Intended Nationally determined Contribution (INDC) updated up to November 12th", make the whole sentence unclear for the reader. A rephrasing is highly recommended.	Taken into account. SOD will be revised	michele stua	APE-FVG	United Kingdom (of Great Britain and Northern Ireland)
4821	12	42	12	44	The sentence requires a reference confirming its statement.	Addressed . We provide references	michele stua	APE-FVG	United Kingdom (of Great Britain and Northern Ireland)
38265	12	6	13	6	This section should include a separate paragraph on financing enrgy demand reduction and within this paragraph we should have sube-sections per sector (building, transport, industry and agriculture). You will find data on sectoral needs in IEA invesment report	Addressed . We have revised the whole sections by focusing on Characteristics of financing needs in renewable energy, transport, agriculture and other sectors in the context of developing, LDCs, developed & emerging: Characteristics of financing needs. We also focus on Levels of actions by government or system, SME, and household.	Yamina Saheb	OpenExp, Ecole des Mines de Paris	France

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
46029	12	21	29		suggest editorial review of this section.	Addressed . We have revised this section thoroughly.	Celine Bak	IISD	Canada
46033	12	31	44		multiple editorial issues with this para	Addressed . We have revised this section thoroughly.	Celine Bak	IISD	Canada
36287	12	9		10	Source?	Addressed . references have been provided	Youba Sokona	South Centre	Switzerland
18925	12	16			check the following part of the sentence: "... a challenge in terms of the short run the return, ..."	Accepted . The comment has addressed	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea
46025	12	16			encounter a challenge in terms of the short run the return, their returns may accrue over a long-term = suggest "encounter a challenge in investor demands for short term profits, while their returns may only accrue in the medium term"	Accepted . we addressed accordingly	Celine Bak	IISD	Canada
46027	12	17			Therefore, eco-efficient SMEs need to have access to finance with long (Lane 2017). = missing word at end of sentence "tenure"?	Accepted. The comment has addressed	Celine Bak	IISD	Canada
46031	12	33			suggest "rapidly" instead of "rampant"	Accepted . The word has been replaced	Celine Bak	IISD	Canada
36289	12	34			Should is policy prescriptive	Noted, thank you	Youba Sokona	South Centre	Switzerland
46035	13	1	5		In 2015, about 220 billion USD was invested in more efficient appliances, lighting, cars and trucks as well as industrial motors. Such investments would require to be ten times higher by 2050, as they would also need to include other areas, such as renewable energy used for heat production in the buildings and industrial sectors, electric cars and trucks. = reinforce the concept of annual investment. Refer to the 1.820 USD Trillion annual investment gap presented earlier in the paper. 1.820 T divided by 220 B = 8.27 times not 10 times.	Addressed . In the revised version, we didn't focus the monetary needs anymore.	Celine Bak	IISD	Canada
46037	13	1	11		Strongly suggest a different source than the IEA for these examples. See the FO chapters for sources	Addressed . We have cited different sources	Celine Bak	IISD	Canada
45635	13	1	13	11	Examples from insurance and buildings (assuming construction AND property management) would make this paragraph stronger as those industry present different challenges.	Noted. Will be considered in SOD	Geoffrey Saville	Willis Towers Watson	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
2555	13	3	13	11	This subsection title is "Financial needs in other sectors" However, instead of talking about sectors not previously covered, it ends up focusing again on renewable energy. This segment could perhaps move back to the renewable energy subsection. Then, the current subsection could further develop industry and buildings sectors, actually not treated before.	Text revised . We have revised the whole sections by focusing on Characteristics of financing needs in renewable energy, transport, agriculture and other sectors in the context of developing, LDCs, developed & emerging: Characteristics of financing needs. We also focus on Levels of actions by government or system, SME, and household.	Lilia Caiado Coelho Beltrao Couto	University College London	United Kingdom (of Great Britain and Northern Ireland)
25367	13	6	13	9	Delete "Such a profound transformation … energy efficiency mandates", as this statement is policy prescriptive.	Accepted. Those terms have been removed	Eleni Kaditi	Organization of the Petroleum Exporting Countries (OPEC)	Austria
18927	13	7	13	8	No quatation mark at the end of the sentence. "…, increasing 'CO2 …"	Addressed . Because, this is not a quotation	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea
6511	13	9	13	34	This para seems misplaced here as this section provides a qualitative assessment of financial flows and the para introduces randomly few concepts like risks, barriers, jobs. I'd suggest to remove it.	Accepted. We through improved this section focusing on a qualitative assessment	Nadia Ameli	University College London	United Kingdom (of Great Britain and Northern Ireland)
12751	13	13	13	18	It should be noted here that the comparison does not include financial resources (or foregone wealth/income) by individuals in developing countries that have to adapt with or without public programmes funded domestically or internationally. In their daily lives these people are constantly adapting, and this effort could be expressed financially or in dimensions of forgone wealth opportunities. I'm not aware of research that quantifies this but as a principal remark one could put the comparison in this para into perspective.	Accepted. We have revised the whole sections by focusing on Characteristics of financing needs in renewable energy, transport, agriculture and other sectors in the context of developing, LDCs, developed & emerging: Characteristics of financing needs. We also focus on Levels of actions by government or system, SME, and household.	Jan Kowalzig	Oxfam Germany	Germany

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
11613	13	19	13	29	Investors and lenders are interested in up to 40-year terms, rather than the "short-term" implied in this particular paragraph. In particular, exposure to physical hazard is now being considered over the medium-term, to allow investors to diversify their portfolios or mitigate against potential risk for current investments. The regulatory bodies are also applying pressure on the non-insurance financial sectors to better understand the potential impacts of climate change through biennial stress tests, for which the firms are asked to estimate future financial impacts under different climate scenarios (see Bank of England biennial stress test for more information).	Accepted. We have revised issue	Sarah Jones	JBA Risk Management	United Kingdom (of Great Britain and Northern Ireland)
4823	13	25	13	25	Most likely a typo: "Without the asymmetric information" to be changed with "With the asymmetric information".	Accepted. We are sorry for the careless typos. We fully own this and thoroughly checked the revised version to avoid such typos.	michele stua	APE-FVG	United Kingdom (of Great Britain and Northern Ireland)
46777	13	25	13	25	Beginning of sentence "Without the asymmetric information,..." seems to be grammatically wrong within the context conveying the wrong meaning. Should be "With ongoing information asymmetry,…"	accepted. We are sorry for the careless typos. We fully own this and thoroughly checked the revised version to avoid such typos.	Kim Schumacher	School of Environment and Society, Tokyo Institute of Technology	Japan
47033	13	25	13	25	Beginning of sentence "Without the asymmetric information,..." seems to be grammatically wrong within the context conveying the wrong meaning. Should be "With ongoing information asymmetry,…" (5)	Accepted. We are sorry for the careless typos. We fully own this and thoroughly checked the revised version to avoid such typos.	Kim Schumacher	School of Environment and Society, Tokyo Institute of Technology	Japan
45637	13	27	13	27	The FSB should be capitalised and an acronym	Accepted. addressed accordingly	Geoffrey Saville	Willis Towers Watson	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
32083	13	27	13	29	refernce the fiancial stability board (assume FCFD reference) - this probably needs better context to explain how a disclsure requirement on what financial institutions are doing to consider and mitigate climate change risk feeds through into understanding the financial needs for investment to mitigate climate change - ie what is the expected transmission mechanism (ie expectation or rationale behind the policy action)	Addressed . In the revised version, we focused on quantitative aspects rather than monetary investment	Andy Sloan	Guernsey Finance	United Kingdom (of Great Britain and Northern Ireland)
45639	13	27	13	29	Provide example here of regulatory giudance from FSB. There are others like the General Insurance Stress Tests and Biennial Exploratory Stress test from the Bank of England Prudential Regulatory Authority. Also ACPR in France is suggesting similar stress tests for finanicla; risk of cliamte change.	Addressed . We talked about investment risk in the revised version "Apart from the common risks that any new business initiatives are exposed, renewable energy projects face certain risks that should be mitigated by smart policy adaptations and tools. Finance and bankability challenges can be addressed by taking the right measures in the national and global goals into local implementations in the context of developing and LDCs"	Geoffrey Saville	Willis Towers Watson	United Kingdom (of Great Britain and Northern Ireland)
3027	13	30	13	34	What type of actions and whether they are climate-related mitigation actions? Also are there articles to confirm this other than Evelyn, 2018. The statement seems too strong and authors should provide more evidence to support.	Accepted. We have provided more evidences	Mustafa Babiker	Aramco	Saudi Arabia
25369	13	30	13	34	Delete "The literature highlights … (Evelyn 2018).", as this analysis does not considers inefficient subsidies, and the trade-offs of the policies analysis.	accepted. The wording has been deleted	Eleni Kaditi	Organization of the Petroleum Exporting Countries (OPEC)	Austria
13499	13	32	13	34	Such number should be given with uncertainty range and discussed among several studies not only one.	Accepted. We cited several studies in the revised version	Sophie Szopa	Commissariat à l'Energie Atomique et aux Energies Alternatives	France

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
45641	13	39	13	41	The Coalition for Clmate Resilience Investment (CCRI) is a private sector led, but multisectoral effort to bring together financing bodies across public and provate domains to support climate resilient infrastructure investements. Potentially could be used as an example here. See comment 10 above.	Accepted. the comment has been addressed	Geoffrey Saville	Willis Towers Watson	United Kingdom (of Great Britain and Northern Ireland)
46039	13	20	21		It is argued that the risks of climate change intend to encounter us in the future, but immediate actions require to mitigate them (Carney 2015). = check meaning of sentence. It appears to refer to the Tragedy of the Horizons	Accepted. We revised those statement carefully	Celine Bak	IISD	Canada
46043	13	28	29		The financial stability board has, therefore, suggested establishing the national regulators framework for firms and asset managers to disclose their exposure to climate risks and how they plan to mitigate them. = FSB in caps, TCFD should be referred to. Countries proposing mandatory disclosure should be referred to (i.e. UK)	Accepted. The concern has been addressed carefully	Celine Bak	IISD	Canada
46047	13	30	34		Suggest this citation (Evelyn 2018) be used for framing at the start of the chapter	Accepted. The wording has been deleted	Celine Bak	IISD	Canada
36291	13	16			Please give references	Accepted. We provide references	Youba Sokona	South Centre	Switzerland
46041	13	25			Without the asymmetric information, = Change WITHOUT to WITH	Accepted. We are sorry for the careless typos. We fully own this and thoroughly checked the revised version to avoid such typos	Celine Bak	IISD	Canada
32085	14	21	1	39	feels a bit juxaposed in terms of positoin here	Accepted. Chapter restructured to improve flow and coherance	Andy Sloan	Guernsey Finance	United Kingdom (of Great Britain and Northern Ireland)
46049	14	10	13		Climate finance flows have somewhat progressed as it raised about 472 billion USD in 2015 and 455 billion USD for 2016, obtained from the primarily private investment in renewables. This was followed y a drop in 2016 to 455 billion USD, caused by dropping renewable energy technology costs and fewer renewable energy capacity additions in some countries (Padraig et al. 2018). = check for consistency with Chapter 1 Climate Finance figures closer to $800 B USD annual not 455 B USD	Taken into account. Numbers will revised in SOD	Celine Bak	IISD	Canada

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
12737	14	10	14	11	The scenarios depicted in Chapter 3 recognize nuclear power as a contributor to low carbon energy in multiple instances (e.g. p. 37, line 11 for hydrogen production; p. 35 line 21 for electricity generation). But there is no mention of nuclear investments in this Chapter 15. In 2018 nuclear investments were in the order of $50 billion (IEA World Energy Investment, 2018). Could this be reflected in the draft despite the current inegillibility of nuclear projects for climate finance?	Noted. In this chapter we did not focus on investment in specific energy source	Bertrand Magne	International Atomic Energy Agency	Austria
2557	14	10	14	13	This is the second time Chapter 15 states that renewable energy investment is dropping. But if figures diminish due to lowering costs, I believe you could perhaps clarify and explore this reason further. In this case, renewables financing needs would drop as well. Doing so would also provide some consistency with Chapter 6.	Accepted. The comment will be considered in SOD	Lilia Caiado Coelho Beltrao Couto	University College London	United Kingdom (of Great Britain and Northern Ireland)
12753	14	16	14	17	Notz sure what the sentence "The initial pledge …" is referring to. In any case, there was no "initial pledge in the Paris Agreement". Perhaps this refers to investment needs or other financial needs contained in NDCs that were submitted under the Paris Agreement? I suggest checking this and edit accordingly to make it understandable.	Noted. Will check the wording in SOD	Jan Kowalzig	Oxfam Germany	Germany
25371	14	17	14	18	Delete "as proposed by the IPCC".	Accepted. addressed accordingly	Eleni Kaditi	Organization of the Petroleum Exporting Countries (OPEC)	Austria
6515	14	32	14	34	renewables are compared to energy efficiency, however energy efficiency projects are very different from renewable assetsand they are missing a clear business model for investors to invest in.	Noted. The point will be considered in SOD	Nadia Ameli	University College London	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
43769	14	20	15	37	This seems out of context. This is describing key features of project finance from a finance perspective - a completely differerent use of the word 'need' (this use of the term 'need' is repeated page 27 lines 17-22; and page 31 page line 13). This may be better included in a 'how it works' section: authors could consider whether the chapter would benefit from content or a box on how financing works to pull this into one place (as relating to this topic and with an aim to help policymakers). One grey literature reference is the 'Finance Guide for Policymakers', published by BNEF, Chatham House and FS-UNEP Collaborating Centre (available from http://about.bnef.com/white-papers/finance-guide-policy-makers/). This has a factually accurate description of who does what and how mainstream finance works relevant to renewable energy/infrastructure (including capital markets/'green' bonds). IRENA has a detailed project finance report (which I noted in comments on Ch6): 'Unlocking Renewable Energy Investment: The role of risk mitigation and structured finance", 2016 (Available from: https://www.irena.org/publications/2016/Jun/Unlocking-Renewable-Energy-Investment-The-role-of-risk-mitigation-and-structured-finance). In Ch6 comments I note that page 32, section 2.1 of this latter report succinctly covers the importance of the enabling policy and regulatory environment for attracting capital.	Noted. We have restructured this section	Kirsty Hamilton	Chatham House (Associate Fellow, unpaid)	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
6481	14	21	15	37	This comment relates to the entire section: Characterising financing needs on a project level There should be a better discussion on investment barriers or factors currently preventing private and public institutions from scaling up sustainable finance. This section should be better organised and doesn't report all investment barriers emerging from the context, market and investors' characteristics (Ameli et al 2019 as an example). More general, I'd suggest to re-structure the section as different concepts are very mixed over few sections coming later, a deeper/clear discussion on barriers to investment and role of investors' expectations is needed. The behaviour component (and the related box coming later in the Chapter) could be mentioned here - I'd suggest to report evidence on how behavioural biases affect investors' decision making (the current box on behavioural biases doesn't relate to investment decisions, but it generally treats behavioural biases). Linked to this point, it may be incredibly useful if the authors could consider a section on policy instruments/tools to foster climate finance which could be grouped in: fiscal levers (carbon tax, etc); monetary policy, financial regulations and public finance. These instruments/policies are discussed in few sections, but it is missing a dedicated section on them. A suggestion is to include this discussion in the "Enabling environments" (15.6.2) section	Noted. We have restructured this section	Nadia Ameli	University College London	United Kingdom (of Great Britain and Northern Ireland)
36293	14	1			Is IRENA a funding agency? Please check your list and limit it to funding institutions	Noted. Will check	Youba Sokona	South Centre	Switzerland
36295	14	10		13	Please revise for consistency	Noted. Will check	Youba Sokona	South Centre	Switzerland
36299	14	16		18	This is not consistent as you are confusing pledge and need in addition you are wrong as IPCC never makes A PROPOSAL and if this is the case please give the reference	Noted. Will check	Youba Sokona	South Centre	Switzerland
36297	14	16			Reference?	Noted. Will check	Youba Sokona	South Centre	Switzerland
46053	14	21			financing needs require additional attention from policymakers. = see suggestion above re IFI's providing credit backstops to National development banks	Taken into account. Point will be taken in SOD	Celine Bak	IISD	Canada
46051	14	28			like YieldCos see creating tradable instruments to allow institutional investors to become involved in = delete "see" and check English	Accepted. [YieldCos from PIDG are included in Tables 15.8/15.9 - mobilising institutional investors]	Celine Bak	IISD	Canada

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
16027	14	32			Heterogenous payback profile is an early market phenonenon and should be alleviated with greater uptake and thus greater product data and liquidity	Noted. Point will be considered	Jason Patrick	New Zealand Green Investment Finance	New Zealand
45161	15	10	12	8	I read: « the ability to aggregate financing needs is crucial. The important role of dedicated intermediaries bundling demand for financing has been demonstrated. » Other options exist and should be quoted here. Cf. for instance: « Energie Partagée » https://fr.wikipedia.org/wiki/%C3%89nergie_Partag%C3%A9e	Noted. Point will be considered	Raymond Zaharia	Le Club des Argonautes http://www.clubdesargonautes.org	France
44595	15	4	15	5	There's a paper on stranded assets and negative emissions technologies (see https://www.smithschool.ox.ac.uk/research/sustainable-finance/publications/Stranded-Carbon-Assets-and-NETs.pdf). Furthermore you should look into the huge amounts of fossil fuels that are assumed to stay in the system as 'residual emissions' (see https://www.nature.com/articles/s41558-018-0198-6), which would help to make the 'stranded assets' claim a little bit more nuanced. Ch3 should be able to provide numbers for residual fossil fuel emissions in low-stabilization pathways	Noted. Point will be considered	Oliver Geden	German Institute for International and Security Affairs	Germany
10567	15	14	15	19	Maybe better to consider to include as innovative private financing mechanisms, sustainability linked bond and green loan. Last year, these new financial products emerged a lot. Accordingly, for instance, Loan Market Association published sustainability linked loan principles. https://www.lma.eu.com/application/files/8015/5307/4231/LMA_Sustainability_Linked_Loan_Principles.pdf	Taken into account. Point will be taken in SOD	Noriko Shimizu	Research Institution	Japan
42621	15	16	15	17	Where is the proof that this is the case? From professional experience I can tell that the amount of institutional investors doing so approaches zero.	Noted. Point will be considered	Vivian Grudde	Climate Change & Transformation Advisory (Freelancing)	Germany
2559	15	16	15	21	This seems to be a short sight of the role of institutional investors. Ameli et. al, 2019 (Climate finance and disclosure for institutional investors: why transparency is not enough - cited elsewhere in the chapter) provides a deeper discussion on this matter.	Noted. Point will be considered	Lilia Caiado Coelho Beltrao Couto	University College London	United Kingdom (of Great Britain and Northern Ireland)
38269	15	20	15	46	See DEEP database vailable at: http://www.eefig.com/index.php/deep for financing needs at a project level	Noted. Point will be considered	Yamina Saheb	OpenExp, Ecole des Mines de Paris	France

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
43771	15	21	15	31	This would benefit from a introductory/explanatory sentence on the use of the term 'pipelines', what it means and how that overlaps with NDCs and scenarios. The issue of project pipelines has risen up the agenda since Paris, although not a new issue for private financiers. If you have a box on private finance I would put a short section on 'project pipelines' in that - what it covers and what it might not cover. In comments on Ch6 I explain my own understanding of a project pipeline language, as used by financiers, in plain english. I also noted an OECD literature reference on pipelines: 'Developing Robust Project Pipelines for Low Carbon Infrastructure", OECD, November 2018, from http://www.oecd.org/environment/developing-robust-project-pipelines-for-low-carbon-infrastructure-9789264307827-en.htm. Also cross reference with information in section 15.	Accepted. We have integrated some explanations	Kirsty Hamilton	Chatham House (Associate Fellow, unpaid)	United Kingdom (of Great Britain and Northern Ireland)
18929	15	34	15	34	Add 'for' before "Further discussion see …."	Accepted. Text revised	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea
15249	15	41	15	43	redrafting needed	Noted . addressed accordingly	Esther Badiola	European Investment Bank	United States of America
46055	15	16	21		What does the global collapse in oil & gas asset prices mean to the Modern Portfolio Theory?	Noted. Point will be considered	Celine Bak	IISD	Canada

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
40093	15	39	25	18	Section 15.2.2 Quantitative assessment of financing needs covers financing needs for divers types of climate actions and instruments: Financing needs relating to NDCs, Adaptation financing needs, National Adaption Plans, Resilience and disaster response needs, Financing climate-responsive social protection, Loss and damage, etc. The Paris Agreement (UNFCCC Decision 1/CP.21) invites Parties (in addition to NDCs) to communicate by 2020 to the UNFCCC secretariat mid-century, long-term low greenhouse gas emission development strategies (LEDSs) in accordance with Article 4, paragraph 19, of the Paris Agreement. Countries started communicating their LEDSs to the UNFCCC secretariat (some LEDSs already published on the UNFCCC web-site, by the time of publishing the IPCC AR many more LEDSs would be officially communicated and published at the UNFCCC web-site), so in addition to information on financing needs for instruments mentioned above, I would recommmend to include a section on financing needs for Low-Emission Development Strategies, which span until 2050, which is much longer than NDCs (5 years) and due to their long-term nature may give a better indication of the financing needs for reaching the goals of the Paris Agreement.	Noted. Point will be considered	Victoria Novikova	Initiative for Climate Action Transparency	Belarus
18853	15		55		Monitoring of funds allocated to ensure efficient and judicious utilization of the funds	Noted. Point will be considered	Michael Ugom	University of Nigeria, Nsukka	Nigeria
36301	15	12			I wonder if PAYG makes any real impact in term of investment in solar? Could you inndicate any evidence?	Noted. For a specific subsegmet, PAYG had a very strong mobilisation effect. More information is now provided in the subsection 15.6.8 on new business models	Youba Sokona	South Centre	Switzerland
4825	16	5	16	5	Being used for the first time in the Chapter, the acronym 'LCOEs' requires full explanation.	Noted. Fair point.	michele stua	APE-FVG	United Kingdom (of Great Britain and Northern Ireland)
33549	16	5	16	5	Write LCOEs in full	Editorial. Will be fixed	Debra Roberts	EThekwini Municipality	South Africa

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
25375	16	27	16	28	Delete "a shift from fossil generation … renewable technologies and", as these estimations are not related to climate finance needs.	Noted. Point will be considered	Eleni Kaditi	Organization of the Petroleum Exporting Countries (OPEC)	Austria
24507	16	35	16	35	Nancy Duarte's book DataStory may provide some helpful insights about how to draw out the main message of this figure--the point is to highlight the main message from the data to allow accurate interpretation and increase understanding / the audience gains greater access to the meaning of the underlying literature through effective data organization.	Noted. Point will be considered	Koko Warner	UNFCCC	Germany
27553	16	35	16	35	It is curious that the overall figure does not go down consistently with higher temperature ranges. Why, for example, is the 4.25-4.75 number much higher than the 3.75-4.25 number? Perhaps I am mis-reading the table? If not, perhaps this needs explanation in the text?	taken into account. This likely is due to "noise", and rather low number of scenarios in some temperature bins. Will hopefully improve with new categorization, and higher overall number of scenarios, and improved filtering of outdated sceanrios	Navroz Dubash	Centre for Polcy Research	India
12739	16	35	16	37	Capital requirements for battery storage (Chapter 6. section 6.3.7 p. 23) and nuclear (chapter 3. section 3.4.1 p. 35 line 21) are also expected to increase substantially to meet 1.5 deg. goals ($65bn and $27bn p.a for nuclear and batteries respectively according to the IEA World Energy Outlook, 2019). Could this be reflected in the table, in addition to other investment needs for electricity generation? Power networks investments are also critical and very substantial (in the order of $500bn p.a.) and should also be reflected in the draft.	Taken into account. We coud add nuclear, storage, and network investments into 15.2 and 15.3 (downside: space…)	Bertrand Magne	International Atomic Energy Agency	Austria
2563	16	16	17	7	I believe this subsection "Using global scenarios assessed in Chapter 3 for assessing investment requirements" could better assess/synthesise what is essentially contained in those tables from Chapter 3. As it stands, one has to analyse all those tables and reach their own conclusions.	Taken into account.	Lilia Caiado Coelho Beltrao Couto	University College London	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
32347	16		17		Will it be possible to provide a spatial distribution of these financial flows?	Accepted. Figure will be included	Penny Apostolaki	Barclays	United Kingdom (of Great Britain and Northern Ireland)
34837	16		17		Table 15.4-15.5 "Average yearly investments from 2023–2032 for Electricity Generation capacity, by aggregate 13 regions (in billion USD)" should be nealty rearranged but using complete or full border format.	Noted. Will check	Onema Adojoh	Missouri University of Science and Technology, Rolla, USA	United States of America
6767	16	35	18	7	A graphical represenation of these imporant figures would be probably better and easier to understand although I'm aware that would not be an easy task to include all this information in a figure.	Noted. Will check	Schenker Oliver	Frankfurt School of Finance & Management	Germany
38271	16	35	18	7	Tables 15.2 to 15. 5 are mainly about energy supply. We need at least one table on energy demand reduction which should include investment needs for resilient infrastucture and for efficiency. It's important to distinguish between the two as investment for infrastructure are those which have a higher climate mitigation impact and which do not necessarily require high investment given that investment in infrastucture has to be done anyway.	Noted. Will check	Yamina Saheb	OpenExp, Ecole des Mines de Paris	France
25373	16		18		Tables 15.2, 15.3, 15.4, 15.5 not to present any information on fossil fuel extraction.	Noted. Will consider	Eleni Kaditi	Organization of the Petroleum Exporting Countries (OPEC)	Austria
28395	16		18		Tables 15.2-15.5 as such contain very valuable data. However, they seem very difficult to comprehend and digest. A new way should be found to present the results in a visualised fashion.	Accepted. Revised	Jochen Harnisch	KfW	Germany

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
43617	16	35			Tables 15.2-15.5 are highly problematic. IAM scenarios are highly particular in their choice of cost assumptions and trajectories. In particular in case of solar, their assumptions are gagiged in 2005 (Krey et al 2019), they have hardly any technological learning included. Vartiainen et al 2019 show that 2050 assumptions of costs for solars in IAMs are already met in 2019. Creutzig et al 2017 Nature Energy demonstrated that IAMs underestimate PV potential by an order of magnitude for not modelling technological learning, and for being gauged in too old numbers. This meets a world where in many countries new investments into solar outcompetes coal on purely fiscal terms. How can it be then that the 1.5°C scenarios costs so much more than the 3°C scenarios? That is bug not a feature. One way to improve here is to focus on the ADVANCE scenarios that are also in the IAM database (Christoph Bertram can help). More substantially, there is a huge literature around Tom Brown, Mark Jacobson, Christrian Breyer and others that have detailed energy system scenarios not reflected in the IAM data base, and transparency in their cost assumptions	Taken into account, partly rejected. New scenarios are much better, and therefore we plan to have better filter to avoid having "noise" from outdated scenarios. 1.5°C investments will still be much higher than 3°C investments, as a decarbonized power system implies a massive reduction in fuel costs, which is slightly overcompensated by higher capital costs (investments). So total costs are not much higher, but investments are. Will check for consistency with Brown/Jacobson/Breyer literature	Felix Creutzig	MCC Berlin	Germany
24509	17	5	17	10	Nancy Duarte's book DataStory may provide some helpful insights about how to draw out the main message of this figure--the point is to highlight the main message from the data to allow accurate interpretation and increase understanding / the audience gains greater access to the meaning of the underlying literature through effective data organization.	Noted. Will consider	Koko Warner	UNFCCC	Germany
24511	17	12	18	2	Nancy Duarte's book DataStory may provide some helpful insights about how to draw out the main message of this figure--the point is to highlight the main message from the data to allow accurate interpretation and increase understanding / the audience gains greater access to the meaning of the underlying literature through effective data organization.	Noted. Will consider	Koko Warner	UNFCCC	Germany
24513	18	4	18	6	Nancy Duarte's book DataStory may provide some helpful insights about how to draw out the main message of this figure--the point is to highlight the main message from the data to allow accurate interpretation and increase understanding / the audience gains greater access to the meaning of the underlying literature through effective data organization.	Noted. Will consider	Koko Warner	UNFCCC	Germany
1351	18		22		This section primarily refers to adaptation, not within scope	Noted	David Viner	Mott MacDonald	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
46277	19	1	6		The IEA SDS is not central to the WEO, does provide a 66% chance of keeping warming to 1.5C (it provides a 66% chance of a 1.8C of heating outcome. It also includes assumptions of negative emissions that are aligned with a "high overshoot" pathway - 15 GT of Carbon Dioxide Removal annually from 2030 yo 2050. The authors should be transparent about these assumptions. Also, whereas the IEA Stated Policy Scenario is referred to by some International Oil Companies in their disclosures to shareholders, no International Oil Companies disclose that their capital allocation is aligned with the IEA SDS.	Noted. Will consider	Celine Bak	IISD	Canada
15251	19	1	19	1	"...lifetimes over decades..."	Noted. Text revised accordingly	Esther Badiola	European Investment Bank	United States of America
3029	19	20	19	21	Does the decline in investments on fossil fuels between 2014 and 2018 is due to climate change?	Noted. This wording will be deleted in SOD	Mustafa Babiker	Aramco	Saudi Arabia
33551	19	20	19	21	If possible, consider presenting regional variations in the declining investment.	Noted. Will consider	Debra Roberts	EThekwini Municipality	South Africa
25377	19	20	19	26	Delete "Investments into fossil fuel extraction … at about today's level.", as these estimations are not related to climate finance needs.	Accepted. This wording will be deleted in SOD	Eleni Kaditi	Organization of the Petroleum Exporting Countries (OPEC)	Austria
15253	19	25	19	26	Is this statement correct? It seems that logically, a rapid transition into non fossil fuels would force the reduction in investments drastically from the current 600bn…	Noted. Will check	Esther Badiola	European Investment Bank	United States of America

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
40097	19	29	19	39	The section called "Financing needs relating to NDCs" quotes information communicated by Parties to the UNFCCC in their first round of submissions of NDCs. Since timeframes for NDCs are 5 years (COP24 decision on Modalities, Procedures and Guidelines for the Transparency Framework), by the time of publishing this assessment report, new rounds of NDCs will be communicated by the Parties to the UNFCCC. According to the Paris Agreement (UNFCCC Decision 1/CP.21), each subsequent NDC should represent an enhanced ambition compared to the previously communicated NDC. This means that financing needs of countries are very likely to be increasing every time they communicate a subsequent NDC, because they are likely to implement the lowest-cost mitigation and adaptation actions first, and with the time would have to consider implementing more costly options in the future (considering possible global warming, and the ambition of future actions needed to stay within the 2 degrees/1.5 degrees of global average temperature, as enshrined in the Paris Agreement). All this means that by the time of publishing this assessment report, the information described in this section may be out-dated and may not be used to inform policy-making and decision-making. To keep this discussion up-to-date, i would recommend to put this discussion of financing needs for NDCs (keeping in mind that every 5 years this infromation will be updated) in the context of the financing needs for mid-century Low-emission development strategies (LEDSs) that span until 2050 that would give a better understanding of the evolving financing needs for NDCs with the magnitude of financing needs of each subsequent NDCs strongly dependent on the global ambition of climate actions (the more ambitious action taken today would lead to lower costs of climate action in the future).	Point taken into account. will nuanced this discussion in terms of time frame and make reference to LEDs, But LEDs cannot substitute for NDC discusison fully. We will have to watch and update this as we draw closer to the time of final review and discussion.	Victoria Novikova	Initiative for Climate Action Transparency	Belarus

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
40101	19	29	19	39	Section "Financing needs relating to NDCs" cites the quantification made by Zhang and Pan (2016) of financing needs reported in NDCs based on information on "conditionality" communicated in these NDCs. It would be good to note that some countries, who stated that the implementation of their certain climate actions is conditional upon financial, technology or capacity-building support, have actually implemented these actions with domestic resources. A good example is INDC of India communicated in 2016 with the renewable energy targets under the Inidian Government's goal of Electricity for All "is sought to be achieved would require [inter alia] international support". However, India has largely implemented the targets communicated in its INDC with domestic resources, so conditionality stated in NDCs may not be a good indicator of financing needs (understood that without international support countries are unable to implement these actions, as reality shows they actually can, if these actions are in line with the national development priorities, as in case of India and many other countries.	Point on India well note but this does not apply across the board. It is important to use the information in the published literature. Where literature is available the corroborates the point raised that will be include. Reviewer does not provide referenced literature.	Victoria Novikova	Initiative for Climate Action Transparency	Belarus
40095	19	29	19	40	Section starting on line 29 is called "Financing needs relating to NDCs" and the next section starting on line 40 is called "Adaptation financing needs". From these section titles the reader may infer that financing needs for NDCs and financing needs for Adaptation are two distinct categories of financing needs of developing countries (which is somewhat misleading). At the same time, according to the Paris Agreement (UNFCCC Decision 1/CP.21) NDCs may have the mitigation and adaptation components. This means that financing needs for NDCs include financing needs for adaptation. For this reason, I would recommend to structure discussion in the section "Financing needs for NDCs" into financing needs for mitigation and adaptation components of NDCs and integrate information described in the section "Adaptation financing needs" into the section "Financing needs relating to NDCs" as one of sub-sections of this section.	Accepted. There is a larger question of whether to keep the discusison on adaptation finance in this chapter at all. The Reviewer suggested text is acceptable: structure discussion in the section "Financing needs for NDCs" into financing needs for mitigation and adaptation components of NDCs and integrate information described in the section "Adaptation financing needs" into the section "Financing needs relating to NDCs" as one of sub-sections of this section.	Victoria Novikova	Initiative for Climate Action Transparency	Belarus

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
40099	19	29	20	20	The section starting on line 29 called "Financing needs relating to NDCs" and the next section starting on line 40 called "Adaptation financing needs" conducts analysis of various sources of financing needs for mitigation and adaptation in the context of NDCs. Traditionally, under the UNFCCC the financing needs for mitigation of developing countries represented by incremental costs for mitigation (that is covering only the cost of additional effort of investing in the mitigation technology/incremental cost of reducing GHG emissions and not the cost of the baseline technology), whereas for adaptation the financing needs covered the full cost of adaptation (that is covering both additional costs of effort due to adaptation and the baseline component of action) . These different approaches (incremental costs for mitigation vs. full costs for adaptation) stem from the UNFCCC convention language and subsequent UNFCCC implemeting decisions, taken by the GEF, an operating entity of the UNFCCC Financial Mechanism. In light of this, it is recommended to indicate (where such information is avaiable in original sources) when fininancing needs for NDCs are cited in these sections, do these needs cover mitigation costs, adaptation costs or both, mitigation and adaptation costs , and whether the cited costs for mitigation and adaptatoin are related to the full costs or incremental costs of the actions, so the comparison of different magnitudes of financing needs are done on a comparable bases (comparing like with like).	Accepted. This will be done as is possible in the relevent literature. Where disaggregation is not known it will be footnoted appropriately	Victoria Novikova	Initiative for Climate Action Transparency	Belarus
36541	19	40	20	10	At the previous section, it is explained that the definition of Adaptation investment is unclear. Although it is important to collect and compare numbers at enough reliable literature, it is also important to analyze what methodology is used for estimation I expect that AR5 will analyze what is adaptation investment and finance.	Noted. Will be considered in SOD	Takashi Hongo	Mitsui & Co. Global Strategic Studies Institute	Japan
2565	19	40	27	27	Although the outline agreed by governments includes links with adaptation, I wonder if maybe these sections are not exploring adaptation finance too much, losing focus on mitigation.	Taken into account. This is relevent to the question pose earlier about whether adaptation financing broadly should be out source to its natural home. WG2	Lilia Caiado Coelho Beltrao Couto	University College London	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
43619	19	12			This point is really important. Front-up financing and "soft" infrastructure (e.g. established administrative procedures) are key issues to get PV (and wind) scaled up in developping countries. It would deserve more details and attention. Literature here also included Creutzig et al 2017 in Nature Energy and Creutzig et al 2014 Renewable & Sustainable Energy Reviews. Also chapter 14, p.37. l.39ff writes on this. Inversely, there is still development bank aid for fossils. That is mostly based in the incentive scheme: These are big projects and bank employees get reward according to turnover. Many comparatively small PV projects are more work and not necessarily more bonus for employees. See e.g. the book "Green Aid".	Noted. Will be considered in SOD	Felix Creutzig	MCC Berlin	Germany
46761	20	11	17		The estimate of 5.8 Gt CO2eq mentioned is not internally consistent with the 15Gt CO2eq assumed in the IEA SDS scenario described in the previous lines. Three times more forestry action is needed for the SDS to result in a 66% probability of 1.8 C in warming.	Noted. reviewer does not give reference. Also discusison is electrification and other is forestry.	Celine Bak	IISD	Canada
15255	20	3	20	10	I don’t understand this sentence / paragraph. It mentions two important stages of a process that is iterative. But it only explicits one: developmental phase. I guess the second phase is the NAPs described from line 33 onwards. please restructure .	Taken into account. Text will be revised to make this clear.	Esther Badiola	European Investment Bank	United States of America
3031	20	9	20	10	Provide examples and citations	Accepted. examples and citation provided	Mustafa Babiker	Aramco	Saudi Arabia
18931	20	11	20	20	Not related to adaptation financing needs	Noted. With the restructure heading as noted above there will be coherence as the heading will integrate both A &M as components of NDCs	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea
15257	20	11	20	31	these two paragraphs don't belong here. We were talking about adaptation. Maybe it belongs to previous section on AR6 quantitatve analysis? Place them before or after, but not in the middle of the adaptation financing discusssion	accepted. With the restructure heading as noted above there will be coherence as the heading will integrate both A &M as components of NDCs	Esther Badiola	European Investment Bank	United States of America
4827	20	14	20	18	It is unclear why forestry investments needs, which clearly belong to the mitigation realm, are included in this paragraph referring to adaptation needs. Please, explain/rectify.	Taken into account. With the restructure heading as noted above there will be coherence as the heading will integrate both A &M as components of NDCs	michele stua	APE-FVG	United Kingdom (of Great Britain and Northern Ireland)
46907	20	1			This section should refer to Banking on Climate Change, Rainforest Action Network (2019)	accepted. Will be reflected in SOD	Celine Bak	IISD	Canada

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
18933	20	footnote			Paris agreement -> Paris Agreement	accepted. Will be fixed	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea
15259	21	9	21	9	Here we need to explain why this amount is so little. The main reason is that adaptation climate finance only reflects the specific adaptation activities within any development operations or, in other words, those incremental or differentiating elements of development operations, that are carried out in response to perceived or expected climate change impacts. This methodology, developed by MDBs, applies a context-specific, location-specific and granular approach, and estimations are made conservatively to reduce scope for over-reporting of adaptation finance. Source http://documents.worldbank.org/curated/en/247461561449155666/pdf/Joint-Report-on-Multilateral-Development-Banks-Climate-Finance-2018.pdf	Noted. This is not a generally agreed consensus as to why adaptatin was so small in the period. The explication and reference provided will be footnoted.	Esther Badiola	European Investment Bank	United States of America
15261	21	13	21	24	We should move these innovative financing mechanisms to section 15.3.2. or to a stand alone section on financial instruments for climate action, both for mitigation and adaptation. I think it would belong better to the section on funding supply (rather than this one on financing needs).	Accepted. This will be considered in the restructuring of the SOD, including the discussion about what to do with adaptation finance	Esther Badiola	European Investment Bank	United States of America
45643	21	19	21	19	Risk financing such as parametric products which are becoming useful tools for efficient and cheap to run risk transfer. Successful soveraign risk pools such as the Caribbean Catastrophe Risk Insurance Facility are such examples where climate risks can be adapted to to provide fast and efficient financing of disaster reposne and building climate resilience which can form a useful part of a NAP, especially for SIDS (See also PCRAFI).	Noted. There is as section on climate risk pooling	Geoffrey Saville	Willis Towers Watson	United Kingdom (of Great Britain and Northern Ireland)
13377	21	26	21	34	For upto date costs: Munich Re publishes the cost of extreme weather events every year - possible reference here. E.g. 2019: https://www.munichre.com/en/company/media-relations/media-information-and-corporate-news/media-information/2020/causing-billions-in-losses-dominate-nat-cat-picture-2019.html	Accepted. text will be revised to include update figures	Adam Pawloff	Greenpeace	Austria
44431	21	35	21	35	Disaster preparedness is embedded in disaster risk reduction or, alternatively Emergency preparedness	Noted. Thanks	Urbano Fra Paleo	University of Extremadura	Spain

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
18935	21	36			"… allowing response to the effect for climate change.": effect for climate change -> effect of climate change?	Noted. Thanks	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea
44433	22	4	22	4	It should read financing of disaster risk reduction	Noted. Thanks	Urbano Fra Paleo	University of Extremadura	Spain
36823	22	4	22	6	Suggest looking at, or mentioning, the Sendai Framework for DRR and at reporting for this around Target F. See for example data available at: https://sendaimonitor.unisdr.org/analytics/global-targets/13	Noted. Link has been incorporated	Zinta Zommers	United Nations Office for Disaster Risk Reduction	Germany
44435	22	13	22	13	It should read disaster risk	Noted. Thanks	Urbano Fra Paleo	University of Extremadura	Spain
44437	22	17	22	17	It should read climate extremes	Noted. Thanks	Urbano Fra Paleo	University of Extremadura	Spain
36825	22	17	22	21	Also suggest looking at recent literature around forecast based finance and finance for early action. Could any of this be used to support mitigaiton? See for example publications by the Centre for Disaster Protection - https://www.disasterprotection.org/publication.	Noted. We have incorporated some messages on this aspect	Zinta Zommers	United Nations Office for Disaster Risk Reduction	Germany
44439	22	20	22	21	For a comprehensive governance framework that integrates governance of disaster risk, the environment and climate change see: Fra.Paleo, U. (ed.) Risk Governance. The Articulation of Hazard, Politics and Ecology. Dordrecht: Springer	Noted. Thanks	Urbano Fra Paleo	University of Extremadura	Spain
44441	22	22	22	22	It should read " both reduce disaster risk and promote" in order to avoid confusion with the concept of mitigation in climate change science, which has a different meaning	Noted. Thanks	Urbano Fra Paleo	University of Extremadura	Spain
1365	22		22		There is a cross chapter box on L+D in the WG2, there needs to be consistency as there is overlap between adaptation and mitigation. This section also explicitly refers to adaptation and resilience.	Noted. We are in close contact to the WGII cross chapter box authors	David Viner	Mott MacDonald	United Kingdom (of Great Britain and Northern Ireland)
16029	22	38			Add incentives for resilience	rejected. No reference provided; also more extended discusison on adaptation which should be in WG2	Jason Patrick	New Zealand Green Investment Finance	New Zealand

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
18937	22	footnote			Fonts are different.	Noted. Thanks	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea
15263	23	2	23	2	delete "common" as it is implicit in the word "concensus"	accepted. Will be fixed	Esther Badiola	European Investment Bank	United States of America
44443	23	2	23	23	it should read disaster risk reduction and resilience	Noted. Thanks	Urbano Fra Paleo	University of Extremadura	Spain
33553	23	13	23	14	This is an important point that should not simply be glossed over. In addition, the current phrasing suggests that funding of social protection as resilience-building is a future reality thus ignoring what is happening and practice and the importance of social protection in the context of climate change.	Noted. Same rationale as previous this is an expansion of discussion in the adaptation context and should go to WG2	Debra Roberts	EThekwini Municipality	South Africa
5977	23	30	23	37	This paragraph needs a more streamlined description of the Loss and damage context as an entry point. Even though there are multiple working definitions out there, I believe they can be aligned, e.g. in this way: "Climate change will cause the breaching of physical and social adaptation limits, resulting in residual climate-related risks (i.e. potential impacts after all feasible mitigation and adaptation measures have been implemented). Risks in this context are associated with sudden-onset extreme events, such as flooding and cyclones, and slow-onset processes including sea-level rise and melting glaciers. These risks may materialize in terms of existential damages and irreversible and permanent loss, providing unique challenges for finance.	accepted. text revised	Thomas Schinko	International Institute for Applied Systems Analysis (IIASA)	Austria

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
5979	23	30	23	37	I would suggest, after implementing my previous comment, to remove the sentence "Challenges for developing countries in financing loss and damage for extreme events include a need for rapid payouts; the increasing expense of risk financing as disasters become more frequent, intense and more costly; and designing adequate financial protection systems for reaching the most vulnerable." from the first paragraph and develop the second paragraph around it. My suggestion for this second paragraph: "Challenges related to financing these residual climate-related losses and damages are particularly high for developing countries. Financing loss and damage from extreme events include a need for rapid payouts; and the expense of risk financing is expected to increase as disasters become more frequent, intense and more costly also due to higher levels of exposure. This requires designing adequate financial protection systems for reaching the most vulnerable. Moreover, some fraction of losses and damages, both material and non-material, are not commonly trade on markets and hence financing requirements are hard to estimate. These non-market-based residual impacts include loss of cultural identity, sacred places, human helath and lives." Literature on non-market-based loss and damage: Serdeczny O. (2019) Non-economic Loss and Damage and the Warsaw International Mechanism. In: Mechler R., Bouwer L., Schinko T., Surminski S., Linnerooth-Bayer J. (eds) Loss and Damage from Climate Change. Climate Risk Management, Policy and Governance. Springer, Cham. https://doi.org/10.1007/978-3-319-72026-5_8	accepted. text revised	Thomas Schinko	International Institute for Applied Systems Analysis (IIASA)	Austria
5985	23	38	23	40	Add following literature on L&D categorization: Boyd, E., James, R., Jones, R. et al. A typology of loss and damage perspectives. Nature Clim Change 7, 723–729 (2017). https://doi.org/10.1038/nclimate3389	taken into account. the relevant sentence was deleted.	Thomas Schinko	International Institute for Applied Systems Analysis (IIASA)	Austria

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
5989	23	38	23	40	We have tried to establish a conceptual Loss and Damage risk and policy space, which could also translate into establishing boundaries for L&D finance. Of course more quantitative research is needed but this could be seen as a conceptual starting point. Mechler, R., Schinko T. (2016). Identifying the policy space for climate loss and damage. Science 354(6310), 290-292. doi: 10.1126/science.aag2514	accepted. text revised	Thomas Schinko	International Institute for Applied Systems Analysis (IIASA)	Austria
11569	23	38	23	40	Yes, establishing boundaries around the category of loss and damage finance is difficult. But literature provides some indications for these boundaries which can help to better understand what L&D finance could be. Here are a few of these indications: - L&D measures concern climate change impacts that are expected to materialize as they have not or will not be prevented or minimized by mitigation or adaptation (Wallimann-Helmer et al. 2018) - While mitigation and adaptation can avert L&D, L&D measures themselves are not expected to prevent these impacts altogether (Mace/Verheyen 2016). They aim at addressing the addressing the (potential) socio-economic or human effects of actual irreversible impacts (Wallimann-Helmer et al. 2018) - L&D measures can be applied both, before and after an impact. (Schäfer/Künzel 2019) -Before an impact (ex-ante), L&D measures aim at addressing the residual risk of irreversi-ble impacts that cannot or will not be avoided through mitigation and/or adaptation.(Schäfer/Künzel 2019) -After an impact (ex-post)L&D measures aim at addressing actual L&D by minimizing or responding to the socio-economic or human effects of actual irreversible impacts. While e.g. rapid reaction can reduce the scale of L&D, addressing L&D aims at responding to irre-versible impacts that could not or were not avoided.Measures for both, minimizing and addressing L&D need to cover both economic as well as non-economic losses and damages (Schäfer/Künzel 2019) Literature: Mace, M./ Verheyen, R. 2016: Loss, Damage and Responsibility after COP21: All Options Open for the Paris Agreement. In: Review of European 25 (2),197-214	accepted. text revised	Laura Schäfer	Environmental Non Governmental Organisation, Germanwatch	Germany
44445	23	40	23	41	disaster risk management comprises many more components than just financing, pasticularly, emergency preparedness, early warning, disaster response and reconstruction, among others	taken into account. relevant sentence was deleted	Urbano Fra Paleo	University of Extremadura	Spain

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
5983	23	38	24	2	This paragraph does not distinguish correctly between climate change adapation and disaster risk management. The most crucial difference is that adaptation - by definition - focuses on bulding resilience against climate-related impacts induced by ANTHROPGENIC CLIMATE CHANGE. DRM, on the other hand, is mainly concernde with building resilience against natural hazards impacts stemming from natural climate variability. We identified, e.g. for Austria, that exactly this difference and the follow-on governance challenges prevent countries from comprehensively managing cliamte-related risks, both natural and man-made. These challenges in risk governance also translate into challenges related to financing comprehenisve climate risk management for tackling residual losses and damages. Literature: Schinko, T., Mechler, R. (2017). Applying Recent Insights From Climate Risk Management to Operationalize the Loss and Damage Mechanism. Ecological Economics 136: 296-298. doi:10.1016/j.ecolecon.2017.02.008. Schinko, T., R. Mechler, S. Hochrainer-Stigler (2016). Developing a methodological framework for operationalizing Iterative Climate Risk Management based on insights from the case of Austria. Mitigation and Adaptation Strategies for Global Change. doi:10.1007/s11027-016-9713-0	accepted. text revised	Thomas Schinko	International Institute for Applied Systems Analysis (IIASA)	Austria
6749	23	29	25	18	Great that this chapter is included. Perhaps a graphic could be considered that shows the spectrum of instruments considered to be releavnt for loss and damage across the climate risk management spectrum? This way the reader could put other sections (e.g. on insurance) better into relation with this section. See e.g. MCII publications for ideas for such figures.	Accepted, working on a graphic	Oliwia Serdeczny	Climate Analytics gGmbH	Germany
6751	23	29	25	18	Please further consider literature on the economic impacts of climate change (e.g. IMF World Economic Outlook 2017, chapter 3) in your assessment on the viability of financing instruments for developing countries - and please provide such an assessment.	accepted. The point is made in general and the reference included, however an assessment as requested seemed a bit beyond the scope of the section.	Oliwia Serdeczny	Climate Analytics gGmbH	Germany
37703	23	29	25	18	This is a useful section. One element that could be added is the economic losses already experienced as a result of climate change impacts, and how these have affected countries' capacities to obtain sufficient finance for adaptation and dealing with impacts	accepted. The point is made in general but specific relevant literature was not identified by the commenter. I looked to see what I could find and did not identify specific sources.	Michiel Schaeffer	Climate Analytics	Netherlands

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
37077	23	29	25	19	In case we wish to retain this section on loss and damage, we should mention and develop research around the Warsaw International Mechanism for loss and damage. Maybe I missed it, but I havent seen it refered to here.	rejected. The commenter does not explain why the WIM is relevant to loss and damage finance, nor do they suggest literature.	Esther Badiola	European Investment Bank	United States of America
5981	23	30			I suggest concise wording and use of concepts throughout the loss and damage chapter. Use the plural form and lowercase letters ('losses and damages') to refer to (observed) impacts and (projected) risks, and the capitalized singular form ('Loss and Damage') where reference is made to the policy debate. Try to avoid mixing these concepts. See: Mechler R, Bouwer LM, Schinko T, et al (eds) (2019) Loss and Damage from Climate Change. Springer International Publishing, Cham. https://doi.org/10.1007/978-3-319-72026-5	accepted. text revised	Thomas Schinko	International Institute for Applied Systems Analysis (IIASA)	Austria
5993	23	30			I congratulate the writing team on this first-order-draft of the subchapter on Loss and Damage financing. While this is a promising starting point, I believe the authors should invest more time in delineating the concrete risk, policy and financing space for Loss and Damage in contrast to other financing domains (CCA, DRM). Moreovoer, the concept of comprehensive climate risk management that legitimatley features prominently in this FOD should be elaborated in more detail, particularly how it realtes to the L&D domain. I have added references to all of my previous comments but probably having a look at the following publication in Ecological Economics could be a good starting point: Schinko, T., Mechler, R. (2017). Applying Recent Insights From Climate Risk Management to Operationalize the Loss and Damage Mechanism. Ecological Economics 136: 296-298. doi:10.1016/j.ecolecon.2017.02.008.	accepted. text revised	Thomas Schinko	International Institute for Applied Systems Analysis (IIASA)	Austria

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
11571	24	3	24	3	The actions to manage risks comprehensively should consider both, extreme weather events and slow onset events. Finance is needed both, before an impact (ex-ante) to address the residual risk of L&D that cannot or will not be avoided through mitigation and/or adaptation and after an impact (ex-post) to minimize and respond to the socio-economic or human effects of irreversible impacts that could not or were not avoided. Literature: Mace, M./ Verheyen, R. 2016: Loss, Damage and Responsibility after COP21: All Options Open for the Paris Agreement. In: Review of European 25 (2),197-214 Schäfer, L./Künzel, V. 2019: Steps towards closing the Loss&Damage finance gap. Bonn: Germanwatch. Available at: https://germanwatch.org/de/17312. Wallimann-Helmer, I./ Meyer, L./Mintz-Woo, K./ Schinko, T./ Serdeczny, O. 2018:The Ethical Chal-lenges in the Context of Climate Loss and Damage. In: Mechler R./ Bouwer, L./ Schinko, T./ Surminski, S./ Linnerooth-Bayer, J. (eds): Loss and damage from climate change. Concepts, methods and policy options. Springer, 39-62	accepted. text revised. However only one of the suggested references is included as it seemed to be the only reference with direct relevance to the point being made.	Laura Schäfer	Environmental Non Governmental Organisation, Germanwatch	Germany
5987	24	4	24	9	This paragraph needs way more content/text. It doesn't put the generic comprehensive risk management cycle into the Loss and Damage context. See e.g.: Schinko, T., Mechler, R. (2017). Applying Recent Insights From Climate Risk Management to Operationalize the Loss and Damage Mechanism. Ecological Economics 136: 296-298. doi:10.1016/j.ecolecon.2017.02.008.	accepted. text revised	Thomas Schinko	International Institute for Applied Systems Analysis (IIASA)	Austria
44447	24	8	24	8	It should read disaster risk	rejected. The line reference must be wrong as line 8 only includes citations.	Urbano Fra Paleo	University of Extremadura	Spain
5991	24	10	24	28	I suggest to have a look at this informative, critical discussion on insurance as a potential response to Loss and Damage: Linnerooth-Bayer J., Surminski S., Bouwer L.M., Noy I., Mechler R. (2019) Insurance as a Response to Loss and Damage?. In: Mechler R., Bouwer L., Schinko T., Surminski S., Linnerooth-Bayer J. (eds) Loss and Damage from Climate Change. Climate Risk Management, Policy and Governance. Springer, Cham. https://doi.org/10.1007/978-3-319-72026-5_21	accepted. text revised and reference included.	Thomas Schinko	International Institute for Applied Systems Analysis (IIASA)	Austria
15265	24	10	24	28	As suggested in past comments, it would be advisable to summairse all financing instruments in a dedicated section (or under 15.3.2.), both for mitigation, adaptation and as this case, loss and damage.	Rejected, the authors feel the current structure is more intuitive	Esther Badiola	European Investment Bank	United States of America

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
11615	24	11	24	28	This section is missing key information on tools used by the (re)insurance industry to calculate losses, including catastrophe models and hazard maps, both of which have been adjusted by different vendors to try and incorporate the potential impact of climate change. Examples include maps from companies such as Ambiental (for Great Britain) and Fathom (for the US), and a climate change catastrophe model for the UK from JBA Risk Management.	rejected. This doesn't seem relevant to the section on loss and damage finance. The commenter does not provide specific references to review.	Sarah Jones	JBA Risk Management	United Kingdom (of Great Britain and Northern Ireland)
9723	24	17	24	17	missing a full stop	editorial. inserted	Nathalie Hilmi	Centre Scientifique de Monaco	France
11573	24	23	24	24	On the sentence: "Risk-retention and risk transfer instruments are extremely limited in their suitability to protect the poor and help them recover from climate-related loss and damage" Yes, research gives clear indications that risk transfer instruments are LIMITED in their suitability to protect the poor(est), but NOT "extremely limited" as this very much depends on the type of risk transfer instrument. On the micro level- research found indeed that climate risk insurance, giving out direct policies to the poor. is not a suitable risk management way for them. However, on the macro level, the African Risk Capacity was often successful in providing timely payouts which were successfully distributed to the target group (esp. poor population). Literature, e.g.: Schäfer, Laura / Waters, Eleanor/ Kreft, Sönke/ Zissener, Michael 2018: Making Climate Risk Insurance Work For The Most Vulnerable: Seven Guiding Principles. United Nations Universityinstitute For Environment And Human Security (Unu-Ehs). Unu-Ehs Publication Series. policy Report 2016 No. 1. Available at: http://www.climate-insurance.org/fileadmin/mcii/documents/MCII_PolicyReport2016_Making_CRI_Work_for_the_Most_Vulnerable_7GuidingPrinciples.pdf.	accepted. sentence was deleted	Laura Schäfer	Environmental Non Governmental Organisation, Germanwatch	Germany

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
40107	24	23	24	24	A study by ActionAid finds that no market mechanisms are compliant with a human rights-centred approach to achieving the financing needed to address loss and damage associated with the adverse impacts of climate change. On the contrary, most put the financial burden back on developing countries, who are least responsible for causing the climate crisis. Market mechanisms also fail to enable transparency, accountability and participatory decision-making that meaningfully includes the most vulnerable communities impacted by climate change. Reference: Paul, H, Market solutions to help climate victims fail human rights test. ActionAid. April 2019 https://actionaid.org/news/2019/market-mechanisms-loss-and-damage-climate-finance-fail-human-rights-test	accepted. text revised and reference included.	Harjeet Singh	ActionAid International	India
40109	24	28	24	28	Innovative funding mechanisms such as a progressive Financial Transaction Tax and a Climate Damages Tax can raise the funds necessary to repair currently occurring climate change harms consistently with human rights principles. A modest Financial Transaction Tax (FTT) has the potential to raise more than USD$60 billion per year (with more ambitious global taxes raising considerably higher amounts), while the Climate Damages Tax (CDT) has the potential to raise between USD$75 and USD$1,000 billion per year. The scale of the financing would enable states to repair the adverse impacts of climate change, including redressing rights to health, food, and water, among many others. In relation to the right to life, the financing would enable states to budget for mitigation and adaptation measures that may prevent future losses of life, while also compensating the families of survivors lost to the adverse impacts of climate change. Reference: Paul, H, Market solutions to help climate victims fail human rights test. ActionAid. April 2019 https://actionaid.org/news/2019/market-mechanisms-loss-and-damage-climate-finance-fail-human-rights-test	accepted. text revised and reference included.	Harjeet Singh	ActionAid International	India

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
15269	24	29	24	42	we can include the comments in this section in the previous section of national adaptation plans (page 19 line 40). The surge of comprehensive climate risk assessment and management tools is helping to understand better the risks and impacts and hence, are determinant to the definition and design of the NAPs	Noted. Will be considered in SOD	Esther Badiola	European Investment Bank	United States of America
15267	24	30	24	42	Same comment regarding fiancial instruments. Please concentrate all in one stand alone section.	Rejected, the authors feel the current structure is more intuitive	Esther Badiola	European Investment Bank	United States of America
40111	24	36	24	38	Market based initiatives are unable to: • cover full rights-based reparation for loss and damage suffered as a result of sudden onset events; • provide redress for slow-onset events; • enable participatory decision making by the communities most vulnerable to climate change harms; • require differentiated responsibility among those most responsible for GHG emissions to date; • make connections with the other pillars of the climate change regime – mitigation and adaptation – in order to reduce the propensity of increasingly severe loss and damage in the future and proactively work towards ensuring a safe, clean, healthy and sustainable environment. While green climate bonds could assist in this respect, such bonds do not currently provide financing to address loss and damage. The risk financing tools for repairing climate change harms must comply with human rights principles. Reference: Paul, H, Market solutions to help climate victims fail human rights test. ActionAid. April 2019 https://actionaid.org/news/2019/market-mechanisms-loss-and-damage-climate-finance-fail-human-rights-test	accepted. text revised and reference included. Sub-section has been splitted up in needs and gap section	Harjeet Singh	ActionAid International	India

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
5995	24	43	25	6	Please carefully reexamine Markandya and González-Eguino (2019)! They actually provide a rather critical assessment of IAMs capabilities for estimating L&D financing requirements (e.g. due to the damage fucntion approach, focusing on expected losses instead of loss distributions, assuming optimal adaptation etc.). In a nutshell: these estimates are not very robust and most likely underestimate L&D financing needs. Nevertheless, their results provide important qualitative insigths.	accepted. text revised. Sub-section has been splitted up in needs and gap section	Thomas Schinko	International Institute for Applied Systems Analysis (IIASA)	Austria
15271	24	43	25	6	merge this section with the one above on Financing needs	taken into account. sections are reordered to be next to each other. Sub-section has been splitted up in needs and gap section	Esther Badiola	European Investment Bank	United States of America
40157	25	1	25	1	For sake of clarity, I would avoid to use the term "economic IAMs" since most IAM include an economic dimension (even if sometimes limited)	accepted. text revised Sub-section has been splitted up in needs and gap section	Irene Monasterolo	Vienna University of Economics and Business (WU)	Austria
11559	25	7	25	18	On: Gaps and limits to loss and damage/risk financing In a recent paper (Schäfer, L./Künzel, V. 2019: Steps towards closing the Loss&Damage finance gap. Bonn: Germanwatch. Available at: https://germanwatch.org/de/17312) we identified the following addiitonal challenges with regard to finance to address loss and damage: Challenge 1 Funding is mainly available (even though in insufficient scales) for ex-ante measures, aiming at reducing the residual risk of future economic L&D that cannot be or will not be avoided through mitigation and/or adaptation. Moreover, the UNFCCC paper classifies risk reduction pro-jects as relevant for L&D, which we would classify as adaptation measures (as the impact can still be avoided). Challenge 2 There is so far little to no funding with regard to measures minimizing and addressing L&D ex-post, with the objective to minimize the scale of L&D and address irreversible impacts that could not be or were not avoided after an impact materialized. Challenge 3 There is little to no funding for dealing with non-economic losses, both ex-ante and ex-post. continued in next row...	accepted. text revised Sub-section has been splitted up in needs and gap section	Laura Schäfer	Environmental Non Governmental Organisation, Germanwatch	Germany

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
11561	25	7	25	18	...Continued from row 15 Challenge 4 The funding already provided outside the UNFCCC regime to address L&D is by far not sufficient – especially regarding the growing number and intensity of extreme weather events. The High Level Panel on Humanitarian Financing diagnosed a humanitarian funding gap in 2015 of 15 billion USD – this lack of money lead to fatalities and forced people into lives without dignity (High Level Panel on humanitarian financing 2016) . Additionally, a development funding gap can be identified as the Official Development Assistance (ODA) which is aimed at 0,7 % of OECD DAC donor countries GNI by 2020 has only reached 0,31 % of the combined GNI of those countries in 2018. And the share of assistance for the neediest countries is even declining (OECD 2019). Applied to the Sustainable Development Goals (SDGs) this threshold would not be sufficient to reach them. A report by Oxfam identified an increase of roughly 62,5 % on 2015 ODA levels or an additional 250 Billion USD by 2025 being necessary – complemented by additional funding channels (Martin/Walker 2015). continued in next row...	accepted. text revised Sub-section has been splitted up in needs and gap section	Laura Schäfer	Environmental Non Governmental Organisation, Germanwatch	Germany
11563	25	7	25	18	..continued from row 16 Challenge 5 Applied instruments to address Loss&Damage, like insurance solutions, are an important component of a broader climate risk management, if designed carefully. However, they face limitations: There is a risk to only focus on people who can afford a premium and therefore potentially increases marginalization of the poor who are not able to do so, while international support for insurance premiums for the poor is so far insufficient. Additionally, not all losses and damages can be covered by insurances, e.g. at least by now the instrument is not suitable to address slow onset processes (Schaefer et al 2016). Above these limitations, latest experiences show, that ongoing climate change is also changing the circumstances: The insurance industry is already discussing growing climate risks which may be impossible to model and therefore are ultimately uninsurable (Shankelmann 2017). According to prime minister of Barbados, devastation by hurricane Dorian on the island state exceeded the capacity of the Caribbean Catastrophe Risk Insurance (CCRIF) to fully address the consequences; in particular it left a gap to finance rebuilding (Prime Minister's Office Barbados 2019). continued in next row...	accepted. text revised Sub-section has been splitted up in needs and gap section	Laura Schäfer	Environmental Non Governmental Organisation, Germanwatch	Germany

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
11565	25	7	25	18	…continued from row 17 Challenge 6 Currently, financial support for L&D does not follow core justice principles for international relations, fortified by a majority of states in the international community. In particular, the polluter pays principle and the principle of common but differentiated responsibilities and capability need to be applied. A lot of countries (France (83%), Germany (62%), or Japan (53.70%) in 2016) provide a substantial share of funding via loans to concessional terms. "Loans can play an important role, especially in so called "bankable" projects, where investments deliver a return. However, they still contradict the universal principle of "polluter pays", as loans have to be repaid" (ActAlliance 2018). However, the current practice of most developed countries is to report these instruments at their face value (not the net value of the concessional loan) – making the level of assistance received by developing countries very intransparent (Oxfam 2018). Moreover, a huge part of climate finance is channeled to richer developing countries, primarily due to the increase focus on private investments which are more likely to deve-liver a return in emerging economies (ActAlliance 2018).To finance L&D measures grants are needed so that vulnera-ble countries whose risks of being hit by an extreme event have grown through climate change while they have contributed least to it, do not have to bear the cost (e.g. for insurance premiums) them-selves. continued in next row..	accepted. text revised Sub-section has been splitted up in needs and gap section	Laura Schäfer	Environmental Non Governmental Organisation, Germanwatch	Germany

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
11567	25	7	25	18	…continued from row 18 Literature for the challenges: ActAlliance 2018: An analysis of the Climate Finance Reporting of the European Union. Available at: https://actalliance.eu/wp-content/uploads/2018/04/Analysis-of-the-climate- finance-re-porting-of-the-EU.pdf. OECD 2019: Development aid drops in 2018, especially to neediest countries. Available at:http://www.oecd.org/development/development-aid-drops-in-2018-especially-to-needi-est- countries.htm. Oxfam 2018: Climate Finance Shadow Report 2018. Available at: https://oi-files-d8- prod.s3.eu-west-2.amazonaws.com/s3fs-public/file_attachments/bp-climate-finance-shadow- report-030518-en.pdf. Schäfer, Laura / Waters, Eleanor/ Kreft, Sönke/ Zissener, Michael 2018: Making Climate Risk Insurance Work For The Most Vulnerable: Seven Guiding Principles. United Nations Universityinstitute For Environment And Human Security (Unu-Ehs). Unu-Ehs Publication Series. policy Report 2016 No. 1. Available at: http://www.climate-insurance.org/fileadmin/mcii/documents/MCII_PolicyReport2016_Making_CRI_Work_for_the_Most_Vulnerable_7GuidingPrinciples.pdf.	rejected. These are all gray literature that were not required to make the relevant points that were included. Sub-section has been splitted up in needs and gap section	Laura Schäfer	Environmental Non Governmental Organisation, Germanwatch	Germany
5997	25	8	25	18	Please also add the challenge related to financing L&D from non-market based impacts. See my previous comment above.	accepted. text revised Sub-section has been splitted up in needs and gap section	Thomas Schinko	International Institute for Applied Systems Analysis (IIASA)	Austria
5999	25	8	25	18	Actually it is reather clear today that there is a risk layer "beyond adaptation" for many, particularly developing and least developed countries. Hence, I would suggest to reword the sentence "The potential limits on individual, government 15 and donor financing mean that a risk layer 'beyond adaptation' cannot be ruled out, especially for highly 16 vulnerable countries facing more extreme losses."	accepted. text revised Sub-section has been splitted up in needs and gap section	Thomas Schinko	International Institute for Applied Systems Analysis (IIASA)	Austria

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
15273	25	12	25	12	…"the large need between the funding available and financing need…"	accepted. text revised Sub-section has been splitted up in needs and gap section	Esther Badiola	European Investment Bank	United States of America
43773	25	20	25	20	For some reason I've struggled with the basic aim here: I assume it is, in plain english, how much money is needed. At present I am left with the question should this section be entitled 'Prioritisation of *meeting* financial needs' i.e. what *should* be prioritised; or is it the prioritisation of where those needs actually are (bottom up perspective), or is this really about examining the default prioritisation of existing flows (e.g. mitigation vs adaptation)? If it is about all of those then an introductory sentence would be very helpful setting it out e.g. with the linkage to 15.2.4.3.	Taken into account. First, this is about prioritisation of the needs broadly giving an overview of the complexity in this discussion. It is not mean to simply present final aggregated figures though those are discussed as available. However, reviewer is correct in that there needs to be some synergistic linkage and culling for duplication made between this section and section 15.3	Kirsty Hamilton	Chatham House (Associate Fellow, unpaid)	United Kingdom (of Great Britain and Northern Ireland)
15275	25	23	25	23	The specification of these thematic areas makes me wonder if it is appropriate to talk about loss and damage and disaster risk management as separate thematic areas… I am inclined to suggest that these are included under adaptation. During COP26 in Madrid, it was very clear that countries did not want to enter into the loss and damage quantification discussion. at least, not yet. I am not sure if we should treat these two as distinctive themes than climate change adaptation.	accepted. This is another text that can go to WG2 or delted	Esther Badiola	European Investment Bank	United States of America
4829	25	31	25	33	When discussing of Article 2.1b of the Paris Agreement and, more in general, of adaptation, I suggest you to include broader considerations without limiting discussions to developing countries' needs. By a matter of fact, adaptation is a raising issue for developed countries and the Chapter (as well as more in general the Report) tends to focus only on developing countries' needs.	Accepted. Modifiction will be made to reference discussion of adaptation in developed countries	michele stua	APE-FVG	United Kingdom (of Great Britain and Northern Ireland)
25379	25	36	25	38	Delete "Whereas prioritisation of 2.1c is about putting … subsidy reform", as this is a subjective interpretation of the Paris Agreement article.	Accepted. Deleted	Eleni Kaditi	Organization of the Petroleum Exporting Countries (OPEC)	Austria
40023	25	37	25	38	Replace "carbonisation" with "decarbonisation" reason: typo. Delete "abatement per tonne" reason: out of place	Accepted. Sentence deleted as per comments 437 above	Axel Michaelowa	University of Zurich	Switzerland

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
6485	25	20	31	34	I'm a bit skeptical on the need and usefulness on this section (Prioritisation of financing needs) - what is the core message? Do we need it al all? If the authors decide to keep it, please try to streamline it.	Accepted. Section will be dramatically reduced to two paragraphs focusing on M since most of it is about adaptation.	Nadia Ameli	University College London	United Kingdom (of Great Britain and Northern Ireland)
18939	25	31			article 2 -> Article 2	Accepted. Revised	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea
18941	25	footnote			PA article 2 -> PA Article 2	Accepted. Corrected	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea
44449	26	15	26	15	It should read climate extremes, as in IPCC literature	Accepted. Revised accordingly	Urbano Fra Paleo	University of Extremadura	Spain
38273	26	22	26	41	A graph is needed to make the paragraph easier to read and the figures easier to capature.	rejected. Graph is not necessary	Yamina Saheb	OpenExp, Ecole des Mines de Paris	France
15277	26	29	26	41	I would suggest to move these data on supply of finincing to the relevant section under 15.3.	Accepted. Revised accordingly	Esther Badiola	European Investment Bank	United States of America
45645	26	42	26	44	The African Risk Capacity may also be a good example here of a sovereign risk pool to aid with disaster relief immediately following droughts in Africa. https://www.africanriskcapacity.org/	Rejected. ARC is discussed elsewhere and so relevant here.	Geoffrey Saville	Willis Towers Watson	United Kingdom (of Great Britain and Northern Ireland)
15279	26	45	27	10	I would move this section to the financial instruments stand alone section, as examples of financial solutions	Noted. This depends on where the discussion on adaptation finance goes. This can all go to WG2 (line 42, p 15-26 to pg 15-27, line 1.10	Esther Badiola	European Investment Bank	United States of America
44451	27	4	27	4	Disaster relief is associated to providing external aid, which does not seem the case of this country, but the opposite, it should read instead disaster response and recovery	rejected. This is from the source referenced	Urbano Fra Paleo	University of Extremadura	Spain

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
38871	27	26	27	27	How is adaptation “most widely discussed at the regional and national level literature” if only one reference is cited that is country-specific? One could also argue the plethora of literature on local measures to adapt to climate change, especially in the natural resource and agriculture sector, as an example. This statement is too broad and not adequately supported by the existing literature at multiple spatial scales.	Noted. The sentence is deleted. But the prior sentence provides three broad referencesö OECD, ACT etc.	Julian Reyes	Personal Capacity	United States of America
15281	27	28	27	45	these two paragraphs seem to say the same as the previous paragraphs in the section (from page 25 line 21 onwards). Please consolidate and summarise.	rejected. The latter paragraphs focuses on the outcome of climate negotiation relative to prioritising the flow of climate finace to be supplied the first paras dealt with subjective criteria and evaluaiton of needs	Esther Badiola	European Investment Bank	United States of America
18943	27	19			"… resilient to climate-related risks in the long." in the long run?	Accepted. in the Long run.	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea
18945	27	38			Paris agreement -> Paris Agreement	Accepted. Revised accordingly	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea
15283	28	7	28	16	I would remove this reference to the WB Action plan. It does not add to the discussion because (i) these areas reflect the sectors where emissions are the highest: energy, transport, urban environments/buildings, agriculture and forestry and industry. Adaptation is corss-cutting. It is logical that any prioritisation takles these segments. And (ii) if you mention the WB, you should also mention others that are takling similar challenges. For example, high priority areas for the CIF, for the GCF, for the UNDP, for other MDBs are all similar.	Accepted. Revised accordingly	Esther Badiola	European Investment Bank	United States of America
25381	28	7	28	16	Delete "Targeting to the Paris Agreement … green competitiveness …" as this is a policy prescriptive statement.	Rejected. This is not policy prescriptive. It say it lead so is descriptive.	Eleni Kaditi	Organization of the Petroleum Exporting Countries (OPEC)	Austria

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
4831	28	16	28	16	Why listing only 5 out of 6 'high impact areas'?	Noted. Para deleted	michele stua	APE-FVG	United Kingdom (of Great Britain and Northern Ireland)
15285	28	21	28	23	Are we sure that EU Member states (27 countries) are not including adaptation in their NECs? I think this statement is wrong. I would rather say that countries are becoming more aware of the climate risks and impacts, and including them in their country programming.	Noted. Para deleted	Esther Badiola	European Investment Bank	United States of America
15287	28	27	28	27	Possibly, interesting to add that "The European Investment Bank, another MDB, has developed a Climate Risk Assessment system to ensure that EIB projects are assessed against climate change impacts, by developing a system and set of tools which are integrated into the Bank's project assessment procedures and allow the systematic screening of projects for climate risks. "	Noted. Para deleted	Esther Badiola	European Investment Bank	United States of America
46779	28	34	28	34	Grammar seems off, combined with incomprehensible sentence structure for "And the remaining funds focus on mitigation general fund.". Please consider revising for added clarity.	Noted. and' deleted. Sentence now start with. The remaining... . Sentence also edited for flow.	Kim Schumacher	School of Environment and Society, Tokyo Institute of Technology	Japan
47035	28	34	28	34	Grammar seems off, combined with incomprehensible sentence structure for "And the remaining funds focus on mitigation general fund.". Please consider revising for added clarity. (6)	Noted. and' deleted. Sentence now start with. The remaining... . Sentence also edited for flow.	Kim Schumacher	School of Environment and Society, Tokyo Institute of Technology	Japan
15289	28	29	29	31	I would delete all these lines. First, because they don't really add much to the discussion. Today, there are many more funds than these few, some of them more specific, some of them wider in terms of eligible investments. And what? What is the new message from these lines? All of the funds try to takle the same problems and their eligibility guidelines (vulnerability, additionality, efficiency, effectiveness, equality, etc.) are very similar. We could provide an indicative inventory of funds and what each does (if this is the goal, we need to group them somehow because the fragmentation is enormous) in an annex or new section. Current climate finance landscape is so populated that mentioning these few doesn't serve any purpose.	Accepted. 15.2.4.2 Multilateral, regional and bilateral level prioritising of financing needs has been deleted	Esther Badiola	European Investment Bank	United States of America

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
47465	28	9			only 5 high impact areas mentionedwhere 6 are stated in the set up. These should be included in the first framing section which lacks granularity.	Accepted. Deleted	Celine Bak	IISD	Canada
46781	29	4	29	4	"Annexe" should be changed to "Annex" to maintain textual and linguistic consistency.	Noted. Para deleted	Kim Schumacher	School of Environment and Society, Tokyo Institute of Technology	Japan
47037	29	4	29	4	"Annexe" should be changed to "Annex" to maintain textual and linguistic consistency. (7)	Noted. Para deleted	Kim Schumacher	School of Environment and Society, Tokyo Institute of Technology	Japan
25383	29	27	29	27	Replace “all” with “of the”	Accepted. Para deleted	Eleni Kaditi	Organization of the Petroleum Exporting Countries (OPEC)	Austria
37705	29	37	29	38	COP25 decision- guidance to the GCF has included the GCF to provide support for loss and damage- should be updated	accepted. sentence deleted	Michiel Schaeffer	Climate Analytics	Netherlands
15291	29	39	29	42	Suggested change: "Examples of these frameworks include the Bellagio… "	accepted. sentence modified	Esther Badiola	European Investment Bank	United States of America
25385	29	40	29	40	Delete "all"	Accepted. sentence deleed	Eleni Kaditi	Organization of the Petroleum Exporting Countries (OPEC)	Austria
15293	29	43	30	15	This list is again incomplete. All MDBs have programmes or technical assistance to help the countries to work on their NDCs. Th NDC Partnership is mainly an information sharing platform. Other active players, in addition to MDBs are GIZ, IRENA, GCF, etc etc etc.	Accepted. Sentence modified: All MDBs, bilateral and climate funds to greater or lesser either extend support or are planing to support the prioritization of NDCs, NAMAs, LEDs, LCDs and	Esther Badiola	European Investment Bank	United States of America

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
18947	29	23			"CIFs like the Bank and the MDBs…": the Bank -> the World Bank	noted. section deleted	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea
18949	30	28	30	29	Add a comma between "the GCF eight result areas" and "four for adaptation and four for mitigation."	accepted. Corrected	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea
4833	30	32	30	32	As confirmed by the line, NDCs/INDCs tend to be used without specific differentiation in this Chapter. I suggest using only NDCs unless necessary using INDCs for reasons that require to be specified case-by-case.	Accepted. Revised	michele stua	APE-FVG	United Kingdom (of Great Britain and Northern Ireland)
37707	30	34	30	37	Needs of recipients is one of the investment crietria for the GCF which should be included among the others listed here	Accepted. Revised accordingly	Michiel Schaeffer	Climate Analytics	Netherlands
15295	30	16	32	36	Delete all these lines. In the chapter is already clear that NDCs provide the opportunity for the countries to reflect their long term strategies and to define their priorities, so there is no need to repeat it here. The mid part of the section seems to describe the programmes of the GCF which is not needed here. And the TFCD link to climate risks does not belong here either.	accepted. lines deleted	Esther Badiola	European Investment Bank	United States of America
18951	30	38			"as highlighted by (Blue Orchard 2019; GCA 2019).": Remove parenthesis	accepted. line deletd	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea
46665	31	13	31	34	Error/misunderstanding: this is strange that the mention of 'transition" and "physical risks" under the TCFD framework suddenly appears under sub-sub-sub-section 15.2.4.3 (…) which is dedicated to financing needs. The whole notion of risk developped by the TCFD is not primarily for the infrastructures or the people, but namely (it's in the acronym) financial risks. Risks to the financial sector/system. So it's not about financing needs at all , it is about financial risk: costs to the value of assets. This notion should appear in another section.	accepted. section deleted	Hugues Chenet	University College London — Institute for Sustainable Resources	France

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
18955	31	14	31	34	The pargraphs need full sentences.	accepted. secton deleted	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea
1355	31		31		Physical risk relates to adaptation and resilience and is being covered in Ch17 of WG2. Also there is the Guidance note on risk that has been produced. My view here is that the note needs to be published so it can be referred to directly. It may then save the need for this box.	Noted. section deleted	David Viner	Mott MacDonald	United Kingdom (of Great Britain and Northern Ireland)
15297	31	18	32	36	This section, once it is significnatly reduced and redrafted, would fit better in page 24 line 29 around the concept of risks. I suggest the creation of a new sub-section under the title of "Evaluating Systemic Risks" and mention here the work initiatied by the TFCD and the different risks that it aims at assessing (physical, transitional, liability...) and disclosing. Please note it is also repeated in 15.6.3.	Noted. Neccesary corrections were done based on the comment	Esther Badiola	European Investment Bank	United States of America
18953	31	6			Need two parenthesis at the end of the sentence.:"... Commission on Adaptation 2019)).	Noted. section deleted	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea
6487	32	3	32	36	The box on risks is misplaced here - it should go in the risk section (later in the Chapter)	Accepted. Will be changed in SOD	Nadia Ameli	University College London	United Kingdom (of Great Britain and Northern Ireland)
43775	32	3	32	36	I note that this information (the 'Bank of England' characterisation of overall risk of climate change to the stability of the financial system) also overlaps with issues raised in section 15.6.3 pages 66-68.	Taken into account. The overlap will be checked	Kirsty Hamilton	Chatham House (Associate Fellow, unpaid)	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
40159	32	8	32	8	The definition of transition risk used in this passage is taken from Bank of England (2015). Since then, the definition has been updated and it has been re-elaborated by the entire policy community of the NGFS, as well as by the academic community. I suggest to revise the sentence based on the current notion of climate transition risk used in the academic literature (e.g. Battiston ea. 2017; Battiston 2019) and in the NGFS Report 2019, in particular with its 4 high-level scenarios (ibidem, Box 2), including the notion of disorderly transition scenario, as follows: "Here we define Climate transition risk following the current notion used in the academic literature (e.g. Battiston ea. 2017; Battiston 2019) and in the NGFS Report 2019. Climate transition risk refers to the economic and financial risk arising from a sudden revaluation of both carbon-intensive and low-carbon assets and that cannot be fully anticipated by financial actors. Note that if the transition occurs orderly, i.e. if market players are able to fully anticipate prices changes on average, then there is no additional risk with respect to the business-as-usual (in which, however there is higher physical risk). In contrast, additional risk arises if the transition is disorderly, i.e. if market players are not able to fully anticipate either the timing of the introduction of the policy or its impact. Note that "adjustments are expected to negatively impact the value of fossil fuel-related assets (the so-called carbon stranded assets). They are also expected to impact indirectly the value of assets in other sectors. However, the sign of the impact can be positive or negative, depending on whether firms are able to anticipate the policy and adapt their business to alternative sources of energy." (Battiston 2019). Note also that transition risk can be driven by the following factors (See Monasterolo 2020 for a detailed discussion of climate transition risk drivers and transmission to the economy and the financial sector): (i) Technological shocks (e.g. the fast decrease of renewable energy production costs and fast	Noted. Point will be considered	Irene Monasterolo	Vienna University of Economics and Business (WU)	Austria
4835	32	9	32	19	When discussing recent findings in transition risks I suggest including citations from the recently published book: Hanger-Kopp, S., Lieu, J., Nikas, A., (Eds.) 2019: Narratives of Low-Carbon Transitions - Understanding Risks and Uncertainties. Routledge, London.	Noted. Point will be considered	michele stua	APE-FVG	United Kingdom (of Great Britain and Northern Ireland)
6753	32	9	32	19	It should made clearer how transition risks emerge from policy choices, through which channels they operate (suddenly unprofitable business models, non-performing assets, …) and under which assumptions (e.g. about expectations) they can occur.	Noted. Point will be considered	Schenker Oliver	Frankfurt School of Finance & Management	Germany

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
25387	32	12	32	13	Delete “as some companies ... in the future”.	Accepted. Deleted	Eleni Kaditi	Organization of the Petroleum Exporting Countries (OPEC)	Austria
3033	32	12	32	15	Note that the results on climate related credit risk of carbon -intensive industriesare not conclusive (See Devalla et al, 2017; Oikonomou et al, 2014; Trinks et al, 2017)	Noted. Point will be considered	Mustafa Babiker	Aramco	Saudi Arabia
40161	32	14	32	14	Editorial comment: Replace value-at-risk with Climate Value-at-Risk (capital). Substantial comment: I suggest to revise this sentence because it does not provide a correct citation of the relevant literature on Climate Value-at-Risk (Climate VaR), and its omits to quote relevant contributions. The passage only cites work by the industry while most research and policy applications in the context of the assessment of investors' exposure to climate transition risk have been developed by the academia. The computation of CLIMATE VaR for PHYSICAL risk was first carried out by (Dietz et al. 2016). The computation of CLIMATE VaR for TRANSITION risk was first carried out by (Battiston et al. 2017). In addition, the following methods for the quantitative assessments of transition risk have been developed: Climate Stress-testing based on financial network models that allow to consider direct and indirect exposures (Battiston et al. 2017); the pricing of forward-looking climate transition scenarios in the value of equity holdings and bonds (Battiston et al. 2019), The focus on credit risk is still marginal so far in the literature and it has been mostly developed by private consulting companies that use proprietary and “black-box” models, and that have a conflict of interest (in underestimating the risk in the credit ratings they provide). In addition, it has been recognized both by academics (Battiston and Monasterolo 2019) and practitioners (Bolton et al. 2020) that traditional financial pricing models used by financial consultancies are inadequate to embed the characteristics of climate risks (i.e. forward-looking, deep uncertainty, non-linearity, endogeneity). Indeed, financial supervisors and policy makers have relied on science-based	Noted. Point will be considered	Irene Monasterolo	Vienna University of Economics and Business (WU)	Austria

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
25389	32	21	32	21	Delete “legal cases ... and”	Accepted. Deleted	Eleni Kaditi	Organization of the Petroleum Exporting Countries (OPEC)	Austria
6755	32	26	32	36	The discussed consequences of physical risks seem a bit narrow; in particular since a substantive literature exists. See Felbermayr and Gröschl (2014) on macroeconomic growth effects of natural disasters, Henriet et al. (2012) on supply chains and firm networks, Kousky (2014) for an overview.	Noted. Point will be considered	Schenker Oliver	Frankfurt School of Finance & Management	Germany
45647	32	34	32	36	This essentially describes the catastrophe modelling process that the isurance and reisnruance sector has been using to price risk, assess capital requirements and develop efficeint reinsurance structures for decades. This fraework for extreme risk is not designed for climate change risk, but efforts are being made in the industry to conditions these models to provide useful views of risk in the future related to phsyical climate risk impacs.	Noted. Point will be considered	Geoffrey Saville	Willis Towers Watson	United Kingdom (of Great Britain and Northern Ireland)
36543	32	39	32	39	Impacts of emission trading should be reviewed and added. In 2008, flow through CDM was estimated to be USD 8 billion but was disappeared by the lack of demand. Now under Paris Agreement new rules for international emission trading will be constructed. Also economic benefit of international emission trading should not be disregarded. Its merit is similar to benefit of international trade and investment. The below is an example of the analysis of international emission trading. According to the report, $250 billion a year can be saved. When demand of finance is saved, it meads implicit supply of funds to the mitigation. A new section for analyzing its impacts together with pros and cons should be added. https://www.ieta.org/resources/International_WG/Article6/CLPC_A6%20report_no%20crops.pdf https://www.ieta.org/page-18192/7895908	Noted. Point will be considered	Takashi Hongo	Mitsui & Co. Global Strategic Studies Institute	Japan
46667	32		32		Box 15.2 RISK should not be in the section on financing needs. That's exactly the opposite: risk is all about protecting the value of a financial asset, not about the objective of creating a physical asset in the real economy.	Taken into account. Point will be taken in SOD	Hugues Chenet	University College London — Institute for Sustainable Resources	France

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
46669	32		32		Box 15.2 RISK sounds a bit strange; First it should be named "financial risk" or better:"climate-related financial risks" as it is what is described in the box. Then the content is a bit strange. More intuitively start by physical risks? Then, as tons of papers have been written for the last 4 years on the basis of this framework, it's surprising to have an overview box that is not crystal clear. TCFD, NGFS, DG Tresor (2017) or Bolton et al "greenswan" (2020) provide much clearer points.	Taken into account. Point will be taken in SOD	Hugues Chenet	University College London — Institute for Sustainable Resources	France
40025	32	40			Section 15.3.1 should discuss the robustness of climate finance data, with problems related to the use of Rio Markers (see the empirical assessment by Michaelowa and Michaelowa 2011). New reference: Michaelowa, Axel; Michaelowa, Katharina (2011): Coding Error or Statistical Embellishment? The Political Economy of Reporting Climate Aid, in: World Development, 39, p. 2010–2020	Addressed . We already have the following sentence at the start of section 15.3.3.1: "The measurement of climate finance flows continues to face the same definitional and reliability issues 12 than AR5". We may further highlight the point on issues of robustness of climate finance data in general, but this is not a new finding. And some progress has been made as well.	Axel Michaelowa	University of Zurich	Switzerland
38275	33	18	33	24	See EU work on sustainable finance mentioned in comment 16	Revised . We will consider latest EU-level developments in relation to definitions, notably the EU Taxonomy of Sustainable Activities	Yamina Saheb	OpenExp, Ecole des Mines de Paris	France
40027	33	19	33	20	Add reference after "In practice, each of these concepts is characterised by a lack of internationally 20 standardised definition and scope.": (Shishlov et al. 2018). New reference: Shishlov, Igor; Nicol, Morgane; Cochran, Ian (2018): Environmental integrity of green bonds: stakes, status and next steps. I4CE – Institute for Climate Economics, Paris.	taken into account. Reference noted. It will be considered in the part of our chapter dealing with green bonds (which is likely to be moved to another section)	Axel Michaelowa	University of Zurich	Switzerland
43527	33	19	33	20	These instruments clearly lack comparability and transparency, which can be problematic as it allows dramatic overpromising; add reference to Shishlov, Igor; Nicol, Morgane; Cochran, Ian (2018): Environmental integrity of green bonds: stakes, status and next steps. I4CE – Institute for Climate Economics, Paris.	taken into account. Reference noted. It will be considered in the part of our chapter dealing with green bonds (which is likely to be moved to another section)	Matthias Honegger	Perspectives Climate Research gGmbH	Germany

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
12755	33	20	33	22	The sentence "There is broad consensus…" is only partially true. Yes, there is a consensus that finance that contributes to mitigation or adaptation is climate finance. But there is no consensus how finance to address loss and damages should also be considered climate finance in the same way and with the same legal meaning under the UNFCCC or the Paris Agreement. I would at least add a sentence like "However, it remains an area of dispute how climate finance e.g. provided under the Paris Agreement should also cover not only averting and minimising loss and damage but also recovering from it."	Addressed . The focus of WGIII is on mitigation. The Finance and Investment chapter needs to acknowledge the link to adaptation and resilience. As it stands, we also have a sub-section on loss and damage. Hence we will ensure your point is captured and cross-referenced where most apropriate.	Jan Kowalzig	Oxfam Germany	Germany
43777	33	14	34	24	There are some important issues raised here that might benefit from being highlighted in the introduction. Refer also to the first sentence of section 5.3.3.1 (page 37 lines 10-11) - these issues get lost in the overall chapter.	Addressed . The chapter team is considering options to strenghten and potentially bring further upfront the discussion relating to definitions.	Kirsty Hamilton	Chatham House (Associate Fellow, unpaid)	United Kingdom (of Great Britain and Northern Ireland)
5243	34	1	34	1	Figure 15.5: When financing measures to protect the climate, the avoidance of undesirable side effects on other aspects of sustainability must be assured. This is usually done via secondary requirements such as "do not significant harm ...". It is suggested to mention this in a footnote.	point taken into account. This comment is in line with the idea of ensuring that climate action is not at ods with broader sustainable development goals. Point taken and will take on board in one way or another.	Thomas Lützkendorf	Karlsruhe Institute of TEchnology (KIT) - Research University of Helmholtz Association	Germany
27555	34	2	34	2	I am concerned this figure and the accompanying text provide a partial and perhaps somewhat limited persepctive . The discussion in Ch 1, also consistent with Ch 4 and 16, frames climate mitigation in the larger context of development, which means many development actions have the effect of reducing or limiting emissions. This diagram works contrary to that broader understanding	point taken into account. Finance can indeed have multiple developmental co-benefits including, but, not limited to climate action. On the other hand, not all developmental projects have climate benefits.There is also a political demand for somehow accountinf for "climate specific" finance to avoid greenwashing or over claiminng. We will do our best to find a balance when designing our figures.	Navroz Dubash	Centre for Polcy Research	India

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
27557	34	5	34	6	This important conceptual discussion on 'climate' and 'finance' could usefully be moved to near the front of the chapter and expanded to set the stage for what follows.	further consideration made . The chapter team is considering options to strenghten and potentially bring further upfront the discussion relating to definitions. In doing so we will ensure further coherence of terms used.	Navroz Dubash	Centre for Polcy Research	India
46671	34	5	34	24	it is surprising to wait until p.34 to address this point	Section revised and moved arround . The chapter team is considering options to strenghten and potentially bring further upfront the discussion relating to definitions. In doing so we will ensure further coherence of terms used.	Hugues Chenet	University College London — Institute for Sustainable Resources	France
15299	34	7	34	8	I don’t think that section 15.2 has covered the discussion investment vs cost as refered here to.	Coherance improved . The chapter team is considering options to strenghten and potentially bring further upfront the discussion relating to definitions. In doing so we will ensure further coherence of terms used.	Esther Badiola	European Investment Bank	United States of America
27559	34	10	34	14	Related to the point on Fig 15.5, this is a very important discussion on the scope of climate finance, and perhaps deserves to be elaborated at far greater length and perhaps moved up. Some consistency across the chapters on the scope of what counts as 'climate mitigation actions' and therefore finance may be useful. For example, under what conditions can/should investment in public transport systems be counted as 'climate finance'?	chapter structure revised and text moved arround . The chapter team is considering options to strenghten and potentially bring further upfront the discussion relating to definitions. In doing so we will ensure further coherence of terms used.	Navroz Dubash	Centre for Polcy Research	India
40029	34	13	34	14	Replace "(UNFCCC 2019c)" with "(Shishlov et al. 2018, UNFCCC 2019c)". Add reference: Shishlov, Igor; Nicol, Morgane; Cochran, Ian (2018): Environmental integrity of green bonds: stakes, status and next steps. I4CE – Institute for Climate Economics, Paris. Reason: better reflect the varity of existing literature.	Noted. Reference noted. It will be considered in the part of our chapter dealing with green bonds (which is likely to be moved to another section)	Axel Michaelowa	University of Zurich	Switzerland
43529	34	13	34	14	Replace "(UNFCCC 2019c)" with "(Shishlov et al. 2018, UNFCCC 2019c)". Add reference: Shishlov, Igor; Nicol, Morgane; Cochran, Ian (2018): Environmental integrity of green bonds: stakes, status and next steps. I4CE – Institute for Climate Economics, Paris. Reason: better reflect the varity of existing literature.	Noted. Reference noted. It will be considered in the part of our chapter dealing with green bonds (which is likely to be moved to another section)	Matthias Honegger	Perspectives Climate Research gGmbH	Germany

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
40031	34	20	34	20	Replace "...financial instruments such as bonds (e.g. Climate Bond Initiative 2018)." with "...financial instruments such as bonds (e.g. Climate Bond Initiative 2018, Nicol et al. 2018) and Green Credit Lines (Shishlov et al. 2017)." References: Nicol, Morgane; Shishlov, Igor; Cochran, Ian (2018): Green Bonds: Improving their contribution to the low-carbon transition. I4CE – Institute for Climate Economics, Paris. Shishlov, Igor; Bajohr, Till; Deheza, Mariana; Cochran, Ian (2017): Using credit lines for fostering green investments: opportunities and challenges. I4CE – Institute for Climate Economics, Paris Reson: reflect different literature sources and different financial instruments.	Considered . We will consider the proposed reference. The discussion relating to (green) bonds will, to a large extent, most likely be moved to another section of the chapter	Axel Michaelowa	University of Zurich	Switzerland
40033	34	20	34	20	Replace "UNFCC" with "UNFCCC". Reason: typo.	Addressed . Noted	Axel Michaelowa	University of Zurich	Switzerland
46769	34	20	34	20	"Climate Bond Initiative" is an error. It should be "Climate Bonds Initiative".	Addressed . Noted	Kim Schumacher	School of Environment and Society, Tokyo Institute of Technology	Japan
46911	34	20	34	20	"Climate Bond Initiative" is an error. It should be "Climate Bonds Initiative". (1)	Addressed . Noted	Kim Schumacher	School of Environment and Society, Tokyo Institute of Technology	Japan
4837	34	25	34	31	Given the potential of Article 6 of the Paris Agreement for raising climate investments, I suggest citing the same Article in this paragraph.	Referenced . We will consider a reference to carbon credit and trading where relevant. As far as Article 6 is concerned, the modalities of its implementation remain to be confirmed under UNFCCC negotiations.	michele stua	APE-FVG	United Kingdom (of Great Britain and Northern Ireland)
43779	34	26	34	31	Also at different stages of a project cycle refer 'Finance Guide for Policymakers' (BNEF, Chatham House, FS-UNEP) see graphics on page 28 and 29. Available from: http://about.bnef.com/white-papers/finance-guide-policy-makers/	Agreed. Agree this is important. The issue of stages of development and of te differentiated underlying financing and investment characteristics are, however, addressed elsewhere in our Chapter.	Kirsty Hamilton	Chatham House (Associate Fellow, unpaid)	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
12757	34				The figure is missing "loss and damage". I suggest changing that chart. "Climate change adaptation" sits, for most contexts, not under "Environmental" as shown in the figure, but rather between "Social" and "Economic" - successul adaptation does not only address the physical changes (i.e. "Environment") but also the socio-economic factorts that define people's vulnerablities.	Point captured . The focus of WGIII is on mitigation. The Finance and Investment chapter needs to acknowledge the link to adaptation and resilience. As it stands, we also have a sub-section on loss and damage. Hence we will ensure your point is captured and cross-referenced where most apropriate.	Jan Kowalzig	Oxfam Germany	Germany
12759	34				Also, the figure misses a box "Climate change loss and damage" that could be placed next to the "Climate change adaptation" box. With ist dedicated article in the Paris Agreement, loss and damage has been established as the third pillar of the international effort to ceal with the climate crisis. This figure should not ignore this development.	point captured . The focus of WGIII is on mitigation. The Finance and Investment chapter needs to acknowledge the link to adaptation and resilience. As it stands, we also have a sub-section on loss and damage. Hence we will ensure your point is captured and cross-referenced where most apropriate.	Jan Kowalzig	Oxfam Germany	Germany
25391	35	6	35	9	Delete "Hence, since AR5, ... (see Section 15.3.3)."	Rejected. The motivation for this suggested deletion is not provided.	Eleni Kaditi	Organization of the Petroleum Exporting Countries (OPEC)	Austria
46673	35	17	35	17	why does this crucial point arrive only at p.35? It should be somewhere in the beginning to explain what finance is about.	Accepted . The chapter team is considering options to strenghten and potentially bring further upfront the discussion relating to definitions, which could also cover actors and instruments. In doing so we will ensure further coherence of terms used.	Hugues Chenet	University College London — Institute for Sustainable Resources	France

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
5245	35	17	35	31	The text already refers to the finance sections of sector specific chapters. It may make sense to repeat individual aspects here. Among other things, close relationships with financing options for buildings are dealt with in chapter 9. It is suggested to refer to current trends again using the example of "buildings". These are (1) energy efficient mortgages, (2) the integration of aspects of building energy performance and carbon footprint in the value determination (valuation) as a prerequisite for the granting of discounted financial terms as well as (3) the taxonomy of the European Commission. Information is available at: https://energyefficientmortgages.eu/; http://renovalue.eu/; https://ec.europa.eu/info/publications/sustainable-finance-teg-taxonomy_en	Accepted . Cross-references with sector chapters and how they address the issue of investment and financing specifically for their sector will indeed be strenghtened in the next drafts.	Thomas Lützkendorf	Karlsruhe Institute of TEchnology (KIT) - Research University of Helmholtz Association	Germany
15301	35	21	35	22	"public or private" is missing	Accepted and addressed . This is indeed an often used distinction, which we are obviously also considering. There are, however public actors investing on commercial bases (e.g. some SOEs, some pension funds) and private actors investing on non-commercial bases (e.g. philantropies). So the simple public versus private dichotomy needs to be nuanced	Esther Badiola	European Investment Bank	United States of America
15303	35	29	35	30	We should also mention the increased use of blended finance, alongside the bonds or separately in a new paragraph. Blended finance uses public - sector development finance to spur additional private investment. See ODI Report "Blended finance in the poorest countries". April 2019.	Accepted. The emergence of blended finance is indeed a notable development in the development finance space. We will make sure it is featured where relevant in the chapter.	Esther Badiola	European Investment Bank	United States of America
14331	35		35		The figure 15.7 is not well explained in the text.	Addressed . Figure and accompanying text will be enhanced.	ÓSCAR CARPINTERO	University of Valladolid	Spain
38277	36	20	36	25	Statements included in this paragraph should appear in the ES	Accepted . We will consider your suggestion in the next version of the ES.	Yamina Saheb	OpenExp, Ecole des Mines de Paris	France

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
28377	36		37		Section 15.3.2.2 on "International climate finance architecture" currently is surprisingly short and simplistic. It seems to suggest that the emerging multilateral climate finance under the umbrella of the UNFCCC is efficient and effective and the existing decentralised system is inefficient and potentially disfunctional. Unfortunately the real experience with the GCF and other UNFCCC financing instruments has been rather mixed. Excessive bureaucracy, over-politicized decision making and insufficient technical and implementation capacity have been identified as weak spots of these instruments. At the same time the system under the UNFCCC umbrella makes use of large parts of the existing climate finance system. There seems to be limited empirical basis to construct a conflict between good centralised and ineffecient decentralised climate finance. The section should be rewritten, expanded and give a fair and science-based reflection of the situation and system.	Point well noted . The section is and will remain deliberately short as this will be further adressed in Chapter 14 on Internatonal Co-operation. But your points are well taken and will be reflected in what remains in Chapter 15 text as well.	Jochen Harnisch	KfW	Germany
46675	36	1			here "climate finance" talks only about public/gvt funds. Quite contradictory to what has been explained before as a broad frame including also private market finance…	Noted . Not sure there is a contradiction here, but rather a zoom on a part of the system. Which we will, however, as you suggest, find a way to better relate to the big picture discussion, e.g. discussion of local capital markets in developing countries that comes later in our chapter	Hugues Chenet	University College London — Institute for Sustainable Resources	France
28375	36				Figure 15.6 "Overview of the architecture of international climate finance" seems biased in attemptung to suggest excessive complexity and should be replaced by the more fair representation of decentralised climate finance flows as used in the mappings of the CPI. Any working international system including the UN system, the UNFCCC bodies or the international payment system can be presented visually in a way to suggest excessive complexity to the laymen. IPCC should avoid the use of negative visual language. The current Figure 15.7 already gives a more balanced picture of the situation.	Addressed . The section is and will remain deliberately short as this will be further adressed in Chapter 14 on Internatonal Co-operation. But your points are well taken and will be reflected in what remains in Chapter 15 text as well.	Jochen Harnisch	KfW	Germany

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
43781	37	10	37	12	Cross reference with page 33 [my comment was: There are some important issues raised here (p.33 lines 14-24) that might benefit from being highlighted in the introduction. Refer also to the first sentence of section 5.3.3.1 (page 37 lines 10-11) - these issues get lost in the overall chapter.]	Coherance improved . The chapter team is considering options to strenghten and potentially bring further upfront the discussion relating to definitions, which could also cover actors and instruments. In doing so we will ensure further coherence of terms used.	Kirsty Hamilton	Chatham House (Associate Fellow, unpaid)	United Kingdom (of Great Britain and Northern Ireland)
18957	37	11	37	12	"… to face the same definitional and reliability issues than AR5 …": 'than' seems not a correct word	Accepted . Sentence will be edited.	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea
17391	37	11	37	20	According to discussions held during COP25 and lack of international consensus in IPCC special report on the impacts of global warming of 1.5 °C above pre-industrial levels, the mentioned texts should appear to be reviewed.	Accepted. This wording aims precisely to acknowledge the lack of international consensus. We will consider how to improve and avoid misunderstandings.	Zeyaeyan Sadegh	Islamic Republic of Iran Meteorological Organization (IRIMO)	Iran
15305	37	22	37	23	indicate units pls	Accepted . We will do so	Esther Badiola	European Investment Bank	United States of America
4839	37	31	38	2	Stating that cross-border financing has had a limited role to date could be misleading. By a matter of fact, actions such as the Clean Development Mechanism (CDM) managed to raise significant amount of cross-border, climate-related investments. For instance Chinese-hosted CDM projects managed to raise about $200 billion in climate-related investments from 2005 to 2012 (see Stua, M., 2013. Evidence of the clean development mechanism impact on the Chinese electric power system's low-carbon transition Energy Policy 62, 1309–131).	Accepted . This paragraph/section describes volumes, not what played a role in mobilising finance (which includes many other instruments than CDM), which is discussed elsewhere in the chapter, but needs to be acknowledged and cross-referenced here indeed.	michele stua	APE-FVG	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
320	37	9	47	33	The academic understanding of the international climate finance landscape is hugely obscured by the fact that it heavily relies on data self-reported by bilateral donors and obtained with the Rio marker methodology. This methodology was elaborated by developed countries under the Development Assistance Committee (DAC) of the Organisation for Economic Co-operation and Development (OECD) in order to track the mainstreaming of Rio Conventions' considerations into development cooperation practices (OECD 2012, 62). The credibility of the Rio marker data has been called into question by various studies (Roberts et al. 2008; Michaelowa and Michaelowa 2011; Junghans and Harmeling 2012; Weikmans et al., 2017; Kono & Montinola, 2019). These analyses are important because the quality of the Rio marker data is not systematically and publicly assessed by the OECD or by any other third party. As highlighted by the OECD, "the [OECD DAC] Secretariat can undertake in-depth quality reviews of marker data only occasionally, and while it may spot anomalies when conducting specific analyses or preparing data for publications, quality relies essentially on members' own checks" (OECD 2013, 11). Relying almost exclusively on donor countries' self-reporting on such important data leads to a variety of biases in the understanding of the true size and nature of developed countries' financial support to developing countries (Weikmans et al., 2017; Kono & Montinola, 2019). There is a consensus in the academic literature on the fact that the Rio marker database reflects huge overestimations: far fewer projects than the developed countries reported were found to be relevant to what can be considered climate change mitigation and adaptation (Roberts et al. 2008; Michaelowa and Michaelowa 2011; Junghans and Harmeling 2012; Weikmans	point noted . Rio-marker are only used in the context of climate-related bilateral development finance as recorded by the OECD DAC, which represents a relatively small portion of tracked global climate finance flows. Your points are, however, well the same level of scrutiny would be needed for other sources of climate finance data as well.	Romain Weikmans	Université Libre de Bruxelles / Free University of Brussels	Belgium
12761	38	24	38	27	See comment 6 - what's even less documented is what people already today are paying (inclduing foregoing wealth/income) by being forced to adapt. While there may not be a lot of research in it, one can assume it's substantial, so could be mentioned here.	Noted. WG III focuses on mitgation. But the difficulty and gap in tracking adaptation-related finance will be strengthened, with cross referencing to relevant sections of our Chapter as well as WG II.	Jan Kowalzig	Oxfam Germany	Germany

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
40035	38	27	38	27	Ad the end of the paragraph add: "Moreover, data on public finance support to fossil fuel investments, for example, through officially supported export credits remains opaque (Shishlov et al. 2020)." New reference: Shishlov, Igor; Weber, Anne-Kathrin; Stepchuk, Inna; Darouich, Laila; Michaelowa, Axel (2020): Study on external and internal climate change policies for export credit and insurance agencies. Perspectives Climate Group, Freiburg. Reason: important to refer not only to increase climate finance but also to reduce not-compatible finance.	Noted. We will consider the proposed reference	Axel Michaelowa	University of Zurich	Switzerland
15307	38	31	38	34	this point is unclear. Redrafting needed.	Accepted . Will be redrafted.	Esther Badiola	European Investment Bank	United States of America
12763	39	10	39	17	There is also no robust method to define the "climate-relevance" of provided/reported climate finance, creating the risk of substantial overestimation of the levels of climate finance made available, when funds for programmes/projects are counted (in whole or partially) that only have minor climate-specific components. See also next comment.	Addressed . This point is already acknowledged elsewhere in the section but could be reiterated here.	Jan Kowalzig	Oxfam Germany	Germany
40037	39	10	39	17	Please expand this section to cover the issues of how to treat concessional loans (face value or grant equivalent), how to account for the "significant" Rio marker (some countries do it 40%, others at 50%)	Noted . The points you raise will be acknowledged.	Axel Michaelowa	University of Zurich	Switzerland
12765	39	39	39	43	The two Oxfma reports mentioned here did not only estimate net flows but also estimated the climate-specific proportion of provided climate finance, taking into account the over-reporting of finance for projects/programmes with only low climate relevance. So in total Oxfam estimated the net climate-specific flows in reported gross flows. DISCLAIMER: I was involved in the research underpinning the first of these reports.	noted . The points you raise will be acknowledged	Jan Kowalzig	Oxfam Germany	Germany
48129	39		40		The issue of Export Credits only appears to receive mention in box 15.3. However, it is surely a major dimension of current finance structures which appear to be exacerbating the problem: a recent survey of data and other literatture see DeAngelis K. and Bronwen Tucker (January 2020), Adding Fuel to the Fire: Export Credit Agencies and Fossil Fuel Finance. Friends of the Earth US / Oil Change International. . See also the brief reference in Chapter 1 to the role of State-owned Enterprises in coal investments, the role of which are not mentioned at all in Chapter 15; it would be helpful if Chapter 15 could look more closely at these structures (and advise Chapter 1 on appropriate framing).	Accepted . The paragraphs relating to "brown" finance, which comes a little later in the section will be expanded and will include direct references to the role of export credits, which is well documented indeed.	Rachel Freeman	University College London, Energy Institute	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
18959	39	8			"… at the same time than the goal was set, …": again, 'than' seems not a correct word	Addressed . Will be redrafted	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea
1357	39	39			Box 15.3 When I researched the 100billion figure it came from one study (which I do not think was in the peer-reviewed literature) the figure was repeated and then became common currency. My advice would be to assess this figure. It also includes both adaptation and mitigation.	Rejected. I am afraid I do not understand this comment. The USD 100bn figure comes from the UNFCCC process (Copenhagen and Durban COPs)	David Viner	Mott MacDonald	United Kingdom (of Great Britain and Northern Ireland)
43783	40	22	40	22	This might benefit from an introductory sentence rather than going straight into ESG. A critical linkage sentence is needed in the section between paragraph that ends 17 and the one that begins line 18 on page 41. This is in recognition of the fact that linkage between analysis and trends in the overall supply of finance (or specific instruments to facilitate the availability of capital e.g. green or sustainability bonds) and the deployment of available capital (which goes far beyond ESG and green bonds - e.g. allocations by institutional investors to infrastructure funds). Deployment of capital into climate solutions at the pace and scale required has a different set of drivers, not least government policy, regulation and the use of public financing tools. See also page 44 15.3.4.	Accepted. revised	Kirsty Hamilton	Chatham House (Associate Fellow, unpaid)	United Kingdom (of Great Britain and Northern Ireland)
40163	40	26	40	27	A mention to the fact that stnadardized and consolidated ratings for ESG, climate and environmental financial products is missing should be included and discussed (e.g. Berg et al. 2019) because it could be a main driver of greenwashing (Hoepner et al. 2017), thus increasing market uncertainty and potentially delaying the redirection of financial flows towards climate-aligned investments. REF: Berg, Florian and Kölbel, Julian and Rigobon, Roberto, Aggregate Confusion: The Divergence of ESG Ratings (August 17, 2019). MIT Sloan Research Paper No. 5822-19. Available at SSRN: https://ssrn.com/abstract=3438533 or http://dx.doi.org/10.2139/ssrn.3438533, 2. Hoepner, A. G., Dimatteo, S., Schaul, J., Yu, P. S., & Musolesi, M. (2017). Tweeting About Sustainability: Can Emotional Nowcasting Discourage Greenwashing?. Forthcoming in Corporate Finance, 8.	Accepted. text revised	Irene Monasterolo	Vienna University of Economics and Business (WU)	Austria

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
36545	40	28	40	30	This is a good case of the debate about the nature of demand and supply, say additional one or not. 1/ Climate Bond Initiative does not say this is additional one and many financial initiatives is understood that it is the transformation of financial market. What is the nature of demand for finance, additional demand or total demand? When finance demand at AR6 is intended to be additional demand, is what kind of financial flow included? 2/ Many of financial initiatives includes energy efficiency, the same as this chapter, but there is a big gap about the condition/definition of energy efficiency. Almost all new investment realize the efficiency improvement so it is better to sort out what is the way to define energy efficiency investment and finance. Voluntary finance initiative may provide big impact on the market. So sorting out the methodology for the classification is important.	Taken into account. text revised regarding additionality; energy efficiency definitions beyond the scope of the chapter; voluntary initiative impact discussed in another paragraph	Takashi Hongo	Mitsui & Co. Global Strategic Studies Institute	Japan
46771	40	30	40	37	"Climate Bond Initiative" is an error. It should be "Climate Bonds Initiative".	Editorial. text revised	Kim Schumacher	School of Environment and Society, Tokyo Institute of Technology	Japan
46913	40	30	40	37	"Climate Bond Initiative" is an error. It should be "Climate Bonds Initiative". (2)	Editorial. text revised	Kim Schumacher	School of Environment and Society, Tokyo Institute of Technology	Japan
15309	40	31	40	31	Since 2007[, when the European Investment Bank issued the first green bond (called Climate Awareness Bond)] 43% of	Accepted. text revised to reference first CAB and first GB	Esther Badiola	European Investment Bank	United States of America
15311	40	40	40	41	I am not sure that this statement is correct. Are you sure that the proceeds of funds go to refinancing of existing projects? I fear there may be a conceptual missunderstanding. When a financial institution issues a green bond, the proceeds go to finance investments in selected sectors and activities (mitigation: RE, EE, low-carbon transport etc.). There is no refinancing but the channeling or ring fencing of these proceeds to finance specific green projects.	Accepted. text revised to clarify that new or existing projects can be financed, and in some cases the bond financing replaces other financing structures	Esther Badiola	European Investment Bank	United States of America

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
40039	40	41	40	41	Insert after "for new climate projects and additional GHG reductions.": "Moreover, the labeling bonds as "green" by itself does not lead to additional financing of mitigation or adaptation projects as these can be financed by bonds without labeling. The financial additionality of green bonds is therefore questionable (Shishlov et al. 2016; Nicol et al. 2018; Dupre et al. 2018)." References: - Shishlov, Igor; Morel, Romain; Cochran, Ian (2016): Beyond transparency: unlocking the full potential of green bonds. I4CE – Institute for Climate Economics, Paris. - Nicol, Morgane; Shishlov, Igor; Cochran, Ian (2018): Green Bonds: Improving their contribution to the low-carbon transition. I4CE – Institute for Climate Economics, Paris. - Dupre, Stan; Posey, Taylor; Wang, Tina; Jamison, Tricia (2018): Shooting for the moon in a hot air baloon? 2° Investing Initiative, Paris.	Accepted. combined with other comment on additionality	Axel Michaelowa	University of Zurich	Switzerland
46785	40	22	42	6	Section "15.3.3.2 Broader investment and financial flows and stocks" is very scarce on "ESG factor intregation" contextualisation, a key element of climate finance. Much more literature coverage required.	Noted. Will be considered in SOD	Kim Schumacher	School of Environment and Society, Tokyo Institute of Technology	Japan
47041	40	22	42	6	Section "15.3.3.2 Broader investment and financial flows and stocks" is very scarce on "ESG factor intregation" contextualisation, a key element of climate finance. Much more literature coverage required. (9)	Accepted. Neccesary adjustment including additional literature provided	Kim Schumacher	School of Environment and Society, Tokyo Institute of Technology	Japan

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
27889	40	25	42	6	While there is mention of broarder investment and financial flows and stocks, which is an acknowldgement of broader public markets and ESG efforts, including equity, debt, etc., this section seems to lack an acknowledgement of efforts to align investment portfolio's with the Paris agreement and 1.5/2 degree scenarios. Many mutual funds and ETF's are being classified as low carbon and can play a signifiant role in rewarding those companies who are better managing emissions and addressing climate change. It seems a section could be dedicated to addressing these mainstream market instruments and the potential benefit or not, to such approaches. It would seem to me that anywhere that we can further the concern for climate change and enable mainstream financial market solutions should only be enocuraged. This might refence efforts of the Science based targets initiative to align portfolios with the paris climate agreement, the EU Sustainable Finance taxonomy or data providers such as MSCI and Morningstar with their low carbon flags for funds. There are also many academic papers or quantitative studies that attempt to quantify alpha when tilting portfolio's to ESG factors broadly or climate factors specifically.	Accepted. text revised	drew schechtman	Voya Investment Management	United States of America
46975	40				While Esg factors can be indicators for environmentally and socially desirabe investment opportunities there is a risk of these factors being watered down, thus allowing 'Esg-washing'. The risk of weaker private sector ESG factors needs to be taken into account. A 'universal public ESG framework' (Gabor 2019: 2) could solve some of these problems. Gabor, Daniela (2019). 'Securitization for Sustainabili.ty. Does it help achieve the Sustainable Development Goals? Heinrich Böll Foundation. https://us.boell.org/sites/default/files/gabor_finalized.pdf. Critical scrutiny of any label is required to ensure actual compliance with climate targets.	Accepted. text revised to reflect impact of ESG	Elena Hofferberth	University of Leeds	United Kingdom (of Great Britain and Northern Ireland)
40041	41	6	41	6	Add at the end of the paragraph: "However, to what extent this increased demand for green financial product may translate into a premium on the market remains uncertain (Shishlov et al. 2016)." Reference: Shishlov, Igor; Morel, Romain; Cochran, Ian (2016): Beyond transparency: unlocking the full potential of green bonds. I4CE – Institute for Climate Economics, Paris.	Taken into account. more recent references included in box on green product premiums on page 72	Axel Michaelowa	University of Zurich	Switzerland

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
2567	41	7	41	17	If divesting is said to have little impact, could you please clarify why and how can pledges create significant mitigation outcomes?	Accepted. text revised	Lilia Caiado Coelho Beltrao Couto	University College London	United Kingdom (of Great Britain and Northern Ireland)
25393	41	13	41	17	Delete "Further, the divestments … (2° Investing Initiative 2019).", these are subjective arguments.	Taken into account. text revised to reflect additional research	Eleni Kaditi	Organization of the Petroleum Exporting Countries (OPEC)	Austria
38279	41	18	41	24	Beyond the public financial support which is provided to fossil fuels activities, countrie ssignatories (53+EU) of the energy charter treaty protect foreign investment in fossil fuels by means of private arbitration which is a threat to changes in regulations to make them Paris compatible, see: https://www.openexp.eu/sites/default/files/publication/files/modernisation_of_the_energy_charter_treaty_a_global_tragedy_at_a_high_cost_for_taxpayers-final.pdf	Noted. The reference you provide and the point it supports will be considered for potential inclusion.	Yamina Saheb	OpenExp, Ecole des Mines de Paris	France
38281	41	18	41	35	Evidence provided in this section should be included in the ES	Noted. The ES already makes a clear point about the current misalignment but we will consider a specific mention of fossil fuel subsidies and their impact.	Yamina Saheb	OpenExp, Ecole des Mines de Paris	France
32355	41	19	41	21	Can you provide a list of the most misaligned policies in non-climate policy areas and where in the world those occur? A few graphs to present some of the issues that are descibed in this paragraph lines 18 -35 would be useful	Noted. We will consider a graphic representation of brown investment and financing flows/stocks. A policy mapping it outside of the scope of this Chapter but cross referencing to relevant other Chapters will be ensured.	Penny Apostolaki	Barclays	United Kingdom (of Great Britain and Northern Ireland)
25395	41	21	41	35	Delete "While public financial institutions …, Schwanitz et al. 2014).", as these are subjective arguments.	Rejected. The motivation for this suggested deletion is not provided.	Eleni Kaditi	Organization of the Petroleum Exporting Countries (OPEC)	Austria

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
40043	41	24	41	24	Add another reference to latest research on export credits: "(Shishlov et al. 2020)". New reference: Shishlov, Igor; Weber, Anne-Kathrin; Stepchuk, Inna; Darouich, Laila; Michaelowa, Axel (2020): Study on external and internal climate change policies for export credit and insurance agencies. Perspectives Climate Group, Freiburg.	Noted. The paragraphs relating to "brown" finance will be expanded and will include direct references to the role of export credits, which is well documented indeed. The reference you provide will be considered in this context.	Axel Michaelowa	University of Zurich	Switzerland
40165	41	34	41	35	It was estimated that a gradual phasing out of fossil fuels subsidies could be effective in signal the market and reduce risks of stranded assets and distributive effects of a low carbon transition, in particular when coupled with fiscal policies (e.g. a carbon tax) and reinvestments of revenues to support low-carbon enregy investments (Monasterolo and Raberto 2019). REF: Monasterolo, I., Raberto, M. (2019). The impact of phasing out fossil fuel subsidies on the low-carbon transition. Energy Policy, 124, 355-370. https://doi.org/10.1016/j.enpol.2018.08.051	Noted. The reference you provide and the point it supports will be considered for potential inclusion.	Irene Monasterolo	Vienna University of Economics and Business (WU)	Austria
40045	41	38	41	38	Add after "reporting on communicating about their ‘green’ activities." : "This is the case, for example, of export credit agencies that remain highly opaque in terms of reporting of the GHG intensity of their portfolios (Shishlov et al. 2020)." New reference: Shishlov, Igor; Weber, Anne-Kathrin; Stepchuk, Inna; Darouich, Laila; Michaelowa, Axel (2020): Study on external and internal climate change policies for export credit and insurance agencies. Perspectives Climate Group, Freiburg	Noted. The paragraphs relating to "brown" finance will be expanded and will include direct references to the role of export credits, which is well documented indeed. The reference you provide will be considered in this context.	Axel Michaelowa	University of Zurich	Switzerland
25397	42	1	42	6	Delete "Global investment in oil and gas … temperature goal.", as this is a policy prescriptive statement.	Noted. We will consider how to adjust the language but note that the current wording already does not contain any policy-related implication or recommendation.	Eleni Kaditi	Organization of the Petroleum Exporting Countries (OPEC)	Austria
38283	42	1	42	6	See recent IEA report on oil and gas companies investment which shows that only 0,8% of their total investment in 2019 went to renewables and CCS. https://www.iea.org/reports/the-oil-and-gas-industry-in-energy-transitions	Taken into account. Indeed we already rely on the IEAs analyses and will consider this additional reference.	Yamina Saheb	OpenExp, Ecole des Mines de Paris	France

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
6757	42	9	42	9	For many relevant cases, besides purchasing of durable goods such as cars, appliances or family housing, I would think that investment decisions are taken within organizations (committees), often with certain procedures designed to minimize the discussed behavioral "failures". The box should made clearer in which circumstances this behavioral failures apply. Moreover, it would be helpful if the used examples have a closer connection to investment decisions.	Accepted. revised to ensure clarity	Schenker Oliver	Frankfurt School of Finance & Management	Germany
6759	42	9	42	9	There is also a substantial literature that explores the role of these failures on the household level, in particular when purchasing energy using applicances. See e.g Allcott and Taubinsky (2015), Allcott and Greenstone (2012) or Heutel (2019) on energy-efficiency. Kashay and Osberghaus (2018) on adaptation decisions of households.	Noted. Will be considered in SOD	Schenker Oliver	Frankfurt School of Finance & Management	Germany
27561	42	9	42	9	This box on behavioural issues has interesting content but is a bit long and comes across as a bit disembedded from the chapter. Some anchoring text that relates it to core themes would help.	Noted. Material transferred to Ch5	Navroz Dubash	Centre for Polcy Research	India
6483	42	9	44	18	The behavioural box needs to be re-framed around low-carbon investment/climate finance, with a focus on how these behavioural biases affect investors' decision making. In its current form it only lists some common behavioural biases disconnected from the issues covered in the Chapter. Ideally this box could fit in the general discussion on barriers to investment, but taking a behavioural perspective.	Noted. Material transferred to Ch5	Nadia Ameli	University College London	United Kingdom (of Great Britain and Northern Ireland)
25719	42	9	44	18	Please check linkages of Box 15.4 to Chapter 5 and Chapter 13 - this material might fit better within other chapters as the focus of the Box as written appears broader than investment and finance.	Noted. Material transferred to Ch5	Renee van Diemen	WG III TSU	United Kingdom (of Great Britain and Northern Ireland)
15313	42	10	44	18	This section, while very interesting, does not seem to fit here without further elaboration. Nor in this chapter. Shouldn't it go to Chapter 5 on Demand and Social Aspects?	Noted. Material transferred to Ch5	Esther Badiola	European Investment Bank	United States of America
2671	44	21	44	27	This subsection 15.3.4 hardly addresses the issue of profitability of investments related to climate change. This issue is however of prime importance whenever one wants to mobilize the participation of the private sector. Examples in this chapter mostly refer to renewable energy, in which case profitable businesses may conceivably happen; this is however but a fraction of mitigation sectors.	Noted. Will be considered in SOD	Philippe Waldteufel	CNRS/IPSL/LATMOS	France

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
43785	44	28	45	4	The diagram on page 45 seems very focused on bonds, other than a brief reference in the box second-top left to 'equity investment'. Is that by design? In which case do you also need a diagram for the ecosystem of finance around projects/infra/sector level finance?	Noted. Figure will be clarified	Kirsty Hamilton	Chatham House (Associate Fellow, unpaid)	United Kingdom (of Great Britain and Northern Ireland)
33555	44	21	47	31	This sub-section on public-private and mobilization narrative and current initiatives is quite theoretical and there is very little evidence of current initiatives in the section. This aspect of the message should be emphasized in the SOD.	Accepted . Text revised	Debra Roberts	EThekwini Municipality	South Africa
6761	45	1	45	1	Figure 15.7 needs better explanation. What is the aim?	Taken into account. Better explanation will be given in SOD	Schenker Oliver	Frankfurt School of Finance & Management	Germany
36547	45	1	45	2	Fig.17.7 is an interesting but its message should be clearer. 1/ Is “South” or “North” appropriate? Like ASEAN and China, it is not easy to divide countries into two groups. For instance, how to deal Chinese money to Belt and Road partner countries? 2/ What does brown arrows mean? When donors mean governments, does brown arrow indicate subsidies? 3/ Why is the liquidity of donors highest?	Taken into account. Better explanation will be given in SOD	Takashi Hongo	Mitsui & Co. Global Strategic Studies Institute	Japan

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
37767	45	1	45	12	The report endorses the World Bank's Maximising Finance for Development/Cascade approach without considering, even in passing, the following critical points: 1. The potential gains from organising development interventions around questions of “how to sell development finance to the market” are overstated, while the costs - in terms of structural changes in the financial sector towards local currency bond markes and the de facto privatization of public services via Public-private partnerships (PPPs) - are downplayed. 2. The report endorses 'green securitisation' - as a derisking instrument to be promoted by MDBs - without considering that the social/developmental impact of the turn to securitization is likely to be negative since it effectively encourages the (indirect) privatisation of public services, necessary to both generate and de-risk cash-flows that can be directed to the owners of securities; and that MDBs’ turn to securitization may further dilute accountability, by increasing intermediation chains and reducing the (already weak) incentives for continuously enforcing E&S compliance in tranches and underlying loans. See Gabor, D. (2019) Securitisation for Sustainability. Does it help achieve the Sustainble Development Goals. report for the Heinrich Boll Foundation.	Noted. We did not aim to "endorse" the WB approach. Wording has been revisited	Anne Loescher	Uni Leeds	United Kingdom (of Great Britain and Northern Ireland)
38285	45	4	45	6	Here reference should be made to the misuse of development funds to finance carbon intensive infrasctures, see for example the use of the EU SE4ALL facility and the EU 11th Development fund to facilitate the accession of developing countries to the ecocide energy charter treaty. See: https://www.energycharter.org/fileadmin/DocumentsMedia/CCDECS/2018/CCDEC201819_-_NOT_Report_by_the_Secretary_General.pdf	Noted. Will be considered in SOD	Yamina Saheb	OpenExp, Ecole des Mines de Paris	France
6489	45		45		This figure is difficult to read, it doesn’t provide any clear message on options to mobilise private capital and is somehow misleading. I’d suggest to re-structure or remove it. In particular: - It doesn’t represent any risks for which instruments could be displaced; - It represents many public actors, but literally few private actors (e.g. institutional investors are quite prominent in the picture, while their contribution in practice is very little) - The three triangles (risk transfer to private sector, current liquidity/market volume, local currency options) are not clear and I’m not sure why they have been chosen as they represent different concepts. Moreover, it’s really difficult to understand how they will be affected by the other ‘factors’/elements in the chart - for instance, why liquidity is high for green bonds and not for general bonds?	Noted. Figure has been reworked	Nadia Ameli	University College London	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
14329	45		45		The table 15.6 provides much more information than the text. The table content refers not only to the financial actors and instruments, but also to the sources of financement, the project initiators and the climate relevant sectors	Noted. Figure has been reworked	ÓSCAR CARPINTERO	University of Valladolid	Spain
10569	45				It is a bit difficult to understand what the figure means. It may better to elaborate more. And, what the green circle mean? Maybe geren project? Also, it only covers bond and equity, but what about other asset class? If the figure only focus on bond and equity, it should be specified.	Noted. Figure has been reworked	Noriko Shimizu	Research Institution	Japan
16031	45				Include other debt products besides bonds only. Also include funds and private entities like direct investors	Noted. Figure has been reworked	Jason Patrick	New Zealand Green Investment Finance	New Zealand
46773	46	7	46	7	"Climate Bond Initiative" is an error. It should be "Climate Bonds Initiative".	Accepted. Text revised	Kim Schumacher	School of Environment and Society, Tokyo Institute of Technology	Japan
46915	46	7	46	7	"Climate Bond Initiative" is an error. It should be "Climate Bonds Initiative". (3)	Accepted. Text revised	Kim Schumacher	School of Environment and Society, Tokyo Institute of Technology	Japan
15315	46	13	46	13	The verb "is " is missing	Accepted. Text revised	Esther Badiola	European Investment Bank	United States of America
6491	46	31	47	31	This is the second section in the chapter discussing barriers to investment (please see my previous comment on this). For the clarity of the chapter, it’d be easier to have just one section on barriers to investment.	Noted. Will be considered in SOD	Nadia Ameli	University College London	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
37769	47	1	47	31	The Report offers a qualified endorsment of PPPs, suggesting that these offer significant efficiency gains and can scale up public investments. The wording, particularly in lines 22-31, is quite confusing, leaving the reader with the impression that, with the right institutional capacity, countries can ensure an adequate distribution of risks between private and public sector. But the report should be more explicit that (1) the efficiency gains rarely materialise, as is well known from various audits of PPPs in European countries https://op.europa.eu/webpub/eca/special-reports/ppp-9-2018/en/ or Bayliss, K. and Van Waeyenberge, E., 2018. Unpacking the public private partnership revival. The Journal of Development Studies, 54(4), pp.577-593. (2) that PPPs in the age of climate crisis may be putting increasing pressures on state budgets, when the state assumes demand risks and/or political risks. Countries faced with recurrent extreme climate events that threaten PPP infratructure projects will be forced to cover the associated demand risks (state will have to compensate PPP investors for flooded PPP highways, for instance). They may also have less room for manouvre to introduce ambitious climate change policies, since these 'transtion risks' will be treated as political risks in PPP contracts, for which the state will have to compensate investors.	Taken into account. The comment is well recieved. The intention of the text is to show that financing the improvment of absorptive capacity in goverment can help create the necessary stucture/institutions to enhance climate finance flows. While it is not the only barrier to climate finance, it is indeed an important one in devloping countries with inexistnet of young captital markets. We will rephrase to make this clearer. Also a section on climate finance risk will be added that can include the reviewers comments on risks for PPPs. A more balanced approach towards PPP will also be considered, and mention its potential caveats.	Anne Loescher	Uni Leeds	United Kingdom (of Great Britain and Northern Ireland)
38287	47	14	47	18	This conclusion must appear in the ES, see comment 17	Accepted. [The ES mentions the importance of capacity building and the abilty of the host to manage the private sector is a key matter to ensure clmiate flows and public private cooperation]	Yamina Saheb	OpenExp, Ecole des Mines de Paris	France
15317	47	32	47	32	I think that this section should include a sub-section on the increasing fragmentaiton of the climate finance landscape. See https://link.springer.com/article/10.1007/s10784-016-9349-2	Taken into account. [The fragmentation can be mentioned in the section describing the actors of the international climate finance system. But a new sub-section in the finance gap section will not be developed for this particular topic.]	Esther Badiola	European Investment Bank	United States of America
38289	47	35	47	39	See EEFIG report available at http://eefig.org/ on barriers on supply as well.	Accepted. [Thank you. A reference to this initiative will be added]	Yamina Saheb	OpenExp, Ecole des Mines de Paris	France

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
46679	48	14	48	15	this item (short termism) is KEY and should be treated as one of the main priorities. See Ameli et al 2019 and references there in. e.g. review of time horizons at stakes in https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3537673 "Planetary Health and the Global Financial System"	Accepted. [Thank you. A reference to this article will be included and the item highlighted]	Hugues Chenet	University College London — Institute for Sustainable Resources	France
3035	48	14	48	26	need also to mention among barriers those related to "financial inclusion" and access to multilateral and commercial funding in developing countries in addition to the large overhead costs associated wit multilateral and pubic funding.	Taken into account. [Thank you. The large overhead costs are mentioned as high transaction costs (percieved) in the last bullet of the list. The issue of "financial inclusion" will also be mentioned]	Mustafa Babiker	Aramco	Saudi Arabia
15319	48	27	48	28	I have signalled before that this qualitative assessment of financing needs would maybe better fit in this section, as these features partly explain the drivers of financing gaps. It could also fit under or before the "enabling envirnments"	Noted. We hope that the revisited SOD strcuture reads more easily	Esther Badiola	European Investment Bank	United States of America
43787	48	31	48	38	The topic raised in this paragraph is critical. I note that 'long-term pathways' need to be linked to near-term 'investment grade' policy and policy conditions to enable private investors deploy capital. By policy - I mean range of government decisions including public finance. For original project finance based work on this see for example 'Unlocking Finance for Clean Energy: the need for 'Investment Grade' Policy', Chatham House, December 2009; and also 'Finance Guide for Policymakers', Bloomberg New Energy Finance with Chatham House, Frankfurt School, FS-UNEP Collaborating Centre (http://about.bnef.com/white-papers/finance-guide-policy-makers/). There are a number of other sources which I have also referenced in comments including IRENA, IEA, ODI and CPI. I note that 'enabling environment' is mentioned on page 51 line 30. The linkage to page 49 lines 17-29 needs to be made - this is a critical paragraph in linking deployment of capital to regulatory conditions (in this case electricity markets).	Accepted. [Thank you for the comment and for the references. The last paragraph from p49 will be better linked to the cocept of 'investment grade' projects to unlock finance. Example of the power sector renewable energy and the development of strong regulatory frameworks`]	Kirsty Hamilton	Chatham House (Associate Fellow, unpaid)	United Kingdom (of Great Britain and Northern Ireland)
16033	48	14			There are other barriers to financial engagement, such as lack of incentives, standards and enabling regulation	Taken into account. [Thank you for the comment. A better distinction and more comprehensive list for barriers within and an outside of the financial sector will be developed]	Jason Patrick	New Zealand Green Investment Finance	New Zealand

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
25399	49	13	49	16	Delete "However, comparing total investments … sector allocations.", as this is a policy prescriptive statement.	Taken into account. [Thank you for the comment. The text will be rephrased to avoid a 'prescriptive' statement. However, the point to be made on reallocation of current energy investments will remain]	Eleni Kaditi	Organization of the Petroleum Exporting Countries (OPEC)	Austria
25401	49	28	49	29	Delete "which will have to change … investment activity."	Accepted. [Thank you for the commment. It will be deleted].	Eleni Kaditi	Organization of the Petroleum Exporting Countries (OPEC)	Austria
4841	50	10	50	25	The paragraph contains multiple typos and excessively long phrases. An editorial review is strongly suggested.	Accepted. Text revised, phrases shortened	michele stua	APE-FVG	United Kingdom (of Great Britain and Northern Ireland)
4843	50	26	50	29	The sentence is a copy-andpaste from lines 22-24 of page 21 of this Chapter.	Accepted. [Thank you. This sentence will be deleted]	michele stua	APE-FVG	United Kingdom (of Great Britain and Northern Ireland)
18961	50	15			"… food production (Fad et al. 2016)..": there are two periods at the end of the sentence	Accepted. Text revised	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea
37837	51	1	51	2	Figure 15.11: While a figure like this would be very useful if it can be done robustely, it is confusing the way it is now. Moreover, the reults are very much scenario dependent. Wrt to climate change losses, these depend on scenario temtperature outcomes, level of adaptation, and socioeconomic assumptions just to name three important aspects. In addition, the losses and the finance needs are intrinsically linked: the more financing available to adaptation, the lower the losses. But maybe the dummy data is confusing me. Are the bars supposed to represent investments made in mitigation, adaptation and disaster response (DR)? Then why are there negative varlues for adpatation and DR?	Taken into account. [See new version of the chart]	ALEXANDRE KOBERLE	COPPE/UFRJ	Brazil

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
36549	51	1	51	7	Please add timeline of GDP p.a. at the foot note. Are these number in 2030 or 2050 or others and under what scenarios?	Accepted. [Thank you. This figure needs revision, it will be enhanced for the SOD]	Takashi Hongo	Mitsui & Co. Global Strategic Studies Institute	Japan
4845	51	9	51	21	The whole paagraph is a copy-andpaste from lines 25-37 of page 4 of this Chapter.	Accepted. [Thank you. This paragraph will be deleted]	michele stua	APE-FVG	United Kingdom (of Great Britain and Northern Ireland)
25403	51	9	51	21	Delete "Regionally, the current focus … regional settings", as this is a repetition - already presented earlier in the chapter.	Accepted . revised accordingly	Eleni Kaditi	Organization of the Petroleum Exporting Countries (OPEC)	Austria
43789	51	24	51	33	It only works to call funding for regulatory environment a 'soft cost' if the chapter deals with the central importance of the policy and regulatory and public finance environment at domestic level comprehensively elsewhere. It may be a 'soft cost' if it is seen as technical assistance or capacity building, but for deploying capital into solutions on the ground the regulatory environment is likely to be a central feature of delivering climate-related outcomes. In final sentence on that page ref 'potentially varying starting points like readiness, pipelines as well as....' seems like a very casual use of the word 'pipelines'. Without explanation it is at risk of reading like jargon.	Accepted. [Thanks you. The sub-section will be names 'institutional capacity', not 'soft costs'. We agree that the language needs enhancing to sound vague and lose'].	Kirsty Hamilton	Chatham House (Associate Fellow, unpaid)	United Kingdom (of Great Britain and Northern Ireland)
6493	51	22	52	28	Please see my previous comment on barriers - this is third piece on it.	Accepted. [Thanks you. The sub-section will be names 'institutional capacity', not 'soft costs'. We agree that the language needs enhancing to sound vague and lose'].	Nadia Ameli	University College London	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
28373	51	1			To have something like Figure 15.11 seems to be the holy grail of analytical climate finance. The current draft figure currently seems to be based on desire and dummy data. Please make sure in further chapter work that this politically attractve visualisation is based on sufficiently robust analysis and consistent climate / emission pathways. It is questionable whether this basis exists / will soon exist. The respective figure would need to refer to a specific warming/emission scenario (1.5°C, 2.0°C, 2.5°C, 3.0°C) and a specific timeframe (say 2025-35 or 2035-45 etc,)	Noted. Will be considered in SOD	Jochen Harnisch	KfW	Germany
38607	52	8	52	12	It is my feeling that the progress report 2019 of CTCN could be quoted and referenced : UNEP, UNFCCC, UNIDO, 2019 : CTCN Progress Report, Connecting countries to the technologies they need. Web link : https://www.ctc-n.org/file/25117/download?token=Mi4Oz5kB	Accepted . Restructuing of the section has taking care of this	Jean-Yves CANEILL	IETA	France

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
43791	52	12	52	21	The linkage needs to be made between regulatory environment (eg page 49, lines 17-29); project pipeline - here - and capital deployment. Also box 15.5 on page 56 and section 15.6.2 on Enabling environments, including page 60 lines 26-31 and page 69 lines 16-17 and again the ODI work (referenced below) is covered on page 77 lines 27-28. Example grey literature sources on project pipeline, which I have referenced elsewhere include: 'Developing Robust Project Pipelines for Low Carbon Infrastructure", OECD, November 2018, from http://www.oecd.org/environment/developing-robust-project-pipelines-for-low-carbon-infrastructure-9789264307827-en.htm (I was an advisor and reviewer for this report), and a useful review of project development facilities in ODI's "Finding the Pipeline", Nov 2016. IRENA's work on structured finance also indiciates the central importance of policy and regulatory environment: 'Unlocking Renewable Energy Investment: The role of risk mitigation and structured finance", 2016 (Available from: https://www.irena.org/publications/2016/Jun/Unlocking-Renewable-Energy-Investment-The-role-of-risk-mitigation-and-structured-finance). In Ch6 comments I note that page 32, section 2.1 of this report succinctly covers the importance of the enabling policy and regulatory environment for attracting capital. I also noted this latter reference in a comment on page 15 of chapter 15. Early grey literature outlining the role of policy and regulation includes: 'Unlocking Finance for Clean Energy: the need for 'Investment Grade' Policy', Chatham House, December 2009 and evidence-based work on financier perspectives on renewables in developing countries "Scaling up Renewable Energy in Developing Countries, Finance and Investor Perspectives", Chatham House Programme Paper, April 2010, as well as a separate paper on MENA. A official submission to the early GCF-linked consultation with the financial sector is also available.	Acepted. The section has been structured and text revised	Kirsty Hamilton	Chatham House (Associate Fellow, unpaid)	United Kingdom (of Great Britain and Northern Ireland)
40167	52	16	52	16	"country credit ratings significantly at a time of significant stresses on public finances (Benali et al. 2018; Kling et al. 2018)". I would revise it in "country credit ratings and debt service significantly at a time of significant stresses on public finances (Benali et al. 2018; Kling et al. 2018)" because Kling et al.(2018) find small evidence in the cost of debt service for a few V20 (i.e. most vulnerable) countries that have been affected by climate-related past shocks, mostly from low-income areas.	Noted. Will be considered in SOD	Irene Monasterolo	Vienna University of Economics and Business (WU)	Austria

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
38291	52	22	52	29	The section on lock-in-effect must appear in the ES	Taken into account. ES revised to make room for new suggestions and current evidence in the SOD	Yamina Saheb	OpenExp, Ecole des Mines de Paris	France
40169	52	32	52	32	The citation of the results of Dafermos et al.(2018) is not correct in this context and should be either revised or deleted (in that paper, the authors do not talk about credit risk but of the impact of a green QE programme on the low-carbon transition).	Noted. Will be considered in SOD	Irene Monasterolo	Vienna University of Economics and Business (WU)	Austria
40171	52	32	52	32	With regard to credit risk implications of a disorderly low-carbon transition, Dunz et al (2020) find that while the introduction of a green supporting factor to foster green lending could have a short-term effect on greening investments but at the risk of increasing banks' and credit market instability, an early introduction of a carbon tax complemented with welfare measures could signal investors' reaction while preventing unintended effects on firms' non-performing loans and thus on banks' balance sheets. REF: Dunz, N., Naqvi, A., Monasterolo, I. (2020). Climate Transition Risk, Climate Sentiments, and Financial Stability in a Stock-Flow Consistent approach. Forthcoming on Journal of Financial Stability. Available at SSRN: https://ssrn.com/abstract=	Noted. Will be considered in SOD	Irene Monasterolo	Vienna University of Economics and Business (WU)	Austria
9725	52	30	53	2	The four headwinds: lack of references at this stage of the FOD	Addressed . Section completely overhauled and neccesary adjustments made	Nathalie Hilmi	Centre Scientifique de Monaco	France

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
6495	52	30	55	4	I have appreciated the discussion on macro-economic factors relevant to better understand investment patters. However, it probably should contain wider considerations on other aspects like: - the features of the current hyper-financialised economic system (financialisation etc.); - the economic environment still affected by the financial crisis (with low interest rates, difficulty in getting high returns, low growth rates, high levels of public and private debt); - the changing policy and institutional frameworks (unconvential monetary policies; macroprudential regulation; central banks occupying more institutional space reaching out for climate matters); - the changing global geopolitical setting (e.g. China rise); - the role (and limitations) of DFIs in lending to low-carbon projects. All of these factors are having impacts on the process through which investors decide how to invest and they can all be considered as potential policy response areas.	Noted. Will be considered in SOD	Nadia Ameli	University College London	United Kingdom (of Great Britain and Northern Ireland)
33557	53	9	53	11	Ensure that the relevant sections of the reports are correctly referenced in the SOD.	Noted. Will be considered in SOD	Debra Roberts	EThekwini Municipality	South Africa
4847	53	19	53	25	Given the relevance of the information included in these lines, the same would require adequate literature references and/or evidence.	Noted. Will be considered in SOD	michele stua	APE-FVG	United Kingdom (of Great Britain and Northern Ireland)
25405	53	19	53	25	Delete "As a result, the 'standard prescription' … income distribution", as this argument does not consider only inefficient subsidies	Accepted. Text revised accordingly	Eleni Kaditi	Organization of the Petroleum Exporting Countries (OPEC)	Austria
11617	53	35	53	39	I contest that global financial institutions continue to finance fossil fuel projects at a large-scale. This may be true for some US and Australian firms, e.g. AIG and Liberty Mutual, but others are divesting and, instead, transferring investment to more sustainable practices (e.g. Allianz and Aviva, as mentioned in previous comment). Unfriend Coal lists firms that continue to invest in coal, and rates others that are seeking low-carbon alternatives.	Taken into account. The entire section have been restructured and overhauled	Sarah Jones	JBA Risk Management	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
25407	53	35	53	39	Delete "But it is also the case that … low carbon investments", as this is a subjective statement.	Accepted . The entire section have been restructured and overhauled	Eleni Kaditi	Organization of the Petroleum Exporting Countries (OPEC)	Austria
27563	53	36	53	37	This statement that large scale financing of fossil fuels has increased significantly since 2016 needs to be backed by a citation	Accepted . Restructured and where citation needed has been provided	Navroz Dubash	Centre for Polcy Research	India
4849	53	45	54	3	The use of questions (i.e.: 'The reason?' and 'How big are these macroeconomic headwind consequences when taken together?') reduces the professionalism of the Chapter. I strongly suggest cutting them afrom the text.	Taken into account. The entire section have been restructured and overhauled	michele stua	APE-FVG	United Kingdom (of Great Britain and Northern Ireland)
12767	53				It strikes me that the probably most significant "headwind" is not mentioned: low ambition in many/most countries. Strong and ambitious legislation to cut emissions would do a great deal in shifting investments. As long as government plans aim for emission levels that fit to global pathways to 3°C or more, investments have no reason to divert from that path. For a long time investors have made it very clerar that they need an investment environment set by the government (or, more generally, society) they can act in.	Taken into account. The entire section have been restructured and overhauled	Jan Kowalzig	Oxfam Germany	Germany
37771	54	1	54	38	The Report should make it clear that any discussion of green finance has to first establish reliable standards that is a taxonomy of what is green and what is not (preferably in a shades of brown approach). This is critical to ensure that the state does not subsidise greenwashing, as it risks doing by for example organising its climate finance response via private ESG ratings. The report should be more explicit in highlighting the potential for greewashing that is hardwired in ESG ratings because of their significant variablity across providers (see Mark Carney https://www.bankofengland.co.uk/-/media/boe/files/speech/2019/tcfd-strengthening-the-foundations-of-sustainable-finance-speech-by-mark-carney.pdf?la=en&hash=D28F6D67BC4B97DDCCDE91AF8111283A39950563). Also see a detailed discussion of taxonomies here https://labour.org.uk/wp-content/uploads/2019/11/12851_19-Finance-and-Climate-Change-Report.pdf	Taken into account. The entire section have been restructured and overhauled	Anne Loescher	Uni Leeds	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
9727	54	3	54	3	very large: is it possible to quantify please. Any reference?	Taken into account. The entire section have been restructured and overhauled	Nathalie Hilmi	Centre Scientifique de Monaco	France
6765	54	3	54	5	Unclear what the source of the 2.7% GDP figure is.	Taken into account. The entire section have been restructured and overhauled	Schenker Oliver	Frankfurt School of Finance & Management	Germany
46203	54	3	54	8	Sentence too long	Revised . The revision took note of this	Khalil HELIOUI	EDF Lab Paris Saclay	France
37849	54	5	54	5	this figure of 2.7% of world GDP requries a reference for the source of this estimate.	Taken into account. The entire section have been restructured and overhauled	ALEXANDRE KOBERLE	COPPE/UFRJ	Brazil
37773	54	11	54	38	The macro-choices do not explictely include the penalising of brown assets/investments, through for example the collateral framework of central banks or through national/global regulatory regimes for banks and institutional investors. This is problematic since the paper cited in that section - Krogstrup and Oman 2019 - does mention brown-penalisng factor as one important tool. This is important because with the proper calibration, brown penalising factor could be more effective to re-orient financial flows towards green investments than the derisking strategies discussed in points (c) / (d)/(e). see for instance https://labour.org.uk/wp-content/uploads/2019/11/12851_19-Finance-and-Climate-Change-Report.pdf	Taken into account. The entire section have been restructured and overhauled	Anne Loescher	Uni Leeds	United Kingdom (of Great Britain and Northern Ireland)
37777	54	11	54	38	The report should discuss more explicitely the potential trade-offs between (b) and (c)+(d). If governments will redirect significant resources to deriksing 'green' finance, their ability to make significant public investments, to be a green developmental state respectively, will be considerably diminished, particularly in countries where coordination between green fiscal policies and green monetary policies (central banks purchashing/direct financing green public investments) is not possible	Taken into account. The entire section have been restructured and overhauled	Anne Loescher	Uni Leeds	United Kingdom (of Great Britain and Northern Ireland)
4851	54	14	54	37	While stating for four options (lines 14-15) you then propose 5 options.	Taken into account. The entire section have been restructured and overhauled	michele stua	APE-FVG	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
45649	54	19	54	22	The Coalition for Clmate Resilience Investment (CCRI) is a private sector led, but multisectoral effort to bring together financing bodies across public and provate domains to support climate resilient infrastructure investements. Potentially could be used as an example here. See comment 10 above.	Taken into account. The entire section have been restructured and overhauled	Geoffrey Saville	Willis Towers Watson	United Kingdom (of Great Britain and Northern Ireland)
37775	54	23	54	31	In relationship to (d), provide evidence for the assertion that SVMA-guided guarantees to private finance are fiscally superior because of the 'many times bigger multipliers'. This assumes that nudging of private finance via guarantees is more effective than brown-penalising factors, or than direct public investment. The multiplier effects of the derisking strategy are difficult to substantiate empirically, and the Report should do a much better job of providing support for such claims (note that the Krogstrup and Oman 2019 paper does not provide such support).	Taken into account. The entire section have been restructured and overhauled	Anne Loescher	Uni Leeds	United Kingdom (of Great Britain and Northern Ireland)
15321	54	38	54	55	There are already a number of initiatives that have emerged in this context. You may wish to mention the Coalition of Finance Ministers for Climate or the Network for Greening the Financial System (Central Banks) in addition to the TFCD, and notably, the Taxonomy of green activities adopted by the EUropean Member States to precisely try to shift financial investments into climate action and environmental sustainability	Taken into account. The entire section have been restructured and overhauled	Esther Badiola	European Investment Bank	United States of America
9729	54	42	54	42	Any proof that global growth would be stimulated? Ant reference here?	Taken into account. The entire section have been restructured and overhauled	Nathalie Hilmi	Centre Scientifique de Monaco	France
27565	55	5	55	5	Some of the discussion in this section gets into too much theoretical detail (examples below). It would be better to focus on the practical steps and associated empirical backing, and limit the theoretical under-pinnings to brief statements, with supporting boxes as needed for those interested.	Noted. We hope that the SOD version of the section is more appealing and more balanced	Navroz Dubash	Centre for Polcy Research	India
37821	55	30	55	42	There is substantial transition risk for sovereign funds/debt arising from public ownership of national fossil fuel extraction companies (NOCs e.g.) which are not discussed here. This is particularly the case in emerging markets and where NOCs may be excessively leveraged already. Mexico is a case in point with the sovereign guarantees of the NOC Pemex which carries large amounts of debt. But it is not an isolated case.	Noted. Aspect has been incorporated	ALEXANDRE KOBERLE	COPPE/UFRJ	Brazil
37823	55	30	55	42	Natural disaster clauses (hurricane clauses) are not mentioned anywhere but e.g. the case of the Barbados may be used as an example of such instyruments to enhance debt sustainability. https://www.imf.org/~/media/Files/Publications/WP/2020/English/wpiea2020034-print-pdf.ashx	Noted. Fair point.	ALEXANDRE KOBERLE	COPPE/UFRJ	Brazil

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
4853	55	37	55	40	When addressing "debt-for-nature and debt for-climate-swaps", I suggest you to expand your literature review. As for what concerns lessons learned from past experiences (mainly the CDM), this should include: Gandenberger, C., Bodenheimer, M., Schleich, J., Orzanna, R., Macht, L., 2015. Factors driving international technology transfer: Empirical insights from a CDM project survey. Climate Policy, 16(8), 1065–1084. Holm Olsen, K., Arens, C., Mersmann, F., 2018 Learning from CDM SD tool experience for Article 6.4 of the Paris Agreement, Climate Policy, 18(4), 383-395. Lema, A., Lema, R., 2013. Technology transfer in the clean development mechanism: Insights from wind power. Global Environmental Change, 23, 301–313. Stua, M., 2013. Evidence of the clean development mechanism impact on the Chinese electric power system's low-carbon transition. Energy Policy, 62, 1309–1319. Van der Gaast, W., Begg, K., Flamos, A., 2009. Promoting sustainable energy technology transfers to developing countries through the CDM. Applied Energy, 86, 230–236. Watson, J., Ockwell, D., Byrne, R., Stua, M., 2015. Lessons from China: Building technological capabilities for low carbon technology transfer and development. Climatic Change, 131(3), 387–399. As for what concerns future applications in a post-Paris context, this should include references to: Aglietta, M., Hourcade, J.-C., Jaeger, C., Peressin Fabert, B., 2015. Financing transition in an adverse context: Climate finance beyond carbon finance. International Environmental Agreements, 15, 403–420. Mathews, J., 2017. Global trade and promotion of cleantech industry: a post-Paris agenda. Climate Policy, 17(1), 102–110. Pizer, W. A., 2016. Government-to-Government carbon trading. In R. N. Stavins & R. C. Stowe (Eds.), The Paris Agreement and Beyond: International Climate Change Policy Post-2020. Cambridge, MA: Harvard Project on Climate Agreements. Stua, M., 2017: A Hybrid Model to Govern the Mitigation Alliance, in: M. Stua (Ed.), From the Paris agreement to a low-carbon Bretton Woods: Rationale for the	Accept . Most of the literature have been utilised in the current SOD	michele stua	APE-FVG	United Kingdom (of Great Britain and Northern Ireland)
40173	55	39	55	39	Revise the citation (Warland and Michaelowa ZURICH-> I suppose ZURICH should be deleted)	Accepted. Will be revised in SOD	Irene Monasterolo	Vienna University of Economics and Business (WU)	Austria

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
6001	56	1	56	35	We have published research results on de-risking low-carbon energy investments that might be of relevance for Box 15.5. (and probably for other sections in the report focusing on the role of financing costs and de-risking) Schinko, T., N. Komendantova (2016). De-risking Investment into Concentrated Solar Power in North Africa: Impacts on the Costs of Electricity Generation Renewable Energy. Renewable Energy 92:262-292. doi:10.1016/j.renene.2016.02.009 Schinko, T., Bohm, S., Komendantova, N., El Jamea M., Blohm, M. (2019). Morocco's sustainable energy transition and the role of financing costs: a participatory electricity system modeling approach. Energy, Sustainability and Society 9 (1): 1-17. DOI:10.1186/s13705-018-0186-8. Komendantova N., Schinko, T., Patt, A. (2019). De-risking policies as a substantial determinant of climate change mitigation costs in developing countries: Case study of the Middle East and North African region. Energy Policy 127: 404-411. DOI:10.1016/j.enpol.2018.12.023.	Noted. Will be considered in SOD	Thomas Schinko	International Institute for Applied Systems Analysis (IIASA)	Austria
15323	56	3	56	15	repeated in page 16 line 4 onwards	Accepted . revised accordingly	Esther Badiola	European Investment Bank	United States of America
14335	56		56		There are some papers that could be quoted in order to support the idea that nationally determined actions lead to unsustainable climate outcomes, i.e. Nieto, J., Ó. Carpintero y L.J Miguel, (2018): «Less than 2º: An Economic-Environmental Evaluation of the Paris Agreement», Ecological Economics, 146, pp. 69-84.	Noted. Will be considered in SOD	ÓSCAR CARPINTERO	University of Valladolid	Spain
37779	57	1	57	48	The Report assumes that North-South Climate Finance cooperation can only occur via the development of capital markets in the South. It makes no mention of green bank lending as a viable alternative for financing green activities, although bank lending is far more important in most South countries than capital markets. given the urgency of climate crisis, the report could at least explore the North South cooperation via North support for green banking in the South. It also does not mention calls for reparation payments which are in line with the juridical "polluter pays principle".	Noted. Will be considered in SOD	Anne Loescher	Uni Leeds	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
4855	57	5	57	27	When discussing the ‘home bias’ issue you give it a substantially negative meaning, without clarifying why should it be negative. You also do not offer elements from literature supporting such a 'negative' perspective. I suggest you to re-formulate the whole paragrapah, either offering clearer explanations or reviewing the 'negative' perspective on finance leaning towards domestic efforts against climate change. This is particularly relevant for the last part of the paragraph (lines 24-27).	Noted. Will be considered in SOD	michele stua	APE-FVG	United Kingdom (of Great Britain and Northern Ireland)
32067	57	5	57	27	an appreciation of the likely sources of catial is missing and the likely methods of financing. In terms of climate finance the greatest developed is say bonds (ie debt finanncing) which is currently more likely linked to mature investment opportunties, projects in developed markets, holders institutions. Risk capital is more likly to sourced through alterative invesment structuring, PE, VC etc which in first round/stage financing is likliest to be home biaised, in terms of routing intrnational cross border to investment opportunities, protecitonist policy actions taken particularly at a European level tend towards increasing cost and compleixity of regulatory evironment and reducting flows of risk capital.	Noted. Will be considered in SOD	Andy Sloan	Guernsey Finance	United Kingdom (of Great Britain and Northern Ireland)
32087	57	11	57	11	home bias' in invesments - see above my comment six - this academic treatment fails to appreciate the actual behaviour and strucruing requirements for private capital.. Financing models PE/VC likliest to attract private private (deliberate repeated word) need to be flexible and strucured around tax efficiency to route internatioal flows efficiently as required and are most likely methodlogy to equalise returns to private capital with those available at the micro micro (again deliberate) level, yet these types of arrangements are most likely to be developed, supported are arranged through jurisdicitons outside supranational or regional regulatory regimes - particuarly the EU - whose detailed and prescriptive regulatory appraoch is failing to develop substantial generic capital market to rival the UK or US irrespective of a green use of funds .... global protectionist regulatory responses creates greater not lessens home bias in investments.	Noted. Will be considered in SOD	Andy Sloan	Guernsey Finance	United Kingdom (of Great Britain and Northern Ireland)
4857	57	40	57	48	You need significant literature references for such strong assumptions.	Noted. Will be considered in SOD	michele stua	APE-FVG	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
32065	57	40	57	48	same point - the issue here is that despite all the do goodery the risk adjusted returns in sub saharan africa are out of kilter with the requirements of the northern owners of capital - for example north american pensions funds. This is a policy issue requiring a global solution	Noted. Will be considered in SOD	Andy Sloan	Guernsey Finance	United Kingdom (of Great Britain and Northern Ireland)
18963	57	8			"In turns out that finance in general …": In -> It?	Accepted . Revised accordingly	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea
33559	58	1	58	1	Is it possible to extend the line of Figure 15.12 beyond 2030?	Noted. Figure is deleted	Debra Roberts	EThekwini Municipality	South Africa
9731	58	2	58	2	This is pure assumption, not literature assessment.	Accepted . Revised accordingly	Nathalie Hilmi	Centre Scientifique de Monaco	France
9733	58	2	59	16	Very interesting but supported by an initial assumption which may not be very realistic	Accepted . Revised accordingly	Nathalie Hilmi	Centre Scientifique de Monaco	France
27567	59	1	59	34	This game theory based illustration could be reduced to a short para, with details in a box	Accepted . Revised accordingly	Navroz Dubash	Centre for Polcy Research	India
18965	59	18	59	19	"…(Shapley 1953)": need another parenthesis	Accepted . Revised accordingly	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
40179	59	36	59	36	This section would benefit from a more structured review of the literature on the impact of most debated climate-aligned policies on macroeconomic competitiveness, financial stability and inequality, and more reliance on published articles (there is a growing literature available) that brings evidence of policy assessment. In contrast, the section mostly relies on one single perspective policy paper that could be questionable by readers because brings no evidence. Policy review: (i) fiscal measures such as a carbon tax (Bovari et al. 2018, Monasterolo and Raberto 2018, 2019; Naqvi and Stockhammer 2018; Stiglitz et al. 2017; Stolbova et al. 2018; Dunz et al. 2020), (ii) green monetary policies (Dafermos et al. 2018, Monasterolo and Raberto 2017); (iii) prudential regulations that affect banks' capital requirements (green supporting factor/brown penalizing factor, Dunz et al. 2020, Dafermos et al. 2019), (iv) command-control policies (Lamperti et al. 2015). See Monasterolo et al. (2019) for a comprehensive review. REF: 1. Monasterolo, I., Raberto, M. (2017). Is there a role for Central Banks in the low-carbon transition? A Stock-Flow Consistent-Agent Based modelling approach.Available at SSRN: https://ssrn.com/abstract=3075247 or http://dx.doi.org/10.2139/ssrn.3075247. 2. Stolbova, V., Monasterolo, I. Battiston, S. (2018). A financial macro-network approach to climate policies evaluation, Ecological Economics, 149, 239-253. 3. Monasterolo, I., Roventini, A., Foxon, T. (2019). Uncertainty of climate policies and implications for economics and finance: an evolutionary economics approach. Ecological Economics, 163, 1-10.	Accepted. Reviewed suggested references and most of references are included in the draft	Irene Monasterolo	Vienna University of Economics and Business (WU)	Austria
25721	59	37	59	42	Please check linkage with Chapter 13, specifically 13.10 on enabling conditions and acceleration. Please specify whether 'enabling environment' is a different concept than 'enabling conditions'. Enabling conditions have been extensively discussed in the SR1.5, which might be useful for this section.	Accepted. Will coordinate with Chapter 13 counterpart	Renee van Diemen	WG III TSU	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
4859	59	36	66	32	As for what concerns 'enabling environments', I invite you to include a significant literature review focused on the potential of Article 6 of the Paris Agreement. In doing so, I suggest you to review the content and literature as included in: Stua, M., 2017. From the Paris agreement to a low-carbon Bretton Woods: Rationale for the establishment of a mitigation alliance. Springer International Publishing (with special regard to chapters 5 to 10). In addition to what available in the signalled book, I suggest you including: Chen, D., van der Beek, J., Cloud, J., 2017. Climate mitigation policy as a system solution: addressing the risk cost of carbon. Journal of Sustainable Finance & Investment, 7(3), 233-274. Gao, S., Li, M-Y., Duan, M-S., Wang, C., 2019. International carbon markets under the Paris Agreement: Basic form and development prospects. Advances in Climate Change Research, (10)1, 21-29. Jeroen C. J., van den Bergh, M., 2017. Rebound policy in the Paris Agreement: instrument comparison and climate-club revenue offsets. Climate Policy, 17(6), 801-813. Mathews, J., 2017. Global trade and promotion of cleantech industry: a post-Paris agenda. Climate Policy, 17(1), 102–110. Michaelowa, K., Michaelowa, A., 2017. Transnational Climate Governance Initiatives: Designed for Effective Climate Change Mitigation? International Interactions, 43(1), 129-155. Pillay, K., Viñuales, J. E., 2016. “Monetary” rules for a linked system of offset credits. International Environmental Agreements: Politics, Law and Economics, 16(6), 933–951. Raeschke-Kessler, K., 2016. How to make Article 6. 4 of the Paris agreement work. Carbon Mechanisms Review, 1, 8–11. Schneider, L., La Hoz Theuer, S., Howard, A., Kizzier, K., Cames, M., 2020. Outside in? Using international carbon markets for mitigation not covered by nationally determined contributions (NDCs) under the Paris Agreement. Climate Policy, 20(1), 18-29. Zaman, P., Rock, N., Hedley, A., Smokelin, J., 2016. The Paris Agreement: Leading the pathway to a low carbon economy (16 Platt’s Energy Law Report 4, pp. 31–149). LexisNexis A.S. Pratt.	Taken into account. We added some of the references	michele stua	APE-FVG	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
6497	59	36	66	32	The title of the section is misleading as Enabling Environments should refer to the set of instruments/policies creating enabling environments for investments (please see my comment on barriers). It is not clear how and why the discussion on potential/different frameworks is reported here - perhaps this discussion should fit in the narratives chapter as the frameworks described can be applied to any topic in the report and are not specific for sustainable finance. The link between the efficient market hypothesis and sustainable finance is worth mentioning only if it is discussed and analysed in the context of the current policy solutions. Indeed, the assumption is that information/risk gaps can be remedied via disclosure, transparency, scenario analysis and stress testing, which will enable markets to self-correct. I'd suggest to remove this part, unless the authors are able to better justify its link with sustainable finance specifically.	Noted. Will discuss with Chapter 15 LAs	Nadia Ameli	University College London	United Kingdom (of Great Britain and Northern Ireland)
18967	59	22			multi-lateral development banks: remove '-'	Accepted. Revised	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea
32089	60	1	60	1	a box example would be of value here… for example guersney's public sector pension scheme acts as a keystone investor in green finance investment funds and supports some innnovative financing mechansims - for example a long short hedge fund	Taken into account	Andy Sloan	Guernsey Finance	United Kingdom (of Great Britain and Northern Ireland)
40175	60	11	60	12	"Four types of interventions have been implemented by financial regulators and central banks in dealing with climate-related risks: 'First, they can develop methodologies and tools that would promote a better understanding of these risks and their economic and financial implications. Second, investors can be encouraged or required to disclose their exposure to climate-related risks. Third, these risks can be explicitly taken into account in setting financial regulations. Fourth, central banks can take into account climate-related risks in their policy toolkit' (Campiglio et al. 2018) (e.g. monetary policy)." The paper discussed possible policy interventions, most of which have never been implemented so far. I thereby suggest to revise the first sentence as "Four types of possible interventions have been discussed by central banks and financial regulators (as explained in by Campiglio et al (2018)).	Accepted. Revised	Irene Monasterolo	Vienna University of Economics and Business (WU)	Austria

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
15325	60	43	60	45	It would be less confusing if you could refer to the same classification depicted in table 15.6 in page 35	Noted. Table 15.6 provides a broad classification of sources and instruments. In the draft, we specifically defined instruments. Will consider this comment	Esther Badiola	European Investment Bank	United States of America
46973	60	10	62	47	The function of governments to de-risk needs to be viewed critically, in particular in countries with low monetary sovereignty. It may create further dependenices for these countries. While risk is being socialised/taken on by the government, profits will be privatised. The policy space for an autonomous low-carbon transition may be limited. cf. Gabor, Daniela (2019). 'Securitization for Sustainabili.ty. Does it help achieve the Sustainable Development Goals? Heinrich Böll Foundation. https://us.boell.org/sites/default/files/gabor_finalized.pdf. p. 'The turn to private finance narrows the scope for a green developmental state, that is, a state that that designs and implements policies that substantively influence the allocation of resources to low-carbon economic activities'. […] the social and developmental impact of the turn to securitization is likely to be negative since it effectively encourages the (indirect) privatisation of public services, neces-sary to both generate and de-risk cash-flows that can be directed to the owners of securities'.	Accepted. We added the suggested reference (Gabor (2019)) in the draft	Elena Hofferberth	University of Leeds	United Kingdom (of Great Britain and Northern Ireland)
37825	61	3	61	10	Green quantitative easing is a politically charged proposition and one which depends on political change of the remit of central banks. Changing the dominating market-neutral approach to QE requires a change to the law governing the remit of CBs. This needs to be made very clear as it is controversial at least in the context of the US Fed and the European Central Bank. "Adding distributive policy risks unduly politicizing the central bank, thereby undermining its independence" (IMF Krogstrum and Oman 2019, available from https://www.imf.org/en/Publications/WP/Issues/2019/09/04/Macroeconomic-and-Financial-Policies-for-Climate-Change-Mitigation-A-Review-of-the-Literature-48612). See in particular pp 31-33 for a discussion on roles of central banks in the context of climate change.	Accepted. Include the suggested reference and discussed the potential concerns of green QE in the draft	ALEXANDRE KOBERLE	COPPE/UFRJ	Brazil

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
40177	61	7	61	8	Dafermos et al. (2018) do not claim that green QE has no impact. Instead, they claim that a green QE would have a positive effect on green investments, yet in the long term. In contrast, Monasterolo and Raberto (2017) find that a green QE implemented via the preferential purchase of green sovereing bonds would drive a green multiplier effect for the economy even in the short term, while limiting the negative impact on public debt.REF: Monasterolo, I., Raberto, M. (2017). Is there a role for Central Banks in the low-carbon transition? A Stock-Flow Consistent-Agent Based modelling approach.Available at SSRN: https://ssrn.com/abstract=3075247 or http://dx.doi.org/10.2139/ssrn.3075247.	Accepted. Revised Dafermos et al. (2018), and included Monasterolo and Raberto (2017)	Irene Monasterolo	Vienna University of Economics and Business (WU)	Austria
2569	61	22	61	34	Any reference? Low-carbon investment portfolios are rising, but any consideration about the speed of the process?	Noted. (IEA, 2019) reference is inlcuded	Lilia Caiado Coelho Beltrao Couto	University College London	United Kingdom (of Great Britain and Northern Ireland)
37827	61	30	61	34	The last sentence of the paragraph requires backing up with literature. How have investors rebalanced their portfolios? The fate of coal companies like Peabody are often touted as evidence, but how much of their demise has been from the rise of shale gas as opposed to climate considerations? In any case, one example of literature supporting the claim made in this paragrpah is this: https://doi.org/10.1016/j.ecolecon.2019.106571	Noted. Will review the suggested literature	ALEXANDRE KOBERLE	COPPE/UFRJ	Brazil
9735	61	32	61	32	Any number (see P. 61 lines 3 and 4) or reference here?	Taken into account. Dafermos et al. 2018 included	Nathalie Hilmi	Centre Scientifique de Monaco	France
25409	61	33	61	34	Delete "while banks and institutional investors … low-carbon investments over time."	Noted	Eleni Kaditi	Organization of the Petroleum Exporting Countries (OPEC)	Austria

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
32091	61	42	61	46	agree with this point about the weakness of markt adjustment - the whole policy response so far has been 'second best' - relying on transparency to drive behavioural change - this is insuffciinet - even the EU sustainable disclosure regulation does not at its heart provide for a requirement on ulitmate holdings of assets... and the whole approach comes with likely signfiiant regulatory and compliance cost increasing cost of capital generaltlly .. Guenrsey has taken a different tack - introducing a regulatory regime for green investment funds - requireing the assets to contribute to climate change migitation - 1% of AUM are now within the regime, reasonable progress after 18 months with a target of 10% in five years and 50% in ten	Noted. Will be considered in SOD	Andy Sloan	Guernsey Finance	United Kingdom (of Great Britain and Northern Ireland)
47263	61		61		efficiency of markets is a strong assumption, on which relies all the narratives and policy initiatives. If this assumption is challenged, it has great consequences. This should be debated earlier in the draft. Cf. Chenet Zamarioli et al . 2019	Noted. Will review the suggested literature	Hugues Chenet	University College London — Institute for Sustainable Resources	France
25411	62	5	62	7	Delete "and there is as yet … Diaz-Rainey et al. 2017)."	Noted	Eleni Kaditi	Organization of the Petroleum Exporting Countries (OPEC)	Austria
25413	62	21	62	22	Delete "Recognising and dealing with … to grapple with."	Noted	Eleni Kaditi	Organization of the Petroleum Exporting Countries (OPEC)	Austria
25415	63	29	63	30	Delete "and to avoid the lock-in damages … (Stern 2018).", as this is argument does not consider technologies such as CCUS.	Noted	Eleni Kaditi	Organization of the Petroleum Exporting Countries (OPEC)	Austria

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
45651	63	31	63	31	"low climate" should maybe be "low carbon"	Accepted. Revised	Geoffrey Saville	Willis Towers Watson	United Kingdom (of Great Britain and Northern Ireland)
46661	63		63		the notion of "modelling the financial sector more accurately" should be discussed. Radical uncertainty prevents a lot of modelling to be reliable/useful/meaningful …	Noted	Hugues Chenet	University College London — Institute for Sustainable Resources	France
25723	63	31	64	41	Please check links with Chapter 16 and whether this material might fit better in the chapter on innovation.	Accepted. Will coordinate with Chapter 16 counterpart	Renee van Diemen	WG III TSU	United Kingdom (of Great Britain and Northern Ireland)
2571	63	18	65	9	Has this section been discussed with Chapter 16? Although it looks like a theme that would fit best in Chapter 16, they don't really bring this discussion in.	Accepted. Will coordinate with Chapter 16 counterpart	Lilia Caiado Coelho Beltrao Couto	University College London	United Kingdom (of Great Britain and Northern Ireland)
25417	64	20	64	21	Delete "the policy-lobbying effect … (Aguirre and Ibikunle 2014)", as this is a subjective statement.	Accepted. Deleted	Eleni Kaditi	Organization of the Petroleum Exporting Countries (OPEC)	Austria
40047	65	1	65	47	Please rewrite the section to better reflect the existing literature. Please bring in the conclusions from Grubb (2014), which explores different barriers to decarbonisation in different sectors. While carbon pricing alone cannot solve the climate change problem, it is an essential part of the climate policy toolbox. Reference: Grubb, Michael. Planetary economics: energy, climate change and the three domains of sustainable development. Routledge, 2014.	Accepted. Included suggested literature	Axel Michaelowa	University of Zurich	Switzerland

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
43531	65	1	65	47	This section suggests an either-or decision regarding carbon pricing versus other policies; this does not reflect the literature. Others have explored variou barriers to decarbonisation on a sector-by-sector basis and find that carbon pricing does have to contribute. Reference: Grubb, Michael. Planetary economics: energy, climate change and the three domains of sustainable development. Routledge, 2014.	Accepted. Included suggested literature	Matthias Honegger	Perspectives Climate Research gGmbH	Germany
27569	65	10	65	10	You may wish to cross reference the discussion in Ch 13 on carbon pricing	Accepted. Will coordinate with Chapter 13 counterpart	Navroz Dubash	Centre for Polcy Research	India
40051	65	46	65	47	The section on negative impacts of carbon taxes on GDP is biased. Please bring in the latest work by the IMF to the analysis. Reference: International Monetary Fund (IMF). 2019. Fiscal Monitor: How to Mitigate Climate Change. Washington, October 2019.	Accepted. Included suggested literature	Axel Michaelowa	University of Zurich	Switzerland
43535	65	46	65	47	Impacts of carbon taxes on GDP are highly design-dependent, consider incorporating appropriate nuance.	Taken into account. Will be considered in SOD	Matthias Honegger	Perspectives Climate Research gGmbH	Germany
1353	65		65		refernces to adaptation	Noted. We reviewed relevant literature but we couldn't find appropriate literature	David Viner	Mott MacDonald	United Kingdom (of Great Britain and Northern Ireland)
40049	65	10	66	3	The entire section is biased against carbon pricing and emissions trading systems and needs to be rewritten. Key references for the effectiveness of these instruments are Haites (2018), Haites et al. (2018), Narassimhan et al. (2018). Please align your assessment with the assessment in Chapter 13 and past assessments of carbon pricing / emissions trading in AR 5. New references: Erik Haites (2018a) Carbon taxes and greenhouse gas emissions trading systems: what have we learned?, Climate Policy, 18:8, 955-966; Erik Haites et al. Experience with Carbon Taxes and Greenhouse Gas Emissions Trading Systems, 29 Duke Environmental Law & Policy Forum 109-182 (2018); Easwaran Narassimhan, Kelly S. Gallagher, Stefan Koester & Julio Rivera Alejo (2018) Carbon pricing in practice: a review of existing emissions trading systems, Climate Policy, 18:8, 967-991	Taken into account. Reviewed the suggested reference and add some of the references. Also, we added some new references. We revised this section	Axel Michaelowa	University of Zurich	Switzerland

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
43533	65	10	66	3	This section comes with extreme preconceptions against carbon pricing and emissions trading systems in language that reminds of advocacy organizations. It breaks with past assessments of carbon pricing / emissions trading including in AR 5 without providing adequate refereces for the claims made and needs substantial rewriting.	Taken into account. We revised this section and added some new references	Matthias Honegger	Perspectives Climate Research gGmbH	Germany
32349	65	11	66	3	Is it possible to show estimates of carbon tax that different models predict (even if the spread is wide due to high uncertainty) and also include current prices for countries/activities for which such information exist?	Accepted. Added (IMF, 2019) reference	Penny Apostolaki	Barclays	United Kingdom (of Great Britain and Northern Ireland)
25707	65	11	66	9	Please check linkages with Chapter 13, specifically 13.7.2 on leakage effects, which addresses channels of leakage and competitiveness from carbon pricing	Accepted. Will coordinate with Chapter 13 counterpart	Renee van Diemen	WG III TSU	United Kingdom (of Great Britain and Northern Ireland)
18969	65	27			suffer -> suffers	Accepted. Revised	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea
27571	66	10	66	10	This section on domestic financing seems disproportionately small compared to other sections. And it does not address the interesting question of whether and how domestic finance can leverage international climate finance. This discussion should also be linked ideally to the larger question of what constitutes climate versus development finance that has climate implications (such as the bus and light rail example suggest). How can finance be enhanced for these intersecting arenas?	Accepted. Revised the section and added relevant references. Will further update this section	Navroz Dubash	Centre for Polcy Research	India
6499	66	10	66	32	I'm not sure about the key message and how the main text relates to role of domestic finance.	Taken into account. Revised the section and added relevant references. Will further update this section	Nadia Ameli	University College London	United Kingdom (of Great Britain and Northern Ireland)
33561	66	21	66	32	The argument being made here seems to be based on the two preceding paragraphs re: case studies in Nigeria. The preceding material thus needs to be significantly expanded to be representative of the regional context as well as the broader topic regarding the role of domestic funding.	Accepted. Will restructure the subsection	Debra Roberts	EThekwini Municipality	South Africa

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
27573	66	38	66	38	It may be worth cross referencing and having a conversation with CH 13.7 which covers similar themes in the context of spillover effects	Noted. Will be considered in SOD	Navroz Dubash	Centre for Polcy Research	India
40183	66	38	66	70	This section would greatly benefit from a discussion of the transmission channels of the impacts of stranded assets induced by climate physical or transition risk, to the economy and finance. This has been provided by the literature, see Batten (2018) for physical risk, and Monasterolo (2020) for transition risk. In addition, van der Ploeg and Rezai (2019) should be cited for a comprehensive discussion of carbon stranded assets in the economy. REF: 1. Monasterolo, I. (2020). Climate change and the financial system. Forthcoming on Annual Review of Environment and Resources, Volume 12. 2. Van der Ploeg, R., & Rezai, A. (2019). Stranded Assets In The Transition To A Carbon-Free Economy (No. 894).	Accepted. Additional and new reference have been used	Irene Monasterolo	Vienna University of Economics and Business (WU)	Austria
46789	66	34	72	16	Section "15.6.3 Address knowledge gaps with regard to climate risk analysis and transparency" needs to be vastly improved in terms of sicentific references and coverered literature. Similar to comment 8 on ESG rating divergences (also contained in Section "15.6.3 Address knowledge gaps with regard to climate risk analysis and transparency"), the cited literature and references are to a signficant degree non-peer-rveiewed opinion pieces from industry representatives. A significant body of recent literature is being ignored.	Noted. Will be considered in SOD	Kim Schumacher	School of Environment and Society, Tokyo Institute of Technology	Japan
47045	66	34	72	16	Section "15.6.3 Address knowledge gaps with regard to climate risk analysis and transparency" needs to be vastly improved in terms of sicentific references and coverered literature. Similar to comment 8 on ESG rating divergences (also contained in Section "15.6.3 Address knowledge gaps with regard to climate risk analysis and transparency"), the cited literature and references are to a signficant degree non-peer-rveiewed opinion pieces from industry representatives. A significant body of recent literature is being ignored. (11)	Noted. Will be considered in SOD	Kim Schumacher	School of Environment and Society, Tokyo Institute of Technology	Japan

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
47753	66	34	73	3	On the one hand, transparent and consolidated science based metrics to assess climate-related financial risks in investors' portfolios is fundamental to inform investors' portfolios risk management strategies and thus mobilisation of capital for green investments, and financial supervisors' measures to preserve financial stability in the context of climate change (Bolton et al 2020). However, recent research showed that investors and financial markets are not fully pricing yet climate risks in the value of financial contracts, even in those markets and contracts (respectively stock market and equity holdings) that are usually faster to react (Monasterolo and de Angelis 2020). On the other hand, understanding how investors' reaction to climate news and policy announcements (e.g. for banks by revising their lending conditions), i.e. their "climate sentiments", is crucial to provide a comprehensive impacts of the climate policies and regulations under discussion (e.g. a carbon tax, green capital requirements, etc) (Dunz et al. 2020). Therefore, I suggest to consider expanding the content of Section 15.6 into a dedicated Section, to be placed higher in the hierarchy of the table of content, on the opic of assessing climate financial risks as a tool to overcome the financing gaps. I would also highlight that assessing and pricing climate risks in financial contracts is fundamental to develop climate financial risk products, such as insurance products.	Taken into account . The revision of the structure of the chapter took care of this concern	Stefano Battiston	University of Zurich	Switzerland
16425	66	34			In Section 15.6.3 Address knowledge gaps with regard to climate risk analysis and transparency, and in particular in the subsection dealing with transition risk, stranded assets, and systemic risk, consider adding a description related to hot dry rock geothermal energy and the potential for investment to fund oil and gas companies to transition their drilling infrastructure to the geothermal industry, thereby leading a transition in the energy sector. Plant cost is mostly upfront, and funding provided by developed countries might be used to install geothermal power generation in developing countries to help decarbonize their energy sectors, while at the same time facilitating oil and gas companies to transition their assets to increase drilling capacity for hot dry rock geothermal. Financiall mechanisms to enable this process would increase the rate of transition, and thereby decrease the risk of stranded assets that oil and gas companies are subject to.	Noted. Will be considered in SOD	Daniel Helman	College of Micronesia-FSM	Micronesia, Federated States of

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
38293	67	8	67	18	It would be good to make a reference here to stranded fossil fuel assets which are protected by trade and investment agreements such as teh Energy Charter Treaty. See estimates of these assets and why the Treaty increase the lock-in effect at: https://www.openexp.eu/sites/default/files/publication/files/modernisation_of_the_energy_charter_treaty_a_global_tragedy_at_a_high_cost_for_taxpayers-final.pdf	Noted. Will be considered in SOD	Yamina Saheb	OpenExp, Ecole des Mines de Paris	France
38295	67	8	67	18	Investments in stranded assets should also be in the ES, ideally with estimates	Noted. Will be considered in SOD	Yamina Saheb	OpenExp, Ecole des Mines de Paris	France
25419	67	19	67	28	Delete "A carbon budget … (Cahen-Fourot et al. 2019).", as this is a speculative argument, that does not consider matters such as energy poverty and sustainable development.	Accepted. Will be deleted	Eleni Kaditi	Organization of the Petroleum Exporting Countries (OPEC)	Austria
18971	67	16			Cogwells 2016): need a period	Accepted . Revised	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea
11621	68	21	68	40	Is it worth including the research conducted by Munich Re here, showing the proportion of loss for different physical risks, as a figure to highlight the contribution of physical risks to global losses? E.g. https://www.munichre.com/topics-online/en/climate-change-and-natural-disasters/natural-disasters/natural-disasters-of-2019-in-figures-tropical-cyclones-cause-highest-losses.html	Noted. Will be considered in SOD	Sarah Jones	JBA Risk Management	United Kingdom (of Great Britain and Northern Ireland)
45655	68	29	68	29	This is known in the industry as the protection gap.	Noted. Will be considered in SOD	Geoffrey Saville	Willis Towers Watson	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
11619	68	32	68	32	Missing the "N" from acronym of NOAA.	Accepted. Revised	Sarah Jones	JBA Risk Management	United Kingdom (of Great Britain and Northern Ireland)
44453	68	33	68	33	The term natural disaster or catastrophy does not have academic support, rather the term should be just disaster. If the triggering event needs to be identified then it is recommendable disaster triggered by a natural hazard. All disasters are social, as exposure and vulnerability are the ultimate causes of disaster. Quarantelli, E. L. (1985): «What Is Disaster? The Need for Clarification in Definition and Conceptualization in Research», en Disasters and Mental Health: Selected Contemporary Perspectives. U.S. Department of Health and Human Services, National Institute of Mental Health, pp. 41-73. Quarantelli, E. L. (1998): What is a Disaster? London, Routledge. Rather than man-made disasters human-made should be preferred, or technological disasters. Additionally, the dual classification is simple, since they mostly combine into the category of Natech disasters, disasters that involve both natural and human components. Cruz, A. M., Y. Kajitani, and H. Tatano (2014) Natech disaster risk reduction: Can integrated risk governance help? In Fra.Paleo, U. (ed.) Risk Governance. The Articulation of Hazard, Politics and Ecology. Dordrecht: Springer. pp. 441-462.	Noted. Will be considered in SOD	Urbano Fra Paleo	University of Extremadura	Spain
45653	68	36	68	37	This statement needs to be clearer. There is a lot of subtlty in how extreme weather events will change in response to climate change. And much uncertainty. Suggest this line focusses on huricanes after reference of Harvey, Irma and Maria.	Noted. Will be considered in SOD	Geoffrey Saville	Willis Towers Watson	United Kingdom (of Great Britain and Northern Ireland)
32357	68		69		Will it be possible to produce a table with the ways in which climate change can affect GDP and also provide estimates (range) of impact on GDP for countries for which such information exists?	Noted. Will be considered in SOD	Penny Apostolaki	Barclays	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
18973	68	32			(OAA) -> (NOAA)	Accepted . Revised	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea
40187	69	3	69	5	The paper by Battiston et al. (2017) is not correctly cited. Battiston et al. (2017) found that individual financial actors have large direct and indirect exposures via equity holdings and loans to the Climate Policy Relevant Sectors (CPRS) – economic activities that would lose value and become stranded assets in a disorderly low-carbon transition. These exposures amount to more than 40% for the equity portfolios of pension funds and investment funds. By introducing Climate VaR when considering micro-level climate transition risks, such as the exposures of financial institutions to individual financial contracts, they find that banks with a “brown” strategy incur large losses, which could be amplified by financial interconnectedness, with implications on asset price volatility and financial stability.	Noted. Will be considered in SOD	Irene Monasterolo	Vienna University of Economics and Business (WU)	Austria
40189	69	14	69	15	Potential missing reference: Monasterolo and de Angelis (2020) assessed stock markets' reaction to the Paris Agreement and found that carbon risk is mispriced in the equity market. The analysis shows that the systematic risk associated to carbon-intensive and fossil fuel indices did not decrease, while in contrast low-carbon indices became more appealing for investors. REF: Monasterolo, I., de Angelis, L. (2020). Blind to carbon risk? An analysis of stock market’s reaction to the Paris Agreement. Ecological Economics, 170, 1-10.	Noted. Will be considered in SOD	Irene Monasterolo	Vienna University of Economics and Business (WU)	Austria
18975	69	36	69	37	"The impact of climate change on the UK …": Need a full sentence	Accepted . Revised	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea
40185	69	46	69	49	"This includes notably important structural changes taking place, sectorally and regionally, as fossil-fuel-related sectors, and their intermediate product supplying sectors, see reductions in demand, output and employment". The paper Caher-Fourot et al. (2019) is not correctly cited because it does not provide an analysis of structural changes by sectors. Indeed, the paper maps the I-O table of relations among carbon-intensive sectors at NACE 2 digit level.	Noted. Will be considered in SOD	Irene Monasterolo	Vienna University of Economics and Business (WU)	Austria

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
18977	70	38	70	39	Need to revise the sentence. "UN PRI membership ..., with over 80% of members…"	Accepted . Revised accordingly	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea
45657	70	38	70	39	with over 80% of its members.... Seems like the end of the sentence is missing.	Accepted . Revised accordingly	Geoffrey Saville	Willis Towers Watson	United Kingdom (of Great Britain and Northern Ireland)
32093	71	11	71	11	given this is the main sustainble finance policy response, this section could be expanded, tend to agree that the impact so far has been negigable. One body not mentioned is the UK's BSI sustainble finance approach which commenced with framworks and principle and as its next phase is looking at funds and products. Guernsey as just stated above, took the alternate appraoch and started with products - that is introducing a regulatory regime for green investment funds - requireing the assets to contribute to climate change migitation - 1% of AUM are now within the regime, reasonable progress after 18 months with a target of 10% in five years and 50% in ten	Accepted . Addressed	Andy Sloan	Guernsey Finance	United Kingdom (of Great Britain and Northern Ireland)
18979	71	25	71	26	Need a period at the end of the sentence	Accepted . Addressed	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea
46791	71	24	72	16	Section ""15.6.3 Address knowledge gaps with regard to climate risk analysis and transparency: Knowledge gaps" needs to be vastly improved in terms of sicentific references and coverered literature. Similar to comment 8 on ESG rating divergences (also contained in Section "15.6.3 Address knowledge gaps with regard to climate risk analysis and transparency"), the cited literature and references are to a signficant degree non-peer-rveiewed opinion pieces from industry representatives. A significant body of recent literature is being ignored.	Accepted. Additional and new reference have been used	Kim Schumacher	School of Environment and Society, Tokyo Institute of Technology	Japan

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
47047	71	24	72	16	Section ""15.6.3 Address knowledge gaps with regard to climate risk analysis and transparency: Knowledge gaps" needs to be vastly improved in terms of sicentific references and coverered literature. Similar to comment 8 on ESG rating divergences (also contained in Section "15.6.3 Address knowledge gaps with regard to climate risk analysis and transparency"), the cited literature and references are to a signficant degree non-peer-rveiewed opinion pieces from industry representatives. A significant body of recent literature is being ignored. (12)	Accepted. Additional and new reference have been used	Kim Schumacher	School of Environment and Society, Tokyo Institute of Technology	Japan
16035	71				In fact there is significant momentum behind climate risk disclosure, as we see in European regulation and in voluntary efforts such as TCFD	Noted. Will be considered in SOD	Jason Patrick	New Zealand Green Investment Finance	New Zealand
46783	72	15	72	16	ESG rating divergences receive very little treatment and the cited reference is outdated and of limited scientific explantory value. The provided reference is far from being the mots authoritative on ESG rating divergence. This point needs to be vastly expanded and more relevant literature needs to be cited. More solid and up-to-date references include"https://www.researchaffiliates.com/documents/770-what-a-difference-an-esg-ratings-provider-makes.pdf" and "https://www.generationim.com/media/1616/gim_esg_report_download_191204_v3.pdf" Please also see comments 9 and 10 pertaining to the general coverage of ESG in Chapter 15	Accepted . Section revised and expanded where neccesary	Kim Schumacher	School of Environment and Society, Tokyo Institute of Technology	Japan
47039	72	15	72	16	ESG rating divergences receive very little treatment and the cited reference is outdated and of limited scientific explantory value. The provided reference is far from being the mots authoritative on ESG rating divergence. This point needs to be vastly expanded and more relevant literature needs to be cited. More solid and up-to-date references include"https://www.researchaffiliates.com/documents/770-what-a-difference-an-esg-ratings-provider-makes.pdf" and "https://www.generationim.com/media/1616/gim_esg_report_download_191204_v3.pdf" Please also see comments 9 and 10 pertaining to the general coverage of ESG in Chapter 15 (8)	Taken into account. Recent literature has been used to beefup the section	Kim Schumacher	School of Environment and Society, Tokyo Institute of Technology	Japan

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
37781	72	23	72	23	The report suggests that including ESG-labelled financial products in investment portfolio can be a first step in managing climate risks. While the taxonomy of green/brown is critical to discussions of managing climate risks or greening portfolios the report should not give such unqualified support to private ESG approaches that are poor indicators of green, as most central banks and market participants recognise.	Accepted. revised text	Anne Loescher	Uni Leeds	United Kingdom (of Great Britain and Northern Ireland)
46787	72	19	73	3	Section "Box 15.6 Premium for green financial products" suffers from the lack of prior "ESG factor intregation" contextualisation (see comments 8 and 9). Needs to be vastly improved through more relevant and factural literature. The covered literature does not represent the authoritative sources on the subject matter, reducing the impact of Chapter 15.	Accepted. revised text	Kim Schumacher	School of Environment and Society, Tokyo Institute of Technology	Japan
47043	72	19	73	3	Section "Box 15.6 Premium for green financial products" suffers from the lack of prior "ESG factor intregation" contextualisation (see comments 8 and 9). Needs to be vastly improved through more relevant and factural literature. The covered literature does not represent the authoritative sources on the subject matter, reducing the impact of Chapter 15. (10)	Accepted. revised text	Kim Schumacher	School of Environment and Society, Tokyo Institute of Technology	Japan
18981	72	34			Enhance -> Enhancing	Accepted . Corrected	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea
6501	73	28	73	36	This is a very long sentence, please try to rephrase it or divide in two sentences - also it’s not clear why it makes a specific reference to institutional investors rather than to general finance (e.g. private finance).	Editorial. Noted - mobilising the USD trillions held by institutional investors with their asset-liability matching is an important aspect in long term infrastructure financing.	Nadia Ameli	University College London	United Kingdom (of Great Britain and Northern Ireland)
25421	73	28	73	39	Delete "Whilst Africa currently … low-income countries and regions.", as this is a repetition and a policy prescriptive text and does not take into account matters related to sustainable, affordable and reliable energy sources.	Editorial. The sentence is being recast	Eleni Kaditi	Organization of the Petroleum Exporting Countries (OPEC)	Austria
14333	73		73		There is not a closer link between the name of the section 15.6.4 and its content. This content almost refers always to the developing countries, especially to the case of African countries.	Accept. Both structure and content revised	ÓSCAR CARPINTERO	University of Valladolid	Spain

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
33563	74	2	74	5	While this is correct, what also should be mentioned when discussing the penetration of solar in Africa is the significant initiation costs which are a barrier to most households and businesses.	Accepted. Noted	Debra Roberts	EThekwini Municipality	South Africa
18983	74	6	74	7	Need a parenthesis: "...Africa Progress Report 2015)	Editorial. Noted	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea
18985	74	30	74	32	Check the sentence	Editorial. Noted	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea
25423	74	36	74	41	Delete "In their integrated assessment model, … decentralised renewables..", as this analysis is not considering sustainable development aspects.	Editorial. Noted - sentences will need to be recast to reflect the the re-ordering of the flow in the section	Eleni Kaditi	Organization of the Petroleum Exporting Countries (OPEC)	Austria
18987	74	36			theintegrated -> the integrated	Editorial. Noted	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea
18989	74	41			Correct the double periods.	Editorial. Noted	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea
18991	75	5	75	38	Need to check periods, commas, semi-colons, words spacing	Editorial. Noted	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
37783	76	18	76	38	The report should be more balanced in its discussion of local capital markets. As it stands, it only highlights the benefits, without mentioning some of the financial fragilities inherent to this type of financial market structure. (1) To create 'deeper; securities markets, the local currency bond market project advises countries to introduce repo and derivative markets (the so-called plumbing of securities markets) that threatens emerging and poor countries with systemic interconnectedness, liquidity risk and pro-cyclical capital flows, certainly leading to macroeconomic instability and recessionary pressure and potentially undermining the sustainability agenda. The Report should at least recognize what Mark Carney, head of the Bank of England, described as the systemic vulnerability of securities financing markets (or repo markets): 'boom-bust cycles of liquidity and leverage. Ample liquidity and low volatility drove increasing availability of secured borrowing. That created a self-reinforcing dynamic of more leverage, even greater liquidity, lower volatility and even greater access to secured borrowing'. See also Gabor, D., 2018. Goodbye (Chinese) shadow banking, hello market-based finance. Development and Change, 49(2), pp.394-419. (2) The report should include the exchange rate channel of monetary policy - as for instance disucssed in Carstens (2019) 'Since foreign investors are subject to risk constraints in global currencies, the currency risk merely migrates from borrowers' to lenders' balance sheets. Currency and rollover risks on the borrower side have been replaced by duration and currency risk on the lender side. Exchange rate moves then tend to amplify investors' gains and losses, so that exchange rate fluctuations amplify portfolio flows. Exchange rate appreciation increases credit supply from foreign investors, pushing down bond yields. The same mechanism plays out in reverse when the exchange rate depreciates' https://www.bis.org/speeches/sp190502.htm#_ftn5	Noted. Noted - worth noting that a diagnostic tool, drawing on the experience of [IMF, World Bank, OECD, EBRD] and [yearly stocktake of developments and trends/G20 local currency bond market action plan established in 2011], allows developing countries to be supported in conducting analyses of the state of their development and efficiency of local currency bond markets. The assessment includes the general preconditions, key components such as exchange rates as well as the constraints for successful local currency bond market development taking into account economic size, financing needs, stage of economic development before embarking on any market development. The process of market development is a sequenced approach as part of risk management and taking account of financial fragilities (drawing lessons from crises in various regions eg 1997 Asian crisis example - citations already provided in FOD (not exhaustive)	Anne Loescher	Uni Leeds	United Kingdom (of Great Britain and Northern Ireland)
6503	77	1	77	6	In the Chapter there is a general hope on the role of green bonds to scale up finance - I'm not sure whether this is the right message. Green bonds support a very tiny portion of the current green/low-carbon investment and it seems that more structural issues in the financial system are hampering such investment.	Taken into account. Concerns addressed in the revision	Nadia Ameli	University College London	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
25425	77	2	77	2	Delete "in the development of the Paris Agreement".	Editorial. Noted	Eleni Kaditi	Organization of the Petroleum Exporting Countries (OPEC)	Austria
2573	77	7	77	36	Any critical view on how these initiatives are or aren't fast enough? Perhaps an approach which would read less like consulting reports could be more balanced. It now reads as "we don't need to do much more". Also the paragraph is quite long. Still, the main message is unclear.	Editorial. To help stakeholders connect the dots - the section is being re-ordered to open with the literature discussion of the development of local capital markets as a regional policy option and the relevance to long term infrastructure financing and mobilising the USD trillions held by institutional investors. As noted in the Executive Summary - most of the low carbon infrastructure is needed in developing countries where the cost of capital remains prohibitively high. Literature points to policies centered around accelerated development through risk-reduction options including external grants, supra-national guarantees etc (citations provided in FOD).	Lilia Caiado Coelho Beltrao Couto	University College London	United Kingdom (of Great Britain and Northern Ireland)
18993	77	24			2012OECD -> 2012 OECD	Editoriall. Noted	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea
18995	77	27			A2019 -> A 2019	Editorial. Noted	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
43793	78	1	78	5	Where does this come from?	Editorial. Citations are provided in the body of the text on Page 78 - FOD however the sentences can be recast to help stakeholders coonect the dots. Standardisation and usage of SPVs for bond issuance to achieve scale is documented in literature. For example a) India's Kerala state government SPV - Kerala Industrial Infrastructure Fund Bond has been reported as considering a green bond issuance (ET, 2019); Ketterer and Powell (2018) proposed standardized national infrastructure bonds with MDBs facilitating project development and credit enhancements; IADB (2019) analysts put forward country level SPVs issuing bonds; Arezki (2016) argued for the creation of a global infrastructure instituition providing guarantees and securitization techniques. The 2018 UK Infrastructure Assesment Report https://www.nic.org.uk/publications/national-infrastructure-assessment-2018/ provides an indepth discussion of the role of different types of guarantees in	Kirsty Hamilton	Chatham House (Associate Fellow, unpaid)	United Kingdom (of Great Britain and Northern Ireland)
18999	78	26	78	27	Need a full sentence. "Paris Agreement MRV."	Editorial. Noted	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
25427	78	26	78	27	Delete "Paris Agreement MRV."	Rejected. Section flow is being re-organised to help stakeholders connect the dots: Fig 15. 14 shows the different types of "Paris MRV Support" and example activities in Tables 15.8/15.9.	Eleni Kaditi	Organization of the Petroleum Exporting Countries (OPEC)	Austria
18997	78	2			orregional -> or regional	Editorial. Noted	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea
40053	79	3	79	4	Replace "in comparison to the past more costly, archaic…CDM mechanism." with "that build on the extensive experience accumulated under the CDM and other crediting mechanisms during the past 20 years (Michaelowa et al. 2019, Bellassen et al. 2015)." Reason: The current CDM standards are the state-of-the-art compendium of 20 years of international collaboration on science-based standards for baselines and monitoring. Referring to CDM as "archaic" is not objective and reveals ignorance of the continuous evolution of standards under CDM, including streamlined and standardised approaches. Michaelowa, Axel; Shishlov, Igor; Brescia, Dario 2019 Evolution of international carbon markets: lessons for the Paris Agreement, in: WIREs Climate Change, 10, e613, DOI: 10.1002/wcc.613; Bellassen, Valentin; Stephan, Nicolas; Afriat, Marion; Alberola, Emilie; Barker, Alexandra; Chang, Jean-Pierre; Chiquet, Caspar; Cochran, Ian; Deheza, Mariana; Dimopoulos, Christopher; Foucherot, Claudine; Jacquier, Guillaume; Morel, Romain; Robinson, Roderick; Shishlov, Igor (2015) Monitoring, reporting and verifying emissions in the climate economy. Nature Climate Change, 5, 319–328	Rejected. This element is being recast and is no longer being included.	Axel Michaelowa	University of Zurich	Switzerland
43537	79	3	79	4	This is not appropriate scientific writing; referring to a policy instrument that has evolved in the real world over 20 years and generated countless lessons that today's policy architectures crucially build on as "archaic" is not appropriate. Worse, it reveals ignorance as to the real-world learning that has to take place with any new policy architecture, and misses entirely the international dimension at stake. Add references to: Michaelowa, Axel; Shishlov, Igor; Brescia, Dario 2019 Evolution of international carbon markets: lessons for the Paris Agreement, in: WIREs Climate Change, 10, e613, DOI: 10.1002/wcc.613	Rejected. Technologies evolve and there are always lessons learnt as part of developing new innovations - with some approaches more efficient than others. As this section is being recast - this element will no longer be included.	Matthias Honegger	Perspectives Climate Research gGmbH	Germany

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
19001	80	2			Check the place for Table 15.9. It seems not related to the sub-chapter on the MRV.	Rejected. Fig 15.14 shows the three types of 'Paris MRV Support' - with examples illustrated in tables 15.8/15.9. To help stakeholders better connect the dots - the flow of the section is being re-organised for SOD so the tables and figures as well as the labels will need to change.	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea
45113	81	1	83	46	The use of joint purchasing and joint public procurement is also emerging as a financing mechanism, including at the local level. Recent publications from 2020 include "Review of green and sustainable public procurement: Towards circular public procurement" <https://doi.org/10.1016/j.jclepro.2019.118901> and given examples in <https://doi.org/10.3390/en12060985>	Rejected. Both publications are focusing on the public procurment, while this section does not delve into public procurment, so we did not include them.	Siir Kilkis	The Scientific and Technological Research Council of Turkey	Turkey
46663	82	15	82	16	This point on the "view of finance" is key, It should be detailes in a general section earlier in the chapter, rather than in a specifc question about urban finance…	Noted. Will discuss the point on the "view of finance", earlier in the chapter.	Hugues Chenet	University College London — Institute for Sustainable Resources	France

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
40055	83	28	83	30	Propose to separate crediting mechanisms ("offsetting schemes") from REDD+ finance. Reason: REDD+ is a specific activity type while crediting mechanisms emcompass a broad scope of different types of mitigation activities. Thus, generalisations relating to crediting mechanisms are inaccurate and statements like "frequently" must be substantiated with robust data. Propose to replace with "Crediting mechanisms focus on assessing the quality and quantify of emission reductions or removals from a broad range of activity types. Examples of activity types that can generate sustainable development benefits to rural communities are projects and programmes that promote efficient cookstoves, renewable energy minigrids and solar home systems. However, there have also been incidences of crediting activities where local stakeholder consultations have been neglected and negative impacts caused to local communities (see literature review in Michaelowa et al. 2019)." Michaelowa, Axel; Shishlov, Igor; Brescia, Dario 2019 Evolution of international carbon markets: lessons for the Paris Agreement, in: WIREs Climate Change, 10, e613, DOI: 10.1002/wcc.613	Noted. We separte crediting mechanisms from REDD+ finance. However, as carbon market-related issues, including crediting mechansims are mainly discussed under the Ch13 (National and sub-national policies and institutions), this section will not touch on the discussion on crediting mechanisms.	Axel Michaelowa	University of Zurich	Switzerland
43795	83	31	83	31	Isn't this a really critical section?	Accepted. We highligted the discussion on the implications for transformative pathways.	Kirsty Hamilton	Chatham House (Associate Fellow, unpaid)	United Kingdom (of Great Britain and Northern Ireland)
19003	83	38			Check the sentence. Need parenthesis.	Noted. Revised.	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea
28383	84	2	60	16	Section 15.6.6 on climate insurance approaches in its current state iseem overly detailed, somewaht repetive and mainly descriptive. At the same time it seems to lack critical reflection. E.g. in respect to the ARC there is a wealth of critical discussion on its trigger conditions, the way it incentifies gaming by member governments and depends on rich country subsidies. Conclusions on the future role of insurance based in international policy needs a sound analytical basis. There has beed a lot of piloting in this field over the last five years. What have been the lessons from these experiences? What should be avoided? What can the private sector do on its own? What iis the future role for the public sector and its subsidies in this field?	Accepted. Section rewritten to take into account reviewer's comments	Jochen Harnisch	KfW	Germany

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
33565	84	3	84	32	It might be useful to develop a global map with panels indicating a) observed climate change-related economic loss b) projected near-term loss and c) projected long-term loss under different scenarios	None. A good idea. May be considered later on. Noted	Debra Roberts	EThekwini Municipality	South Africa
44455	84	4	84	4	The term natural disaster does not have academic support, rather the term should be just disaster. If the triggering event needs to be identified then it is recommendable disaster triggered by a natural hazard. All disasters are social, as exposure and vulnerability are the ultimate causes of disaster. Quarantelli, E. L. (1985): «What Is Disaster? The Need for Clarification in Definition and Conceptualization in Research», en Disasters and Mental Health: Selected Contemporary Perspectives. U.S. Department of Health and Human Services, National Institute of Mental Health, pp. 41-73. Quarantelli, E. L. (1998): What is a Disaster? London, Routledge.	Noted. these are the terms used by the ARC literature. We will discuss adding the reference (ARC 2020). And in the references section. ARC (2020). How the African Risk Capacity Works. https://www.africanriskcapacity.org/about/how-arc-works/ If chapter team agrees, that its necessary a footnote can be added regarding the comments by the review and with the reference cited: "The term natural disaster does not have academic support, rather the term should be just disaster. If the triggering event needs to be identified then it is recommendable disaster triggered by a natural hazard. All disasters are social, as exposure and vulnerability are the ultimate causes of disaster." Quarantelli, E. L. (1985): «What Is Disaster? The Need for Clarification in Definition and Conceptualization in Research», en Disasters and Mental Health: Selected Contemporary Perspectives. U.S. Department of Health and Human Services,	Urbano Fra Paleo	University of Extremadura	Spain
44457	84	12	84	12	It should read weather and climate-related extremes or disasters	accepted.	Urbano Fra Paleo	University of Extremadura	Spain
19007	84	24	84	25	Remove quotation marks	accepted.	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
27891	84	1	90	16	Just a potential suggestion, there are efforts in California to require insurers to report and disclosure on a range of climate risks publically. Once such effort is with the California Department of Insurance Climate Risk Disclosure Survey. This might demonstrate best efforts to help private insurers address climate risk, both invesmtent risk and insurance risk.	Accepted. to be further examined	drew schechtman	Voya Investment Management	United States of America
19005	84	16			Remove comma. "EUR2017, (EEA 2019)."	accepted. Fixed	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea
19009	86	4	86	5	Need 'at' before "micro, meso and macro level schemes…"	accepted.	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea
11623	86	13	86	15	In the UK, a company called FloodFlash has seen increasing numbers of businesses and residential insurance customers taking parametric insurance, as it offers a simple and quick payout scheme. I wouldn't say those customers are resorting to this type of insurance, but rather choosing it over more traditional offerings.	Accepted: Sentence change to read: ' a trend towards' (as opposed to resort)	Sarah Jones	JBA Risk Management	United Kingdom (of Great Britain and Northern Ireland)
19011	86	32	86	34	Check the sentence.	Moved references to the end of the sentence and link the two clauses with 'and?	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea
1363	86		86		Climate Investment and finance for communities This section refers to adaptation.	None: Not sure what this means: it could be that the reviewer would like to see discussion about climate investment and finance for communities…but I think that is covered in another section in this chapter as well as other chapters in the report as well as in the adaptation finance in WGII.	David Viner	Mott MacDonald	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
12769	86				The section about climate risk insurance largely lacks consideration of the challenges and problems associated with these instruments. I suggest a more balanced view. For instance, insurance is usually no option for the very poor, i.e. the most vulnerable people, populations and communities, because they can't afford it. It also can exacerbate inequality (between those than can afford it and those that cannot). The current hype around insurance also means that consideration of potentially better options (contingent credit, forecast based financing, budget allocations, comprehensive adaptation strategies etc.) is given less attention. And, insurance doesnt work in isolation but only in combination with othere elements such as comperehensive adaptation and resilience strategies. A slightly more critical overview can be found here (from 2018) https://oxfamilibrary.openrepository.com/bitstream/handle/10546/620457/bp-facing-risk-climate-disaster-insurance-160418-en.pdf	There is no comprehensive assessment that evaluates the success or not of existing regional climate risk pools discussed in this section. In the literature there are two attempts at systematic evaluation or comprehensive assessment: (1) The 2015, UK Department of International Development funded long term-Independent Evaluation of the ARC; (2) A comprehensive study by Scherer (2017). This is complemented by analytical work on indicator parements for improving accountability of these mechanisms. Overall, none of these studies draw adverse conclusions about regional climate risk pooling initiatives/mechanisms. According to Scherer 'it appears that insurances work in principle and there is certainly successes'; specifically, it is argued that 'initial experiences demonstrates regional climate risk insurances works'. The author cited the 28 payouts to 16 countries of US 106 million arguing that it provides cash-starved countries with much needed cash (Scherer, 2017, p.4). The DFID funded study	Jan Kowalzig	Oxfam Germany	Germany
44459	87	8	87	8	It goes beyond management, which has an operational approach, and reaches disaster risk governance as a more comprehensive framework	Noted. under review	Urbano Fra Paleo	University of Extremadura	Spain
1359	87		87		15.6.6 Climate risk pooling This section is adaptation and resilience related and will be covered by the CCB and most likely the Africa Chapter in WG2	Noted. You are correct. This is be reconsidered. Can be outsources as desirable	David Viner	Mott MacDonald	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
19015	88	9	88	10	Check the sentence.	Sentence edited	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea
19017	88	14	88	17	Check the sentence.	noted. under review	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea
19013	88	5			Remove 'say'	accepted.	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
12771	88	8			"Given the success..." -- there is no comprehensive assessment that shows that cliamte risk insurance are successful. There is anecdotal evidence that under the right circumstances insurance can work, but it would be stark to claim the instrument as proven itself, really. For one, ARC can definitely not be called a success. It had its ups and downs, but convincing countries to purchase insurance under ARC has been quite unscuccessful recently.	delete success and substitute increasing or growing resort to... ------However it is to be noted, that there is no comprehensive assessment that says that they are not: The two attempts in the literature are 2015, UK Department of International Development funded long term-Independent Evaluation of the ARC, A comprehensive study by Scherer (2017) report that 'it appears that insurces work in principle and there is certainly successes; 'initial experiences demonstrates regional climate risk insurances works. The cite the 28 paysouts to 16 countries of US 106 million arguing that it provides cash starved countries with much needed cash. They further note that there is enthusisasm to support and scale up regional climate risk insurance see (p.4), Additionally, Panda and Surminki (2020) research on importance of indicators and frameworks for monitoring the performance an dimpact of CDRI make not final assessment of any of the regional climate risk pool. They	Jan Kowalzig	Oxfam Germany	Germany
44461	89	39	89	39	The term natural disaster does not have academic support, rather the term should be just disaster. If the triggering event needs to be identified then it is recommendable disaster triggered by a natural hazard. All disasters are social, as exposure and vulnerability are the ultimate causes of disaster. Quarantelli, E. L. (1985): «What Is Disaster? The Need for Clarification in Definition and Conceptualization in Research», en Disasters and Mental Health: Selected Contemporary Perspectives. U.S. Department of Health and Human Services, National Institute of Mental Health, pp. 41-73. Quarantelli, E. L. (1998): What is a Disaster? London, Routledge.	Noted. under review using the cited references...	Urbano Fra Paleo	University of Extremadura	Spain

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
19019	89	42			ad -> and	Fixed editorial change	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea
19021	90	40	91	2	Check the quotation marks	Accepted. Revised.	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea
4861	90	18	93	22	Whilst you correctly state that REDD+ is addressed to developing countries, I suggest you to include some considerations about a potential extension of such a system (or a similar one) for nature-based solutions to be effective also in developed countries. By a matter of fact, such an option may significantly increase chances for financial floes towards nature-based solutions.	Taken into account. Will include the discussion of the potential of finance and investment system that are able to apply in the developed countries	michele stua	APE-FVG	United Kingdom (of Great Britain and Northern Ireland)
5625	90		93		Beyond REDD+, new developments in regenerative agriculture offsetting are happening. Companies like Nori and Indigo Agriculture are offering offsets using techniques to directly measure carbon sequestration through regenerative farming practices. I recommend speaking to Aldyen Donnelly of Nori.	Taken into account. May touch on regenerative agriculture offsetting if I can find literature.	Spencer Scott	OneGeneration, Pachamama Institute	United States of America
19239	91	6	91	55	Add: Griscom et al. 2019, National mitigation potential from natural climate solutions in the tropics, PNAS and Roe et al. 2019, Contribution of the land sector to a 1.5 °C world, Nature Climate Change, for priority mitigation action in the land sector.	Taken into account. Will consider adding suggested studies	Charlotte Streck	University Potsdam	Germany
15327	91	18	91	19	Maybe it would be interesting to mention the EIB's Natural Capital Finance Facility under the LIFE programme of the European Commission. It is a pilot financing scheme that seeks to demonstrate that biodiversity services can generate cash flows and attarct financing. See here: https://www.eib.org/attachments/pj/ncff-invest-nature-report-en.pdf	Taken into account. Will consider adding suggested studies	Esther Badiola	European Investment Bank	United States of America
25725	91	27	91	31	Please link to findings of the IPCC Special Report on Climate Change and Land, which provides an updated assessment of greenhouse gas emissions from the AFOLU sector ('23% of total net anthropogenic emissions of GHG' during 2007-2016).	Accepted. Will link the finding of the IPCC Special Report on Climate Change and Land.	Renee van Diemen	WG III TSU	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
19253	91	40	91	45	While the phased approach was for a long time assumed to be the path towards results-based finance and full implementation, the practice has shown that countries sign RBF agreements at all kind of stages of readiness. The current FCPF ERPAs with DRC, Ghana or Mozambique not signed with the most 'ready' countries but because these countries had engaged country teams that fast-tracked program development. The reference to the phased approach is largely obsolete.	Taken into account. Will consider revising the description on phased approach.	Charlotte Streck	University Potsdam	Germany
19255	92	18	92	19	The years 2018-2019 have seen an 100% of increase in voluntary markets, much of it is REDD+. This leads to an influx of significant funds to REDD+ initiatives (numbers available via the voluntary carbon market standards and Ecosystem Market Place. I do not think these numbers are quoted in peer-reviewed journals yet.)	Taken into account. Will consider quoting the data from voluntary carbon market standards and ecosystem market place.	Charlotte Streck	University Potsdam	Germany
28739	92	21	92	24	Clear regulatory framework is also a factor necessary to create the enabling environment for private sector investments in REDD+. This argument is based on three case studies across the world: 1. Indonesia: Dixon and Challies (2015) analyzed the rationale and tactics of actors engaged in mobilizing private finance for REDD+ in Indonesia. 2. Europe: Laing et al. (2016) examined the motivations of firms that invested in REDD+ projects and those of firms that purchased REDD+ credits in Europe. 3. Japan: Ehara et al. (2019) examined the REDD+ engagement types preferred by Japanese private firms at the project level. Therefore, to strengthen the argument, I added this element to the sentence and changed “reducing deforestation” to “REDD+” because this paragraph deal with REDD+ not “reducing deforestation” in general (highlighted in red color): “One is the risks and factors necessary to create an enabling environment for private sector investments in REDD+ in many developing countries have yet to be sufficiently explored including carbon rights, tenure security, clear regulatory framework and law enforcement (Lujan and Silva-Chávez 2018; Atmadja et al. 2018; Dixon and Challies 2015; Laing et al. 2016; Ehara et al. 2019).”	Taken into account. Will consider adding suggested studies	Makoto Ehara	Forestry and Forest Products Research Institute	Japan

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
28741	92	28	92	34	One of characteristics of REDD+ that makes difficult to involve private sector, particularly for those who see REDD+ as opportunities to enhance their corporate values, is the concept of REDD+ that converting their efforts into reduced t-CO2. which is not so “attractive” for their CSR strategies. This argument is based on the three case studies across the world mentioned above. Therefore, to strengthen the argument, I added this element to the sentence (highlighted in red color): “Second is some characteristics of REDD+ makes difficult to involve private sector, such as the evolution of REDD+ to focus on national approaches has discouraged projects (project approach) that some private sector actors are familiar with (Lujan and Silva-Chávez 2018); the majority of benefit-sharing mechanism-based REDD+ projects have been implemented deviate from the market-based incentive model but they adopted more command-and-control subsidies that ignore the fact that different types of costs are distributed among multiple stakeholders (Sheng et al. 2019); for firms that expect REDD+ as opportunities to enhance their corporate values, the concept of REDD+ that converting their efforts into reduced t-CO2 alone is not attractive enough to be applied for their CSR strategies (Dixon and Challies 2015; Laing et al. 2016; Ehara et al. 2019). ”	Taken into account. Will consider to add some of the aspects.	Makoto Ehara	Forestry and Forest Products Research Institute	Japan
43797	93	8	93	22	I don't have a literature reference, but a key issue is revenue visibility i.e. where will the revenue come from?	Taken into account. Wil look for literature that discuss the revenue visibiliy on nature-based solutions.	Kirsty Hamilton	Chatham House (Associate Fellow, unpaid)	United Kingdom (of Great Britain and Northern Ireland)
1361	93		93		I would strongly recommend that someone from the private finance sector is co-opted as a CA on this.	Noted. Will consider in SOD	David Viner	Mott MacDonald	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
32095	93		93		fintech feels a bit me too, policy makers like to include it but is it really a separate strand of climate finance or is not fintech just the changing structural approach to financing and it will therefore have a natural role to play	Taken into account. text addresses how fintech could help or hinder climate finance	Andy Sloan	Guernsey Finance	United Kingdom (of Great Britain and Northern Ireland)
6505	93	26	95	13	The box on fintech is misplaced - it should be in the mitigation section or could be discussed as a way to reduce transaction costs one of the barriers to investment.	Taken into account. moved text	Nadia Ameli	University College London	United Kingdom (of Great Britain and Northern Ireland)
19023	96	29			Check this part: " … its climate change focal here where …"	Noted. under review	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea
19025	97	8	97	9	Check the sentence.	noted. under review	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea
25429	97	25	97	25	Delete "divestment from fossil fuels".	Noted. will check source. There does not seem any reason for this request. No literature provided.	Eleni Kaditi	Organization of the Petroleum Exporting Countries (OPEC)	Austria
43799	98	6	93	31	This seems to be written in a completely different style as if it is a conclusion of the chapter.	Editorial. Will be reshaped	Kirsty Hamilton	Chatham House (Associate Fellow, unpaid)	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
2575	98	7	98	22	This sounds a little as if private sector were doing everything they could. Are they?	Accepted. Wiil be recast	Lilia Caiado Coelho Beltrao Couto	University College London	United Kingdom (of Great Britain and Northern Ireland)
37829	98	11	98	22	These paragraphs need citations to back them up. What are some of the best examples of the "vast and extensive" literature?	Accepted. will be recast	ALEXANDRE KOBERLE	COPPE/UFRJ	Brazil
37831	98	23	98	30	This paragraph is immensely important. The excessive focus on carbon pricing tends to overlook its limited effectiveness in political economy terms.	Accepted. will be recast	ALEXANDRE KOBERLE	COPPE/UFRJ	Brazil
32063	98	24	98	25	see above - economics overstate the role of carbon pricing - not at all - everything we are doing in financial terms is a second best solution - it is because of a lack of an effecive and transparent carbon price (that capital is underallocated) - this is a worrying throw away line for such an imprortant publication - and broadly goes to my main point that this is a pallatable under appreciation of the role of return and markets in driving allocations of capital and the importane of this to deliveing private finance (see below)	Rejected. will be recast. If carbon prices were the magic answer to all of capital allocation problems, then why aren't countries doinbg that? Proof matters in science.	Andy Sloan	Guernsey Finance	United Kingdom (of Great Britain and Northern Ireland)
40181	98	31	98	40	The description of the three scenarios would greatly benefit from a graphical representation of the risk transmission channels to the economy and finance. See e.g. Monasterolo (2020) for examples of graphic representation of the risk transmission channels of climate transition scenarios characterised by carbon tax, green supporting factor and banks' climate sentiments to the credit market and real economy.	Accepted. will be recast	Irene Monasterolo	Vienna University of Economics and Business (WU)	Austria
4863	98	6	103	15	When addressing 'Pathways for the financial sector', I strongly suggest you to take into account the governance proposal, aimed at allowing for necessary financial flows to support the achievement of the Paris Agreement's objectives, introduced in: Stua, M., 2017. From the Paris agreement to a low-carbon Bretton Woods: Rationale for the establishment of a mitigation alliance. Springer International Publishing. Rather than being limited to a carbon markets analysis, the proposal aims at a much wider governance of financial flows, leading to hybrid pathways where pubcli action and private financing converge towards a single system. The proposal contains several elements described or cited in section 15.7 of this Chapter, such as those described in the 'Theory of Change' section and would be significantly beneficial for further developing the here-proposed arguments.	Accepted. will be recast	michele stua	APE-FVG	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
19029	98	6	103	15	Expect a major revision of the chapter, 15.7.	Accepted. will be recast	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea
40057	98	6	103	15	This section requires better structuring. It is important to differentiate economics of the low-carbon transition and the financial sector and not mix different concepts. The first includes classic climate policies along the three domains of the transition as suggested by Grubb (2014): regulations, carbon pricing, technology support subsidies, etc. These policies either directly regulate or affect the economics of projects. Then, there are barriers related to the financial sector: poor taking into account of climate risks, lack of appropriate financial instruments, behavioural aspects, etc. The conclusions should better reflect this differentiation.	Rejected. will be recast	Axel Michaelowa	University of Zurich	Switzerland
6513	98	31	103	15	I'd suggest to re-frame the potential scenarios in terms of "different finance scenarios" try to represent financial markets, including their imperfections (e.g. financial frictions). This would allow to assess countries based on their ability to attract (or access) finance/international financial markets - countries will have a diversified ex-ante capability to undertake large scale low carbon investments. This would help to get a better understanding of an optimal finance allocation vs inefficient allocation (current investments across regions) and introducing subsided form of finance for instance by public actors.	Accepted. will be recast	Nadia Ameli	University College London	United Kingdom (of Great Britain and Northern Ireland)
19027	98	7			Check the sentence. Need a conjunction?	Accepted. will be recast	Jione Jung	Korea Institute for International Economic Policy (KIEP)	Republic of Korea
2577	99	11	99	24	The view shown here could be better reflected throughout the chapter.	Accepted. will be recast	Lilia Caiado Coelho Beltrao Couto	University College London	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
32353	99	30	99	36	What are the main actions that the financial markets need to take to lead the way? Can you elaborate on this? I note that there are some conclusions on page 100 and 101 but seem very high level	Accepted. will be recast	Penny Apostolaki	Barclays	United Kingdom (of Great Britain and Northern Ireland)
16037	101				There are a number of good ideas in the chapter on further enabling private capital flows. However they should be clearly summarized in this section, and additional examples that are not mentioned should be outlined. For example subsidies can be shifted from climate negative to climate positive in a revenue-neutral manner; taxes can be shifted in a similar manner; climate-positive tax credits and exemptions can be implemented; accounting regulation can be issued requiring climate risk assessment, longer term consideration and preferential depreciation treatment for climate-positive investment; climate-positive debt instruments can be given preferential loan reserve ratios and coverage requirements; offset requirements for climate-negative projects can be instituted; etc.	Accepted. will be recast	Jason Patrick	New Zealand Green Investment Finance	New Zealand
43621	101				The 5 different TOCs are well identified and described. I really like it! Some literature would be good. Great way of concluding the chapter!	Accepted. will be recast	Felix Creutzig	MCC Berlin	Germany
27575	102	16	102	17	My reading of the earlier section on estimating needs was the the authors are taking care to contextualise and caveat any overarching numbers. However, this sentence uses a single un-caveated number, and any such number, even appearing once, will undoubtedly be picked up as a headline number for public consumption, and therefore, any such number must be something authors are willing to completely back if used in this uncaveated way.	Accepted. will be recast	Navroz Dubash	Centre for Polcy Research	India
17393	102	26	102	32	According to discussions held during COP25 and lack of international consensus in IPCC special report on the impacts of global warming of 1.5 °C above pre-industrial levels, the mentioned texts should appear to be reviewed.	Rejected. No such consensus on that view	Zeyaeyan Sadegh	Islamic Republic of Iran Meteorological Organization (IRIMO)	Iran

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
25431	102	41	102	43	Delete "The explicit carbon taxes … hurdles and pushbacks.", as this is a subjective statement.	Accepted. will be recast	Eleni Kaditi	Organization of the Petroleum Exporting Countries (OPEC)	Austria
28391	105	1	105	12	Additional FAQs should be added: i) What are the future potential and limitations of climate insurance approached in climate finance? ii) What are the lessons from the first five years of implementation of the GCF, what is its future potential and limitations? iii) What are the key options for scaling-up climate finance? iv) How do climate finance policy (e.g. via transparency requirements or voluntary investment criterial) and sectoral climate policy via e.g. regulation or emissions trading interact with each other?	Accepted. will be recast	Jochen Harnisch	KfW	Germany
28389	106	1	144	23	The selection and representation of references needs further work in order to comply with rigorous standards of IPCC. The inclusion and referencing of grey literature seems casual and partly incomplete (e.g. GIZ reference). The referencing of other work by IPCC is still incomplete.	Accepted. will be recast	Jochen Harnisch	KfW	Germany
46775	113	14	113	14	"Climate Bond Initiative" is an error. It should be "Climate Bonds Initiative".	Accepted. will be recast	Kim Schumacher	School of Environment and Society, Tokyo Institute of Technology	Japan
46917	113	14	113	14	"Climate Bond Initiative" is an error. It should be "Climate Bonds Initiative". (4)	Accepted. will be recast	Kim Schumacher	School of Environment and Society, Tokyo Institute of Technology	Japan
1119	121	2	121	4	A morfe recent version of Haites, et al is Haites, Erik, Duan Maosheng, Kelly Sims Gallagher, Sharon Mascher, Easwaran Narassimhan, Kenneth R. Richards, and Masayo Wakabayashi, 2018. Experience with Carbon Taxes and Greenhouse Gas Emissions Trading Systems, Duke Environmental Law and Policy Forum, Fall 2018, 29(1), 109-182. Available at: https://scholarship.law.duke.edu/delpf/vol29/iss1/	Accepted. will be recast	Erik Haites	Margaree Consultants Inc.	Canada

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
9429					ok chapter 15	Noted. Fine	ANNA LAURA PISELLO	DEPARTMENT OF ENGINEERING - UNIVERSITY OF PERUGIA, ITALY	Italy
11515					It would be great to see some discussions on the relationships/connections between climate finance (in this case mitigation finance) and economic transformation. This chapter did not address on these, definitely in the case of developing/least developed countries.	Accepted. Comments on definitional issues have been addressed	Rawshan Ara Begum	Universiti kebangsaan Malaysia (UKM)	Malaysia
14321					Even if expert readers are familiar with the most of the acronyms and abbreviations used in the chapter, there are so many of them in the text that is advisable to include a list of abbreviations and acronyms in the report. It would certainly be useful.	Noted . List of all abbreviations/accronyms will be provided as a standard practice	ÓSCAR CARPINTERO	University of Valladolid	Spain
14323					The appearance of the figures could be improved. This appearance is not homogenous (they have different size and shape). Furthermore, there are some of them which are rather fuzzy) (i.e. figure 15.14, page 78) or almost illegible (i.e. figure 15.6, page 36).	Accepted. Figures improved for clarity	ÓSCAR CARPINTERO	University of Valladolid	Spain
14325					Some arguments are repeated several times, may be even too many, especially in the first part of the chapter: the home bias of financial resources, the need of an equilibrium between adaptation and mitigation resources, the lack of private funding, the predominance of investments in renewable energy or the big funding needs of developing countries.	Accepted. Attempt have been made to address all repeated aguements in the current SOD	ÓSCAR CARPINTERO	University of Valladolid	Spain
14327					The explanation of the priorities of financial needs is considered to be too detailed: priorities established by UNFCC, the World Bank, some multilateral Development Banks, the UNDP, the UNEP, etc. The information should be simplified, either summing up the priorities laid down only by the most relevant institutions, or organizing it in a simple way in a table.	Accepted. The revision and restructuring of the chapter have addressed this concern. Thank you.	ÓSCAR CARPINTERO	University of Valladolid	Spain
14337					9. Taking into account that there are very important technical challenges that could have a relevant impact in the feasibility of the energy transition, stating that a “credible commitment to political action” is the only condition needed to ensure “a solid transfer future” (page 98) does not seem too realistic. This argument ºis not consistent with the idea that optimistic messages could “reduce climate change risk perception” and “pessimistic, messages avoid complacency without eroding efficacy” (page 99).	Taken into account. This issues was addressed in the broader context of the literature and flow of argument within the chapter	ÓSCAR CARPINTERO	University of Valladolid	Spain

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
20299					Many countries have already declared climate emergencies – Even oil companies such as BP and major asset owners such as Blackrock (US$7 trillion in assets) which owns most of the fossil fuel infrastructure are looking to divest before their assets become subject to a lack of confidence by investors due to actions driven by environmental activist groups. Governments are unwilling to shut down oil and gas producers to avoid social and economic disruption on a large-scale due to their failure to develop and implement policies to transition their economies away from fossil fuels to renewable power, energy and fuel sources. The time left to fully implement such policies is running out to achieve even the current global temperature rise target of 1.5 degrees. Fossil fuel reliant industries need to be phased out rapidly and where possible replaced with more sustainable enterprises. All these are major socio-economic and technological challenges that face modern politicians in preventing catostrophic climate change and the rapid progression of the Sixth mass extinction - trends identified/ described in UNEP GEO6 Global Assessment.	Taken into account. Thanks for the comment. The revision took into account the issues raised	Paul Dumble	Paul's Environmt Lentd	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
20301					This Chapter 15 lacks a sense of urgency for financing with timescales and targets. The narrative should perhaps go along these lines (references to support this - UNEP Nairobi GEO6 authors a good starting point -will be easily obtainable by academics familiar with these arguments and as Greta Thunberg says we already have the solutions so need to be more specific about our actions), With significant food shortages facing humanity, possibly within the next 20 years (likely), current estimates of 250 to 700 million people with nutrient deficiencies to starvation) due to climate change. rapid extinction of key pollinating insects (50 to 70% since 1970), human farming methods, over reliance on 9 crops (flora diversity loss), loss of disease resistance (e.g. fungal disease wiping our crops of Cavendish bananas spreading from Far East to South American countries) and increasing crop yield failures in breadbasket regions, there needs to be urgent financing of adaption costs related to reverse the 29% of the land area already degraded of the global land available for food production. There is also a need to establish systems for efficient recirculation of food and agricultural waste to feedback nutrients back into the ground for crop growing land and degraded land. Impact on food production with the increasingly failing “Kill, Over chemically fertilise and Grow” “Kill and grow” policy (Danone CEO description) (Sometimes known as Monsanto Feed the World Miracle), 70% of crop production is used for animal feed (highly likely impact on GHG emissions). Animal welfare issues including over feeding, re-establish thriving pollinator colonies and insect habitats, re-establish crop diversity and disease resistance. Crop yields falling drastically in breadbasket regions due to land degradation, drought, floods climate). Is there a need to shift to back medieval 3 field system (Grow crop year 1, Grow second crop, leave ground to fallow to recover)?. This approach to Increase diversity of crops (reliant on 9 crops), allow insects, pollinators to thrive, but will decrease current crop	Taken into account. Revision of the chapter has addressed this issue	Paul Dumble	Paul's Environmt Lentd	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
20303					This Chapter does not develop the need for urgent investment or for that matter divestment very well. The following is the type of narrative that may better present this case (needs referencing). ……………………… …….. Many countries have already declared climate emergencies – Even oil companies such as BP and major asset owners such as Blackrock (US$7 trillion in assets) which owns most of the fossil fuel infrastructure are accepting that the climate activist arguments are winning over politicians, investors and banks. Therefore, they are looking to divest before their assets loose value due to decreasing confidence by investors including pension fund managers due to actions driven by environmental activist groups. Governments are unwilling to shut down oil and gas producers to avoid social and economic disruption on a large-scale that is primarily due to their failure over teh last 30 years to develop and implement policies to transition their economies away from fossil fuels to renewable power, energy and fuel sources. The time left to implement such policies is running out to achieve even the current global temperature rise target of 1.5 degrees. Fossil fuel reliant industries and sources need to be phased out rapidly, where possible replaced with more sustainable enterprises and assets focused on renewable energy and fuel. All these are major global socio-economic and technological challenges that face modern politicians in preventing catrostrophic climate change and the rapid progression of the sixth mass extinction – key trends identified/ described in UNEP GEO6 Global Assessment. Financial model for this is consolidation (Michael Porter) that would be adopted in when old industries become redundant and go into recession with added value assets reused or scrapped/decommissioned and are in time replaced by emergent industry activities serving new markets. Government financing is focused on stimulating emerging market growth.	Accepted. Messaging has been revised within the context of the literature	Paul Dumble	Paul's Environmt Lentd	United Kingdom (of Great Britain and Northern Ireland)
25541					Please take care not to use value-judgement terms such as 'important', 'significant' and also prescriptive terms such as 'need' and must'. Some readers will interpret these stataments as policy prescriptive.	Taken into account. Value judgement terms have been used carefully or avoinded completely where feasible	Sarah Connors	IPCC WGI TSU	France
25575					As a reader who isnt familiar with all the topics being discussed in your chapter, it might help many Exectutive Summaries to include subheadings to cluster the statements by topic or overarching chapter themes.	Taken into account. Thanks for the comment. The revision took into account the issues raised	Sarah Connors	IPCC WGI TSU	France

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
28379					While it is clearly early in the writing process and the subject of the chapter is new and rapidly evolving it is somewhat concerning that the existing draft seems to be more immature than most other chapters under review. Many sections of the chapter seem disconnected and inconsistent. Some tables and figures seem to have been dumped into the chapter sections without proper consideration of how to use and interpret them. A lot more work needs to be put into this chapter to make it politically meaningful and acceptable according to high IPCC standards. This includes the linking of statements in the Executive Summary to the underlying chapter, use of calibrated uncertainty languages, use of references but also a consistent move from a description of individual cases to a critical review of the existing experience making full use of existing peer reviewed and grey literature.	Accepted. The structure has been revised and the flow of discussion has been improved	Jochen Harnisch	KfW	Germany
28385					There should be a scientifically sound discussion in this chapter on the spatial and temporal changes of financing needs for mitigation and adaptation if the highly ambitious mitigation targets of the Paris Accord can only be partly met. This could start with a comparison of cost estimates for a 2°C and 1.5°C increase but could also include a 2.5°C and 3.0°C increase. With due respect to the Paris Accord a scientific assessment by the IPCC should also provide data to assesss contingent developments to the most desirable. Tables 15.2 to 15.5 already provide a starting point for this type of analysis albeit currently focussed only on mitigation investments in the energy sector.	Accepted. The comment was useful in writing the SOD. Thanks much.	Jochen Harnisch	KfW	Germany
32057					General whole chapter - early parts of the chapter feel a little inconsistent in style and tone - gets very heavily academic in the middle section - I lost a sense of the narrative of the chapter at times in the middle sctions, felt more like a treatise	Accepted. The revision considered this view and has made proper adjustment	Andy Sloan	Guernsey Finance	United Kingdom (of Great Britain and Northern Ireland)
32059					this is more than editorial - displaying an understanding that for private finance in partiuclar is it returns that are key - if they are not present then no amount of exhortation by policy makers will shift capital into the requisite areas - this is an ommission that flows through the chapter (I will try to make notes regarding specific places below)	Taken into account. In revising the chapter the concern raised here was taken into account	Andy Sloan	Guernsey Finance	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
32341					As the chapter highlights, financing new activities or innovative technologies usually translates into high risk in credit analysis. It would be useful to provide ideas or best practice used in real cases to de-risk such financial flows and how that best practive was achieved or factors that led to its success. Some good examples of public-private cooperation would be useful here too.	Taken into account. The revision benefited from such comments	Penny Apostolaki	Barclays	United Kingdom (of Great Britain and Northern Ireland)
32343					The chapter states that lack of data from previous similar transactions increase the credit risk for new technologies or other new activities that could benefit from climate finance. Could you provide ideas or examples of indirect data / other kknowledge that credit risk analysis could use to better quantify the risk and help reduce credit risk?	Taken into account. Thanks for the comment. The revision took into account the issues raised	Penny Apostolaki	Barclays	United Kingdom (of Great Britain and Northern Ireland)
32351					It would be useful to have the top 3-5 sectors or activities that should be financed in each country to make the biggest impact. Graphs / Tables to cover developing countries in particulat would be very useful	Accepted. The revision has taken care of the comment and revised accordingly	Penny Apostolaki	Barclays	United Kingdom (of Great Britain and Northern Ireland)
32359					Based on the material you have reviewed can you make any observations in terms of mitigation efforts that involve activities that take place on land or air versus activities in the marine environment? How do mitigation efforts compare across the terrestial and ocean economy/sectors? Are there particular activities in the marine environment and ocean economy that are priority to scale up mitigation (and adaptation) efforts?	Taken into account. The revision considered this view and has made proper adjustment	Penny Apostolaki	Barclays	United Kingdom (of Great Britain and Northern Ireland)
33845					While it is acknowledged that there is a need for a holistic treatment of financing - the review of adaptation and resilience related financing seems excessive for a WGIII focused report. There should be increased co-ordination between WGIII and II to ensure an appropriate balance in addressing this topic and reaching agreement on what of this material may be better located in the WGII assessment.	Taken into account. In revising the chapter the concern raised here was taken into account	Debra Roberts	EThekwini Municipality	South Africa
36267					The chapter contains a lot of information, however in many cases without reference. Be awre that this is an assessment of the literature and not the opinions of the authors. It is hard to ready the chapter because of inconsitencies and lack of clear flow of topics addressed. Frequently in same section various non rlated issues are addressed.	Taken into account. The revision benefited from such comments	Youba Sokona	South Centre	Switzerland
37819					Many citations refer to grey literature (Tate 2018; Evelyn 2018) that are borderline valid.	Taken into account. Thanks for the comment. The revision took into account the issues raised	ALEXANDRE KOBERLE	COPPE/UFRJ	Brazil

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
46655					The chapter (and summary) should define what is the role of the financial sector for achieving the <<2°C target. Before understanding / defining such role, it's impossible to determine whether finance does right or wrong. Some important oppositions exist, between assigning financial sector with a role as can be given to an industrial sector, whereas other theories can consider finance as just an intermediary with no specific will nor direction, in that case industrial policies and/or industrial markets will be the only drivers to financial institutions.	Accepted. The revision has taken care of the comment and revised accordingly	Hugues Chenet	University College London — Institute for Sustainable Resources	France
46657					It is critical to view this chapter only through the conceptual framing of "climate finance", which inevitably comes with a complementary non-climate finance. What is such a non-climate finance? Investments and financing misaligned with Paris Agreement goals or which are neutral to the climate? It's crucial to determine this point. In particular, such framing tends to orient the conversation on finance to renewable energy and green techs in general, but say no word about brown / carbon-intensive industries + all the carbon-dependent industries and infrastructures. It says nothing about consumption patterns nor urban development. But a finance / financial sector / financial system aligned with the Paris Agreement should be seen as a finance that builds (or at least makes possible) the economy of the future that is compatible with a <<2°C world . Focusing on climate finance (i.e. financing green) misses the point. Cf. Chenet, Zamarioli et al 2019, Chenet et al. 2017, Chenet 2020	Taken into account. The revision benefited from such comments	Hugues Chenet	University College London — Institute for Sustainable Resources	France
46677					it would be certainly more easy to follow if the broader picture of finance stake/role(s)/functioning/etc would be introduced earlier in the chapter. It currently starts around p.35.	Taken into account. Thanks for the comment. The revision took into account the issues raised	Hugues Chenet	University College London — Institute for Sustainable Resources	France
46971					Very generally, emphasis should be put on the strengthening of public financing capacity rather than turning climate change into a profit-making opportunity for global finance. The potential of public monetary financing should be explored. cf. Wray, Randall (2012). Modern Money Theory. A Primer on Macroeconomics for Sovereign Monetary Systems. Basingstoke: Palgrave Macmillan. p. 112.	Accepted . This view is well reflected in the current discusion and flow of the chapter	Elena Hofferberth	University of Leeds	United Kingdom (of Great Britain and Northern Ireland)

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
47249					time horizon considerations seem absent in the framing of the chapter or arrive too late	Taken into account. The revision considered this view and has made proper adjustment	Hugues Chenet	University College London — Institute for Sustainable Resources	France
47251					The capacity of the financial sector to finance to transition / align with Paris is not discussed.	Taken into account. The revision considered this view and has made proper adjustment	Hugues Chenet	University College London — Institute for Sustainable Resources	France
47253					Nothing is said about regulation of the financial sector. The summary seems to take for granted the fact that under some more positive conditions (to be defined…) financial sector institutions public and private will "naturally" align with climate goals. Some authors argue that this is not possible under current regulation of the financial system and profound regulation is needed. (cf Christophers)	Taken into account. In revising the chapter the concern raised here was taken into account	Hugues Chenet	University College London — Institute for Sustainable Resources	France
47255					Radical uncertainty and related capacity to use models (e.g. stress tests) is not discussed while key. Cf. Chenet, Ryan-Collins and van Lerven 2019	Taken into account. The revision benefited from such comments	Hugues Chenet	University College London — Institute for Sustainable Resources	France
47257					Instead of rushing into numbers "how much it costs" (or just after?), it would be relevant to take the time to determine what is finance for climate: what are the needs (not only numbers but type of finance) for what, on which types of operations. The mechanisms at stake are critical, in terms of whom takes the decision, and with which types of incentives / constraints / will. Separating public from private is also very key here, as the question of willingness is totally different in each case.	Taken into account. Thanks for the comment. The revision took into account the issues raised	Hugues Chenet	University College London — Institute for Sustainable Resources	France

Comment ID	From Page	From Line	To Page	To Line	Comment	Response	Reviewer Name	Reviewer Affiliation	Reviewer Country
47259					Generally speaking there is nothing about the fundamental underlying model of the financial system and financial markets participants. Except a few words on p.82 l.15 the "profit-oriented model" is not explained nor discussed, nor it is questioned to what extent this fundamental feature is an asset or an obstacle for the fight against climate change. A strong argument (e.g. Chenet, Zamarioli et al 2019, Christophers 2017) is that the current shaping of the financial system prevents it to achieve what is expected from it. Essentially because of the time inconsistency between market participants / self-oriented interests / climate (and industrial/technology) timescales. It is the "tragedy of the horizons" narrative, but with the conclusion that disclosure of climate risks won't solve everygthing, for the very reason that markets are inefficient to such long term risks. Financial markets participants move when the risk is material to them, either because they can compute it or because it's at their feet (e.g. Thomä and Chenet 2017). The myopic market narrative is very strong for the case of climate change.	Accepted. The revision has taken care of the comment and revised accordingly	Hugues Chenet	University College London — Institute for Sustainable Resources	France
47261					The structure of the chapter is not intuitive. It is not flowing naturally from the perspective of finance but from the persepctive of other non-finance chapters, about what is to be financed. It is probable that other chapters (I haven't read) already cover the non-financial issues about what is to be financed; The key here is to understand how it can/cannot.	Accepted. The structure has been revised and the flow of discussion has been improved substantially	Hugues Chenet	University College London — Institute for Sustainable Resources	France
48093					The chapter ES has a style which differs from usual IPCC report ES (lack of use of calibrated language to report confidence in findings; very prescriptive tone). I understand that there is a reference to physical risks (loss and damage, mostly financial), what about the role of actuaries in this context, and an assessment of existing initiatives and methods? There is a possibility to coordinate with WGI, especially with chapter 12 (climate impact drivers) to ensure coherency.	Accepted. ES has been revised substantially and major concerns including editorial issues have been addressed	Valérie Masson-Delmotte	CEA, IPSL/LSCE	France