Errata in Climate Change 2022: Mitigation of Climate Change
Working Group III Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (WGIII AR6)

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Document (Chapter, Annex, Supp. Material)	**Page** (Based on the final pdf version)	**Correction**
SPM	40	C.11.1: Insert minus sign before “45” ie: (e.g., -45-100 USD/tCO2…
SPM	45	Figure 8: Symbol showing the links between response option: “Highly energy efficient building envelope” links with “SDG 17” should be a “**+**”
SPM	46	D2.2: replace "Land-related mitigation options with potential co-benefits for adaptation include agroforestry, cover crops, intercropping, and perennial plants, thus restoring natural vegetation and rehabilitating degraded land." with "Land-related mitigation options with potential co-benefits for adaptation include agroforestry, cover crops, intercropping, perennial plants, restoring natural vegetation and rehabilitating degraded land."
SPM	13	B.3.3: "35% live in countries…" to be changed to: "Around 35% live in countries…"
SPM	36	C.8.2: Replace "In both categories of scenarios, the transport sector likely does not reach zero CO2 emissions by 2100 so negative emissions are likely needed to counterbalance residual CO2 emissions from the sector (high confidence). " with "In both categories of scenarios, the transport sector is not modelled to reach zero CO2 emissions by 2100 so CDR is expected to be needed to counterbalance residual CO2 emissions from the sector (high confidence). "
SPM	41	C.12.3: replace "Models that incorporate the economic damages from climate change find that the global cost of limiting warming to 2°C over the 21st century... " with "Models that incorporate the economic damages from climate change find that the global cost of limiting warming to 2°C (>67%) over the 21st century ..."

SPM	35	C.7.3 : "The 2020–2030 decade is critical for accelerating the learning of know-how, building the technical and institutional capacity, setting the appropriate governance structures, ensuring the flow of finance, and in developing the skills needed to fully capture the mitigation potential of buildings." to be changed to: "The 2020–2030 decade is critical for accelerating the **acquisition** of know-how, building the technical and institutional capacity, setting the appropriate governance structures, ensuring the flow of finance, and in developing the skills needed to fully capture the mitigation potential of buildings."
SPM	9	Introduction: Add "; Solar Radiation Modification (SRM) {Cross-Working Group Box 4 in Chapter 14}." to the end of the footnote, to read: "Namely: Economic Benefits from Avoided Climate Impacts along Long-Term Mitigation Pathways {Cross-Working Group Box 1 in Chapter 3}; Urban: Cities and Climate Change {Cross-Working Group Box 2 in Chapter 8}; Mitigation and Adaptation via the Bioeconomy {Cross-Working Group Box 3 in Chapter 12; and Solar Radiation Modification (SRM) {Cross-Working Group Box 4 in Chapter 14}."
SPM	38	Change to SPM C10.2, from: "By 2050, comprehensive demand-side strategies across all sectors could reduce CO2 and non-CO2 GHG emissions globally by 40– 70% compared to the 2050 emissions projection of two scenarios consistent with policies announced by national governments until 2020…." To: "By 2050, comprehensive **demand-side strategies could reduce direct and indirect CO2 and non-CO2 GHG emissions in three end-use sectors (buildings, land transport, and food) globally by 40%–70% compared to the 2050 emissions** projection of two scenarios consistent with policies announced by national governments until 2020…."
SPM	21	Footnote 40: Change from: "In the same type of pathways assessed in SR1.5, GHG emissions are reduced by 45% (40-60% interquartile range) relative to 2010." To: "In the same type of pathways assessed in SR1.5, reported GHG emissions reductions in 2030 were 39-51% (interquartile range) relative to 2010."
SPM	32	Footnote 44 : Change from: " In this context, 'unabated fossil fuels' refers to fossil fuels produced and used without interventions that substantially reduce the amount of GHG emitted throughout the life-cycle; for example, capturing 90% or more from power plants, or 50-80% of fugitive methane emissions from energy supply. {Box 6.5, 11.3}" To: "In this context, 'unabated fossil fuels' refers to fossil fuels produced and used without interventions that substantially reduce the amount of GHG emitted throughout the life-cycle; for example, **capturing 90% or more CO2 from power plants**, or 50-80% of fugitive methane emissions from energy supply. {Box 6.5, 11.3}"
SPM	19	•Drawing error: in the 2100 panel of Figure SPM4 - for current policies the p75 should be 74.16, not 70 •Drawing error: discrepancy in the lines between panel a and b in 2030
SPM	26	Box SPM.1, Figure 1 : In the legend : "Filled: peak warming (over the 21st century" - change to "Filled: peak/highest projected warming over the 21st century"
SPM	12	Footnote 14: Replace "+5.9 (±4.1)" with "+5.7 (±4.0)". Replace "2.2" in the line of sight with "Table 2.1"
TS	115	Table TS.7: Replace Enhanced plant growth, reduced erosion, enhanced soil carbon, **reduced pH**, soil water retention." with "Enhanced plant growth, reduced erosion, enhanced soil carbon, **reduced soil acidity**, **enhanced** soil water retention."
TS	67	Figure TS.7 Legend: Replaced legend with SPM.3 Legend.

TS	134	Revised Figure TS.25 legend: Breakdown of recent average (downstream) mitigation investments and model-based investment requirements for 2020-2030 (USD billion) in scenarios that likely limit warming to 2°C or lower. Mitigation investment flows and model-based investment requirements by sector / segment (energy efficiency in buildings and industry, transport including efficiency, electricity generation, transmission and distribution including electrification, and agriculture, forestry and other land use), by type of economy, and by region (see Annex II Part I Section 1: By region is based on intermediate level (R10) classification scheme. By type of economy is based on intermediate level (R10) classification scheme, which considers 'North America', 'Europe', and 'Asia-Pacific Developed' as developed countries, and the other seven regions as developing countries). Breakdown by sector / segment may differ slightly from sectoral analysis in other contexts due to the availability of investment needs data. The granularity of the models assessed in Chapter 3, and other studies, do not allow for a robust assessment of the specific investment needs of LDCs or SIDSs. Investment requirements in developing countries might be underestimated due to missing data points as well as underestimated technology costs. In modelled pathways, regional investments are projected to occur when and where they are cost cost-effective to limit global warming. The model quantifications help to identify high-priority areas for cost-effective investments, but do not provide any indication on who would finance the regional investments. Investment requirements and flows covering downstream / mitigation technology deployment only. Data includes investments with a direct mitigation effect, and in the case of electricity, additional transmission and distribution investments. See section 15.4.2 Quantitative assessment of financing needs for detailed data on investment requirements. Data on mitigation investment flows are based on a single series of reports (Climate Policy Initiative, CPI) which assembles data from multiple sources. Investment flows for energy efficiency are adjusted based on data from the International Energy Agency (IEA). Data on mitigation investments do not include technical assistance (i.e., policy and national budget support or capacity building), other non-technology deployment financing. Adaptation only flows are also excluded. Data on mitigation investment requirements for electricity are based on emission pathways C1, C2 and C3 (Table SPM.1). For electricity investment requirements, the upper end refers to the mean of C1 pathways and the lower end to the mean of C3 pathways. Data points for energy efficiency, transport and AFOLU cannot always be linked to C1-C3 scenarios. Data do not include needs for adaptation or general infrastructure investment or investment related to meeting the SDGs other than mitigation, which may be at least partially required to facilitate mitigation. The multiplication factors show the ratio of average annual model-based mitigation investment requirements (2020-2030) and most recent annual mitigation investments (averaged for 2017-2020). The lower and upper multiplication factors refer to the lower and upper ends of the range of investment needs. Given the multiple sources and lack of harmonised methodologies, the data can only be indicative of the size and pattern of investment gaps. The gap between most recent flows and required investments is only a single indicator. A more comprehensive (and qualitative) assessment is required in order to understand the magnitude of the challenge of scaling up investment in sectors and regions. The analysis also does not consider the effects of misaligned flows. {15.3, 15.4, 15.5, Table 15.2, Table 15.3, Table 15.4}
TS	71	TS.2 Table scenario category names updated to be consistent with the SPM (broad guidelines followed as below) in all instances in chapter where this change aids comprehension Category>Old>Approved C1>limit warming to 1.5°C with no or limited overshoot>limit warming to 1.5°C (>50%) with no or limited overshoot C2>limit warming to 1.5°C with high overshoot>return warming to 1.5°C (>50%) after a high overshoot C3>Likely below 2°C>limit warming to 2°C (>67%) C4>Below 2°C>limit warming to 2°C (>50%) C5>Below 2.5°C>limit warming to 2.5°C (>50%) C6>Below 3°C>limit warming to 3°C (>50%) C7>Below 4°C>limit warming to 4°C (>50%) C8>Above 4°C>exceed warming of 4°C (>=50%) C1, C2 and C3>Likely limit to 2°C or lower>limit warming to 2°C (>67%) or lower
TS	108	Table footnotes to be replaced with Table SPM.2 footnotes.
TS	83	Caption for Figure TS.10 to be replaced with caption from Figure SPM.5.
TS	57	**Table TS.1: Update Row 2 col 1, from** 'At least 24 countries have reduced both territorial carbon dioxide (CO2) and GHG emissions and consumption-based CO2 emissions in absolute terms for at least 10 years, including consumption-based CO2 emissions. Of these, six are Western and Northern European countries that started reducing in the 1970s, six are former Eastern Bloc countries with consistent reductions since the 1990s, and 12 more have reduced since the mid-2000s. Some have done so at rapid sustained CO2 reduction rates of 4% yr–1. (TS.3) {2.2}' **to** 'A growing number of countries have reduced both territorial carbon dioxide (CO2) and GHG emissions and consumption-based CO2 emissions in absolute terms for at least 10 years, including consumption-based CO2 emissions. These include mainly European countries, some of which have reduced production-based GHG emissions by a third or more since peaking. Some countries have achieved several years of rapid sustained CO2 reduction rates of 4% yr–1. (TS.3) {2.2}'
TS	57	**Table TS.1: Update Row 2. Col 1** 'The combined emissions reductions of these 24 countries were outweighed by rapid emissions growth elsewhere, particularly among developing countries that have grown from a much lower base of per-capita emissions. Uncertainties in emissions levels and changes over time prevents a precise assessment of reductions in some cases. The per-capita emissions of developed countries remain high, particularly in Australia, Canada, and the United States of America. {2.2}' **To** 'The combined emissions reductions achieved by some countries have been outweighed by rapid emissions growth elsewhere, particularly among developing countries that have grown from a much lower base of per-capita emissions. Uncertainties in emissions levels and changes over time prevents a precise assessment of reductions in some cases. The per-capita emissions of developed countries remain high, particularly in Australia, Canada, and the United States of America. {2.2}'

TS	61	**Update TS.3** 'A growing number of countries have achieved GHG emission reductions over periods longer than 10 years – a few at rates that are broadly consistent with the global rates described in climate change mitigation scenarios that limit warming to 2°C (>67%) (high confidence). At least 24 countries have reduced CO2 and GHG emissions for longer than 10 years...' **to** A growing number of countries have achieved GHG emission reductions over periods longer than 10 years – a few at rates that are broadly consistent with the global rates described in climate change mitigation scenarios that limit warming to 2°C (>67%) (high confidence). At least 18 countries have reduced CO2 and GHG emissions for longer than 10 years…
TS	82	**Update TS.4.2** 'Pathways limiting warming to 2°C (>67%) or 1.5°C (>50%) and below exhibit substantial reductions in emissions from all sectors (high confidence). 1.5°C pathways with no or limited overshoot entail CO2 emissions reductions between 2019 and 2050 of around 77% (31–96%) for energy demand, around 115% (90–167%) for energy supply, and around 148% (94–387%) for AFOLU. In pathways limiting warming to 2°C (>67%), projected CO2 emissions are reduced between 2019 and 2050 by around 49% for energy demand, 97% for energy supply, and 136% for AFOLU (medium confidence). {3.4}' **to** 'Pathways that limit warming to 2°C (>67%) or lower exhibit substantial reductions in emissions from all sectors (high confidence). Pathways that limit warming to 1.5°C (>50%) with no or limited overshoot entail CO2 emissions reductions between 2019 and 2050 of around 77% (31–96%) for energy demand, around 115% (90–167%) for energy supply, and around 148% (94–387%) for AFOLU.[1]4 In pathways that limit warming to 2°C (>67%), projected CO2 emissions are reduced between 2019 and 2050 by around 49% for energy demand, 97% for energy supply, and 136% for AFOLU (medium confidence). {3.4}'
TS	117	TS.5.8 Change from: "The indicative potential of demand-side strategies across all sectors to reduce emissions is 40-70% by 2050 (high confidence)." To: "The indicative potential of demand-side strategies across all sectors to reduce emissions is 40-70% in end use sectors by 2050 (high confidence)."
TS	127	TS.6.1: "Removing fossil fuel subsidies could reduce emissions by 1-10% by 2030 while improving public revenue and macroeconomic performance (*robust evidence, medium agreement*). {13.6} To be replaced with: "Removing fossil fuel subsidies would reduce emissions, improve public revenue and macroeconomic performance, and yield other environmental and sustainable development benefits; subsidy removal may have adverse distributional impacts especially on the most economically vulnerable groups which, in some cases can be mitigated by measures such as redistributing revenue saved, all of which depend on national circumstances (high confidence); fossil fuel subsidy removal is projected by various studies (using alternative methodologies) to reduce global CO2 emissions by 1–4%, and GHG emissions by up to 10% by 2030, varying across regions (medium confidence). {6.3, 13.6}"
TS	69	Figure TS.9: Figure to be replaced by updated graphic to reflect updated changes to figure SPM.4. Changes as follows: •Drawing error: in the 2100 panel - for current policies the p75 should be 74.16, not 70 •Drawing error: discrepancy in the lines between panel a and b in 2030
TS	118	Figure TS.20, Panel (a). "Consumption of top 10%" to be changed to top "Consumption of top 10% (excluding top 1%)"
TS	57	Table TS.1, Column 1, Row 2, request to delete duplication of 'consumption-based CO2 emissions' in sentence below: A growing number of countries have reduced both territorial carbon dioxide (CO2) and GHG emissions and consumption-based CO2 emissions in absolute terms for at least 10 years~~, including consumption-based CO2 emissions.~~
TS	129	Table TS.9, last column, row 1, replace second bullet from: "Pushback from equity-focused social movements against 'premium' fares, cycling ban" To: 'Accommodating and addressing legitimate concerns from social movements about the exclusionary effects of 'premium' fares, cycling bans on busy roads'

SPM	21	Footnote 40 Add line of sight to SR1.5: "{SR1.5 Figure SPM.3b}"
2	326	Figure 2.11: scenario category names updated to be consistent with the SPM (broad guidelines followed as below) in all instances in chapter where this change aids comprehension Category>Old>Approved C1>limit warming to 1.5°C with no or limited overshoot>limit warming to 1.5°C (>50%) with no or limited overshoot C2>limit warming to 1.5°C with high overshoot>return warming to 1.5°C (>50%) after a high overshoot C3>Likely below 2°C>limit warming to 2°C (>67%) C4>Below 2°C>limit warming to 2°C (>50%) C5>Below 2.5°C>limit warming to 2.5°C (>50%) C6>Below 3°C>limit warming to 3°C (>50%) C7>Below 4°C>limit warming to 4°C (>50%) C8>Above 4°C>exceed warming of 4°C (>=50%) C1, C2 and C3>Likely limit to 2°C or lower>limit warming to 2°C (>67%) or lower
2	233	2.2.3 '...while countries in Asia and developing Pacific...' to '…while countries in Asia and Pacific...'
2	271	2.8.4: change 13.4% to 13.3%
2	242	2.3.3: Request to add "(Haberl, et al., 2020)", to read: "(Ward et al., 2016; Hickel and Kallis, 2020; Haberl, et al., 2020)"
2	244	2.3.3: Request to add "(Jiang, et al., 2021)", to read: "(Xu and Ang, 2013; Kanitkar et al., 2015; Su and Ang, 2016; Jiang, et al., 2021)" Reference also missing from bibliography: Jiang, M. H. An X. Gao N. Jia S. Liu and H. Zheng, 2021: Structural decomposition analysis of global carbon emissions: The contributions of domestic and international input changes. J Environ Manage, 294, 112942, doi: 10.1016/j.jenvman.2021.112942
2	237	2.2.4: "Ranking of high-emitting **sectors** by direct emissions highlights the importance of CO2 emissions from LULUCF (6.6 GtCO2-eq; but with low confidence in magnitude and trend), road transport (6.1 GtCO2-eq), metals (3.1 GtCO2-eq), and other industry (4.4 GtCO2-eq) **subsectors**." Changed to: "Ranking of high-emitting **sub-sectors** by direct emissions highlights the importance of CO2 emissions from LULUCF (6.6 GtCO2-eq; but with low confidence in magnitude and trend), road transport (6.1 GtCO2-eq), metals (3.1 GtCO2-eq), and other industry (4.4 GtCO2-eq) ."
2	245	2.3.4.1: request to remove in-text citation (Le Quéré et al. 2018) from the following sentence: Developing countries tend to be net emission exporters with higher PBEs than their CBEs (Peters et al. 2011a; **Le Quéré et al. 2018**),
3	300	ES: replace "The global benefits of pathways likely limiting warming to 2°C outweigh global mitigation costs over the 21st century, …" with "The global benefits of limiting warming to 2°C outweigh global mitigation costs over the 21st century,..."
3	367	3.6.2: likely' to be deleted from below:"However, emerging evidence suggests that, even without accounting for co-benefits of mitigation on other sustainable development dimensions (see section 3.6.3 for elements on co-benefits), global benefits of pathways likely to limit warming to 2°C outweigh global mitigation costs over the 21st century".
3	333	Replace: "total gross negative" from the bottom-right panel of figure 3.15 with "total gross removals"
3	381	Figure 3.43: Changes in the colours to be aligned with Figure TS.32; changes in the symbols and colours for the IMPs (Panel C) to be aligned with Figure TS.32.

3	309	3.2.5: Below replacement of text to match approved changed in SPM Box 'The IMPs consist of pathways with: gradual strengthening of current policies (GS), extensive use of net negative emissions (Neg), renewables (Ren), low demand (LD), and shifting pathways (SP). Each of these pathways can be implemented with different levels of ambition.' With 'The IMPs differ in terms of their focus, for example, placing greater emphasis on renewables (IMP-Ren), deployment of carbon dioxide removal that results in net negative global GHG emissions (IMP-Neg), and efficient resource use and shifts in consumption patterns, leading to low demand for resources, while ensuring a high level of services (IMP-LD). Other IMPs illustrate the implications of a less rapid introduction of mitigation measures followed by a subsequent gradual strengthening (IMP-GS), and how shifting global pathways towards sustainable development, including by reducing inequality, can lead to mitigation (IMP-SP)
3	319	3.3.2.2: Replace 'This is illustrated in Figure 3.13, which plots the cumulative CO2 emissions against the projected outcome for global mean temperature, both until a temperature peak and full century.' With This is illustrated in Figure 3.13, which plots the cumulative CO2 emissions against the projected outcome for global mean temperature, both until peak temperature and through to end of century (or 2100).'
3	363	3.6.1.2: Replace 'By contrast, achieving equity without international markets would result in a large discrepancy in regional carbon prices, up to a factor (Bauer et al. 2020). with 'By contrast, achieving equity without international markets would result in a large discrepancy in regional carbon prices, up to **a factor of 100** (Bauer et al. 2020).'
3	369	3.7.1: SDG 15 updated from 'ecosystem protection and water system' to 'life on land' per official SDG name (https://sdgs.un.org/#goal_section)
3	379	**3.8.1: Update** 'Other factors currently limiting the capacity to steer transitions at the necessary speed include the electoral-market orientation of politicians (Willis 2017), the status-quo orientation of senior public officials (Geden 2016), path dependencies created by 'instrument constituencies' (Béland and Howlett 2016), or the **benefits** of deliberate inconsistencies between talk, decisions and actions in climate policy (Rickards et al. 2014).' **to** 'Other factors currently limiting the capacity to steer transitions at the necessary speed include the electoral-market orientation of politicians (Willis 2017), the status-quo orientation of senior public officials (Geden 2016), path dependencies created by 'instrument constituencies' (Béland and Howlett 2016), or the **impacts** of deliberate inconsistencies between talk, decisions and actions in climate policy (Rickards et al. 2014).'
3	310	Fig 3.5 addition to caption: 'The Ren2.0 and Neg2.0 scenarios are alternative scenarios to the IMPs. These pathways are based on renewables and extensive use of negative emissions, respectively, but leading to temperature levels comparable to the C3 category and have sometimes been used for comparison.'
3	304	3.2.2: Change from: "The SSPs have now been quantified in terms of energy, **land-use change,** and emission pathways (Riahi et al. 2017)" to "The SSPs have now been quantified in terms of energy, land-use, and emission pathways (Riahi et al. 2017)"
3	306	3.2.4: "The scenarios originated from over 15 different model intercomparison projects, with **very few scenarios** originating from individual studies" Changed to: "The scenarios originated from over 15 different model intercomparison projects, with **around one fifth** originating from individual studies"

3	307	3.2.4: Numbers throughout paragraph changed to reflect updated numbers in Annex III, as follows: "In addition to the temperature classification, each scenario is assigned to one of the following policy categories: (P0) diagnostic scenarios – **100** of 1686 vetted scenarios; (P1) scenarios with no globally coordinated policy and either (P1a) no climate mitigation efforts – **119**, (P1b) current national mitigation efforts – 59, (P1c) Nationally Determined Contributions (NDCs) – **110**, or (P1d) other non-standard assumptions – **104**; (P2) globally coordinated climate policies with immediate (i.e., before 2030) action – **73**, (P2a) without any transfer of emission permits – 435, (P2b) with transfers – 70; or (P2c) with additional policy assumptions – 55; (P3) globally coordinated climate policies with delayed (i.e., from 2030 onwards or after 2030) action, preceded by (P3a) no mitigation commitment or current national policies – 7, (P3b) NDCs – **376**, (P3c) NDCs and additional policies..." Changed to: "In addition to the temperature classification, each scenario is assigned to one of the following policy categories: (P0) diagnostic scenarios – **99** of 1686 vetted scenarios; (P1) scenarios with no globally coordinated policy **(500)** and either (P1a) no climate mitigation efforts – **124**, (P1b) current national mitigation efforts – 59, (P1c) Nationally Determined Contributions (NDCs) – **160**, or (P1d) other non-standard assumptions – **153**; (P2) globally coordinated climate policies with immediate (i.e., before 2030) action **(634) and either** (P2a) without any transfer of emission permits – 435, (P2b) with transfers – 70; or (P2c) with additional policy assumptions – 55; (P3) globally coordinated climate policies with delayed (i.e., from 2030 onwards or after 2030) action **(451)**, preceded by (P3a) no mitigation commitment or current national policies – 7, (P3b) NDCs – **426**, (P3c) NDCs and additional policies..."
3	312	Figure 3.7, title to change from: The residual fossil fuel and industry emissions, **net land-use change, carbon dioxide removal (CDR**), and non-CO2 emissions (using AR6 GWP-100) for each of the seven illustrative pathways (IPs)." To: "The residual fossil fuel and industry emissions, **carbon dioxide removal (CDR) {LUC, DACCS, BECCS}**, and non-CO2 emissions (using AR6 GWP-100) for each of the seven illustrative pathways (IPs)."
3	320	Box 3.4, *cumulative CO2 emissions until net zero estimated by AR6 WGIII* "The numbers can be found in Table 3.2 (330–710 GtCO2 for C1; **540**–930 for C2; and 640–1160 for C3)." changed to: "The numbers can be found in Table 3.2 (330–710 GtCO2 for C1; **530**–930 for C2; and 640–1160 for C3)."
3	327	Pathways following emissions levels projected from the implementation of NDCs announced prior to COP26 until 2030 would have to reach net zero CO2 around **10** years earlier. CCB 3 Changed to: Pathways following emissions levels projected from the implementation of NDCs announced prior to COP26 until 2030 would have to reach net zero CO2 around **5** years earlier. Same change made in corresponding footnote.
3	327	Footnote 5: A small fraction of pathways in the AR6 scenarios database that **likely** limit warming to 2°C (**9%) or are as likely as not to limit warming to 2°C (14%)…** Changed to: A small fraction of pathways in the AR6 scenarios database that limit warming to 2°C **(7% for C3 and 14% for C4)**...
3	327	Footnote 8: Pathways that follow emission levels projected from the implementation of NDCs announced prior to COP26 until 2030 and that still **likely** limit warming to 2°C reach net zero CO2 emissions during 2065–2070 (**2060**–…) compared with **2075–2080 (2060–…)** Changed to: Pathways that follow emission levels projected from the implementation of NDCs announced prior to COP26 until 2030 and that still limit warming to 2°C **(>67%)** reach net zero CO2 emissions during 2065–2070 (**2055-2090**) compared with **2070-2075** (**2055-...**)

3	327	CCB3. "Global net zero GHG emissions measured in terms of GWP-100 are reached between 2095 and 2100 (**2055**–…)" Changed to: "Global net zero GHG emissions measured in terms of GWP-100 are reached between 2095 and 2100 (**2050**–…)"
3	298	Footnote 2 changed from: "'NDCs announced prior to COP26' refers to the most recent Nationally Determined Contributions submitted to the UNFCCC as well as those publicly announced with sufficient detail on targets, but not yet submitted, up to 11 October 2021, and reflected in studies published up to 11 October 2021." To: "NDCs announced prior to COP26 refer to the most recent nationally determined contributions submitted to the UNFCCC up to the literature cut-off date of this report, 11 October 2021, and revised NDCs announced by China, Japan and the Republic of Korea prior to October 2021 but only submitted thereafter."
3	298	ES: Cost-effective mitigation pathways assuming immediate actions to limit warming to 2°C (>67%) are associated with net global GHG emissions of **32–55** GtCO2-eq yr–1 by 2030…" Changed to: "Cost-effective mitigation pathways assuming immediate actions to limit warming to 2°C (>67%) are associated with net global GHG emissions of **30-49** GtCO2-eq yr–1 by 2030..."
3	298	Footnote 1: New footnote added at first use of 'immediate action', lifted from the SPM. Footnote reads: "Immediate action in modelled global pathways refers to the adoption between 2020 and at latest before 2025 of climate policies intended to limit global warming to a given level. Modelled pathways that limit warming to 2°C (>67%) based on immediate action are summarised in category C3a in Table SPM.2. All assessed modelled global pathways that limit warming to 1.5°C (>50%) with no or limited overshoot assume immediate action as defined here (Category C1 in Table SPM.2)."
3	298	"To limit warming to 2°C (>67%) after following the NDCs to 2030, the pace of global GHG emission reductions would need to accelerate quite rapidly from 2030 onward: to an average of 1.4–2.0 GtCO2-eq yr–1 between 2030 and 2050, which is **similar to** global CO2 emission reductions in 2020..." Changed to: "To limit warming to 2°C (>67%) after following the NDCs to 2030, the pace of global GHG emission reductions would need to accelerate quite rapidly from 2030 onward: to an average of 1.4–2.0 GtCO2-eq yr–1 between 2030 and 2050, which is **around two thirds of the** global CO2 emission reductions in 2020..."
3	351	Modelled pathways that are consistent with NDCs announced prior to COP26 until 2030 and assume no increase in ambition thereafter have **higher** emissions, leading to a median global warming of 2.8°C [2.1-3.4°C] by 2100. changed to: Modelled pathways that are consistent with NDCs announced prior to COP26 until 2030 and assume no increase in ambition thereafter have **lower** emissions, leading to a median global warming of 2.8°C [2.1-3.4°C] by 2100.
3	307	Table 3.1 Col 1 heading updated from 'Description' to' Category to match SPM table 2 and col 2 heading 'Subset' to 'Description' for clarity
3	354	Scenarios following NDCs until 2030 show a much smaller reduction in fossil fuel use, **only half of the** growth in renewable energy use… Changed to: Scenarios following NDCs until 2030 show a much smaller reduction in fossil fuel use, **a slower** growth in renewable energy use…
3	330	Table 3.2, footnote b: addition of 'and table 3.1' as : 'For a description of pathways categories see Box SPM.1 and Table 3.1.'

3	301	Update missing confidence statement as **'Different mitigation pathways are associated with different feasibility challenges, though appropriate enabling conditions can reduce these challenges.** Feasibility challenges are transient and concentrated in the next two to three decades (high confidence). They are multidimensional, context-dependent and malleable to policy, technological and societal trends. {3.8}' to **'Different mitigation pathways are associated with different feasibility challenges, though appropriate enabling conditions can reduce these challenges *(high confidence)* .** Feasibility challenges are transient and concentrated in the next two to three decades (high confidence). They are multidimensional, context-dependent and malleable to policy, technological and societal trends. {3.8}'
3	301	Update missing confidence statement as '**Mitigation pathways are associated with significant institutional and economic feasibility challenges rather than technological and geophysical feasibility challenges**. The rapid pace of technological development and deployment in mitigation pathways is not incompatible with historical records. Institutional capacity is rather a key limiting factor for a successful transition. Emerging economies appear to have the highest feasibility challenges in the short to medium term. {3.8}' to '**Mitigation pathways are associated with significant institutional and economic feasibility challenges rather than** **technological and geophysical feasibility challenges *(medium confidence)*** . The rapid pace of technological development and deployment in mitigation pathways is not incompatible with historical records. Institutional capacity is rather a key limiting factor for a successful transition. Emerging economies appear to have the highest feasibility challenges in the short to medium term. {3.8}'
3	307	Table 3.1: Last row added 'C1, C2, C3: limit warming to 2°C (>67%) or lower' based on approved changes from SPM
3	303	Section 3.2: Title for section 3.2 updated from 'What are Mitigation Pathways Compatible With Long-term Goals?' to 'Which Mitigation Pathways are Compatible With Long-term Goals?'
4	432	**4.2.4.2: Reference deletion:** Görz, W. W.K., K. Hennenberg, F. F.C. Matthes, M. Scheffler, and K. Wiegmann, 2020: Towards a Climate-Neutral Germany. **As well as change of corresponding in-text citation:** 'For Germany, three steps to climate neutrality by 2050 are introduced: Firstfirst, a 65% reduction of emissions by 2030; second, a complete switch to climate- neutral technologies, leading to a 95% cut in emissions, all relative to 1990 levels by 2050; and third balancing of residual emissions through carbon capture and storage (Görz et al. 2020)' to 'For Germany, three steps to climate neutrality by 2050 are introduced: Firstfirst, a 65% reduction of emissions by 2030; second, a complete switch to climate- neutral technologies, leading to a 95% cut in emissions, all relative to 1990 levels by 2050; and third balancing of residual emissions through carbon capture and storage (Prognos et al. 2020)'
4	435	4.2.5.1:Replacing in-text citation as below: from 'The European Union member states (EU-28) recently announced 2050 climate neutrality goal is explored by pathways that emphasise complete substitution of fossil fuels with electricity generated by low-carbon sources, particularly renewables; demand reductions through efficiency and conservation, and novel fuels and end-use technologies **(Capros et al. 2019; Zappa et al. 22 2019; Louis et al. 2020; Duscha et al. 2019; Prognos Öko-Institut Wuppertal-Institut 2020)'** to 'The European Union member states (EU-28) recently announced 2050 climate neutrality goal is explored by pathways that emphasise complete substitution of fossil fuels with electricity generated by low-carbon sources, particularly renewables; demand reductions through efficiency and conservation, and novel fuels and end-use technologies **(Prognos et al. 2020).'**
4	474	'The European Green Deal proposed in 2019 (European Commission 2019), including a UDF100 billion..' To 'The European Green Deal proposed in 2019 (European Commission 2019), including a €100 billion..'
4	415	4.1: replace 'Some early framing of development pathways was included in the Third Assessment Report (William R Moomaw et al. 2001)' with 'Some early framing of development pathways was included in the Third Assessment Report (Banuri et al. 2001)'
4	475	Fig 4.9 'Just transitions around the world' caption: Addition of Government of Spain to the list of countries source references for the figure
4	475	Delete references: UNFCCC, 2015a: Paris Agreement. Conf. Parties its twenty-first Sess., 21932(December), 32, doi:FCCC/CP/2015/L.9/Rev.1. UNFCCC, 2015d: Adoption of the Paris Agreement. United Nations Framework Convention on Climate Change (UNFCCC), 32 pp.

4	425	Cross chapter Box 4, Emissions gap. Change from: “GHG emissions of NDCs are broadly consistent with 2030 emission levels of cost-effective long-term pathways staying below 2.5°C.” To: “GHG emissions of NDCs are broadly consistent with 2030 emission levels of cost-effective long-term pathways staying below 2.5°C**, (scenarios category C5, Table 3.2, Chapter 3).**”
4	427	Table 4.4, Target for Non-CO2 emissions: "Members to implement policies that will deliver substantial short-lived climate forcers (SLCP) reductions in the near to medium-term (i.e., by 2030) for HFCs and methane" Changed to: "Members to implement policies that will deliver substantial short-lived climate **pollutants** (SLCP) reductions in the near to medium-term (i.e., by 2030) for HFCs and methane"
4	424	CCB4 Figure 1, figure to be replaced by updated graphic to reflect updated changes to figure SPM.4. Changes as follows: •Drawing error: in the 2100 panel - for current policies the p75 should be 74.16, not 70 •Drawing error: discrepancy in the lines between panel a and b in 2030
4	449	Section 4.3.1.2, change from: "Ecological sustainability challenges include reducing GHG emissions, protecting the ozone, controlling pollutants…" To: "Ecological sustainability challenges include reducing GHG emissions, protecting the ozone **layer**, controlling pollutants…"
4	424	Cross chapter Box 4 Figure 1 caption, panel a description: Limit to 2°C (>67%) with immediate action: Pathways that limit warming to 2°C (>67%) with immediate action after **202027** (C3a, Table SPM.2) **202027** should read **2020**
5	505	ES: Change from: "Other options with high mitigation potential include reducing air travel, cooling setpoint adjustments," to: "Other options with high mitigation potential include reducing air travel, **heating and** cooling **set-point** adjustments,"
5	517	Box 5.3 Replace "comparing the situation between 2014 and 2018." With: "comparing the situation between 2000 and 2018"
5	566	Table 5.5: Row "Reduce size of dwellings", change "Size of dwellings getting smaller" with "Size of dwellings getting larger"
5	505	ES: Change from: "The indicative potential of demand-side strategies across all sectors to reduce emissions is 40-70% by 2050 (high confidence)." To: "The indicative potential of demand-side strategies across all sectors to reduce emissions is 40-70% in end use sectors (industry, buildings, land, transport and food) by 2050 (high confidence)."
5	505	change from: "The indicative potential of demand-side strategies across all sectors to reduce emissions is 40-70% by 2050 (high confidence)." To: "The indicative potential of demand-side strategies across all **end use** sectors to reduce emissions is 40-70% by 2050 (high confidence)."

5	546	5.4: Insert "Nielsen et al. 2021" citation to the sentence below: "These five drivers of human behaviour either contribute to the status quo of a global high-carbon, consumption- and GDP growth-oriented economy or help generate the desired change to a low-carbon energy-services, well-being, and equity-oriented economy (Jackson 2016; Cassiers et al. 2018; Yuana et al. 2020, **Nielsen et al. 2021**)" Add full reference to reference list: Nielsen, Kristian S., Kimberly A. Nicholas, Felix Creutzig, Thomas Dietz, and Paul C. Stern, 2021. "The role of high-socioeconomic-status people in locking in or rapidly reducing energy-driven greenhouse gas emissions." Nature Energy 6, no. 11 (2021): 1011-1016.
5	559	5.4.5: In the state of Himachal Pradesh of India, shift from LPG to electricity, with induction stove, has been successful due to…. Changed to: In the state of Himachal Pradesh of India, shift from LPG to electricity **among rural households**, with induction stove, has been successful due to….
5	565	Box 5.10: Examples of informal-sector mitigation include digital banking in Africa; mobility in India using **recycled motors and** collective transport; food production, meal provision, and reduction of food waste in Latin America (e.g. soup kitchens in Brazil, community kitchens in Lima, Changed to: Examples of informal-sector mitigation include digital banking in Africa; mobility in India using collective transport; food production, meal provision, and reduction of food waste in Latin America (e.g. soup kitchens in Brazil, community kitchens in Lima,
5	510	Box 5.1, Figure 1: Higher resolution version of figure provided to make data points clearer. Clustering overlay removed.
6	689	Box 6.11: Change: “limiting warming to 1.5°C” to “likely limiting warming to 2.0°C or below” .
6	686	Updated Figure 6.27; Errors identified in the R6 dataset mean that the figure is redrawn with correct data
6	671, 673, 683	Replace Figures 6.21, 6.22, and 6.25 with updated Figures 6.21, 6.22, and 6.25.
6	689 - 691	Replace Box 11 Figure 1, Box 11 Figure 2, Box 11 Figure 3, Box 11 Figure 4 with updated Figures: Box 11 Figure 1, Box 11 Figure 2, Box 11 Figure 3, Box 11 Figure 4.
6	686	Figure 6.27: Change “R5” in the figure caption to “R6”
6	695	Change ‘generally' to ‘- on an average -’
6	699	Replace Figure 6.35 with the new version to match the accounting method for all relative change assessments in Section 6.7 as undertaken in Final Draft Version .
6	698	Change "23-51" to "24-51"
6	698	change "79% to 99%" to "78% to 99%"
6	698	Change "66% to 98%" to "65% to 98%"
6	698	"21% to 61%" to "21% to 62%"
6	698	Change "-13% to 36%" to "-14% to 36%"
6	698	Change "43" to "73", Change "91" to "145", Change "19% to 54%" to "40% to 78%"
6	699	Change "46" to "26", Change "109" to "86"
6	699	Change "21% 60%" to "14% to 45%"
6	624	Request to add the following references: 1) Jakob, M., Steckel, J.C., Jotzo, F. et al. The future of coal in a carbon-constrained climate. Nature Climate Change 10, 704–707 (2020). https://doi.org/10.1038/s41558-020-0866-1 2) Jewell, J., Vinichenko, V., Nacke, L. et al. Prospects for powering past coal. Nat. Clim. Chang. 9, 592–597 (2019). https://doi.org/10.1038/s41558-019-0509-6 3) Thurber. M. C. & Morse, R. K. in The Global Coal Market (eds Thurber, M. C. & Morse, R. K.) 3-34 (Cambridge Univ. Press, 2015). Also to add in-text citation: Growth in coal-fired electricity generation capacity in the Asia Pacific region has offset retirements in North America and Europe (Jakob et al. 2020, Global Energy Monitor et al., 2021).
6	646	Box 6.5: Change from: "That said, recent years have seen a decrease in fossil EROI, especially as underground coal mining has continued in China". To: "That said, recent years have seen a decrease in fossil EROI, especially as underground coal mining still represents a substantial portion of global production."

6	701 and 708	Change the sentence as follows and add the following three references: "Similarly, many programs have promoted the installation of lower-carbon household options such as heat pumps, district heating, or solar water heaters across Europe, the Asia-Pacific and Africa (Hu et al,. 2012; Sovacool and Martiskainen 2020; Ahmed et al. 2021)." •Ahmed, Sumair Faisal, Mohammad Khalid, Mahesh Vaka, Rashmi Walvekar, Arshid Numan, Abdul Khaliq Rasheed, Nabisab Mujawar Mubarak, Recent progress in solar water heaters and solar collectors: A comprehensive review, Thermal Science and Engineering Progress, Volume 25, 2021, 100981 •Hu R., Sun P., Wang Z. An overview of the development of solar water heater industry in China. Energy policy, 2012, 51: 46-51. •Sovacool, Benjamin K., Mari Martiskainen, Hot transformations: Governing rapid and deep household heating transitions in China, Denmark, Finland and the United Kingdom, Energy Policy, Volume 139, 2020, 111330
6	613-708	Scenario naming updates made throughout the chapter to ensure consistency, as below :C1>limit warming to 1.5°C with no or limited overshoot>limit warming to 1.5°C (>50%) with no or limited overshoot C2>limit warming to 1.5°C with high overshoot>return warming to 1.5°C (>50%) after a high overshoot C3>Likely below 2°C>limit warming to 2°C (>67%) C4>Below 2°C>limit warming to 2°C (>50%) C5>Below 2.5°C>limit warming to 2.5°C (>50%) C6>Below 3°C>limit warming to 3°C (>50%) C7>Below 4°C>limit warming to 4°C (>50%) C8>Above 4°C>exceed warming of 4°C (>=50%) C1, C2 and C3>Likely limit to 2°C or lower>limit warming to 2°C (>67%) or lower
6	708	References: Correct 'OECD IEA NEA, 2020: Projected Costs of Generating Electricity 2015. Proj. Costs Gener. Electr. 2020, , OECD Library. doi:10.1787/cost_electricity-2015-en.' to 'IEA, 2020j: Projected Costs of Generating Electricity 2020. Paris, France. https://www.iea.org/reports/projected-costs-of-generating-electricity-2020'
6	708	References: Addition of IRENA 2017c:IRENA, 2017c: Stranded assets and renewables: how the energy transition affects the value of energy reserves, buildings and capital stock. International Renewable Energy Agency, Abu Dhabi. www.irena.org/remap.
6	708	Below reference has been removed : 'Neira Castro, J., 2020: The energy trilemma: conceptual development and practical implementation into energy policy. PhD Thesis, University of Dundee'
6	618	Figure 6.1 caption changed from: Global energy flows within the 2019 global energy system (top panel) and within two illustrative future, net-zero CO2 emissions global energy system (bottom panels). Source: IEA, AR6 Scenarios Database. Flows below 1 EJ are not represented. The illustrative net-zero scenarios correspond to the years in which net energy system CO2 emissions reach zero – **2045** in IMP-Ren and **2060** in IMP-Neg-2.0. Source: data from IMP-Ren: Luderer et al.(2021); IMP-Neg-2.0: Riahi, K. et al. 2021. To: Global energy flows within the 2019 global energy system (top panel) and within two illustrative future, net-zero CO2 emissions global energy system**s** (bottom panels). Source: IEA, AR6 Scenarios Database. Flows below 1 EJ are not represented. **Agricultural energy and energy own use are included in industry. Captured methane is included in natural gas supply where appropriate.** The illustrative net-zero scenarios correspond to the years in which net energy system CO2 emissions reach zero – **2060** in IMP-Ren and **2070** in IMP-Neg-2.0. Source: data from IMP-Ren: Luderer et al.(2021); IMP-Neg-2.0: Riahi, K. et al. 2021.
6	617-618	Figure 6.1, panels b & c: Figure panels updated as incorrect data had been used.
6	622	Fig 6.5: add a sentence to the caption: Primary energy in this figure is based on IEA accounting methods and not direct equivalents for several energy sources. Final energy does not include industry own use and losses.
6-SM	6SM-5	Demand side mitigation row Change 'Many options rely on voluntarily change so no governance issues and institutional barriers.' to 'Many options rely on voluntary change, consequently there are few governance issues and institutional barriers.'
7	757	Table 7.1 footnote f: " (which would become --7.2 GtCO2 yr-1)" should read "(which would become --7.0 GtCO2 yr-1)"

7	783	7.4.2.4: 'In Australia, savanna burning emissions abatement methodologies have been available since 2012, and abatement has exceeded 4 MtCO2-eq mainly through the management of low intensity early dry season fire (Lynch et al. 2018). Until August 2021, 78 were registered (Australian Government, Clean Energy Regulator, 2021).' CHANGE TO 'In Australia, savanna burning emissions abatement methodologies have been available since 2012, and abatement has exceeded **9.3 MtCO2-eq** mainly through the management of low intensity early dry season fire. Until September 2021, 78 projects were registered (Australian Government, Clean Energy Regulator, 2021).
7	814	7.6.1: 'Regulatory markets provide the next largest share of carbon removal to date. Data from the Australia Emissions Reduction Fund is an estimate of carbon credits in agriculture, and forestry purchased by the Australian government.' Change to 'Regulatory markets provide the next largest share of carbon removal to date. Data from the Australian Emissions Reduction Fund are carbon credits issued in for agricultural, and vegetation and savanna burning projects.'
7	814	Table 7.4: Column 2: Total emissions reduction or offset (Mt CO2-eq): 42.7m Column 3: Timeframe: 2012-2019 (new footnote: "covering 7 financial years, 1 July to 30 June") Column 4: Mt CO2-eq yr: 6.1 Column 5: Financing (USD yr): 53.6 Footnote e: Data for Australian carbon credit units (ACCUs) from the Australian Emissions Reduction Fund Registry for, agriculture and vegetation and savanna burning projects through FY2018/19 (downloaded on 24/10/2019): (http://www.cleanenergyregulator.gov.au/ERF/project-and-contracts-registers/project-register) and from Emissions Reduction Fund auction results to December 2018: (http://www.cleanenergyregulator.gov.au/ERF/auctions-results/december-2018).
7	817	**Box 7.8: Change** 'Summary of the case – Indigenous peoples include more than 5 000 different peoples, with over 370 million people, in 70 countries on five continents (UNIPP 2012). Forests cover more than 80% of the area occupied by indigenous peoples (330 million hectares) point to their critical for forest governance (Garnett et al. 2018; Fa et al. 2020). **to** "Indigenous peoples include more than 5000 different peoples, with over 370 million people, in 70 countries on five continents (UNIPP 2012). For example, in Latin America and Caribbean, forests cover more than 80% of the area occupied by indigenous peoples (330 million hectares) (FAO and FILAC,2021) which points to their critical role for forest governance (Garnett et al. 2018; Fa et al. 2020)." **And add new reference:** FAO and FILAC. 2021. Forest governance by indigenous and tribal peoples. An opportunity for climate action in Latin D151America and the Caribbean. Santiago. FAO. https://doi.org/10.4060/cb2953en
7	770	In section 7.3.1.4 "fire regime changes" notes unprecedented wildfires in British Columbia are dated to 2021. This is not correct. The given source [Kirchmeier-Young et al. 2019] mentions 12000 square kilometers burned in BC in 2017. A quick Google search gives the area burned in British Columbia in 2021 as 8700 square kilometers, i.e. less than 2017.
7	774	CO2-eq emissions for CH4 are incorrect. Replace "(CH4 = 27…" with "(CH4 = 28…"
8	863	ES: Sentence should read "Under a scenario with aggressive but not immediate urban mitigation **efforts** to limit global warming to 2°C (>67%) (low emissions, SSP1-2.6), urban emissions could reach 17 GtCO2-eq in 2050." This is a change to the approved Trickleback, which reads: "Under a scenario with aggressive but not immediate urban mitigation **policies** to limit global warming to 2°C (>67%) (low emissions, SSP1-2.6), urban emissions could reach 17 GtCO2-eq in 2050."
8	864	ES: Sentence should read "cities can achieve net-zero emissions only if emissions are reduced within and outside of their administrative boundaries." This is a change to the approved Trickleback, which reads: "cities can achieve net-zero emissions only if emissions are reduced within and outside of their administrative boundaries **through supply chains**"
8	908	8.4.5: change 'The exclusion of consumption-based emissions and emissions that occur outside of city boundaries as a result of urban activities will lead to significant undercounting, to the effect of undercounting 41% of territorial emissions and 4% of global emissions annually, respectively (Wiedmann et al. 2021).' to **'The exclusion of consumption-based emissions and emissions that occur outside of city boundaries as a result of urban activities, however, will lead to significant undercounting. For example, a study of 79 major cities found that about 41% of consumption-based carbon footprints (1.8 GtCO2-eq of 4.4 GtCO2-eq) occurred outside of city boundaries.** Hence, using a territorial approach would significantly undercount urban carbon footprints. Targeting the goods and services that are produced for consumption by urban households, encompassing the full supply chain and upstream production, are essential to realize the full mitigation potential of urban areas (Wiedmann et al. 2021).'

8	921	8.6.1: replace "Only then can the urban form constraints on locational and mobility options be increased" with: "Only then can the urban form constraints on locational and mobility options be effective at reducing transport-based emissions."
8	927	Delete entire sentence: Sector analysis indicates that gasoline transportation and electricity generation contributed to the majority of the April May 2020 decline (Gurney et al. 2021b).
9	982	Figure 9.2 : Replace Taiwan, China With Taiwan, Province of China
9	984	Figure 9:14 to be updated with correct data.
10	1054	Table 10.1: Column 'basic human needs', change "Reduced stress level from driving" to "Reduced driving-induced stress"
10	1067	Table 10.5 footnote 'n' added: "Salman et al. (2017); Moreira et al. (2014); Roy et al. (2015); Handler et al. (2016)."
10	1113	10.8.1: Change: "Bulawayo, the capital city of Zimbabwe,…" to: "Bulawayo, the second-largest city in Zimbabwe,…"
10	1136	New reference added: "Nassar, N.T., Alonso, E., and Brainard, J.L., 2020, Investigation of U.S. Foreign Reliance on Critical Minerals—U.S. Geological Survey Technical Input Document in Response to Executive Order No. 13953 Signed September 30, 2020 (Ver. 1.1, December 7, 2020): U.S. Geological Survey Open-File Report 2020–1127, 37 p., https://doi.org/10.3133/ofr20201127"
10	1117	Box 10.6 "shows that the trend over the past 30 years has been for the US to move from being self-sufficient in REEs to being 100% reliant on imports, predominantly from China, Japan, and France." replaced with: "Nassar et al. (2020) report that over the past 30 years the US has become increasingly reliant **in** imports to meet domestic demand for minerals, including REEs."
10	1148	Appendix 10.2: Change: "Maintenance costs were assumed to be USD0.1/mile for ICEV buses and USD0.6/mile…" to: "Maintenance costs were assumed to be USD0.63 per km for ICEV buses and USD0.38 per km…"
10	1122	Delete reference 'UK Government, 2019: Houses of Parliament Parliamentary Office of Science & Technology.'
11	1204	Replace entire paragraph before Table 11.5 with "For four sub-sectors in industry with high emissions Table 11.5 shows results from Material Economics (2019) for the EU. The combination of circularity, material and energy efficiency, fossil and waste fuels mix, electrification, hydrogen, CCS and biomass use varies from scenario to scenario with none of these options ignored, but tradeoffs are required. "
11	1204	ADD one line after "end of life plastic" to Table 11.5, titled CCS, with "5-34" for column "Steel", "0-31" for column "Plastics", "0-57" for column "Ammonia", and "29-79" for column "cement".
11	1204	Table 11.5: Merge the rows (not including the new CCS row) in column "Ammonia" and apply "25-84"
11	1197	Table 11.3, replace EUROs with USD and add footnote. USD39-79 t-1 and USD46 MWh-1 [footnote] Footnote: Converted from EUR2018 34–68 t–1 and EUR2018 40 MWh–1
11	1175	Table 11.1, last column heading to be changed from "GtCO2e " to "MtCO2e"
11	1197	Table 11.3, GHG intensity of EAFs, change from “>=0” to “>=0.05”
12	1259	Figure 12.2 Update ‘In both cases cost cut-offs at USD100 tCO2–1 are applied’ to ‘Cost cut-offs at USD100 tCO2–1 are applied to both electricity production in 2030 as calculated by IAMs and electricity production potentials found in the sectoral analyses. ‘
12	1292	Update 'Dietary changes are relevant for several SDGs, **excluding** SDG 13 (climate action)..' to 'Dietary changes are relevant for several SDGs, **in addition to** SDG 13 (climate action),'
12	1275	Table 12.6: Addition of abbreviation. 'TRL: technology readiness level is a measure of maturity of the CDR method. Scores range from 1 (basic principles defined) to 9 (proven in operational environment).'
12	1275	Table 12.6: Replace Enhanced plant growth, reduced erosion, enhanced soil carbon, **reduced pH**, soil water retention.” with “Enhanced plant growth, reduced erosion, enhanced soil carbon, **reduced soil acidity**, **enhanced** soil water retention.”
12	1258	Figure 12.1: Update ‘**The latter** are given as box plots of global emissions reductions for each sector (blue and green) at different global carbon cost levels (horizontal axis) for 2030, based on all scenarios likely limiting warming to 2°C or lower (see Chapter 3) in the AR6 scenarios database (IIASA 2021).’ to ‘**Emission reductions calculated using IAMs are given as box plots** of global emissions reductions for each sector (blue and green) at different global carbon cost levels (horizontal axis) for 2030, based on all scenarios likely limiting warming to 2°C or lower (see Chapter 3) in the AR6 scenarios database (IIASA 2021).’
12	1270	12.3.1.3: update 'biodiversity' to 'fundamental alteration of food webs and biodiversity'

12	1274	**12.3.2: changing the corrigendum for conistency with SPM footnote 53:The current text of corrigendum (p.16 of online corrigenda list):** add footnote after the sentence ending with "percentile range)" - "Cumulative CDR from AFOLU cannot be quantified precisely because models use different reporting methodologies that in some cases combine gross emissions and removals, and use different baselines. **CLAs now propose to update corrigenda to the following:** add footnote after the sentence ending with "percentile range)" - "Cumulative levels of CDR from AFOLU cannot be quantified precisely given that: (i) some pathways assess CDR deployment relative to a baseline; and (ii) different models use different reporting methodologies that in some cases combine gross emissions and removals in AFOLU. Total CDR from AFOLU equals or exceeds the net negative emissions mentioned.
12	1254	Table 12.3: Under Transport section, 'Light duty vehicles' - final column. Change from "Depending on the carbon intensity of the electricity supplied to the vehicles Estimated potential is 0.5 GtCO2-eq, mitigation costs are variable" to "Estimated potential is 0.5-0.7 GtCO2-eq, depending on the carbon intensity of the electricity supplied to the vehicles. Mitigation costs are variable."
12	1254	Table 12.3: Add text to cell under Transport, Heavy duty vehiclese - electric vehicles, final column: "Estimated potential is 0.2 GtCO2-eq. Mitigation costs are variable."
12	1304	12.5.4: Delete "in India" from the following sentence: "For example, hydropower and ground-based solar parks ~~in India~~ have involved enclosure of lands designated as degraded, displacing pastoral use by vulnerable communities, constituting forms of spatial injustice (Yenneti et al. 2016)."
12	1265	Footnote 1: Change to corrigenda to align with SPM footnote 54 (not recorded as a trickleback). Recorded corrigenda reads: “Total CDR from AFOLU equals or exceeds the net negative emissions mentioned.” In Ch12, (after the sentence ending with "percentile range) Corrigenda previously proposed: add footnote after the sentence ending with "percentile range)" - "Cumulative CDR from AFOLU cannot be quantified precisely because models use different reporting methodologies that in some cases combine gross emissions and removals, and use different baselines." New proposal: Footnote: "Cumulative CDR from AFOLU cannot be quantified precisely because models use different reporting methodologies that in some cases combine gross emissions and removals, and use different baselines. Total CDR from AFOLU equals or exceeds the net negative emissions stated."
12	1281	Figure 12.7: is missing some elements in Chapter, which are shown in the TS (grey boxes missing). Replace Figure 12.7 with Figure TS.19.
12	1245	Request to add the following authors as Contributing Authors of Chapter 12 (all contributed to Table 12.2): Inês M.L. Azevedo (Portugal/the United States of America) Stephanie Roe (the Philippines/The United States of America) Aleksandra Novikova (Germany) Sudarmanto Budi Nugroho (Indonesia)
12	1252	Table 12.2 “Soil Carbon Sequestration in croplands and grasslands” Column3 Correction requested: Insert minus sign before “45” ie: -45-100
12	1254	Table 12.4 Row Carbon capture, utilization and storage (CCU and CCS), 6th column “0.15” should be replaced by (formatting same as for buildings sector): 0.15 (0.08-0.36)
12	1271	Replace: "Blue carbon management in coastal wetlands" with "Blue carbon management in coastal ecosystems"
12	1307	**Cross-Working Group Box 3 | Mitigation and Adaptation via the Bioeconomy** **Old text:** A balanced approach to management of biomass resources could take departure in the carbon cycle from a value-preservation perspective and the possible routes that can be taken for biomass and carbon, considering a carbon budget defined by the Paris Agreement, principles for sustainable land use and natural ecosystem protection. **New text:** A balanced approach to management of biomass resources could start from the perspective of value preservation within the carbon cycle, with possible routes for biomass use based on the carbon budget defined by the Paris Agreement, principles for sustainable land use and natural ecosystem protection.

12	1309	**Cross-Working Group Box 3 | Mitigation and Adaptation via the Bioeconomy: replace 'smart agriculture' with 'climate-smart' as below:** Integrated planning and cross-sectoral alignment of climate change policies are particularly evident in developing countries' NDCs pledged under the Paris Agreement, where key priority sectors such as agriculture and energy are closely aligned between the proposed mitigation and adaptation actions in the context of sustainable development and the SDGs. An example is the integration between **climate-smart agriculture** and low-carbon energy (robust evidence, high agreement) (Antwi-Agyei et al. 2018; England et al. 2018).
12	1254	Table 12.3, column "Cost categories 100-200", row "Protection of natural ecosystems…" "0.22 (0.09 - 045)" To move two rows down, under "Improved forest management, fire management", and corrected to: "0.22 (0.09 - **0.45**)"
12	1303	12.5.4: Change from: "For example, hydropower and ground-based solar parks have involved enclosure of lands designated as degraded, displacing pastoral use by vulnerable communities, constituting forms of spatial injustice (Yenneti et al. 2016)." To: "For example, Yenneti et al. (2016) have argued that hydropower and ground-based solar parks in India, which have involved enclosure of lands designated as degraded, displacing pastoral use by vulnerable communities, have constituted forms of spatial injustice."
13	1362	Figure 13.1: The 2020 datapoint for the global share of emissions covered by national climate change legislation should read 52% instead of 53%. Correspondingly, the 47% data point should now read as 48%. This also applies to the TS figure.
13	1399	Cross-Chapter Box 9, top right cell under 'barriers' replace: "Pushback from equity-focused social movements against 'premium' fares, cycling ban" with: "Accommodating and addressing legitimate concerns from social movements about the exclusionary effects of 'premium' fares, cycling bans on busy roads"
13	1370	Section 13.3 title to be updated from 'Structural Factors that Shape Condition Climate Governance' to 'Structural Factors that Shape Climate Governance'
13	1379	**13.5.1: Change** 'Further, as of October 2020, more than 826 cities and 103 regional governments had made specific pledges to decarbonise, whether in a specific sector (e.g., buildings, electricity, or transport) or through their entire economies, pledging to reduce their overall emissions by at least 80% **or greater** (NewClimate Institute and Data Driven EnviroLab 2020).' **to** 'Further, as of October 2020, more than 826 cities and 103 regional governments had made specific pledges to decarbonise, whether in a specific sector (e.g., buildings, electricity, or transport) or through their entire economies, pledging to reduce their overall emissions by at least 80% (NewClimate Institute and Data Driven EnviroLab 2020).'
13	1395	**13.7: Change** 'Common to both approaches is an emphasis beyond the short term, and enabling longer-term structural shifts in economies and societies.' **to** 'Common to both approaches is an emphasis beyond the short term, and **attention to** enabling longer-term structural shifts in economies and societies.'
13	1390	**change** 'Examples include emission trading systems within the USA, such as the Regional Greenhouse Gas Initiative (RGGI) and Western Climate Initiative' **to** 'Examples include emission trading systems within North America, such as the Regional Greenhouse Gas Initiative (RGGI) and Western Climate Initiative (which also includes two Canadian provinces)'
13	1359	ES: "Removing fossil fuel subsidies would reduce emissions, improve public revenue and macroeconomic performance, and yield other environmental and sustainable development benefits. Subsidy removal may have adverse distributional impacts which can be mitigated by measures such as re-distributing revenue saved (high confidence). Fossil fuel subsidy removal is projected by various studies to reduce global CO2 emissions by 1–4%, and GHG emissions by up to 10% by 2030, varying across regions (medium confidence). {13.6}" To be replaced with: "Removing fossil fuel subsidies would reduce emissions, improve public revenue and macroeconomic performance, and yield other environmental and sustainable development benefits; subsidy removal may have adverse distributional impacts especially on the most economically vulnerable groups which, in some cases can be mitigated by measures such as redistributing revenue saved, all of which depend on national circumstances (high confidence); fossil fuel subsidy removal is projected by various studies (using alternative methodologies) to reduce global CO2 emissions by 1–4%, and GHG emissions by up to 10% by 2030, varying across regions (medium confidence). {6.3, 13.6}"
14	1467	14.3.2.2: Replace "As the estimates in Table 4.3 demonstrate…" with "As Figure 14.2 illustrates graphically,…"
14	1478	14.3.3.2: replace "publics" with "public-sector organisations"

14	1475	14.3.3.1: Replace “Chapter 2 of this report lists 24 countries that have sustained absolute emissions reductions for at least a decade, of which 20 are countries that had Kyoto targets for the first commitment period.” With "Chapter 2 of this report lists at least 18 countries that have sustained absolute emissions reductions for at least a decade, nearly all of which are countries that had Kyoto targets for the first commitment period.”
14	1467	Figure 14.2 caption, change: “cost-effective long-term mitigation pathways for limiting warming to 1.5°C with low (<0.1°C) overshoot (50% chance), respectively for limiting warming to 2°C (66% chance)” to “pathways that limit warning to 1.5°C (>50%) with no or limited overshoot, and those to limit warming to 2°C (>67%).”
14	1474	Box 14.1: Change text from: "This aim is explicitly linked to enhancing implementation of the UNFCCC, including its objective in Article 2 of stabilising greenhouse gas **emissions**..." To: "This aim is explicitly linked to enhancing implementation of the UNFCCC, including its objective in Article 2 of stabilising greenhouse gas **concentrations**..."
15	1485	Figure 15.4 Caption: Total Needs: See Table 15.4. Regional breakdown of needs: For Electricity based on IAM output for Non-Biomass renewable (mean C1:C3) plus incremental investment needs for T&D and Storage (mean C1:C3 less mean C5:C7) (see Table 15.2, 15.3., except C6 and C7). --> Total needs: See Table 15.4. Regional breakdown of needs: For Electricity based on IAM output for Non-Biomass renewable and Storage (mean C1:C3) plus incremental investment needs for T&D (mean C1:C3 less mean C5:C7) (see Table 15.2, 15.3).
15	1568	15.4.1: increasing the challenges to mobilise substantial volumes of additional **financing** for many developing
15	1574	15.5.1: the financial sector that are discourage private sector **financing**. They comprise short-termism (e.g. **UNEP Inquiry 2016b),** high perceived risks for mitigation relevant technologies and/or regions (information gap through incomplete/ asymmetric information (e.g. **(Kempa and Moslener 2017; Clark et al. 2018)**, lack of carbon pricing effects (e.g. **Best and Burke 2018**), home bias (results in limited balancing for regional mismatches between current capital and needs distribution, **(e.g. Boissinot et al. 2016),** and perceived high opportunity and transaction costs (results from limited visibility of future pipelines and policy interventions; SME financing tickets and the missing middle, **(e.g. Grubler et al. 2016).**
15	1575	challenge to mobilise **finance**
15	1576	Sectoral considerations. The renewable energy sector attracted the highest level of **financing**
15	1576	Current **financing** of land-based mitigation options is less than 1 billion USD yr-1 representing only 2.5%
15	1576	involvement) a significant scale-up of commercial **financing** to the sector can hardly be expected in
15	1578	of future international public **finance** to maintain operations as key challenges
15	1578	capacity of countries being often stated as challenge for an accelerated deployment of **finance**
15	1578	well-structured patient interventions and **finance** could play an important role (Saldanha 2006; Hope 2011) accepting other barriers than **financing** playing a role as well. One reason why international public climate **finance** is not sufficiently directed to such needs might be the complexity in measuring intangible, direct outcomes like improved institutional capacity (Clark et al. 2018)
15	1579	Early stage / Venture capital **financing** / Pilot project **financing**
15	1579	Access to early stage **financing** remains critical with performance in in recent years being weak
15	1579	their **financing** will continue coming from the public sector noted by
15	1579	basket **finance** for large projects/program or sector wide approaches or multilateral **finance** under
15	1580	of **financing** adaptation projects‘ (Larsen et al. 2019, p.9).
15	1580	short term as opposed to programmatic and long-term (10–15 years) **financing** to build resilience
15	1585	Keenan and Bradt 2020), but transfer to taxpayers the onus of damage compensation and the **financing**
15	1585	**finance** and consequently limited alignment of investment activity with the Paris Agreement tend to
15	1604	**15.6.7: cost** trends of renewable energy (IRENA 2020b) which has been underestimated in many modelling
15	1574	15.4.2: UNEP **2020** Adaptation Gap Report estimates adaptation **costs** amounting to 140–300 **billion USD in 2030** and 280–500 billion USD in 2050 **(UNEP 2021)**. Over 100 countries included adaptation components in their intended NDCs (INDCs) and approximately 25% of these referenced national adaptation plans (NAPs) (GIZ 2017a),
15	1577	Change from "The financial and economic circumstances are the opposite for virtually all developing countries, even…" to: "The financial and economic circumstances are more challenging in many developing countries, even…"

15	1573	rail infrastructure range from 0.1 billion USD in Senegal to 1.6 billion USD in Nigeria. Osama et al. (2021) highlights a 4.7 billion USD financing gap for African countries in the transport sector. In Latin America **Oxford Economics (2017)** identifies Brazil as frontrunner of required rail investments with 8.3 billion USD, followed by Peru with 2.3 billion USD. Totally, developed countries mounting up to almost **120 billion USD yr-1 (n=15, mean=7.97bn USD) for rail infrastructure financing needs with . Developing countries (excl. LDCs and excl. China) mounting up to almost 50 billion USD yr-1 (n=27, mean=1.78bn USD, excl. China). Oxford Economics (2017) reports rail infrastructure financing needs for China of more than 200 billion USD yr-1 between 2016 and 2040.**
15	1577	Change from: "rail infrastructure range from 0.1 billion USD in Senegal to 1.6 billion USD in Nigeria. (Osama et al. 2021) highlights a 4.7 billion USD financing gap for African countries in the transport sector. In Latin America the report identifies Brazil as frontrunner of required rail investments with 8.3 billion USD, followed by Peru with 2.3 billion USD. Totally, developed countries mounting up to 117 billion USD yr-1 (n=14, mean=8.35bn USD) for rail infrastructure funding needs, succeeded by developing countries (excl. LDCs) with 26 billion USD yr-1 (n=28, mean=0.93bn USD, excluding China)." to: "rail infrastructure range from 0.1 billion USD in Senegal to 1.6 billion USD in Nigeria. Osama et al. (2021) highlights a 4.7 billion USD financing gap for African countries in the transport sector. In Latin America **Oxford Economics (2017)** identifies Brazil as frontrunner of required rail investments with 8.3 billion USD, followed by Peru with 2.3 billion USD. In total, developed countries' financing needs mount up to almost **120 billion USD yr-1 (n=15, mean=7.97bn USD) for rail infrastructure. Financing needs in developing countries (excl. LDCs and excl. China) mount up to almost 50 billion USD yr-1 (n=27, mean=1.78bn USD, excl. China). Oxford Economics (2017) reports rail infrastructure financing needs for China of more than 200 billion USD yr-1 between 2016 and 2040."**
15	1578	projects, IEA estimates a need of 90 **billion USD** of public sector **finance** before 2030 having around
15	1564	reaching a high-bound estimate of 681 billion USD in 2016 (UNFCCC 2018a). --> reaching a high-bound estimate of 681 billion USD in 2016 (UNFCCC 2018a), **representing USD674 billion 2015**.
15	1576	Comparing annual average total investments in global fuel supply and the power sector of approximately 1.61 trillion USD yr-1 in 2019 (IEA 2020a) to the investment in the Stated Policies Scenario (approximately 1.84 trillion USD yr-1) and the Sustainable Development Scenario (approximately 1.91 trillion USD yr-1). Comparing annual average total investments in global fuel supply and the power sector of approximately **1.5** trillion USD2015 yr-1 in 2019 (IEA 2020a) to the investment in the Stated Policies Scenario (approximately **1.7** trillion USD2015 yr-1) and the Sustainable Development Scenario (approximately **1.8** trillion USD2015 yr-1).
15	1594	15.6.4: While CPI publishes investment levels of **44 billion** in 2019 and 26 billion in 2020) for energy efficiency, counting majorly international flows, IEA results come in at a much higher level of more than annually 250bn USD between 2017 and 2020 (IEA 2021c) -> While CPI publishes investment levels of **41 billion USD2015** in 2019 and 24 billion USD2015 in 2020) for energy efficiency, counting majorly international flows, IEA results come in at a much higher level of around annually 250 billion USD2015 between 2017 and 2020 (IEA 2021c)
15	1562	GDP in constant 2015 USD trillion USD2015. -> GDP in trillion USD2015
15	1596	15.6.4: "Entities such as the UK Anti-Corruption Help desk is exploring how to mitigate potential corruption with regard to climate risk insurance". This should be corrected to: the U4 Anti-Corruption Helpdesk.
15	1596	15.6.4: addition of missing FCDO study details: **in text citation Scott 2017 added as below -** The FCDO study (Scott 2017) examines the uptake of ARC and its impact on reducing vulnerability to disasters. It notes that there is scarce literature on disaster risk insurance mechanisms in terms of impacts. In its current sample of 20 countries as of November 2017, 4four are projected to experience food security crisis (IPC Level 3) but are not signatories to the ARC, which may signal that ARC is not attractive to all food insecure countries and that there is no overwhelming appetite for ARC among poorer countries. **Reference also added in Bibliography:** Zoë Scott, Z., C. Simon, J. McConnell, P.S. Villanueva, 2017: Independent Evaluation of African Risk Capacity (ARC) Final Inception Report. Commissioned by FCDO (ex DFID) and undertaken by Oxford Policy Management, Oxford, UK, 85pp.
15		scenario category names updated to be consistent with the SPM (broad guidelines followed as below) in all instances in chapter where this change aids comprehension Category>Old>Approved C1>limit warming to 1.5°C with no or limited overshoot>limit warming to 1.5°C (>50%) with no or limited overshoot C2>limit warming to 1.5°C with high overshoot>return warming to 1.5°C (>50%) after a high overshoot C3>Likely below 2°C>limit warming to 2°C (>67%) C4>Below 2°C>limit warming to 2°C (>50%) C5>Below 2.5°C>limit warming to 2.5°C (>50%) C6>Below 3°C>limit warming to 3°C (>50%) C7>Below 4°C>limit warming to 4°C (>50%) C8>Above 4°C>exceed warming of 4°C (>=50%) C1, C2 and C3>Likely limit to 2°C or lower>limit warming to 2°C (>67%) or lower

15	1596	15.6.4: addition of missing FCDO study details: **in text citation Scott 2017 a**dded as below - The FCDO study (Scott 2017) examines the uptake of ARC and its impact on reducing vulnerability to disasters. It notes that there is scarce literature on disaster risk insurance mechanisms in terms of impacts. In its current sample of 20 countries as of November 2017, 4four are projected to experience food security crisis (IPC Level 3) but are not signatories to the ARC, which may signal that ARC is not attractive to all food insecure countries and that there is no overwhelming appetite for ARC among poorer countries. **Reference also added in Bibliography:** Zoë Scott, Z., C. Simon, J. McConnell, P.S. Villanueva, 2017: Independent Evaluation of African Risk Capacity (ARC) Final Inception Report. Commissioned by FCDO (ex DFID) and undertaken by Oxford Policy Management, Oxford, UK, 85pp.
16	1658	Box 16.1 replace “two scenarios” by “two sets of scenarios” to read “technologies, and does not differ much between the two sets of scenarios (Box 16.1, Figure 1a)”
17	1751	17.3.3.2: Delete sentence: "(Fan et al. 2019b) specifically, SDGs 2 (foodzero hunger), SDG 6 (clean water and sanitation), SDG (7) (affordable and clean energy), SDG 11 (sustainable cities and communities) and SDG 12 (responsible production and consumption) are considered essential to the WEFN (Bleischwitz et al. 2018)."
17	1752	Delete sentence: "The energy system will include microgrids, renewable with demand-side controls aligned with local conditions."
17-SM	17SM-2	Supplementary Material: Sheet "Chapter 6" Sectoral mitigation Option: Bioenergy Column SDG 6: Replace the sign + with ±
17-SM	17SM-3	Supplementary Material: Sheet "Chapter 6" Sectoral mitigation Option: Bioenergy Column SDG 14: Replace the cell content with " ± treatment of nutrient-rich wastewater (which produces biogas as a co-benefit) is highly relevant for SDG14.1 - reduce marine pollution. At the same time, effluents from biofuel production can also cause negative impacts on maribe ecosystems when effluent treatment is not meeting high standards (high confidence)"
17-SM	17SM-4	Supplementary Material: Sheet "Chapter 6" Sectoral mitigation Option: Bioenergy Column "Line of sight (section numbers, tables, figures, box)": Replace "Section 6.4.2.6" with "Section 6.4.2.6, Section 12.5"
17-SM	7SM-16	Supplementary Material: Sheet "Chapter 11" Sectoral mitigation Option: Circular Economy Column SDG 14: Add the text "+studies reported direct relationship between CE and SDG14 (High confidence)"
17-SM	7SM-17	Supplementary Material: Sheet "Chapter 11" Sectoral mitigation Option: Electrification Column SDG 2: Replace the existing text with "+ Improved food security -fuel switching to options such as biomass and bioenergy can have negative impact on food prices (Medium confidence) "
17-SM	7SM-18	Supplementary Material: Sheet "Chapter 11" Sectoral mitigation Option: Electrification Column SDG 15: Add the text "-negative impact on SDG 15 [fuel switching to options such as biomass and bioenergy](high confidence)"
17-SM	7SM-19	Supplementary Material: Sheet "Chapter 11" Sectoral mitigation Option: CCS and carbon capture and utilisation (CCU) Column SDG 6: Add the text "-Deployment of CCS and CCU would require increased water consumption (High confidence)"
17-SM	7SM-20	Supplementary Material: Sheet "Chapter 11" Sectoral mitigation Option: CCS and carbon capture and utilisation (CCU) Column SDG 7: Replace the existing text with "+ Decarbonization of energy production through utilization of CO2 (High confidence) -Deployment of CCS and CCU would require high energy demand (High confidence) "

17-SM	7SM-21	Supplementary Material: Sheet "Chapter 11" Sectoral mitigation Option: CCS and carbon capture and utilisation (CCU) Column SDG 11: Add the text "+Deployment of CCS and CCU would contribute to enhancing the sustainability of cities (High confidence)"
17-SM	7SM-22	Supplementary Material: Sheet "Chapter 11" Sectoral mitigation Option: CCS and carbon capture and utilisation (CCU) Column SDG 15: Add the text "-Deployment of CCS and CCU would require additional land-use, (High confidence)"
17-SM	17SM-4	Supplementary Material: Sheet "Chapter 7" Change in name of Sectoral mitigation Option:Replace "Afforestation, reforestation, restoration" with " Ecosystem restoration, reforestation, afforestation"
17-SM	17SM-5	Supplementary Material: Sheet "Chapter 7" Sectoral mitigation Option: Ecosystem restoration, reforestation, afforestation Column SDG 2: Replace the text with "±may lead to competition for land when done at large scales. reforestation and forest restoration can have co-benefits for food security. (medium confidence)"
17-SM	17SM-6	Supplementary Material: Sheet "Chapter 7" Sectoral mitigation Option: Ecosystem restoration, reforestation, afforestation Column SDG 6: Replace the text with "'± better landscape water balance. Afforestation (on naturally unforested land) can compound climate-related risks to water security (medium confidence)"
17-SM	17SM-7	Supplementary Material: Sheet "Chapter 7" Change in name of Sectoral mitigation Option:Replace "Reduce CH4 and N2O emissions from agriculture" with " Reduce CH4 and N2O emissions in agriculture"
17-SM	17SM-8	Supplementary Material: Sheet "Chapter 7" Change in name of Sectoral mitigation Option:Replace "Forest and fire management" with " Forest management, Fire management"
17-SM	17SM-3	Supplementary Material: Sheet "Chapter 6" Sectoral mitigation Option: Bioenergy Column SDG 7: Replace the sign + with ±
17-SM	17SM-4	Supplementary Material: Sheet "Chapter 6" Sectoral mitigation Option: Bioenergy Column "Chapter Source": Add : Box 6.1
17-SM	17SM-5	Supplementary Material: Sheet "Chapter 6" Sectoral mitigation Option: Nuclear Column "Chapter Source": Add : Figure 6.18
17-SM	17SM-6	Supplementary Material: Sheet "Chapter 6" Sectoral mitigation Option: Bioenergy Column SDG 15: Add ± (high confidence)

17-SM	17SM-7	Supplementary Material: Sheet "Chapter 6" Sectoral mitigation Option: Nuclear Column SDG 15: Add "Low impacts to biodiversity but high impact in case of an accident. (High confidence)"
17-SM	17SM-8	Supplementary Material: Sheet "Chapter 6" Sectoral mitigation Option: Bioenergy Column SDG 14: Add "Low impacts to ecosystems (acidification, eutrophication, ecotoxicity, ozone depletion, POCP). Long term solutions for high-level radioactive waste are under development. (High Confidence)"
17-SM	17SM-9	Supplementary Material: Sheet "Chapter 6" Sectoral mitigation Option: CCS Column SDG 1: Delete the text
17-SM	17SM-10	Supplementary Material Sheet: Chater 6 Option: Nuclear power Column– SDG 7 : Change to “synergies and trade-offs” with “medium confidence”
17-SM	17SM-11	Supplementary Material Sheet: Chater 6 Option: Nuclear power Column: SDG 8 to “synergies” with “medium confidence”
17-SM	17SM-12	Supplementary Material Sheet: Chater 10 Options: All SDG 16 and 17: Remove all linkages
17-SM	17SM-13	Supplementary Material Sheet: Chater 10 Option: Electric light duty vehicles Column: SDG 3: Change to “both synergies and trade-offs” with “high confidence”
17-SM	17SM-14	Supplementary Material Sheet: Chater 10 Option: Biofuel Column – SDG 14: Change to “both synergies and trade-offs” with “high confidence”
17-SM	17SM-7	Supplementary Material Sheet: Chater 7 Option: “reduced conversion of natural ecosystem”: Change to 'reduced conversion of forests and other ecosystems'
17-SM	17SM-13	Supplementary Material Sheet: Chater 10 Option: Biofuel Column – SDG 15: Change to “both synergies and trade-offs” with “high confidence”
17-SM	17SM-8	Supplementary Material Sheet: Chater 6 Option: Wind Option: Solar Option CCS Chapter sources corrected (added 6.7.7)

17-SM	17SM-9	Supplementary Material Sheet: Chater 6 Option: Bioenergy Column SDG 2: Changed to “both synergies and tradeoffs”
17-SM	17SM-7	Supplementary Material Sheet: Chater 7 Option: Changed the name of the option ‘soil carbon management’ to ‘Carbon sequestration in agriculture (soil carbon management in cropland and grasslands, agroforestry, biochar)’
17-SM	17SM-8	Supplementary Material Sheet: Chater 7 Option: Changed the name of the option ‘forest management, fire management’ to ‘improved sustainable forest management’
17-SM	17SM-16	Supplementary Material Sheet: Chater 11 Option: Changed the name of the option ‘circular economy’ to ‘circular material flows’
17-SM	17SM-17	Supplementary Material Sheet: Chater 11 Option: Energy efficiency Column- SDG 3: Changed to “synergies” with "medium confidence"
17-SM	17SM-18	Supplementary Material Sheet: Chater 11 Option: circular material flows Column- SDG 3: Changed to “synergies” with "medium confidence"
17-SM	17SM-19	Supplementary Material Sheet: Chater 11 Option: ‘electrification Column- SDG 8: Changed to “synergies” with "high confidence"
17-SM	17SM-20	Supplementary Material Sheet: Chater 11 Option: Electrification Column-Chapter sources" corrected (added 6.7.7)
17-SM	17SM-7	Supplementary Material Sheet: Chater 7 Option: Changed the name of the option ‘shift to sustainable healthy diets’ to ‘shift to balanced, sustainable healthy diets’
17-SM	17SM-8	Supplementary Material Sheet: Chater 6 Option: Nuclear Column- SDG 12: Changed to " both synergies and trade-offs" with "medium confidence"
17-SM	17SM-8	Supplementary Material Sheet: Chater 6 Option: Solar Column- SDG 12: Changed to " both synergies and trade-offs" with "medium confidence"
17-SM	17SM-8	Supplementary Material Sheet: Chater 6 Option: Wind Column- SDG 12: Changed to " both synergies and trade-offs" with "medium confidence"
17-SM	17SM-7	Supplementary Material Sheet: Chater 7 Option: AFOLU Option: Reduced conversion of forests and other ecosystems Column- SDG 16: Changed to " both synergies and trade-offs" with "medium confidence"

17-SM	17SM-8	Supplementary Material: Sheet "Chapter 6" Sectoral mitigation Option: Nuclear Column SDG 3: Change to '± Reduced air pollution if displacing fossil. Much Literature on both the health benefits as well as risks arising from such power plants. (high confidence)"
17-SM	17SM-8	Supplementary Material: Sheet "Chapter 6" Sectoral mitigation Option: Fossil Fuel Phaseout Delete the whole row (Row 10)
9-SM	9SM-9	"Hong Kong" should be replaced with "Hong Kong SAR of China"
All chapters		Below edit has been made **where relevant** across chapters, for consistency with approved regional aggregation: Search for Replace with Asia-Pacific Developed > Australia, Japan and New Zealand Asia and developing Pacific> Asia and Pacific South-East Asia and developing Pacific> South-East Asia and Pacific
Annex I	1794	Updated definition: Aerosol = A suspension of airborne solid or liquid particles, with typical particle size in the range of a few nanometres to several tens of micrometres and atmospheric lifetimes of up to several days in the troposphere and up to years in the stratosphere. The term aerosol, which includes both the particles and the suspending gas, is often used in this report in its plural form to mean 'aerosol particles'. Aerosols may be of either natural or anthropogenic origin in the troposphere; stratospheric aerosols mostly stem from volcanic eruptions. Aerosols can cause an effective radiative forcing directly through scattering and absorbing radiation (aerosol–radiation interaction), and indirectly by acting as cloud condensation nuclei or ice nucleating particles that affect the properties of clouds (aerosol–cloud interaction), and upon deposition on snow- or ice-covered surfaces. Atmospheric aerosols may be either emitted as primary particulate matter or formed within the atmosphere from gaseous precursors (secondary production). Aerosols may be composed of sea salt, organic carbon, black carbon (BC), mineral species (mainly desert dust), sulphate, nitrate and ammonium or their mixtures. See also Particulate matter (PM) and Short-lived climate forcers (SLCFs).
Annex I	1794	Updated definition: Particulate matter (PM) = Atmospheric aerosols involved in air pollution issues. Of greatest concern for health are particles of aerodynamic diameter less than or equal to 10 micrometers, usually designated as PM10 and particles of diameter less than or equal to 2.5 micrometers, usually designated as PM2.5.
Annex I	1816	Urban Systems: remove cross-reference to *Urban areas*
Annex I	1816	Urbanisation: remove cross-reference to *Urban areas*
Annex I	1812	Risk management: remove cross-reference to *Risk transfer*
Annex I	1812	Risk perception: remove cross-reference to Risk transfer
Annex I	1812	Risk perception: remove cross-reference to Risk transfer
Annex I	1794	definition for 'Aerosol', replace: "A suspension of airborne solid or liquid particles, with typical diameters between a few nanometres and a few micrometres and atmospheric lifetimes of up to several days in the troposphere and up to years in the stratosphere. The term aerosol, which includes both the particles and the suspending gas, is often used in this report in its plural form to mean 'aerosol particles'. Aerosols may be of either natural or anthropogenic origin in the troposphere; stratospheric aerosol mostly stems from volcanic eruptions. Aerosols can cause an effective radiative forcing directly through scattering and absorbing radiation (aerosol-radiation interactions), and indirectly by acting as cloud condensation nuclei or ice nucleating particles which affect the properties of clouds (aerosol-cloud interactions), and upon deposition on snow- or ice-covered surfaces. Atmospheric aerosols may be emitted as primary particulate matter (PM), and form within the atmosphere from gaseous precursors (secondary production). Main classes of aerosol chemical composition are sea salt, organic carbon, black carbon (BC), mineral species (mainly desert dust), sulphate, nitrate, and ammonium. See also Short-lived climate forcers (SLCFs)." with "A suspension of airborne solid or liquid particles, with typical particle size in the range of a few nanometres to several tens of micrometres and atmospheric lifetimes of up to several days in the troposphere and up to years in the stratosphere. The term aerosol, which includes both the particles and the suspending gas, is often used in this report in its plural form to mean 'aerosol particles'. Aerosols may be of either natural or anthropogenic origin in the troposphere; stratospheric aerosols mostly stem from volcanic eruptions. Aerosols can cause an effective radiative forcing directly through scattering and absorbing radiation (aerosol–radiation interaction), and indirectly by acting as cloud condensation nuclei or ice nucleating particles that affect the properties of clouds (aerosol–cloud interaction), and upon deposition on snow- or ice-covered surfaces. Atmospheric aerosols may be either emitted as primary particulate matter or formed within the atmosphere from gaseous precursors (secondary production). Aerosols may be composed of sea salt, organic carbon, black carbon (BC), mineral species (mainly desert dust), sulphate, nitrate and ammonium or their mixtures. See also Short-lived climate forcers (SLCFs)." Annex VII 2 Line 27, remove "IPCC, 2014".

Annex I	1815	Addition of the word "policy" to the Sufficiency definition, as follows: **Sufficiency** A set of **policy** measures and daily practices that avoid demand for energy, materials, land, and water while delivering human well-being for all within planetary boundaries.
Annex III	1858	A.III.I.9.1: Delete 'that could not be crossed' from the following sentence: "In early model intercomparisons, climate targets were often specified as a CO2- equivalent concentration level **that could not be crossed** , for example, 450ppm CO2-eq or 550ppm CO2-eq (Clarke et al. 2009). " To read: "In early model intercomparisons, climate targets were often specified as a CO2- equivalent concentration level, for example, 450ppm CO2-eq or 550ppm CO2-eq (Clarke et al. 2009). "
Annex III	1880	A.III.II.2.5.1: Remove unused model from the following sentence: "MAGICC (v7) was used for the main scenario classification, with both FaIR (v1.6.2) and CICERO-SCM (v2019vCH4) being used to provide additional uncertainty ranges…" To read: "MAGICC (v7) was used for the main scenario classification, with FaIR (v1.6.2) being used to provide additional uncertainty ranges..."
Annex III	1880	Changes to numbers of scenarios in the following sentence: "Of the total **2425** global scenarios submitted, **1594** could be assessed in terms of their associated climate response, and 1202 of those passed the vetting process." To read: "Of the total **2266** global scenarios submitted, **1574** could be assessed in terms of their associated climate response, and 1202 of those passed the vetting process."
Annex III	1878	Table 9, Energy column, IMP-Neg: changed from: "CDR, transport H2/Electric based on negative emissions" To: “Heavy reliance on CDR in power sector and industry; CDR used to compensate fossil fuel emissions”
Annex III	1887	Table 15: Change to final column "Total with climate categorisation" numbers as follows: AIM/CGE+Hub: from 55 (162) to 55 (155) DNE21+: from -(46) to -(36) GCAM: from 45 (136) to 45 (73) GCAM-PR: 3(21) to 3 (7) GEM-E3: from 41 (52) to 41 (41) IMAGE: from 142 (153) to 142 (151) MESSAGE: from - (10) to - (9) POLES: from 114 (18) to 114 (137) TIAM-ECN: from 45 (58) to 45 (45) IAM WORLD: from - (11) to - (9) Total: from 1202 (1698) to 1202 (1574)
Annex III	1850	**A.III.I.4.3** change ‘In total, 931 scenarios were submitted to the AR6 scenario database, out of which only two scenarios provided detailed data allowing for an assessment of climate change impacts based on the SER framework considered in the building chapter.’ To "In total, 931 scenarios were submitted to the AR6 scenario database, out of which only two scenarios provided detailed data allowing for an assessment of **emissions reductions** based on the SER framework considered in the building chapter.’

Annex III	1850	Update caption ‘GHG mitigation potentials of scenarios considered in the illustrative mitigation pathways considered in Chapter 3.’ to 'GHG emissions reductions in the building sector (direct emissions) in scenarios considered as illustrative mitigation pathways in Chapter 3.'
Annex III	1873	Footnote 7: Update 'Each SSPx-y combination was calculated by multiple IAMs. The specific scenarios developed by the marker models for the associated SSPs (SSP1: IMAGE; SSP2: MESSAGEGLOBIOM; SSP3: AIM; SSP4: GCAM; SSP5: REMIND-MAgPIE) were selected as Tier 1/Tier 2 scenarios for use in CMIP6. Tier 2 variants include SSP7-3.0 with low emissions of short–lived climate forcers and SSP5-3.4 with high overshoot from following SSP5-8.5 until 2040.' to 'Each SSPx-y combination was calculated by multiple IAMs. The specific scenarios developed by the marker models for the associated SSPs (SSP1: IMAGE; SSP2: MESSAGEGLOBIOM;SSP3: AIM; SSP4: GCAM; SSP5: REMIND-MAgPIE) were selected as Tier 1/Tier 2 scenarios for use in CMIP6. Tier 2 variants include SSP7-3.0 with **high** emissions of short–lived climate forcers and SSP5-3.4 with high overshoot from following SSP5-8.5 until 2040.'
Annex III	1886	Table 14: Scenario category descriptions updated per changes in Chapter 3 Table 3.1 (updates done to match SPM)
6	630	Replace: PV costs (Figure 6.8) have fallen for various reasons: lower silicon costs, automation, lower margins, automation, higher efficiency, and a variety of incremental improvements (Fu et al. 2018;) With: PV costs (Figure 6.8) have fallen for various reasons: lower silicon costs, automation, lower margins, higher efficiency, and a variety of incremental improvements (Fu et al. 2018;
TS	60	Replace: This growth outpaced the reduction in the use of energy per unit of GDP (–2% yr –1, globally) as well as improvements in the carbon intensity of energy (–0.3% yr –1). {2.4.1, Figure 2.19} With: This growth outpaced the reduction in the use of energy per unit of GDP (–2% yr –1, globally) as well as improvements in the carbon intensity of energy (–0.3% yr –1). {2.4.1, Figure 2.16}
2	291	Replace: Tanaka, K., O. Boucher, P. Ciais, and D.J.A. Johansson, 2020: Cost-effective implementation of the Paris Agreement using flexible greenhouse gas metrics. Nat. Commun. (in press). With: Tanaka, K., Boucher, O., Ciais, P., Johansson, D.J.A., Morfeldt, J.. 2021Cost-effective implementation of the Paris Agreement using flexible greenhouse gas metrics. Science Advances 7 (22). Doi.10.1126/sciadv.abf9020
2-SM	2SM-40	Replace: Tanaka, K., O. Boucher, P. Ciais, and D.J.A. Johansson, 2020: Cost-effective implementation of the Paris Agreement using flexible greenhouse gas metrics. Nat. Commun. (in press). With: Tanaka, K., Boucher, O., Ciais, P., Johansson, D.J.A., Morfeldt, J.. 2021Cost-effective implementation of the Paris Agreement using flexible greenhouse gas metrics. Science Advances 7 (22). Doi.10.1126/sciadv.abf9020
2	all instances	Replace: Tanaka et al. (2020) with Tanaka et al. (2021)
2-SM	all instances	Replace: Tanaka et al. (2020) with Tanaka et al. (2021)
1	165 and 172	"Climate policies also encounter resistance" and "Institutions entrench specific political decision-making processes"referenced Section should be "1.4.5" instead of "1.4.6"
7	798	Line "Agroecology (AE) including Regenerative Agriculture (RA)" referenced Box should be "5.11" instead of "5.10" Line "Integrated production systems (IPS)" "transfer of recourses" would rather be "transfer of resources"
9	1150, 1151	column "Geophysical recourses" change to "Geophysical resources"
9-SM	9.SM.6	column "Geophysical recourses" change to "Geophysical resources"
10	1150	Appendix 10.3 column "Geophysical recourses" change to "Geophysical resources"
2.6.2	262	Replace “Globally, households with income in the top 10% – income higher than USD23.03 purchasing power parity (PPP) per capita per day – are responsible for 34–45% of GHG emissions” with “Globally, households with per capita income in the top 10% – income higher than USD23.03 purchasing power parity (PPP) per capita per day – are responsible for 34-45% of global consumption-based GHG emissions”
2.6.2	264	Replace “Emissions remain highly concentrated, with the top 10% per capita emitters contributing to between 35–45% of global emissions, while the bottom 50% emitters contribute to 13–15% of global emissions (Hubacek et al. 2017a).” With “Emissions remain highly concentrated, with households with per capita income in the top 10% contributing to between 34–45% of global consumption-based GHG emissions, while those in the bottom 50% contribute to 13–15% of global emissions (Chancel and Piketty 2015; Hubacek et al. 2017b).”
Chapter 2 ES	219	Replace: “The global wealthiest 10% contribute about 36–45% of global GHG emissions (robust evidence, high agreement). The global 10% wealthiest consumers…..” With “Households with per capita income in the top 10% are responsible for 34-45% of consumption-based GHG emissions (robust evidence, high agreement). Those in the top 10%...”
TS	65	Replace: “Globally, households with income in the top 10% contribute about 36–45% of global GHG emissions (robust evidence, medium agreement).” With “Globally, households with per capita income in the top 10% contribute about 34–45% of global consumption-based GHG emissions (robust evidence, high agreement).