



Subsidiary Body for Implementation

**Report of the Subsidiary Body for Implementation on its
fifty-second to fifty-fifth session, held in Glasgow from
31 October to 6 November 2021**

Addendum

Summary reports on multilateral assessments in 2020–2021

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Abbreviations and acronyms

AD	activity data
AEA	annual emission allocation
BR	biennial report
CAD	Canadian dollar(s)
CCS	carbon dioxide capture and storage
CCUS	carbon dioxide capture, use and storage
CH ₄	methane
CO ₂	carbon dioxide
CO ₂ eq	carbon dioxide equivalent
COVID-19	coronavirus disease 2019
ESD	European Union effort-sharing decision
ESR	European Union effort-sharing regulation
ETS	emissions trading scheme
EU	European Union
EU ETS	European Union Emissions Trading System
F-gas	fluorinated gas
GBP	pound(s) sterling
GDP	gross domestic product
GHG	greenhouse gas
HFC	hydrofluorocarbon
IAR	international assessment and review
IPCC	Intergovernmental Panel on Climate Change
IPPU	industrial processes and product use
LULUCF	land use, land-use change and forestry
MA	multilateral assessment
N ₂ O	nitrous oxide
NDC	nationally determined contribution
NECP	national energy and climate plan
non-ETS	not covered by the European Union Emissions Trading System
PaMs	policies and measures
RES	renewable energy source(s)
SBI	Subsidiary Body for Implementation
WAM	‘with additional measures’
WEM	‘with measures’
Wetlands Supplement	2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands
WOM	‘without measures’

I. Background

1. The Conference of the Parties decided that developed country Parties should enhance the reporting in their national communications and submit BRs on their progress in achieving emission reductions. It established the IAR process under the SBI to promote comparability of developed country Parties' efforts.¹ According to the modalities and procedures for IAR,² MA is to be conducted for each developed country Party at a working group session of the SBI with the participation of all Parties. The aim of MA is to assess each Party's progress in implementation towards achieving emission reductions and removals related to its quantified economy-wide emission reduction target.
2. Each working group session is preceded by a three-month period of questions and answers. In the first month, any Party may submit written questions to the Party being assessed, and the Party may respond to the questions within the remaining two months.
3. Summary reports for each of the 40 Parties assessed in 2020–2021 are presented below. The reports are also available on the UNFCCC website on the individual Party MA web pages.³
4. In closing the MA working group sessions, the SBI Chair, Marianne Karlsen (Norway), reminded Parties that were multilaterally assessed that they may submit any additional observations on their MA process within two months of the working group session, which will form part of the Party's record for the MA. The Chair thanked all Parties and the secretariat for the successful working group sessions.

II. Summary reports on multilateral assessments at the UNFCCC Climate Dialogues 2020

5. In view of the decision taken by the Bureau of the Conference of the Parties on 22 June 2020 to postpone the fifty-second sessions of the subsidiary bodies and the uncertainty as to how the global situation would develop in the light of the COVID-19 pandemic, and following consultations with Parties led by the SBI Chair, the first MA working group session of the fourth cycle of the IAR process was convened virtually during the UNFCCC Climate Dialogues 2020, on 24 and 30 November and 2 December 2020, under the guidance of the SBI Chair and the additional SBI Rapporteur from a Party to the Paris Agreement, Constantinos Cartalis (Greece).

A. Australia

6. The fourth MA of Australia took place on 30 November 2020. Questions for Australia had been submitted in writing two months before the working group session by the following delegations: Canada, China, EU, Japan, New Zealand, Norway, Republic of Korea, Singapore, United Kingdom of Great Britain and Northern Ireland and United States of America. A list of the questions received and the answers provided by Australia, as well as the webcast of the session, can be found on the MA web page for Australia.⁴
7. The working group session was chaired by the additional SBI Rapporteur. Australia was represented by Jamie Isbister from the Department of Foreign Affairs and Trade.
8. Mr. Isbister made a presentation summarizing Australia's progress towards achieving its quantified economy-wide emission reduction targets. Under the Convention Australia made a commitment to reduce its GHG emissions by 5 per cent below the 2000 level by 2020. Australia's target for 2020 takes the form of an emission budget for 2013–2020.

¹ Decision 1/CP.16, paras. 40 and 44.

² Decision 2/CP.17, annex II.

³ <https://unfccc.int/ma>.

⁴ <https://unfccc.int/MA/Australia>.

9. Mr. Isbister presented Australia's NDC target under the Paris Agreement, which is to reduce GHG emissions by 26–28 per cent below the 2005 level by 2030.

10. According to the report on the technical review of the Party's BR4, its total GHG emissions excluding emissions and removals from LULUCF increased by 31.8 per cent between 1990 and 2017, owing mainly to growth in emissions from stationary energy production, coal mining, liquified natural gas production, road transport, and refrigeration and air conditioning, which was offset to some extent by a decrease in emissions from agriculture, LULUCF and waste.

11. Mr. Isbister reported that Australia has exceeded its 2020 target, in terms of both the targeted level of emissions for 2020 and emission budget for 2013–2020. Australia's emissions peaked in 2007 and its emissions per capita and emission intensity in 2020 were at their lowest level in 30 years.

12. Mr. Isbister presented key PaMs for achieving the Party's targets, including existing PaMs such as the Emissions Reduction Fund, the safeguard mechanism and the Renewable Energy Target scheme, as well as recently introduced measures targeting low-emission technologies such as the Technology Investment Roadmap and its stretch goals for priority technologies. These PaMs are focused on renewable energy, energy efficiency, clean hydrogen, energy storage, low-emission production processes (for steel and aluminium), CCS and soil carbon sequestration.

13. According to the report on the technical review of the Party's BR4, Australia's total GHG emissions including LULUCF in 2020 and 2030 are projected to be 532,015.50 and 505,539.80 kt CO₂ eq, respectively, under the WEM scenario, which is a decrease of 1.5 and 6.4 per cent, respectively, below the 2000 level. In addition, the Party's cumulative emissions in 2013–2020 (4,243 Mt CO₂ eq) are projected to be lower than its emission budget of 4,508 Mt CO₂ eq. Given that Australia's target for 2020 is in the form of an emission budget, the 2020 WEM projection suggests that Australia expects to achieve its 2020 target under the Convention.

14. The opening presentation was followed by interventions and questions from the following delegations: China, Czechia, EU, India, Luxembourg, New Zealand and United Kingdom.

15. Questions on the GHG inventory related to the drivers for Australia's emission reductions in 2017–2020; the role of engagement and governance in improving the Party's GHG inventory; whether the bushfires in the country in 2020 were human induced and how they are accounted for in the GHG inventory; and how inventory methods have changed since the Party's BR4.

16. In response, the Party explained that its emission reductions in recent years (its emissions in 2020 were 5.7 per cent below the 2000 level) are the result of lower emissions from electricity production, agriculture and transport. It also explained that the inventory preparation process is managed by the national GHG inventory committee, comprising representatives of all states and territories, who understand and contribute to inventory preparation and data selection. Australia's states and territories have their own GHG emission reduction commitments and thus an interest in improving the national inventory. The Party underlined the importance of the inventory reviews under the UNFCCC in improving its national GHG inventory. Australia accounts for emissions from bushfires using the guidance on the managed land proxy provided in IPCC guidelines and the provisions relating to the treatment of natural disturbances in the Kyoto Protocol, ensuring that all emissions and removals are accounted for. The Party has made a number of improvements to its inventory methods, such as those for estimating CH₄ emissions, since its BR4.

17. Questions on PaMs related to the Renewable Energy Target scheme; PaMs implemented or planned for increasing use of renewable energy for electricity production; PaMs envisaged to target fugitive emissions from coal, oil and gas production; supply constraints that could prevent the switch to electric and hydrogen vehicles; whether Australia is developing a low-emission development strategy in addition to its Technology Investment Roadmap; and additional PaMs put in place to achieve its 2030 target.

18. In response, the Party explained that, in addition to the Renewable Energy Target scheme, it supports use of renewable energy by promoting private sector investment through the Australian Renewable Energy Agency and the Clean Energy Finance Corporation. Among other measures, a second grid link to Tasmania promotes ongoing growth in renewable energy use by helping to reduce costs. In addition, the Party explained that the recent increase in fugitive emissions from natural gas production is due to an increase in exports of liquefied natural gas. Australia has currently the world's largest CCS plant, capturing almost 3 Mt CO₂ eq/year. Regarding electric vehicles, the Party is addressing constraints related to grid integration and charging infrastructure using funding from the Australian Renewable Energy Agency. Furthermore, it is preparing a low-emission development strategy, which includes the Technology Investment Roadmap as a key component.

19. In terms of additional measures for achieving its 2030 target, the Party explained that the key technology sectors in the Technology Investment Roadmap will play a critical role. Australia recently announced a new package of measures for accelerating deployment of next-generation energy technologies in sectors where emission abatement is more difficult, such as transport and agriculture, which includes establishing a regional hydrogen export hub to enhance demonstration and deployment of hydrogen technologies; supporting adoption of hydrogen, biofuel and electric vehicles through the Future Fuels package; supporting businesses in the agriculture, manufacturing, industry and transport sectors in adopting climate-friendly technologies through the Technology Co-investment Fund; and supporting CCS pilot studies through the Carbon Capture, Use and Storage Development Fund.

B. European Union

20. The fourth MA of the EU took place on 24 November 2020. Questions for the EU had been submitted in writing two months before the working group session by the following delegations: Australia, Canada, China, Japan, New Zealand, Republic of Korea and United States. A list of the questions received and the answers provided by the EU, as well as the webcast of the session, can be found on the MA web page for the EU.⁵

21. The working group session was co-chaired by the SBI Chair and the additional SBI Rapporteur. The EU was represented by Jacob Werksman from the European Commission.

22. Mr. Werksman made a presentation summarizing the EU's progress towards achieving its quantified economy-wide emission reduction targets. Under the Convention the EU made a commitment to reduce its GHG emissions by 20 per cent below the 1990 level by 2020. This target covers large GHG emissions sources under the EU ETS, with the goal of reducing emissions by 21 per cent below the 2005 level by 2020, and under the ESD, with the goal of reducing emissions by 10 per cent below the 2005 level by 2020.

23. Mr. Werksman presented the NDC target under the Paris Agreement for the EU and its member States, which is to reduce GHG emissions by at least 40 per cent below the 1990 level by 2030. The EU and its member States are also committed to achieving net zero emissions by 2050.

24. The Party's total GHG emissions excluding emissions and removals from LULUCF decreased by 23 per cent between 1990 and 2018. According to the report on the technical review of the EU's BR4, this reflects the decreasing emission trends across the EU member States, attributable to a combination of economic and sector-specific drivers. The key economic drivers include the economic restructuring of many Central and Eastern European countries in the 1990s, the shift in the ratio of energy-intensive industries to services in the EU, and the economic recession in 2008–2010. The most important sector-specific factors are the shift from coal to gas for electricity and heat production, increased use of RES, energy efficiency improvements, new technological measures in industrial processes and improved waste management practices.

25. Mr. Werksman presented key PaMs for achieving the Party's targets, most notably the EU ETS and the ESD, as well as PaMs covering renewable energy and energy efficiency.

⁵ https://unfccc.int/MA/European_Union.

Besides contributing to the Party achieving its 2020 target, the PaMs led to a 23 per cent decrease in GHG emissions between 1990 and 2018, despite a 61 per cent increase in GDP, which reflects the steady decoupling of economic growth from GHG emissions. The EU has already put in place the legislative framework necessary for meeting its NDC target for 2030. Building on the EU climate and energy package, the framework takes into account the revised EU ETS directive, with an emission reduction target of 43 per cent below the 2005 level for covered sectors; the new ESR, with an emission reduction target of 30 per cent below the 2005 level for non-ETS sectors; and the new LULUCF regulation, including the ‘no-debit’ rule. The EU has also committed to achieving a minimum 32 per cent share of renewable energy in gross total final energy consumption by 2030, and has adopted a new headline target for 2030 of improving energy efficiency by at least 32.5 per cent compared with projections of expected energy use.

26. At the time of the MA, the EU and its member States were discussing a new emission reduction target for 2030 of at least 55 per cent below the 1990 level, which is compatible with the commitment to achieving climate neutrality by 2050.⁶ In addition, the member States and the European Parliament were discussing the approval of the new European Climate Law, which would see the climate-neutrality target for 2050 adopted through binding legislation.

27. The EU expects to overachieve its 2020 target under the WEM scenario. According to the report on the technical review of its BR4, the Party’s total GHG emissions in 2020 are projected to be 27.1 per cent below the 1990 level.

28. The opening presentation was followed by interventions and questions from the following delegations: Australia, China and India.

29. Questions on PaMs related to whether the biomass target for the agriculture sector applies to the EU as a whole or to certain member States; the potential for recycling and incineration in the waste sector; policies in the transport sector; and emission reduction strategies in the power sector.

30. In response, the EU clarified that the biomass target concerns the EU as a whole under the common agricultural policy. In addition, the Party explained that, according to EU directives covering the waste sector, the target for recycling municipal waste is 60 per cent by 2030 and the cap on landfilling of municipal waste is 10 per cent by 2035. The Circular Economy Action Plan on waste across the entire value chain focuses, in order of priority, on prevention, reuse, recycling and recovery, and disposal. Furthermore, all plastics used within the EU have to be either reusable or recyclable by 2030. For the transport sector, there is a strategic plan for developing and manufacturing electric batteries for cars. Finally, the EU explained that emission reductions in the power sector are to be achieved mainly by transitioning to a less-carbon-intensive fuel mix and increasing use of renewable energy. The EU ETS and the EU renewable energy directive were mentioned as key examples of best practice in the EU power and heat sector.

31. In relation to the provision of financial support to developing country Parties, the EU was asked to specify the amount of funding received by developing countries from the EU Innovation Fund and the amount of the EU budget committed to climate-related actions in 2014–2020 (EUR 180 billion) that was earmarked for providing funding to non-EU countries. Although these questions fall outside the scope of the MA,⁷ the EU explained that the Innovation Fund is designed to support its member States; and the amount of EU climate finance available externally has increased substantially, with EUR 23.2 billion allocated in 2019.

C. Finland

32. The fourth MA of Finland took place on 30 November 2020. Questions for Finland had been submitted in writing two months before the working group session by the following

⁶ In its conclusions from 11 December 2020, the European Council endorsed this as a binding EU target; see <https://www.consilium.europa.eu/en/meetings/european-council/2020/12/10-11/>.

⁷ As per decision 2/CP.17, annex II, para. 5.

delegations: Australia, Canada, China, Japan, New Zealand, Republic of Korea and United States. A list of the questions received and the answers provided by Finland, as well as the webcast of the session, can be found on the MA web page for Finland.⁸

33. The working group session was chaired by the additional SBI Rapporteur. Finland was represented by Outi Honkatukia from the Ministry of the Environment.

34. Ms. Honkatukia made an opening presentation summarizing Finland's progress towards achieving its quantified economy-wide emission reduction targets. As an EU member State, Finland is committed to contributing to the achievement of the joint EU quantified economy-wide emission reduction target of 20 per cent below the 1990 level by 2020. Finland's emission reduction target for ESD sectors (i.e. non-ETS sectors) is 16 per cent below the 2005 level by 2020.

35. Ms. Honkatukia presented Finland's long-term emission reduction targets: to be carbon-neutral by 2035 and carbon-negative soon after; and, under the National Climate Change Act, to reduce emissions by at least 80 per cent by 2050 compared with the 1990 level. Finland supports raising the EU's 2020 emission reduction target to at least 30 per cent below the 1990 level and is committed to the EU's target of climate neutrality by 2050.

36. Finland's total GHG emissions excluding emissions and removals from LULUCF decreased by 22.3 per cent between 1990 and 2017, owing mainly to increases in renewable energy use, imported electricity and biofuel use in the forest industry, and a decrease in self-produced electricity in industry.

37. Ms. Honkatukia presented key PaMs for achieving the Party's targets, including the EU ETS, promoting renewable energy use (e.g. through premium schemes, investment subsidies and use of biofuels in transport), energy efficiency measures (e.g. energy audits, energy efficiency agreements, new building standards and subsidies) and implementing the EU regulation on F-gases and the EU landfill directive, aimed at reducing waste generation.

38. Given that its emissions covered by the EU ETS are subject to an EU-wide cap, Finland presented graphically the projected level of emissions by 2020 from ESD sectors under the WEM scenario. This estimate has been updated since the BR4 to take into account weather patterns in 2019–2020 (unusually warm weather affecting demand for heating) and the impact of the pandemic on fuel consumption for transport, and indicates that emissions in 2020 will be below the Party's AEA. As a result, Finland expects to meet its 2020 target under the updated WEM scenario.

39. The opening presentation was followed by interventions and questions from China and India.

40. Questions on PaMs related to Finland's use of revenue from taxation under climate policies; emission trends and PaMs in the agriculture sector; progress in implementing its National Energy and Climate Strategy for 2030; and the most important measures under the WAM scenario. In response, the Party explained that revenue from climate policy taxation is included in the Government's budget and can be used across different economic sectors, such as education and health care. Finland clarified that it is covered by the EU common agriculture policy, which includes climate change PaMs; but it also has national policies that promote, for example, the permanent coverage of agricultural fields and extraction of biogas from animal manure. Finland acknowledged the difficulty of reducing emissions from the agriculture sector. Its current Government is setting ambitious climate change targets, such as carbon neutrality by 2035, and new measures in addition to those in the National Energy and Climate Strategy for 2030, such as an energy tax on fuels used for transport.

41. Questions on GHG emissions and projections related to use of the Wetlands Supplement in preparing the national GHG inventory and the strengths and weaknesses of the Party's projection model. In response, Finland explained that it uses emission factors from the Wetlands Supplement that are more appropriate than its country-specific factors, in particular for estimating emissions from organic soils for the agriculture sector and grassland. In addition, it clarified that the projection model used is fully described in its seventh national communication, with the BR4 including a summary thereof and referring to the national

⁸ <https://unfccc.int/MA/Finland>.

communication. The Party explained that the model is simple to use and transparent, but the level of disaggregation of the outputs is not sufficient for estimating the mitigation impacts of certain actions.

D. Germany

42. The fourth MA of Germany took place on 30 November 2020. Questions for Germany had been submitted in writing two months before the working group session by the following delegations: Australia, Canada, China, Japan, New Zealand, Republic of Korea and United States. A list of the questions received and the answers provided by Germany, as well as the webcast of the session, can be found on the MA web page for Germany.⁹

43. The working group session was chaired by the additional SBI Rapporteur. Germany was represented by Nicole Wilke from the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety.

44. Ms. Wilke made a presentation summarizing Germany's progress towards achieving its quantified economy-wide emission reduction targets. As an EU member State, Germany is committed to contributing to the achievement of the joint EU quantified economy-wide emission reduction target of 20 per cent below the 1990 level by 2020. Germany's emission reduction target for ESD sectors is 14 per cent below the 2005 level by 2020.

45. Ms. Wilke presented Germany's domestic targets, which are to reduce GHG emissions by 40 per cent below the 1990 level by 2020 and by 55 per cent below the 1990 level by 2030. Germany has also set a long-term goal of climate neutrality by 2050.

46. According to the report on the technical review of the Party's BR4, its total GHG emissions excluding emissions and removals from LULUCF decreased by 27.5 per cent between 1990 and 2017, owing mainly to the restructuring of the economic system in the former German Democratic Republic and implementation of climate change policies early on that have been strengthened over time. According to the provisional data for 2019 presented by Ms. Wilke, the Party's total GHG emissions decreased by 36 per cent between 1990 and 2019.

47. Ms. Wilke presented key PaMs for achieving the Party's targets, including the Climate Action Plan 2050 (adopted in 2016), which sets out the guiding principles of the national climate policy with a view to achieving the long-term strategy of the Party, and two supporting framework documents adopted in 2019, namely the Climate Change Act, which established the framework for implementing PaMs, sets out overall and sectoral targets and describes relevant procedures and monitoring mechanisms; and the Climate Action Programme 2030, which summarizes overarching and sector-specific measures. With sector-specific emission budgets decreasing annually as of 2021, the Expert Council for Climate Affairs is to begin assessing GHG emissions against budgets by sector: if the budget has been exceeded, an immediate action programme with specific measures should be developed within three months by the responsible ministry.

48. Given that its emissions covered by the EU ETS are subject to an EU-wide cap, Germany presented the projected level of emissions by 2020 from ESD sectors under the WEM scenario, which was 6.3 per cent above the AEA for 2020 before accounting for the latest emission reductions.

49. Although its BR4 indicated that Germany may face challenges in meeting its 2020 target under the WEM scenario, new data presented by the Party suggest that it could meet the target. The Party does not plan to use market-based mechanisms towards achieving its target, but may use its cumulative AEAs and purchase surplus AEAs from EU member States that have overachieved their targets, under the flexibility allowed under the ESD, to cover its potential cumulative AEA deficit. Germany is focusing on a suite of climate programmes under the Climate Action Plan 2050 to achieve its more ambitious reduction goal by 2030 (i.e. 55 per cent emission reduction below the 1990 level).

⁹ <https://unfccc.int/MA/Germany>.

50. The opening presentation was followed by interventions and questions from the following delegations: China, India and Switzerland.

51. The Party was requested to elaborate on its PaMs, particularly those in the transport sector, which is the only sector that has not experienced a steady decrease in GHG emissions, and on good practices in transitioning from using coal to other fuels. In response, Germany acknowledged that the transport sector is lagging behind in terms of emission reduction and explained that additional measures are under consideration, such as promoting climate-friendly transport options like rail, inland water transport and cycling, switching to cleaner fuels and promoting digital networking. Efforts to decarbonize the sector are ongoing, with both passenger and freight transport targeted. The most important measure for the sector is expected to be the national ETS, scheduled to be launched at the beginning of 2021. The Party explained that coal is substituted mainly by renewable energy, which in 2019 produced more electricity than coal. The act on phasing out coal-fired power plants (adopted on 3 July 2020) set a target of increasing the renewable energy share in the energy mix to 65 per cent by 2030 and phasing out coal-fired plants by 2038.

52. In response to questions on progress towards its 2020 target, Germany highlighted its efforts to close the projected gap to its target by means of the implemented PaMs, but noted that its growing population and rise in GDP in recent years have hampered emission reductions.

53. Questioned on the change in the emission trend in the LULUCF sector, Germany explained that the sector's transition from net sink to net source (in 2016–2020) is due to changes in its forest structure.

E. Italy

54. The fourth MA of Italy took place on 30 November 2020. Questions for Italy had been submitted in writing two months before the working group session by the following delegations: Australia, Canada, China, Japan, New Zealand, Republic of Korea and United States. A list of the questions received and the answers provided by Italy, as well as the webcast of the session, can be found on the MA web page for Italy.¹⁰

55. The working group session was chaired by the additional SBI Rapporteur. Italy was represented by Federica Fricano from the Ministry for the Environment, Land and Sea.

56. Ms. Fricano made a presentation summarizing Italy's progress towards achieving its quantified economy-wide emission reduction target. As an EU member State, Italy is committed to contributing to the achievement of the joint EU quantified economy-wide emission reduction target of 20 per cent below the 1990 level by 2020. Italy's emission reduction target for ESD sectors is 13 per cent below the 2005 level by 2020.

57. Ms. Fricano presented the EU's – and Italy's – target under the Paris Agreement, which is to reduce GHG emissions by 40 per cent below the 1990 level by 2030. Italy has set a long-term goal of climate neutrality by 2050.

58. The Party's total GHG emissions excluding emissions and removals from LULUCF decreased by 17.2 per cent between 1990 and 2018, owing mainly to economic restructuring and implemented PaMs, such as substituting carbon-intensive fuels by natural gas in energy production and industry, and increasing use of renewable energy (mainly photovoltaics and wind power), which have considerably reduced the carbon intensity of the economy. Provisional data indicate that emissions decreased by a further 2.7 per cent in 2019 and 9.1 per cent in 2020 compared with the 2018 level, attributable to some extent to the pandemic.

59. Ms. Fricano presented key PaMs for achieving the Party's targets, including the main milestones in national climate policy since 2013, namely the adoption of the National Adaptation Strategy (2013), National Energy Strategy (2017), National Forestry Accounting Plan (2018) and NECP (2020), as well as the recently developed national adaptation plan and national long-term strategy. The Party elaborated on a set of PaMs included in the NECP

¹⁰ <https://unfccc.int/MA/Italy>.

aimed at further promoting RES and increasing energy end-use efficiency in the energy and industry sectors, promoting biofuels in the transport sector and phasing out coal use for electricity production by 2025.

60. Given that its emissions covered by the EU ETS are subject to an EU-wide cap, Italy presented the projected level of emissions by 2020 from ESD sectors under the WEM and WAM scenarios in its BR4, which is 7.9 per cent below the AEA for 2020 under the WEM scenario and 10.6 per cent below the AEA for 2020 under the WAM scenario. Therefore, Italy expects to meet its 2020 target under the WEM scenario, which would have been the case even without the impacts of the pandemic. Surplus AEAs from 2013–2020 will not be used for compliance in 2021–2030.

61. The opening presentation was followed by interventions and questions from the following delegations: China, India and Singapore.

62. In response to a question on plans for decoupling carbon emissions from energy production, particularly after the pandemic, Italy explained that it is continuously strengthening its measures aimed at reducing energy-related emissions, such as those set out in the NECP, which include improving energy efficiency of buildings, increasing use of renewable energy and electrifying transport with a view to further decoupling GDP from emissions.

63. Questioned on the possible contribution of market-based mechanisms towards achieving its target under the Convention, Italy explained that it is on track to achieving its 2020 target without using such mechanisms.

64. Concerning its projected emissions for 2020, Italy explained that it took the impact of the pandemic into account in its projections, resulting in greater estimated emission reductions, but noted that it was already on track to meeting its 2020 target without the effect of the pandemic. In response to a question on the main reference materials used for its projections, the Party explained that most of the materials are available online, mostly in Italian. It clarified that the most up-to-date information on emission trends and projections is contained in a report on the status of commitments to reduce GHG emissions that is prepared annually by the Ministry for the Environment, Land and Sea in consultation with other ministries and annexed to the Economic and Financial Document, which is approved by the Government on an annual basis.

65. Lastly, in response to a question on the measurement, reporting and verification system and tracking funds for mitigation, adaptation and technology transfer, Italy explained that it uses methodologies from the Development Assistance Committee of the Organisation for Economic Co-operation and Development for tracking and monitoring resource flows and the Rio markers for classifying the flows.

F. Netherlands

66. The fourth MA of the Netherlands took place on 24 November 2020. Questions for the Netherlands had been submitted in writing two months before the working group session by the following delegations: Australia, Canada, China, Japan, New Zealand, Republic of Korea and United States. A list of the questions received and the answers provided by the Netherlands, as well as the webcast of the session, can be found on the MA web page for the Netherlands.¹¹

67. The working group session was chaired by the additional SBI Rapporteur. The Netherlands was represented by Bastiaan Hassing from the Ministry of Economic Affairs and Climate Policy.

68. Mr. Hassing made a presentation summarizing the Netherlands' progress towards achieving its quantified economy-wide emission reduction targets. As an EU member State, the Netherlands is committed to contributing to the achievement of the joint EU quantified economy-wide emission reduction target of 20 per cent below the 1990 level by 2020. The

¹¹ <https://unfccc.int/MA/Netherlands>.

Netherlands' emission reduction target for ESD sectors is 16 per cent below the 2005 level by 2020.

69. Mr. Hassing presented the Netherlands' target to reduce GHG emissions by 49 per cent below the 1990 level by 2030 and its long-term goal to reduce emissions by 95 per cent below the 1990 level by 2050.

70. According to the report on the technical review of the Party's BR4, its total GHG emissions excluding emissions and removals from LULUCF decreased by 12.6 per cent between 1990 and 2017, owing mainly to the effects of PaMs targeting non-CO₂ gases in the IPPU, waste and agriculture sectors and a decrease in fugitive emissions from fuels in the energy sector. Mr. Hassing presented the trends in GHG emissions from ESD sectors, which are the emissions covered by the Party's national target. The latest available data on such emissions at the time of drafting the BR4 were for 2018, when emissions were already below the 2020 target level. Provisional estimates for 2019, which were available at the time of the MA, indicate a further emission decline. According to the report on the technical review of the Party's BR4, the EU ETS and the 2013 Energy Agreement are the Party's main policies underlying the emission reductions to date, reinforced by measures taken with a view to achieving its climate and energy targets for 2020.

71. Mr. Hassing presented key PaMs for achieving the Party's targets, including its overarching framework in the National Climate Act, adopted in 2019. The Netherlands considers the greatest advantage of the National Climate Act to be that it established a legal framework from which the Party cannot deviate and provides certainty to stakeholders with regard to the goals pursued. It requires the Government of the Netherlands to set out its aims in a policy plan every five years and provide an annual update on its achievements. The National Climate Agreement, concluded in mid-2019 following consultations with over 100 stakeholders, outlines agreements with sectors to help achieve these goals, covering PaMs in the mobility, electricity, agriculture and land use, industry and built environment sectors.

72. Mr. Hassing described specific policies for built environment: the Netherlands is aiming to sustainably switch from using natural gas to using less-emission-intensive technologies (e.g. district heating in cities or electric or hybrid heat pumps, preferably powered by solar plants in individual homes) in 7 million houses and 1 million office buildings, starting with 50,000 houses in 2021 with the aim of reaching 200,000 houses annually as of 2030. In case external heat sources are still needed after these measures have been taken, the Party is examining options for using the existing natural gas infrastructure to transport green gas or even hydrogen to meet demand. Although not all technologies are available on the scale needed or at reasonable cost, the Party noted the importance of implementing them given the urgency of the climate crisis. Acknowledging that technological solutions must be affordable, the Netherlands presented its ideas for lowering costs, including digitization, innovation, green loans, and pooling supply and demand. Mr. Hassing explained that public involvement is a crucial part of the strategy for policy development; for example, the Party conducts polling to elicit public opinion on policies (e.g. the shift away from natural gas).

73. Given that its emissions covered by the EU ETS are subject to an EU-wide cap, the Netherlands presented the projected level of emissions by 2020 from ESD sectors under the WEM and WAM scenarios, which is 8.7 per cent below the AEA for 2020 under both scenarios.

74. The Netherlands expects to meet its 2020 target under the WEM scenario, although its latest projections place it slightly short of achieving the 2030 target. This could be because the projections only considered policies implemented before 1 May 2020 and not all policies from the new National Climate Agreement had been implemented by that time. Measures in the pipeline are set to bring the Netherlands closer to its 2030 target, but significant efforts will still be required to achieve it.

75. The opening presentation was followed by interventions and questions from the following delegations: Australia, China and India.

76. In response to a question on how it plans to achieve its domestic target of reducing emissions by at least 25 per cent below the 1990 level by 2020, the Party clarified that this

target stems from a court decision in a case filed by non-governmental organization Urgenda, with which the Government of the Netherlands is required to comply. The Party explained that it is planning to close a coal-fired power plant and has taken additional measures and introduced subsidies to promote energy efficiency in buildings and the agriculture sector. The Netherlands noted that, on the basis of the latest emission projections, it could still achieve the domestic target.

77. The Party was requested to elaborate on sectoral PaMs and good practices in the energy sector that may have contributed to the relatively large reduction in emissions from the sector in 2017. It was also asked whether it had taken any action to enhance its Green Deal programme (a voluntary agreement between stakeholders to reduce GHG emissions) in response to an evaluation thereof in 2016. In response, the Party noted that the economy-wide measures in place, such as energy efficiency standards, are not sufficient for meeting its emission reduction targets and additional measures are required in every sector (e.g. promoting electric vehicles). The significant emission reduction in the energy sector in 2017 was due to the closure of a coal-fired power plant. Lastly, the Party explained that the evaluation of the Green Deal programme concluded that it was successful and as such it has been continued and is reflected in the National Climate Agreement.

78. Finally, the Party was asked to clarify whether there have been any changes to the national GHG inventory system since 2005, whether it uses the Wetlands Supplement and the reasons for the fluctuations in emissions from harvested wood products. In response, the Party confirmed that there have been no changes to the national system since 2005, with the exception of organizational changes, as it was able to accommodate institutional arrangements under the system already in place in 2005. The Party also confirmed that it does not use the Wetlands Supplement, but described overall improvements in its data collection process for the LULUCF sector, including introducing a new soils map in 2018 in order to better estimate emissions from organic soils and recently including updated values for forest in the national GHG inventory.

G. Norway

79. The fourth MA of Norway took place on 2 December 2020. Questions for Norway had been submitted in writing two months before the working group session by the following delegations: Australia, Canada, China, EU, Japan, New Zealand, Republic of Korea, Singapore and United States. A list of the questions received and the answers provided by Norway, as well as the webcast of the session, can be found on the MA web page for Norway.¹²

80. The working group session was chaired by the additional SBI Rapporteur. Norway was represented by Peer Stiansen from the Ministry of Climate and Environment.

81. Mr. Stiansen made a presentation summarizing Norway's progress towards achieving its quantified economy-wide emission reduction targets. Under the Convention Norway made a commitment to reduce its GHG emissions by 30 per cent below the 1990 level by 2020.

82. Mr. Stiansen presented Norway's NDC target under the Paris Agreement, which is to reduce GHG emissions by 50–55 per cent below the 1990 level by 2030. Norway has also set a long-term goal to reduce emissions by 80–95 per cent by 2050.

83. The Party's total GHG emissions excluding emissions and removals from LULUCF increased by 2.9 per cent between 1990 and 2017, owing mainly to strong economic and population growth but also to the expansion of petroleum extraction and use of gas for electricity generation, leading to increased use of fossil fuels (oil and gas) and thus higher CO₂ emissions. Both emissions from offshore petroleum activities and emissions from transport seem to have peaked around 2015, owing partly to electrification and use of renewable energy. The overall increase in emissions has been slowed thanks to improvements in processes, use of new technologies and emission reductions in the IPPU and waste sectors;

¹² <https://unfccc.int/MA/Norway>.

and the growth in CO₂ emissions has been almost fully offset by reductions in emissions of other gases.

84. Mr. Stiansen presented key PaMs for achieving the Party's targets; for example, green taxes and the EU ETS covered more than 80 per cent of its GHG emissions. Norway is aiming to facilitate compliance under the EU ETS by supporting research and development of technologies. Its high share of electric vehicles and minimum requirements for biofuel share in the fuel mix will contribute substantially to decarbonizing the transport sector, while the State-owned enterprise Enova plays a key role in bringing new technologies, such as electric ferries and renewable heating, to market.

85. Norway's total GHG emissions excluding LULUCF in 2020 and 2030 are projected to be 50,984.00 and 45,009.00 kt CO₂ eq, respectively, under the WEM scenario, which is a decrease of 226.40 kt CO₂ eq (0.4 per cent) and 6,201.40 kt CO₂ eq (12.1 per cent), respectively, below the 1990 level. The projections suggest that Norway does not expect to achieve its 2020 target under the Convention without acquiring units from market-based mechanisms.

86. The opening presentation was followed by interventions and questions from the following delegations: Australia, China, EU, India, Luxembourg, Switzerland and United Kingdom.

87. In response to a question on how Norway plans to meet its 2020 target, the Party indicated that it will use units from market-based mechanisms to cover the gap in emission reductions to the 30 per cent target; however, considerable emission reductions have also been achieved via domestic measures. In response to whether it has a road map to meeting its 2050 carbon-neutrality target, Norway stated that this is still to be developed, but it recently submitted to the UNFCCC its long-term low-emission development strategy and updated NDC.

88. In response to a question on its approach to combining a CO₂ tax with an ETS in the same sector and assessing whether or how to change the level of environmental taxes, Norway explained that it always carries out assessments before adjusting the tax level. In the specific case mentioned, there was political will not to weaken mitigation incentives for certain sectors, such as the petroleum sector, and therefore the existing CO₂ tax was retained when the EU ETS was introduced in 2008 and has been increased over time.

89. Norway was also asked about its experience of using permits to reduce GHG emissions from oil and gas operations, particularly CH₄. Norway explained that permits for oil and gas operations were established in a lengthy process and approved by Parliament with the aim of reducing CH₄ emissions for the purposes of safety and mitigation. In response to another question about the sectors in which the Party sees the most potential for further emission reductions, Norway pointed to green taxes, the EU ETS and CCS, explaining that, according to IPCC Assessment Reports, CCS is key to achieving the 1.5 and 2 °C goals under the Paris Agreement. Further, the Party clarified that costs are currently the greatest barrier to CCS deployment, but identifying suitable storage locations and transporting captured carbon also pose challenges. In response to a question on the EU ETS, the Party explained that there are ongoing discussions on the future development of the EU ETS, which may include expanding the scope to cover, for example, emissions from transport.

90. Another question related to the trend in GHG emissions from energy industries due to petroleum extraction and the Party's approach to reducing those emissions. The Party explained that until recently GHG emissions from petroleum extraction were on the rise, driven by increasing extraction activity, despite considerable energy efficiency gains over time and implementation of other mitigation measures, such as using renewable electricity. Extraction activity has recently started to decline, however, causing the related GHG emissions to fall, and this trend is projected to continue.

91. With regard to the transport sector, the Party was asked how it plans to phase out fossil fuel vehicles and whether there are any concerns about using electric vehicles for travelling long distances in rural areas. In response, the Party explained that, while it has a target for all new cars and light-duty vans to be zero emission from 2025 onward, fossil fuel vehicles already in the fleet can still be driven until their end of life. Norway expects that zero-

emission vehicles will account for roughly 75 per cent of the fleet by 2030. The Party explained that it has addressed the challenge of using electric vehicles by establishing a network of, at that point 3,000, charging stations around the country, the majority of which set up without State support. Responding to a further question on whether any areas had been prioritized for charging stations, Norway clarified that they were often located at fuel stations, but many people charge their electric vehicles at home.

92. With regard to aviation, interest was expressed in Norway's experience of biofuel quotas. It explained that, for road transport, the required biofuel share in the fuel mix was increased from 8 per cent in 2017 to 10 per cent in 2018, 12 per cent in 2019 and 20 per cent in 2020. Fuel providers are selling more biofuels than required for these shares as a result of tax incentives, for example. For aviation the required biofuel share in the fuel mix is considerably lower than for road transport at only 0.5 per cent.

93. Concerning the challenges Norway faces with regard to the CO₂ tax in the agriculture sector, the Party clarified that there are no specific challenges as the tax applies only to the use of fossil fuels in the agriculture sector. There was also interest in whether emissions from the agriculture sector had decreased due to the increased efficiency of milk production. Norway explained that it estimates its emissions from livestock mainly on the basis of cattle and sheep head count, and that, while limited emission reductions have been realized, there is potentially scope for further reductions.

H. Portugal

94. The fourth MA of Portugal took place on 2 December 2020. Questions for Portugal had been submitted in writing two months before the working group session by the following delegations: Australia, Canada, China, Japan, New Zealand, Republic of Korea and United States. A list of the questions received and the answers provided by Portugal, as well as the webcast of the session, can be found on the MA web page for Portugal.¹³

95. The working group session was chaired by the additional SBI Rapporteur. Portugal was represented by Eduardo Ferreira-Santos from the Portuguese Environment Agency.

96. Mr. Ferreira-Santos made a presentation summarizing Portugal's progress towards achieving its quantified economy-wide emission reduction targets. As an EU member State, Portugal is committed to contributing to the achievement of the joint EU quantified economy-wide emission reduction target of 20 per cent below the 1990 level by 2020. Portugal's emission reduction target for ESD sectors is 1 per cent above the 2005 level by 2020.

97. Mr. Ferreira-Santos presented Portugal's NDC under the Paris Agreement, which is to reduce GHG emissions by at least 40 per cent below the 1990 level. Portugal has also set a long-term goal of carbon neutrality by 2050, covering all sectors and gases reported in the national GHG inventory.

98. The Party's total GHG emissions excluding emissions and removals from LULUCF increased by 19.5 per cent between 1990 and 2017, owing mainly to economic growth, which resulted in increased emissions from energy use, industrial activity, waste generation and transport.

99. Mr. Ferreira-Santos presented key PaMs for achieving the Party's targets, including its 2050 Carbon Neutrality Roadmap, which also represents its long-term low-emission development strategy, submitted to the UNFCCC in September 2019. A trajectory to carbon neutrality was established by identifying the main drivers of emissions and setting sectoral targets to reduce them. The Party considers it technically viable to fully decarbonize the national economy using existing technology and processes, such as phasing out fossil fuels; implementing energy efficiency measures; increasing use of public transport; electrifying transport; enhancing carbon sequestration through sustainable agriculture and land use; investing in circular economy approaches; and applying appropriate taxes and incentives (such as carbon pricing and ending fossil fuel subsidies).

¹³ <https://unfccc.int/MA/Portugal>.

100. According to the Roadmap, significant investment will be required to transform the economy for achieving carbon neutrality by 2050. Portugal therefore estimates that it will need to allocate 1.2 per cent of GDP annually until 2050 to achieving carbon neutrality, part of which is expected to come from private sector investment. In describing the positive impact that carbon neutrality could have on the economy, Mr. Ferreira-Santos highlighted the opportunities that could arise from new products and services, new technologies and models related to decentralized production and shared consumption, and digitization of the energy system.

101. Given that its emissions covered by the EU ETS are subject to an EU-wide cap, Portugal presented the projected level of emissions by 2020 from ESD sectors under the WEM and WAM scenarios, which is 24.1 per cent below the AEA for 2020 under both scenarios. Portugal therefore expects to meet its 2020 target under the WEM scenario.

102. The opening presentation was followed by interventions and questions from China and India.

103. The Party was asked to clarify both why LULUCF emission estimates for the base year in its BR4 differed from those in previous national inventory reports and the underlying estimation methodology. The Party was also asked to explain how the decline in LULUCF removals since 2010 was being addressed. In response, it explained that LULUCF estimates may have been revised when the annual inventory estimates were recalculated and that the LULUCF sector was a net source of emissions in nearly all years in 1990–2017. When emissions increased significantly, this was in part attributable to the very dry conditions in the country, which frequently result in forest fires, leading to significant emissions. Portugal intends to further enhance its sustainable land management and fire management practices.

104. The Party was further asked to explain whether it needs more ambitious PaMs in the transport sector to reach its objectives and why projected emissions from IPPU and waste are virtually the same under the WEM and WAM scenarios. In response, Portugal indicated that its Roadmap includes a number of transport measures, and that the similarity of projected emissions under the WEM and WAM scenarios is due to the very recent implementation of measures in the waste and IPPU sectors and their inclusion in the WEM scenario.

105. Portugal was asked why the mitigation impact of many of its PaMs was not estimated, to elaborate on challenges in estimating impacts, and how it intends to achieve its objective of carbon neutrality by 2050. In response, the Party noted that estimating mitigation impacts is an ongoing challenge, but it is planning to develop a more systematic approach to measuring and monitoring the impacts of PaMs with a view to improving both the historical and projected estimates of impacts. Regarding carbon neutrality, the Party referred to its Roadmap, noting that the immediate measures expected to have significant impacts include closing all coal-fired power stations and significantly scaling up investment in renewable energy (particularly solar power). All sectors are expected to contribute towards the goal, which is planned to be achieved by following the trajectory for 2020–2030 and beyond set out in the Roadmap.

I. Sweden

106. The fourth MA of Sweden took place on 2 December 2020. Questions for Sweden had been submitted in writing two months before the working group session by the following delegations: Australia, Canada, China, Japan, New Zealand, Republic of Korea and United States. A list of the questions received and the answers provided by Sweden, as well as the webcast of the session, can be found on the MA web page for Sweden.¹⁴

107. The working group session was chaired by the additional SBI Rapporteur. Sweden was represented by Mattias Frumerie from the Ministry for Foreign Affairs.

108. Mr. Frumerie made a presentation summarizing Sweden's progress towards achieving its quantified economy-wide emission reduction targets. As an EU member State, Sweden is committed to contributing to the achievement of the joint EU quantified economy-wide

¹⁴ <https://unfccc.int/MA/Sweden>.

emission reduction target of 20 per cent below the 1990 level by 2020. Sweden's emission reduction target for ESD sectors is 17 per cent below the 2005 level by 2020.

109. Mr. Frumerie presented Sweden's long-term emission reduction targets to reduce domestic transport emissions, excluding domestic aviation, by 70 per cent compared with the 2010 level by 2030; and reduce emissions from ESD sectors by 63 per cent by 2030 and by at least 75 per cent by 2040 below the 1990 level, with a target for 2045 of net zero and negative emissions thereafter.

110. According to the report on the technical review of Sweden's BR4, its total GHG emissions excluding emissions and removals from LULUCF decreased by 27 per cent between 1990 and 2018, owing mainly to the switch from oil to heat pumps and district heating for residential, commercial and institutional premises. Other significant drivers were the increases in use of biofuels for district heating and combustion in manufacturing industries, as well as the reduction in landfill gas emissions from the waste sector. According to provisional data, GHG emissions further decreased by 3.2 per cent in 2018–2019.

111. Mr. Frumerie presented key PaMs for achieving the Party's targets, including an aviation tax on domestic flights and a fee and rebate system for new vehicles. Sweden's 2017 climate policy framework sets out its national plan for implementing the Paris Agreement, with a focus on three pillars: new, long-term emission targets, a climate act and a climate policy council, and requires an annual climate report to be included in the Budget Bill and the Government to submit a climate action plan to Parliament every four years.

112. Given that its emissions covered by the EU ETS are subject to an EU-wide cap, Sweden presented the projected level of emissions by 2020 from ESD sectors under the WEM scenario, which is 18.6 per cent below the AEA for 2020. Sweden therefore expects to meet its 2020 target under the WEM scenario.

113. The opening presentation was followed by interventions and questions from the following delegations: Australia, China and India.

114. The Party was asked to explain how revenue from its aviation tax is being used as well as additional questions on measures for and experience of enhancing renewable energy use in the heating sector and reducing emissions from the industry sector. Specific questions were asked about the mitigation impact of a number of cross-sectoral policies and energy policies, and the shares of hydro- and nuclear power in the energy mix in Sweden. In response, the Party explained that it is too early to elaborate on its experience with the aviation tax owing to the pandemic. Furthermore, Sweden stated that it plans to have 100 per cent of energy coming from RES by 2040. Sweden also stated that its energy consumption for heating is stable, and that emission reductions stem from increasing use of heat pumps and district heating. In addition, the Party explained that hydro- and nuclear power each currently accounts for 39 per cent of the energy mix.

115. Sweden was asked about its work on raising public awareness on climate change. It responded that it recognizes that the achievement of the goals of the Paris Agreement will require the whole society to participate in the transition to a fossil-free society. Hence, a national strategy for raising public awareness will be developed in order to ensure the public's strong commitment and understanding in this regard.

J. Switzerland

116. The fourth MA of Switzerland took place on 2 December 2020. Questions for Switzerland had been submitted in writing two months before the working group session by the following delegations: Australia, Canada, China, EU, Japan, New Zealand, Republic of Korea, United Kingdom and United States. A list of the questions received and the answers provided by Switzerland, as well as the webcast of the session, can be found on the MA web page for Switzerland.¹⁵

117. The working group session was chaired by the additional SBI Rapporteur. Switzerland was represented by Franz Perrez from the Federal Office for the Environment.

¹⁵ <https://unfccc.int/MA/Switzerland>.

118. Mr. Perrez made a presentation summarizing Switzerland's progress towards achieving its quantified economy-wide emission reduction targets. Under the Convention Switzerland made a commitment to reduce its GHG emissions by 20 per cent below the 1990 level by 2020.¹⁶

119. Mr. Perrez presented Switzerland's NDC target under the Paris Agreement, which is to reduce GHG emissions by 50 per cent below the 1990 level by 2030. Switzerland has also set a long-term goal of climate neutrality by 2050.¹⁷

120. The Party's total GHG emissions excluding emissions and removals from LULUCF decreased by 11.9 per cent between 1990 and 2017, owing mainly to measures aimed at reducing fuel use and shifting the fuel mix away from higher-emission fuels (e.g. bituminous coal and residual fuel oil) towards lower-emission fuels (e.g. other fossil fuels, natural gas and biomass).

121. Mr. Perrez presented key PaMs for achieving the Party's targets, including the second CO₂ Act (2011) and the subsequent third CO₂ Act (2020), addressing all sectors of the economy. The third CO₂ Act is based on the principle that mitigation measures that have proven successful and were accepted by a wide range of stakeholders should be retained, with steps taken to adjust and supplement them to achieve more ambitious targets. For example, the CO₂ levy has been increased and emission standards tightened for vehicles and buildings; such as, from 2023 onward, fossil fuels may not be used for heating in newly constructed buildings.

122. Switzerland's total GHG emissions excluding LULUCF and including indirect CO₂ (for energy, IPPU, agriculture and waste) in 2020 and 2030 are projected to be 45,813.26 and 41,535.49 kt CO₂ eq, respectively, under the WEM scenario, which is a decrease of 14.6 and 22.6 per cent, respectively, below the 1990 level. Under the WAM scenario, at around 45,711.72 and 35,048.74 kt CO₂ eq, respectively, emissions in 2020 and 2030 are projected to be lower than in 1990 by 14.8 and 34.7 per cent, respectively. The 2020 WEM projection suggests that Switzerland may face challenges in achieving its 2020 target under the Convention without using market-based mechanisms.

123. The opening presentation was followed by interventions and questions from the following delegations: Australia, China, EU, India, Luxembourg, Norway and United Kingdom.

124. In response to a question about the process of developing and adopting the third CO₂ Act, the Party explained that a draft was presented to Parliament in 2018 for review, with a more ambitious draft developed and adopted in September 2020. The Act still needs to be endorsed by public referendum. On the potential implications of the Act coming into force after the end of 2020, after which time the second CO₂ Act no longer applies, Switzerland responded that Parliament has adopted a partially revised version of the CO₂ Act to cover the interim period, extending it and the measures contained therein by one more year and adopting a new emission target for 2021.

125. Questioned on market-based mechanisms, Switzerland clarified that, while the exact scale of use remains to be determined, units are expected to be used to achieve roughly 10 per cent of its 2020 target.

126. When asked about its experience of diversifying its energy system and its decision to replace nuclear energy instead of fossil fuels, Switzerland responded that its power generation system relies on hydropower and nuclear energy. Phasing out nuclear energy therefore results in the need to increase the share of RES in power generation, such as by creating an enabling environment for solar and wind energy, providing incentives for

¹⁶ The Party will assess achievement of its target under the Convention by accounting against its quantified emission reduction commitment under the second commitment period of the Kyoto Protocol, which means that Switzerland's commitment under the Convention will be considered fulfilled once it has met its target for the second commitment period of the Kyoto Protocol. The Party's target under the Kyoto Protocol, which was derived from its 2020 target under the Convention, is to reduce emissions by 15.8 per cent below the 1990 level in 2013–2020.

¹⁷ Part of Switzerland's third CO₂ Act, approved by parliament in September 2020 but subject to endorsement through a facultative referendum, likely in mid-2021.

households and businesses to use solar energy and investing in research on renewable power generation.

127. In response to a question on its experience of redistributing a third of the CO₂ levy on heating and process fuels to its buildings programme and on automatically increasing levies if interim targets are not met, Switzerland explained that both measures have proven effective and thus been retained in the third CO₂ Act.

128. Switzerland responded to a question about measures for reducing GHG emissions from the transport sector that it has increased emission standards for cars in line with measures taken by neighbouring countries and promoted use of and invested in public transport throughout the country.

129. Questioned on how mitigation efforts have been strengthened in the forestry sector, the Party responded that it has a law in force to promote sustainable forest management, which ensures that the forest area in Switzerland is not reduced in size, and provides incentives for using wood products. Asked about its selection criteria for domestic emission reduction projects, Switzerland responded that such projects have to be additional to those included in the existing climate change policy, such as measures related to district heating.

III. Summary reports on multilateral assessments at the May–June 2021 session of the Subsidiary Body for Implementation

130. The second MA working group session of the fourth cycle of the IAR process was convened virtually during the May–June 2021 session of the SBI, on 2, 4, 12 and 15 June 2021, under the guidance of the SBI Chair; SBI Vice-Chair, Yeonchul Yoo (Republic of Korea); and additional SBI Rapporteur.

A. Austria

131. The fourth MA of Austria took place on 2 June 2021. Questions for Austria had been submitted in writing two months before the working group session by the following delegations: Canada, New Zealand, Thailand, United Kingdom and United States. A list of the questions received and the answers provided by Austria, as well as the webcast of the session, can be found on the MA web page for Austria.¹⁸

132. The working group session was chaired by the additional SBI Rapporteur. Austria was represented by Helmut Hojesky from the Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology.

133. Mr. Hojesky made a presentation summarizing Austria's progress towards achieving its quantified economy-wide emission reduction targets. As an EU member State, Austria is committed to contributing to the achievement of the joint EU quantified economy-wide emission reduction target of 20 per cent below the 1990 level by 2020. Austria's emission reduction target for ESD sectors is 16 per cent below the 2005 level by 2020.

134. Mr. Hojesky presented Austria's NDC target under the Paris Agreement. As an EU member State, Austria is committed to contributing to the achievement of the EU NDC target to reduce its GHG emissions by 55 per cent below the 1990 level by 2030. Austria's target is to reduce GHG emissions from ESD sectors by 36 per cent below the 2005 level by 2030. Austria has also set a long-term goal to reach climate neutrality by 2040.

135. According to the report on the technical review of the Party's BR4, its total GHG emissions excluding emissions and removals from LULUCF increased by 0.6 per cent between 1990 and 2018, owing mainly to factors such as the increased volume of both freight and passenger road transport, coupled with the rising trend of transport fuels being sold in Austria but consumed in neighbouring countries, the growth in activity in manufacturing industries and construction, and increased iron and steel production.

¹⁸ <https://unfccc.int/MA/Austria>.

136. According to the same report, key PaMs for achieving the Party's 2020 target include the Austrian Climate Change Act, which established the National Climate Change Committee as the main coordinating body for climate change mitigation. The key cross-sectoral policies are the EU ETS, the Domestic Environmental Support Scheme and the Austrian Climate and Energy Fund. Mr. Hojesky presented PaMs that are under development and mostly look beyond 2020, such as gradually phasing out fossil fuels for heating purposes in new and existing installations with a view to achieving exclusive use of RES for heating purposes by 2040; sourcing 100 per cent of electricity from RES by 2030, supported by investments of EUR 1 billion/year; introducing an affordable annual ticket that allows unlimited use of public transport; and providing investment support for projects that exclude fossil fuel use and for other climate-related measures under the COVID-19 recovery plan (EUR 3 billion in 2020–2021) and the EU facility (EUR 3.5 billion in 2022–2026).

137. Given that its emissions covered by the EU ETS are subject to an EU-wide cap, Austria presented the projected level of emissions by 2020 from ESD sectors under the WEM scenario, which is 6.6 per cent above the AEA for 2020. Austria may face challenges in meeting its 2020 target under the WEM scenario; however, the Party indicated that it may take advantage of the flexibility provided under the ESD to carry forward part of its cumulative AEA surplus to meet its target.

138. The presentation was followed by interventions and questions from the following delegations: China, India, Malaysia, New Zealand and United Kingdom.

139. A question was asked about the Party's confidence in meeting its 2030 emission reduction target and 2040 carbon-neutrality goal given the significant increase in emissions from freight transport in 1990–2018. In response, the Party explained that the rise in transit freight transport is, in essence, due to the free movement of goods across the EU, and it has put in place a number of measures to reduce the impact on air quality and GHG emission levels, such as banning freight transit at night and requirements for transport vehicles to meet Euro 5 and 6 standards, and is building the necessary infrastructure for shifting from road to rail transport.

140. Questions on PaMs related to:

- (a) Challenges in estimating their mitigation impacts;
- (b) Lessons learned on successful implementation of climate and energy projects at the regional level;
- (c) The PaMs and types of RES that will contribute to achieving 100 per cent of electricity from RES by 2030.

141. In response, the Party explained that:

- (a) Responsibility for implementing policies is distributed across administrative levels and there are no standard regulations for monitoring and reporting the effects of policies, which, in some cases, makes it difficult to reliably calculate the mitigation impacts of PaMs;
- (b) Training responsible entities and their staff in local communities can help to ensure appropriate management of such initiatives and encourage private sector engagement;
- (c) The share of RES in electricity production (currently approximately 70 per cent, with hydropower the largest individual source) is expected to reach 100 per cent by 2030 thanks to planned measures and financial support.

142. On emission trends, when asked about the underlying drivers for the GHG emission reduction in the agriculture sector in 1990–2018, the Party explained that it was due mainly to decreases in livestock numbers and fertilizer use.

143. On projections, when asked about the results of the sensitivity analysis for its 2030 projections, in particular the impact on policies addressing energy security in a scenario of higher fuel imports and prices, the Party explained that its NECP covers energy security issues, and using domestic RES is a key measure for reducing dependence on fossil fuel imports.

B. Belgium

144. The fourth MA of Belgium took place on 2 June 2021. Questions for Belgium had been submitted in writing two months before the working group session by the following delegations: Canada, Japan, New Zealand, United Kingdom and United States. A list of the questions received and the answers provided by Belgium, as well as the webcast of the session, can be found on the MA web page for Belgium.¹⁹

145. The working group session was chaired by the additional SBI Rapporteur. Belgium was represented by Peter Wittoeck from the Federal Public Service Health, Food Chain Safety and Environment.

146. Mr. Wittoeck made a presentation summarizing Belgium's progress towards achieving its quantified economy-wide emission reduction targets. As an EU member State, Belgium is committed to contributing to the achievement of the joint EU quantified economy-wide emission reduction target of 20 per cent below the 1990 level by 2020. Belgium's emission reduction target for ESD sectors is 15 per cent below the 2005 level by 2020.

147. Mr. Wittoeck presented Belgium's NDC target under the Paris Agreement. As an EU member State, Belgium is committed to contributing to the achievement of the EU NDC target to reduce its GHG emissions by 55 per cent below the 1990 level by 2030. Belgium's target is to reduce GHG emissions from ESD sectors by 35 per cent below the 2005 level by 2030.

148. Mr. Wittoeck highlighted that, to complement Belgium's national obligations as an EU member State, all competent authorities have set medium- and long-term targets. The federal Government has set a long-term national target to achieve climate neutrality by 2050. The regional governments have established similar targets, with the Flemish Region setting a long-term target to reduce emissions from ESD sectors by 85 per cent by 2050 compared with the 2005 level; the Walloon Region aiming to reduce GHG emissions by 95 per cent compared with the 1990 level; and the Brussels-Capital Region aiming to achieve climate neutrality by 2050.

149. The Party's total GHG emissions excluding emissions and removals from LULUCF decreased by 19.1 per cent between 1990 and 2018, owing mainly to the closure of some plants in the iron and steel industry and other plants switching to electricity; energy efficiency gains in chemical industry; the switch from solid to gaseous fuels and renewables and technological improvements in power production; reductions in waste disposal; falling livestock numbers; and changes in agricultural practices.

150. Mr. Wittoeck presented key PaMs for achieving the Party's targets, including Belgium's Recovery and Resilience Plan and a new cooperation agreement on internal burden-sharing for Belgium's climate and energy objectives among the country's three regions and the federal State for 2021–2030, which is currently under negotiation. Mr. Wittoeck explained that the federal Government has announced a review of Belgium's Constitution with a view to strengthening cooperation among all competent authorities to reach their medium- and long-term targets.

151. Belgium's emissions covered by the EU ETS are subject to an EU-wide cap. According to the report on the technical review of the Party's BR4, its projected level of emissions by 2020 from ESD sectors under the WEM and WAM scenarios is 4.0 and 0.1 per cent, respectively, above the AEA for 2020. Belgium expects to meet its target for 2020 under the WEM and WAM scenarios using the AEA surplus accumulated between 2013 and 2017. Mr. Wittoeck stated that additional measures contained in Belgium's NECP will need to be implemented to meet the 2030 target and may need to be strengthened in the light of the new EU targets (see para. 147 above).

¹⁹ <https://unfccc.int/MA/Belgium>.

152. The presentation was followed by interventions and questions from the following delegations: Australia, China, India, Indonesia, Malawi, Malaysia, New Zealand and United Kingdom.²⁰

153. In relation to targets, Belgium was asked to:

(a) Elaborate on its confidence in its ability to achieve its 2030 target and the difficulties in reducing emissions from sectors such as freight transport;

(b) Explain how the medium- and long-term targets for the different regional jurisdictions add up to the national target.

154. In response, Belgium explained that:

(a) As its targets are enshrined in legislation, its confidence that it will be able to meet them stems from the rule of law and the regional cooperation agreements. Several PaMs address the transport sector, including the Recovery and Resilience Plan, which provides for significant investment in rail infrastructure, fiscal policies promoting use of low-emission vehicles and a number of additional EU-wide and Belgium-specific PaMs;

(b) As there are differences between the various medium- and long-term targets in terms of their scope and base year, a common national objective would require unanimous agreement from the federal and regional governments. So far, this has not been achieved, although the governments have confirmed their common will to move towards carbon neutrality, with the pathway set to be further defined in Belgium's long-term strategy, which will be regularly updated.

155. Questions on PaMs related to:

(a) Plans to use financial incentives and/or adopt new PaMs or legislation in order to reach 2030 targets;

(b) The Party's experience of ensuring that effective climate governance structures are in place (including its National Climate Commission), particularly where climate and energy policy are often devolved;

(c) The policy under which, according to Belgium's BR4, diesel and gasoline will be phased out by 2030 and 2035, respectively;

(d) Challenges and opportunities in the context of Belgium's national circumstances in addressing climate change and reducing emissions;

(e) Challenges in tracking the implementation and effectiveness of implemented or planned PaMs.

156. In response, the Party explained that:

(a) At the federal level, preparations are under way for a review of the fiscal system. This process will be aimed at promoting climate targets and environmental aspects of the fiscal regime in general. In addition, at the EU level, the European Commission will propose new legislation related to achieving the emission reduction target of at least 55 per cent below 1990 by 2030, which may include a revision of the EU energy taxation directive. Many other financial plans are already in place;

(b) While challenges remain with regard to its effectiveness, the results of a study analysing the role and functioning of the National Climate Commission are available online;

(c) Phasing out diesel and gasoline is a regional measure that applies to the Brussels-Capital Region;

(d) Transport is the most challenging sector, especially for a country like Belgium that has a long-established preference for private car ownership and is situated at the centre of Europe for freight. The Recovery and Resilience Plan presents a real opportunity in terms of the major investments required for the move towards carbon neutrality. The upcoming action plan for phasing out fossil fuel subsidies is expected to help increase emission

²⁰ Four questions could not be answered by Belgium within the allocated time during the MA. The Party's written responses are available at <https://unfccc.int/event/SBI-may-june-2021#eq-6>.

reductions, but steps must be taken to ensure that the burden does not fall on the most disadvantaged when implementing the measure;

(e) The rate of emission reductions has so far been rather slow, and there is a strong need for acceleration in view of the medium- and long-term objectives. Interregional coordination has been a challenge and dialogue through coordination structures has proven to be very important. Many of the measures set out in the NECP require further development and operationalization. Some progress has been made in terms of appointing responsible entities for developing road maps and implementing actions. As opportunities are not always evenly distributed across the country, a balance needs to be struck so that all Parties can benefit.

157. On projections, Belgium was asked to explain:

(a) The challenges in developing a WOM scenario and performing a sensitivity analysis;

(b) Whether electricity demand has only been projected for some sectors, as stated in the BR4.

158. In response, Belgium explained that:

(a) It would be difficult to construct a WOM scenario given the long history of climate policy in the country. No sensitivity analysis was performed for the projections under the NECP (as at December 2019), which were also included in the BR4. Since then, sensitivity analysis has been performed as part of the Party's reporting to the European Commission under the EU governance regulation (in March 2021) and will be reported in Belgium's BR5;

(b) Electricity demand has been modelled for all sectors.

C. Bulgaria

159. The fourth MA of Bulgaria took place on 15 June 2021. Questions for Bulgaria had been submitted in writing two months before the working group session by the following delegations: New Zealand, United Kingdom and United States. A list of the questions received and the answers provided by Bulgaria, as well as the webcast of the session, can be found on the MA web page for Bulgaria.²¹

160. The working group session was chaired by the additional SBI Rapporteur. Bulgaria was represented by Detelina Petrova from the Climate Change Policy Directorate of the Ministry of Environment and Water.

161. Ms. Petrova made a presentation summarizing Bulgaria's progress towards achieving its quantified economy-wide emission reduction targets. As an EU member State, Bulgaria is committed to contributing to the achievement of the joint EU quantified economy-wide emission reduction target of 20 per cent below the 1990 level by 2020. Bulgaria's target for ESD sectors is to limit emission growth to 20 per cent above the 2005 level by 2020.

162. Ms. Petrova presented Bulgaria's NDC target under the Paris Agreement, which, as an EU member State, is to contribute to the achievement of the EU NDC target to reduce its GHG emissions by 55 per cent below the 1990 level by 2030. Bulgaria's target is to keep GHG emissions from ESD sectors at the 2005 level by 2030.

163. According to the report on the technical review of the Party's BR4, its total GHG emissions excluding emissions and removals from LULUCF decreased by 43.2 per cent between 1990 and 2018, owing mainly to Bulgaria's transition from a centrally planned to a market-based economy, which led to a decrease in power production from thermal power stations and an increase in the share of nuclear energy and hydroelectricity in power production. This transition also gave rise to structural changes in industry, causing energy-intensive enterprises to close and leading to improvements in energy efficiency; resulted in

²¹ <https://unfccc.int/MA/Bulgaria>.

the introduction of energy efficiency measures in the residential sector; and saw a shift from solid and liquid fuels to natural gas in energy consumption.

164. Ms. Petrova presented key PaMs for achieving the target included in Bulgaria's third national action plan on climate change (2013–2020), which are supported by legislation such as the Climate Change Mitigation Act, the Energy Act, the Renewable Energy Act and the Energy Efficiency Act. Key PaMs include transitioning to low-carbon electricity production by substituting coal with natural gas and improving production efficiency in existing coal-fired power plants; increasing energy efficiency and use of RES in the residential sector; capturing and utilizing biogas in all new and existing regional landfills; generating thermal and electrical energy from biogas from large wastewater treatment plants; rehabilitating and modernizing the existing road infrastructure; introducing intelligent transport systems; increasing the share of biofuels in road transport; and increasing the share of electric public transport (rail, trolley, tram and metro).

165. Bulgaria's emissions covered by the EU ETS are subject to an EU-wide cap. According to the report on the technical review of the Party's BR4, the projected level of emissions from ESD sectors under the WEM and WAM scenarios is 6.4 per cent below the AEA for 2020. Therefore, Bulgaria expects to meet its target under the WEM scenario. Under the WEM and WAM scenarios, the Party's total emissions excluding LULUCF are projected to be 41.2 and 43.0 per cent, respectively, below the 1990 level by 2020.

166. The presentation was followed by interventions and questions from the following delegations: China, Ghana, India, Saudi Arabia and United Kingdom.

167. Questions on GHG emission trends related to:

- (a) Whether Bulgaria's GHG emissions per capita are increasing or remaining constant given the downward trends in both its GHG emissions and population;
- (b) The reasons for the decrease in annual emissions for the LULUCF sector in 1990–2017;
- (c) Experience and lessons learned in coordinating ministries to prepare the national GHG inventory.

168. In response, the Party explained that:

- (a) According to projections that consider the mitigation effects of relevant PaMs, GHG emissions per capita will steadily decrease over time owing to the implementation of PaMs in different sectors;
- (b) The decrease is due to increased harvesting in forests and age of forest stands;
- (c) The preparation of the GHG inventory is coordinated at a high level in line with a regulation of the Council of Ministers that underpins the national GHG inventory system. The system encompasses ministry agencies, data providers, and scientific and business organizations and supports the collection of country- and sector-specific information related to the GHG inventory. Different institutions are responsible for the GHG inventory for different sectors. The Emission Inventory Department of the Executive Environment Agency compiles and reports the GHG inventory. The regulation of the Council of Ministers has ensured efficient coordination of the national GHG inventory compilation process for more than 10 years.

169. Questions on PaMs related to:

- (a) How PaMs for 2020–2030 are being formulated, and reflections on the processes being followed;
- (b) Challenges in implementing PaMs targeting hard-to-decarbonize sectors and whether the socioeconomic impacts of those PaMs have been assessed in any way;
- (c) Progress in relation to plans to increase energy efficiency in buildings and the share of RES in heat generation;
- (d) Bulgaria's renewable energy targets;

(e) How the switch from coal to natural gas in energy production was implemented and whether any impact assessments were carried out to identify gaps resulting from the implementation of these measures;

(f) PaMs aimed at addressing the decrease in carbon sequestration in the LULUCF sector;

(g) Progress in introducing low-carbon technologies and methods in rice production.

170. In response, the Party explained that:

(a) In early 2020 it introduced its integrated NECP until 2030, which includes the most significant PaMs targeting emission reductions in all sectors until 2030 and is publicly available;

(b) Several measures in hard-to-decarbonize sectors relate to promoting energy efficiency in buildings and increasing the share of RES in heat generation. Difficulties are being addressed by commissioning combined solar-thermal collectors and heat pumps and managing them in a flexible manner through appropriate adaptive measures. Introducing low-carbon technologies in crop production and modernizing the transport sector also present difficulties in terms of decarbonization owing to scientific limitations. Bulgaria is addressing these difficulties by drawing on available best practices;

(c) Its national action plan on climate change includes PaMs for promoting energy efficiency and increasing use of RES. These PaMs have helped to achieve the targets set out in the action plan and are being further strengthened for 2020–2030;

(d) It complies with the EU renewable energy directive. Bulgaria has already surpassed the EU renewable energy target for 2020, and the new ambitious EU renewable target for 2030 is part of its national action plan on climate change;

(e) As part of the programme for accelerating gasification in energy production, it implemented many domestic projects, including in municipalities, which delivered significant emission reductions. It also introduced highly efficient cogeneration plants and energy efficiency audits to monitor the implementation of these projects. While the success of fuel substitution depends on the development of other energy sources that can replace coal, the implemented projects have been successful and will remain in place with a view to achieving the best results possible;

(f) It follows the principles of sustainable forest management and, as such, future mitigation actions in the forestry sector should involve active forest management and work towards the rejuvenation of forests. Bulgaria's long-term forest strategy includes measures to address the decrease in carbon sequestration in forests;

(g) Given the challenges involved in introducing new technologies for rice production, it is following best agricultural practices to reduce emissions.

D. Canada

171. The fourth MA of Canada took place on 12 June 2021. Questions for Canada had been submitted in writing two months before the working group session by the following delegations: Australia, EU, Japan, New Zealand, United Kingdom and United States. A list of the questions received and the answers provided by Canada, as well as the webcast of the session, can be found on the MA web page for Canada.²²

172. The working group session was chaired by the SBI Vice-Chair. Canada was represented by Douglas Nevison from the Climate Change Branch of Environment and Climate Change Canada.

²² <https://unfccc.int/MA/Canada>.

173. Mr. Nevison made a presentation summarizing Canada's progress towards achieving its quantified economy-wide emission reduction targets. Under the Convention Canada made a commitment to reduce its GHG emissions by 17 per cent by 2020 below the 2005 level.

174. Mr. Nevison presented Canada's NDC target under the Paris Agreement, which is to reduce GHG emissions by 30 per cent below the 2005 level by 2030. In 2021 Canada announced a more ambitious 2030 emission reduction target under the Paris Agreement in the range of 40–45 per cent below the 2005 level. Furthermore, the Party is in the process of adopting a law that will stipulate a target of net zero emissions by 2050.

175. The Party's total GHG emissions excluding emissions and removals from LULUCF increased by 20.9 per cent between 1990 and 2018, owing mainly to the increase in oil and gas extraction; the rise in the number of light-duty gasoline trucks and heavy-duty diesel vehicles in operation, resulting in higher fuel consumption in the transport sector; the increase in the production and consumption of HFCs, perfluorocarbons, sulfur hexafluoride and nitrogen trifluoride; and the increase in the use of inorganic nitrogen fertilizers. The emission increase was partially offset by the emission decrease resulting from the reduced share of coal and oil in electricity and heat generation.

176. Mr. Nevison presented key PaMs for achieving the Party's 2020 target, including the Pan-Canadian Framework on Clean Growth and Climate Change, which consists of four pillars: pricing carbon pollution; complementary actions to reduce emissions; adaptation and climate resilience; and clean technology, innovation and jobs. Further detailed information was provided on Canada's flagship carbon pricing policy, which allows each province or territory to either design its own pricing system tailored to its local needs, provided the federal standard is met, or implement the federal pricing system. The federal system incorporates the regulatory charge on fossil fuels and an output-based pricing system for large-scale industries. All proceeds are returned to society and business in the form of payments, climate action programmes and support for decarbonizing the industry sector. Canada is committed to continuing with carbon pricing beyond 2020, with the current price scheduled to increase by CAD 15/t CO₂/year from 2023, rising to CAD 170/t CO₂ in 2030.

177. Mr. Nevison provided information on the latest developments in terms of new PaMs that will enable Canada to exceed its 2030 target and set a path to net zero emissions by 2050, such as the strengthened climate plan entitled "A Healthy Environment and a Healthy Economy", supported by CAD 15 billion of investment in public transit and active transport projects. In the 2021 federal budget, an additional sum of CAD 17.6 billion is allocated to green recovery, covering retrofitting for households; research and development related to CCS; large-scale clean technology projects; and a low-carbon fuel procurement programme.

178. With regard to the Party's long-term goal of net zero emissions by 2050, the Canadian Net-Zero Emissions Accountability Act was introduced in Parliament in November 2020. Once the Act is passed into law, it will require the Government of Canada to set national emission reduction targets, prepare five-year emission reduction plans and provide regular reports on progress and achievements in relation to the targets set. In February 2021 the Government launched the Net-Zero Advisory Body, which is tasked with providing independent advice on pathways to achieving net zero emissions by 2050.

179. Canada's total GHG emissions excluding LULUCF in 2020 and 2030 are projected to be 705.5 and 672.9 Mt CO₂ eq respectively, under the WEM scenario, which is an increase of 17.0 and 11.6 per cent, respectively, above the 1990 level and a decrease of 3.4 and 7.9 per cent, respectively, below the 2005 level (the base year for the 2020 target). Under the WAM scenario, emissions in 2020 and 2030, amounting to 700.5 and 615.9 Mt CO₂ eq, respectively, are projected to be higher than those in 1990 by 16.2 and 2.2 per cent, respectively, and lower than those in 2005 by 4.1 and 15.7 per cent, respectively.

180. The 2020 WEM projection suggests that Canada may face challenges in achieving its 2020 target under the Convention without using units from market-based mechanisms. In its BR4, the Party explained that it is still examining its approach to using market-based mechanisms and will continue to work with interested provinces and territories, along with international partners, to ensure that allowances acquired through international emissions trading are counted towards its international targets.

181. The presentation was followed by interventions and questions from the following delegations: Australia, China, EU, Germany, India, Luxembourg, Malaysia, New Zealand, Saudi Arabia, Singapore, Switzerland and United Kingdom.²³

182. On achieving its 2020 target, Canada was asked about the need to use units from market-based mechanisms. In response, the Party explained that it will be in a position to report on the achievement of its target, including on the possible use of market-based mechanisms, in its BR5, which is due in 2022.

183. Questions on PaMs related to:

- (a) The challenges that prevented the Party from estimating mitigation impacts for a number of PaMs reported in the BR4;
- (b) The concept of 'net zero ready' energy technologies and practices for households;
- (c) Planned PaMs for reducing GHG emissions from fossil fuels in the transport sector;
- (d) Examples of PaMs for supporting emerging technologies;
- (e) The advantages of implementing at both federal and provincial level regulation for addressing emissions in the oil and gas sector and the challenges involved;
- (f) PaMs for achieving carbon neutrality by 2050 and the Party's approach to just transition and engaging stakeholders and industry in the process.

184. In response, the Party explained that:

- (a) Estimations of direct mitigation impacts were provided, except where details of PaMs are still under development; impacts are expected to be minimal; impacts were estimated for a group of measures or an overarching measure; or impacts are not expected in 2020 or 2030, or are only indirect;
- (b) There is potential for households to produce enough energy from RES on site to cover annual consumption, and renewable energy systems could be embedded in the initial design of houses or buildings and put into operation at a later stage;
- (c) It is targeting the medium- and heavy-duty vehicle fleet in particular, aiming to implement low- and zero-emission options; increase production and use of low-carbon fuels, including hydrogen and biofuels; implement the Clean Fuel Standard regulation; invest in research and development and infrastructure for aviation, maritime and railway transport; and prepare the Hydrogen Strategy;
- (d) It supports the implementation of a number of emerging technologies, including modernizing smart grids; increasing power storage capacity; low-carbon and zero-emission fuels; CCS; and new technology in industry;
- (e) The key advantage is comparable regulation coverage that minimizes duplication and administration costs. The main challenge stems from the need for very close collaboration and engagement and extensive information-sharing at different levels of government;
- (f) The Canadian Net-Zero Emissions Accountability Act emphasizes the Party's commitment to providing ongoing support to workers and communities in the transition to a low-carbon economy (see para. 178 above). An independent just transition task force was established to provide expert advice on ensuring fairness for coal power workers and communities in the move from coal to cleaner electricity. On the basis of the task force's recommendations, a total of CAD 180 million was allocated for building infrastructure, developing skills and diversifying the economy of the Canadian coal regions.

²³ Two questions could not be answered by Canada within the allocated time during the MA. The Party's written responses are available at <https://unfccc.int/event/SBI-may-june-2021#eq-6>.

185. Questions on GHG emission trends related to the challenges involved in performing recalculations for the time series due to improvements in AD, methodologies and emission factors, and the reasons for not including an uncertainty analysis for the base year in the inventory submission. In response, the Party explained that continual improvement in reporting is a key principle and Canada has a well-established improvement process that includes the inventory improvement plan and takes into account the latest developments in methodologies, and new and updated AD and emission factors. An uncertainty analysis for 1990 will be included in the next inventory submission.

186. Questions on projections related to when emissions from the transport sector are expected to peak and to challenges in preparing projections for the LULUCF sector. In response, the Party explained that emissions from the transport sector peaked in 2018 and, according to projections, PaMs will help to avoid surpassing that peak in future. In addition, the Party acknowledged that, as LULUCF is a complex sector, a range of expertise and models is required to ensure that the projections encompass all activities, while a lack of suitable data and insufficient understanding of the underlying drivers still prevent comprehensive reporting of projections for all activities.

E. Cyprus

187. The fourth MA of Cyprus took place on 2 June 2021. Questions for Cyprus had been submitted in writing two months before the working group session by New Zealand and the United Kingdom. A list of the questions received and the answers provided by Cyprus, as well as the webcast of the session, can be found on the MA web page for Cyprus.²⁴

188. The working group session was chaired by the additional SBI Rapporteur. Cyprus was represented by Nicoletta Kythreotou from the Ministry of Agriculture, Natural Resources and Environment.

189. Ms. Kythreotou made a presentation summarizing Cyprus's progress towards achieving its quantified economy-wide emission reduction targets. As an EU member State, Cyprus is committed to contributing to the achievement of the joint EU quantified economy-wide emission reduction target of 20 per cent below the 1990 level by 2020. Cyprus's emission reduction target for ESD sectors is 5 per cent below the 2005 level by 2020.

190. Ms. Kythreotou presented Cyprus's NDC target under the Paris Agreement, which is to reduce GHG emissions by 24 per cent below the 2005 level by 2030. Cyprus has also set a long-term goal to achieve carbon neutrality by 2050.

191. The Party's total GHG emissions excluding emissions and removals from LULUCF increased by 54.8 per cent between 1990 and 2018, owing mainly to factors such as the increase in resident population and substantial economic growth (only interrupted between 2008 and 2012 owing to the global financial crisis), particularly in the tourism sector. These factors have contributed to a considerable increase in energy consumption for electricity and transport, sectors that are predominantly fossil fuel based, and to an increase in the use of F-gases for refrigeration and air conditioning.

192. Ms. Kythreotou presented key PaMs for achieving the Party's targets, including using solar-thermal technology for water heating for the past 30 years and currently in 80 per cent of houses in the country. Challenges noted by Cyprus include energy isolation and lack of connectivity, as well as the limited emission reduction potential associated with the country's insularity and the high cost of implementing PaMs owing to the size of its economy.

193. Cyprus's emissions covered by the EU ETS are subject to an EU-wide cap. According to the report on the technical review of the Party's BR4, the projected level of emissions by 2020 from ESD sectors under the WEM and WAM scenarios is 3.1 and 1.9 per cent, respectively, above the AEA for 2020. Therefore, Cyprus may face challenges in meeting its target under the WEM and WAM scenarios. The Party expects to meet its national target for 2020 using the flexibility mechanisms under the ESD and its cumulative surplus of AEAs.

²⁴ <https://unfccc.int/MA/Cyprus>.

194. The presentation was followed by interventions and questions from the following delegations: Australia, China, India and United Kingdom.

195. Questions on PaMs related to:

- (a) The potential for increasing the use of RES and the renewable energy PaMs that Cyprus plans to implement;
- (b) The measures that contributed to the decrease in non-CO₂ emissions in 1990–2018;
- (c) Lessons learned from increasing use of solar technology for water heating;
- (d) The technologies that the Party plans to introduce through additional PaMs;
- (e) The status of the Green Tax Reform.

196. In response, the Party explained that:

- (a) There are plans to install a storage system to enable more sources of renewables to connect to the electricity grid. Additional measures include connecting Cyprus's electricity grid to those of other countries, for instance Greece and Israel, to increase capacity;
- (b) PaMs that have contributed to reducing non-CO₂ emissions include those implemented in the waste management and land-use sectors;
- (c) The success in increasing the uptake of solar water heating was due to several factors, including the low cost of the technology and appropriate promotional activities carried out by the Government. The same approach will be used for other new technologies;
- (d) Additional technologies planned to be introduced include energy storage systems, and other PaMs include reforming the taxation system;
- (e) The Green Tax Reform underwent a public consultation in 2020 and will be presented to Parliament.

197. Questions on GHG emission trends related to:

- (a) Lessons learned from the increase in EU ETS emissions in 2008–2018;
- (b) The projected increase in EU ETS emissions in 2020 despite the pandemic, and the reason for the sharp decrease in emissions projected for 2022.

198. In response, the Party explained that:

- (a) EU ETS emissions peaked in 2008 and 2018 owing to periods of high temperatures and drought, which led to an increase in energy demand. Such peaks are expected to become more frequent in future as a result of climate change;
- (b) The increase in EU ETS emissions projected for 2020 is due to the fact that the emission estimates were made prior to the pandemic. The projections are being revised. The decrease in emissions projected for 2022 is due to the expected entry into force of the new taxation system in that year.

F. Czechia

199. The fourth MA of Czechia took place on 2 June 2021. Questions for Czechia had been submitted in writing two months before the working group session by the following delegations: New Zealand, Thailand, United Kingdom and United States. A list of the questions received and the answers provided by Czechia, as well as the webcast of the session, can be found on the MA web page for Czechia.²⁵

200. The working group session was chaired by the additional SBI Rapporteur. Czechia was represented by Pavel Zamyslicky from the Ministry of the Environment.

²⁵ <https://unfccc.int/MA/Czechia>.

201. Mr. Zamyslicky made a presentation summarizing Czechia's progress towards achieving its quantified economy-wide emission reduction targets. As an EU member State, Czechia is committed to contributing to the achievement of the joint EU quantified economy-wide emission reduction target of 20 per cent below the 1990 level by 2020. Czechia's target for ESD sectors is to limit emission growth to 9 per cent above the 2005 level by 2020.

202. Mr. Zamyslicky presented Czechia's NDC target under the Paris Agreement, which is to reduce ESD emissions by 14 per cent below the 2005 level by 2030.

203. The Party's total GHG emissions excluding emissions and removals from LULUCF decreased by 35.6 per cent between 1990 and 2018, owing mainly to a major decline in heavy-industry activities during the transition to a market economy.

204. Mr. Zamyslicky presented key PaMs for achieving the Party's targets, including the EU ETS and the Act on Integrated Pollution Prevention and Control, which includes support in areas such as renewable energy, energy efficiency, public transport and cycling, alternative vehicles, greening of agriculture and use of biogas. The Party's Waste Management Plan has helped to reduce biowaste, lay the groundwork for a ban on landfilling (from 2024) and increase recycling and use of waste for energy generation. Mr. Zamyslicky underlined the relevance of EU funds, which account for 25 per cent of climate-related investment and are used for increasing energy efficiency in buildings and industry, greening agriculture and developing RES. Furthermore, the Just Transition Fund provides financing opportunities for structurally challenged regions that are dependent on coal.

205. Given that its emissions covered by the EU ETS are subject to an EU-wide cap, Czechia presented the projected level of emissions by 2020 from ESD sectors under the WEM and WAM scenarios, which is 6.0 and 6.5 per cent, respectively, below the AEA for 2020. Therefore, Czechia expects to meet its target under the WEM and WAM scenarios.

206. The presentation was followed by interventions and questions from the following delegations: China, India and United Kingdom.²⁶

207. Questions on PaMs related to:

- (a) Planned PaMs in the LULUCF sector;
- (b) Lessons learned on reducing emissions from the transport sector;
- (c) Plans to reduce HFC emissions by 2030 in line with the Kigali Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer;
- (d) The Party's experience of setting sectoral targets.

208. In response, the Party explained that:

(a) Climate change impacts, drought, high temperatures and the structure of Czech forests have affected emissions from the LULUCF sector and, in order to build the sector's resilience to climate change impacts, Czechia is aiming to change its forest structure through investment and restoration;

(b) It has developed a public transport system that is used by individuals in large cities, and the application of EU standards for new cars and light- and heavy-duty vehicles is expected to further reduce emissions;

(c) According to its latest WEM scenario, the level of HFC emissions in Czechia will roughly halve between 2014 and 2030 thanks to policies such as a quota system for implementing the phase-down of HFC emissions; plans to revise legislation with a view to strengthening the regulation of non-refillable containers; switching to using alternatives to HFCs in air conditioning for cars; and further bans on using HFCs with high global warming potential from 2020 onward, particularly in refrigeration equipment;

(d) PaMs are divided by sector in its climate policy, but targets are not yet divided by sector.

²⁶ One question could not be answered by Czechia within the allocated time during the MA. The Party's written response is available at <https://unfccc.int/event/SBI-may-june-2021#eq-6>.

209. On GHG emission trends, a question was asked in relation to actual emissions in 2020 compared with those projected, particularly with regard to the projected increase in emissions in 2019–2020. In response, Czechia clarified that the emissions reported in its BR4 for 2020 are projections, and total emissions for 2020 will likely have been lower than expected owing to the pandemic and are not expected to exceed the 2019 level.

G. Denmark

210. The fourth MA of Denmark took place on 4 June 2021. Questions for Denmark had been submitted in writing two months before the working group session by the following delegations: Canada, Japan, New Zealand, Thailand, United Kingdom and United States. A list of the questions received and the answers provided by Denmark, as well as the webcast of the session, can be found on the MA web page for Denmark.²⁷

211. The working group session was chaired by the additional SBI Rapporteur. Denmark was represented by Anette Ejersted from the Ministry of Climate, Energy and Utilities.

212. Ms. Ejersted made a presentation summarizing Denmark's progress towards achieving its quantified economy-wide emission reduction targets. As an EU member State, Denmark is committed to contributing to the achievement of the joint EU quantified economy-wide emission reduction target of 20 per cent below the 1990 level by 2020. Denmark's emission reduction target for ESD sectors is at least 20 per cent below the 2005 level by 2020.

213. Ms. Ejersted presented Denmark's NDC target under the Paris Agreement, which, as an EU member State, is to contribute to the achievement of the EU NDC target to reduce its GHG emissions by 55 per cent below the 1990 level by 2030. Denmark's target is to reduce GHG emissions from ESD sectors by 39 per cent below the 2005 level by 2030. This contribution is expected to be revised in 2021–2022 following the Fit for 55 proposal from the European Commission. In addition, Ms. Ejersted presented the national targets set out in Denmark's Climate Act, which are to reduce total GHG emissions by 70 per cent by 2030 compared with the 1990 level and to achieve climate neutrality by 2050. An indicative target of a 50–54 per cent emission reduction by 2025 compared with the 1990 level was also agreed in 2021.

214. According to the report on the technical review of the Party's BR4, its total GHG emissions excluding emissions and removals from LULUCF decreased by 30.7 per cent between 1990 and 2018. Ms. Ejersted explained that the Party has successfully decoupled GHG emissions from economic growth by substituting fossil fuels with renewables and increasing energy efficiency.

215. The above-mentioned report describes key PaMs for achieving the Party's targets. Ms. Ejersted presented the annual cycle for assessment of progress, climate programmes and attainment of targets, as set out in the Climate Act. She highlighted the Government's climate policy working methods, which include public and private sector involvement (including through 13 climate partnerships, a citizens' assembly and the Youth Climate Council). In addition, a government Green Committee has been established to ensure that climate, environmental and nature considerations are strengthened and integrated into government policy.

216. Denmark's emissions covered by the EU ETS are subject to an EU-wide cap. According to projections from April 2021, the expected level of emissions by 2020 from ESD sectors under the WEM scenario is 21 per cent below the 2005 level. Furthermore, Denmark's total GHG emissions without LULUCF are expected to have decreased by 42 per cent in 1990–2020.

217. Ms. Ejersted stated that estimates based on preliminary Danish energy statistics and verified EU ETS data for 2020 suggest that Denmark has achieved emission reductions in accordance with EU legislation in support of the attainment of the joint EU quantified economy-wide emission reduction target for 2020. Additional measures will be required to reach the indicative 2025 and 2030 targets.

²⁷ <https://unfccc.int/MA/Denmark>.

218. The presentation was followed by interventions and questions from the following delegations: China, Malaysia, New Zealand, Saudi Arabia, United Kingdom and United States.

219. Questions on PaMs related to:

- (a) Assessment of the economic and social consequences of response measures;
- (b) PaMs that will be needed to achieve the 2025 indicative target, and the sectors where the greatest emission reductions may be achieved in the next four years;
- (c) Plans to engage the private sector to incentivize innovation in the area of green fuels, and, in relation to the climate partnerships, how businesses are being brought into the climate agenda.

220. In response, the Party explained that:

- (a) When political proposals and agreements are being elaborated, the effect of the specific action on social and economic costs is evaluated before any decision on the policy or measure is adopted;
- (b) It expects the highest impact to come from measures in the energy sector, while the most challenging sector for reducing emissions is agriculture. PaMs in agriculture and related to CO₂ taxation and CCS are being considered;
- (c) It has established the Green Future Fund with the aim of exploring the possibility of implementing projects in collaboration with the private sector. In relation to climate partnerships, Denmark invited all business partnerships to recommend climate policies and focus areas for achieving its 2030 targets. The recommendations were reflected in Denmark's political decision on reaching its 2030 targets. In 2020–2021 Denmark put forward climate agreements for every sector, and business partnerships provided insights into the most significant challenges according to the business sector and how they can be addressed. The next step is to develop more specialized plans to help achieve the 2030 targets.

221. Questions on projections related to:

- (a) How medium-term 2025 and 2030 targets were set when the long-term projection estimates for the 2050 climate-neutrality target are currently unavailable, and challenges in making long-term projections;
- (b) The reasons for not presenting a WOM scenario in the BR4.

222. In response, the Party explained that:

- (a) It has established 2025 and 2030 targets, which are seen as stepping stones to reaching the 2050 target. Denmark must consider the measures that it has already put in place for achieving the 2025 and 2030 targets and identify how they can be revised or amended to enable the 2050 goal to be reached;
- (b) It created a WOM scenario and presented it in a previous BR, but it no longer reports such a scenario as it now focuses on the future when preparing projections.

H. Estonia

223. The fourth MA of Estonia took place on 15 June 2021. Questions for Estonia had been submitted in writing two months before the working group session by New Zealand and the United Kingdom. A list of the questions received and the answers provided by Estonia, as well as the webcast of the session, can be found on the MA web page for Estonia.²⁸

224. The working group session was chaired by the additional SBI Rapporteur. Estonia was represented by Kristi Klaas from the Ministry of the Environment.

225. Ms. Klaas made a presentation summarizing Estonia's progress towards achieving its quantified economy-wide emission reduction targets. As an EU member State, Estonia is committed to contributing to the achievement of the joint EU quantified economy-wide

²⁸ <https://unfccc.int/MA/Estonia>.

emission reduction target of 20 per cent below the 1990 level by 2020. Estonia's target for ESD sectors is to limit emission growth to 11 per cent above the 2005 level by 2020.

226. Ms. Klaas presented Estonia's NDC target under the Paris Agreement, which, as an EU member State, is to contribute to the achievement of the EU NDC target to reduce its GHG emissions by 55 per cent below the 1990 level by 2030. Estonia's goal is to reduce GHG emissions by 70 per cent by 2030. In addition, in 2021 Estonia set a long-term goal to achieve climate neutrality by 2050.

227. The Party's total GHG emissions excluding emissions and removals from LULUCF decreased by 63.3 per cent between 1990 and 2019, owing mainly to factors such as structural changes following Estonia's independence from the former Soviet Union, the transition from a planned to a market economy and the implementation of reforms. Ms. Klaas mentioned additional drivers such as decreasing electricity production from oil shale in recent years.

228. Ms. Klaas presented key PaMs for achieving the Party's targets, including Estonia's long-term vision entitled "General Principles of Climate Policy until 2050" and its long-term development strategy, Estonia 2035, which set the foundation for sectoral strategies and policy instruments. Measures in the energy sector include boiler renovation, including a switch to renewables for heat generation, and investment in wind power generation. In the transport sector, the share of biofuels will be increased, and initiatives have commenced to ensure that all public transport runs on renewable fuels by 2030. Further, measures are being taken to improve the convenience and availability of public transport, including by providing new services and improving ticket systems.

229. In the buildings sector, the objective is to renovate 10 per cent of public and private buildings to meet energy efficiency class D by 2030. For new buildings, there will be minimum requirements for near-zero-emission buildings. In the LULUCF sector, measures are aimed at increasing carbon storage in existing forests and achieving carbon sequestration through timely reforestation. Circular economy principles are key to reducing waste and minimizing losses.

230. Estonia presented updated projections since the submission of its BR4 of total emissions until 2040 under the WEM and WAM scenarios. The Party explained that the two scenarios differ slightly because a large number of measures that were scheduled to end in 2020 have been extended to 2021 or 2022, but Estonia has not yet announced any new planned measures beyond that time frame. Additionally, many measures that were previously included in the WAM scenario are now included in the WEM scenario as they have been implemented.

231. Under the WEM and WAM scenarios, Estonia's total GHG emissions excluding LULUCF are expected to decrease by 75.8 and 76.1 per cent, respectively, by 2040 compared with the 1990 level. Given that its emissions covered by the EU ETS are subject to an EU-wide cap, Estonia presented the projected level of emissions by 2020 from ESD sectors under the WEM scenario, which is 4.5 per cent below the AEA for 2020. Estonia expects to meet its 2020 target under the WEM scenario on the basis of the latest inventory.

232. The presentation was followed by interventions and questions from the following delegations: Australia, China, Ghana, India, Singapore and United Kingdom.²⁹

233. On targets, Estonia was asked whether it could share any lessons learned in terms of reviewing target levels towards carbon neutrality, particularly in relation to any difficulties and how they were overcome. In response, the Party explained that its newly appointed Government is aligning its ambition with that of the EU and its revised 2050 climate-neutrality target, adding that this ambition is already enshrined in its long-term development strategy, Estonia 2035. In 2019 Estonia conducted a study analysing the steps needed to achieve this target and assessing the cost-effectiveness of measures. The study gave an overview of the opportunities involved in pursuing climate neutrality and concluded that following this route would be possible for Estonia and likely be profitable.

²⁹ Four questions could not be answered by Estonia within the allocated time during the MA. The Party's written responses are available at <https://unfccc.int/event/SBI-may-june-2021#eq-6>.

234. On GHG emission trends, in response to a question on which measures were behind the strong decline in GHG emissions from cement production between 1990 and the most recent inventory year, the Party cited the EU ETS and the marked increase in the carbon price in recent years.

235. Questions on projections related to:

- (a) Innovative technologies that Estonia sees as key to reducing GHG emissions;
- (b) Measures to increase energy efficiency and industrial resource efficiency in small and medium-sized enterprises;
- (c) Measures for reducing emissions from heat production and distribution;
- (d) The awareness level of the public related to green transport measures;
- (e) The monitoring and evaluation plan for the Party's PaMs;
- (f) Challenges in estimating the emission impacts of PaMs in the LULUCF sector and plans to quantify them.

236. In response, the Party explained that:

(a) It sees green hydrogen as an important future energy source that still requires substantial research and investment. The Party is currently developing a road map for hydrogen. Digital solutions are another of its priorities, as they will facilitate new solutions enabling circular economy and the move towards climate neutrality;

(b) Examples of such measures include efficiency audits;

(c) Measures in this area include the renovation of home boilers, especially in relation to the switch from oil to renewable fuels; the renovation of heat networks to reduce losses; and the transition to individual heating solutions where district heating networks are inefficient. The Party stressed the high emission reduction potential of this measure given the country's climate and cold winters;

(d) Several measures contributed to promoting green travel: support systems for energy-efficient cars, hybrid buses and hybrid trolleys; support for the purchase of electric cars; public procurement of clean and efficient vehicles; electrification of buses and rail; construction of cycle paths and other spatial and land-use measures promoting an efficient transport system; and support for the shift to freight trains, where feasible. Many of these measures raise awareness and increase opportunities for choosing environmentally friendly alternatives for individual trips;

(e) Impact assessments are carried out during the drafting of policies and strategies at the national level, and local governments are also becoming more involved in integrating climate aspects into their policymaking, especially in relation to spatial planning and transport management. Evaluating individual PaMs is challenging owing to limited data;

(f) The availability of regularly collected AD is one of the main challenges. The effects of measures that have already been implemented are reflected in the GHG inventory estimates, which form the basis for projections. This also applies to PaMs in other sectors.

I. France

237. The fourth MA of France took place on 4 June 2021. Questions for France had been submitted in writing two months before the working group session by the following delegations: Canada, Japan, New Zealand, United Kingdom and United States. A list of the questions received and the answers provided by France, as well as the webcast of the session, can be found on the MA web page for France.³⁰

238. The working group session was chaired by the additional SBI Rapporteur. France was represented by Laurent Michel from the Ministry for the Ecological Transition.

³⁰ <https://unfccc.int/MA/France>.

239. Mr. Michel made a presentation summarizing France's progress towards achieving its quantified economy-wide emission reduction targets. As an EU member State, France is committed to contributing to the achievement of the joint EU quantified economy-wide emission reduction target of 20 per cent below the 1990 level by 2020. France's emission reduction target for ESD sectors is 14 per cent below the 2005 level by 2020.

240. Mr. Michel presented France's NDC target under the Paris Agreement, which, as an EU member State, is to contribute to the achievement of the EU NDC target to reduce its GHG emissions by 55 per cent below the 1990 level by 2030. France has also set a long-term goal to achieve carbon neutrality by 2050.

241. The Party's total GHG emissions excluding emissions and removals from LULUCF decreased by 20 per cent between 1990 and 2019, owing mainly to changes in the energy mix (including the substitution of coal and the development of additional RES) and increasingly energy-efficient industrial processes, combined with a shift towards an increasingly service-based economy. France's mitigation measures served to further reduce GHG emissions over this period.

242. Mr. Michel presented key PaMs for achieving the Party's targets, including the expansion of France's low-carbon electricity system, which ensures that energy production accounts for a relatively small proportion of overall national emissions; its mitigation road map, which is aligned with both EU and national targets; and its use of long-term objectives and five-year carbon budgets to harmonize PaMs across sectors and establish a clear pathway to reducing emissions. In addition, France involves a wide range of stakeholders in its climate policy planning, for example through the creation of the High Council on Climate, a body of 13 independent experts, plus dedicated staff, that advises the French Government, and the Citizens' Convention on Climate, a panel of 150 randomly selected citizens who comment on the Party's pending climate laws.

243. Mr. Michel highlighted sector-specific PaMs, including the energy savings certificate system, carbon tax and multiannual energy plan, as well as the decision to phase out fossil fuels while scaling up RES in the energy sector; the EU F-gas regulation and incentives for cleaner industrial production in the industry sector; regulations on vehicles, targets for low-emission vehicle uptake and measures to encourage cycling and car-sharing in the transport sector; improving energy efficiency, financial aid and new regulations for the buildings sector; the 2018 agriculture and food law and the low-carbon standard in the agriculture sector; incentives for afforestation and greater use of long-lived harvested wood products in the forestry sector; and legislation to minimize waste and encourage circular economy, including a ban on single-use plastic and efforts to increase recycling measures, in the waste sector. While France has managed to achieve the lowest GHG emissions per capita within the EU and among the members of the Group of 20 by reducing emissions or maintaining low emission levels in the industry, energy production and agriculture sectors, it faces ongoing challenges in reducing emissions in the transport and buildings sectors.

244. Given that its emissions covered by the EU ETS are subject to an EU-wide cap, France presented the projected level of emissions by 2020 from ESD sectors under the WEM and WAM scenarios, which is 0.9 per cent above and 3.4 per cent below, respectively, the AEA for 2020. France's cumulative surplus of AEAs in 2018 is 138,059.71 kt CO₂ eq, which suggests that France expects to meet its 2020 target under the WEM scenario.

245. The presentation was followed by interventions and questions from the following delegations: Australia, China, India, Malaysia, New Zealand, Saudi Arabia, Switzerland and United Kingdom.

246. All of the questions for France were related to PaMs. When asked to what extent CCS is considered to have a role in the long-term decarbonization of the French transport sector, the Party explained that it is seen as "one possibility" in the decarbonization mix, particularly for sectors such as energy production where additional abatement is difficult to achieve. However, the Party noted that CCS is currently in the research and development phase; although some pilot projects have been implemented, the process is not currently applied on an industrial scale.

247. In response to a question on what authorities the High Council on Climate has, France noted that the Council can issue non-binding recommendations and produce publicly available reports (either at the request of the Government or on an unsolicited basis).

248. In response to a question on the policies under consideration by France to help achieve carbon neutrality, the Party noted that it plans to move towards carbon neutrality by improving the efficiency of transport (e.g. through car-sharing), reducing transport demand (e.g. through increased teleworking), providing alternative modes of transport (e.g. public transport and cycling) and boosting the adoption of battery-powered electric vehicles, while closely following emerging trends in hydrogen-powered vehicles and biofuels.

249. In response to a question on PaMs in place in the waste sector, France described its comprehensive approach to waste reduction, through which it aims to reduce waste throughout the production-to-disposal cycle and increase circularity in production processes. In addition, the Party noted that decreasing “upfront” waste (e.g. food waste) could also enable it to reduce emissions related to waste treatment and improve recycling and capture of landfill emissions.

250. In response to a question on whether measures in the transport sector are effective in reducing emissions and whether it has considered the social and economic impacts that its transport sector PaMs have on other Parties, the Party noted that, while emissions have increased in the past, they have now stabilized thanks, in part, to PaMs in the sector, along with more recent regulations and incentives and the growing uptake of hybrid and electric vehicles.

251. In response to a question on how it intends to coordinate its five-year carbon budgets across sectors, France noted that the budgets define the overall targets, while specific laws provide clarity for sectoral measures (e.g. the 2018 agriculture and food law, the 2019 framework law on mobility and the 2020 anti-waste law for a circular economy). Additionally, France described the EUR 40 billion action plan for climate and ecological transition, which sets out support for measures across various sectors and the prime-ministerial coordination of action plans across French ministries.

252. When asked how effective the Citizens’ Convention on Climate has been, France explained that the proposals from this body have informed the recovery plan and fiscal, budgetary and regulatory measures on climate change, such as the decree banning the sale of gasoline-fuelled heating devices.

253. In response to a question on its plans to move towards agroecology in the future, France highlighted its transition to climate-smart agriculture and efforts to reduce fertilizer use, improve livestock feeding practices and increase soil carbon storage.

254. When asked whether its long-term strategy had been changed between the submission and update, France noted that some of the assumptions around households and transport were changed.

255. Finally, when asked about progress resulting from the law on energy and climate and efforts to increase the share of RES in overall energy production, France indicated that it aims to continue to diversify its energy mix and move away from nuclear power while attempting to decarbonize. The Party is adopting second-generation biofuels, exploring the potential of hydrogen energy and working towards green urban transport networks in small and medium-sized cities. France noted that, despite progress in increasing the share of RES in energy production, it has encountered some challenges related to heat recuperation in urban districts.

J. Greece

256. The fourth MA of Greece took place on 15 June 2021. Questions for Greece had been submitted in writing two months before the working group session by the following delegations: New Zealand, United Kingdom and United States. A list of the questions

received and the answers provided by Greece, as well as the webcast of the session, can be found on the MA web page for Greece.³¹

257. The working group session was chaired by the additional SBI Rapporteur. Greece was represented by Dimitrios Niavis from the Climate Change Department of the Ministry of Environment and Energy.

258. Mr. Niavis made a presentation summarizing Greece's progress towards achieving its quantified economy-wide emission reduction targets. As an EU member State, Greece is committed to contributing to the achievement of the joint EU quantified economy-wide emission reduction target of 20 per cent below the 1990 level by 2020. Greece's emission reduction target for ESD sectors is 4 per cent below the 2005 level by 2020.

259. According to the report on the technical review of the Party's BR4, Greece's NECP contains a longer-term target to reduce GHG emissions by 42 per cent below the 1990 level by 2030.

260. The Party's total GHG emissions excluding emissions and removals from LULUCF decreased by 17.1 per cent between 1990 and 2019. According to the above-mentioned report, the reduction is due mainly to the economic recession in 2008–2016 and mitigation actions such as the introduction of RES and energy efficiency measures in buildings and industry to comply with EU and national targets and regulations. Mr. Niavis stressed that values for key indicators such as CO₂ emissions per unit of GDP and per capita have fallen over the years. In addition, emissions from the power sector decreased by 28.7 per cent between 2019 and 2020, although electricity consumption only fell by 4.1 per cent.

261. Mr. Niavis presented key PaMs for achieving the Party's targets, including phasing out coal power plants and promoting RES for electricity generation, which has resulted in renewables contributing to a record 63 per cent of total national energy demand; implementing energy efficiency measures in the residential and tertiary sectors with the aim of upgrading 60,000 buildings/year by 2030; the NextGenerationEU Greece 2.0 National Recovery and Resilience Plan, which is aimed at making changes to Greece's growth model and institutions; White Dragon, a project proposal related to green hydrogen production; promoting e-mobility; reforestation (30 million trees by 2030); just transition development plans for lignite areas (Western Macedonia and Megalopoli); and electric grid interconnection with Greek islands.

262. Mr. Niavis noted the importance of adaptation and setting out and implementing relevant strategies, action plans and institutional arrangements.

263. Greece's emissions covered by the EU ETS are subject to an EU-wide cap. According to the report on the technical review of the Party's BR4, its projected level of emissions by 2020 from ESD sectors under the WEM and WAM scenarios is 21.9 and 24.9 per cent, respectively, below the AEA for 2020. Therefore, Greece expects to meet its 2020 target under the WEM scenario.

264. Mr. Niavis noted that, according to projections based on the latest version of Greece's NECP, total emissions excluding LULUCF are expected to decline by 42 per cent below the 1990 level by 2030.

265. The presentation was followed by interventions and questions from the following delegations: China, India, Singapore and United Kingdom.

266. Questions on PaMs related to:

- (a) The Party's plan for hydrogen production and its experience in promoting policies for hydrogen use;
- (b) Greece's experience in transitioning from natural gas to clean energy, considering that natural gas consumption in the residential and commercial sectors rose to record levels in 2015 and given the amount that has already been invested in the natural gas sector;
- (c) The main benefits of supporting climate action taken by local authorities.

³¹ <https://unfccc.int/MA/Greece>.

267. In response, the Party explained that:

(a) The use of hydrogen is related to its highly ambitious target for RES. Installing onshore wind farms and photovoltaic installations are a priority, but the expected growth in large-scale RES poses challenges in terms of maintaining a stable, safe electrical system in Greece. Developing storage facilities may be an option, and in the long term hydrogen is considered to be a potential large-scale storage medium. Given that the main aim of Greece's NECP and its long-term strategy until 2050 is to combine consumption sectors, the Party has a keen interest in the development of hydrogen for further decarbonization. Hydrogen will replace fossil fuels and feedstocks in various sectors, including transport and hard-to-abate industrial sectors;

(b) It plans to make its power sector lignite-free by 2025. During the European energy transition, Greece needs to use natural gas, which will be the main transition fuel until its economy becomes climate-neutral;

(c) Many Greek municipalities are participating in the mitigation and adaptation process. Regional government is responsible for local action plans, especially plans related to adaptation. A new climate law, which is currently being drafted, will give local authorities more responsibilities and a significant role in terms of drawing up plans for mitigation and adaptation. This will be an extremely significant measure for the years ahead.

268. On projections, Greece was asked to share challenges in relation to data collection for projections until 2040 and to explain whether any subsectors or carbon pools in the LULUCF sector present particular challenges in this regard. In response, Greece explained that it faces many challenges in relation to the LULUCF sector. Emission projections are based mainly on analysis of AD for 1990–2019 and the emission factors used are similar to those reported in the latest inventory. To help develop the projections and some assumptions for the LULUCF sector, Greece plans to strengthen its national emission reporting system in order to fill gaps and meet reporting challenges, especially in relation to the LULUCF sector.

K. Hungary

269. The fourth MA of Hungary took place on 4 June 2021. Questions for Hungary had been submitted in writing two months before the working group session by the following delegations: Canada, Japan, New Zealand, United Kingdom and United States. A list of the questions received and the answers provided by Hungary, as well as the webcast of the session, can be found on the MA web page for Hungary.³²

270. The working group session was chaired by the additional SBI Rapporteur. Hungary was represented by Kinga Csontos from the Climate Policy Department of the Ministry for Innovation and Technology.

271. Ms. Csontos made a presentation summarizing Hungary's progress towards achieving its quantified economy-wide emission reduction targets. As an EU member State, Hungary is committed to contributing to the achievement of the joint EU quantified economy-wide emission reduction target of 20 per cent below the 1990 level by 2020. Hungary's target for ESD sectors is to limit emission growth to 10 per cent above the 2005 level by 2020.

272. Ms. Csontos presented Hungary's law on climate protection, which was adopted in June 2020 and sets the targets of reducing GHG emissions by 40 per cent below the 1990 level by 2030 and achieving climate neutrality by 2050.

273. The Party's total GHG emissions excluding emissions and removals from LULUCF decreased by 32.7 per cent between 1990 and 2018, owing mainly to factors such as the regime change in 1989–1990, which caused a radical decline in the output of the Party's national economy; the Party becoming an EU member State in May 2004; and the 2008 global financial crisis, which resulted in a significant drop in its GHG emissions.

274. Ms. Csontos presented key PaMs for achieving the Party's targets, including the Climate and Environmental Protection Action Plan, announced in February 2020, which includes measures such as planting 10 trees for each newborn baby in the country (equivalent

³² <https://unfccc.int/MA/Hungary>.

to 1 million trees/year), achieving a sixfold increase in the capacity of solar power plants, and supporting renewable energy production by small and medium-sized enterprises. Furthermore, Ms. Csontos mentioned the coal phaseout project, which emphasizes the importance of ensuring a sustainable and just transition for the last remaining coal-fired power plants by 2030 and could serve as an example to other Eastern European countries that continue to use coal. Activities in support of a just transition include establishing a decarbonization road map and providing training for miners, workers and affected companies.

275. Hungary's emissions covered by the EU ETS are subject to an EU-wide cap. According to the report on the technical review of the Party's BR4, its projected level of emissions by 2020 from ESD sectors under the WEM and WAM scenarios is 18.5 and 19.8 per cent, respectively, below the AEA for 2020. Therefore, Hungary expects to meet its 2020 target under the WEM and WAM scenarios.

276. The presentation was followed by interventions and questions from the following delegations: Australia, China, India, Malaysia and Saudi Arabia.

277. Questions on PaMs related to:

- (a) Challenges in reporting and barriers to estimating the mitigation impacts of PaMs;
- (b) Changes to Hungary's institutional arrangements, and domestic arrangements established for the process of the self-assessment of compliance with emission reduction commitments or the level of emission reductions that is required by science;
- (c) Additional PaMs included in the WAM scenario for the transport sector;
- (d) The cut-off date for phasing out coal use for residential heating.

278. In response, the Party explained that:

- (a) Although its monitoring framework for climate policy and energy measures is incomplete, work has been under way to establish a comprehensive monitoring, evaluation and verification framework for all climate and energy PaMs at the national level. The project, which received EU support and was implemented in collaboration with the Swedish Environmental Protection Agency, is scheduled for completion in mid-2021;
- (b) It reports on its policy framework and self-assessment of compliance with its commitments under the UNFCCC and to the EU;
- (c) It has plans for several additional PaMs in the transport sector, including PaMs related to alternative fuel infrastructure, e-mobility and providing financial support to both businesses and individuals for buying electric vehicles;
- (d) It has not yet set a cut-off date for phasing out coal use for residential heating.

L. Ireland

279. The fourth MA of Ireland took place on 4 June 2021. Questions for Ireland had been submitted in writing two months before the working group session by the following delegations: Canada, New Zealand, Thailand, United Kingdom and United States. A list of the questions received and the answers provided by Ireland, as well as the webcast of the session, can be found on the MA web page for Ireland.³³

280. The working group session was chaired by the additional SBI Rapporteur. Ireland was represented by John Finnegan from the Department of Environment, Climate and Communications.

281. Mr. Finnegan made a presentation summarizing Ireland's progress towards achieving its quantified economy-wide emission reduction targets. As an EU member State, Ireland is committed to contributing to the achievement of the joint EU quantified economy-wide

³³ <https://unfccc.int/MA/Ireland>.

emission reduction target of 20 per cent below the 1990 level by 2020. Ireland's emission reduction target for ESD sectors is 20 per cent below the 2005 level by 2020.

282. Mr. Finnegan presented Ireland's NDC target under the Paris Agreement. As an EU member State, Ireland is committed to contributing to the achievement of the EU NDC target to reduce its GHG emissions by 55 per cent below the 1990 level by 2030. Ireland's target is to reduce GHG emissions from ESD sectors by 30 per cent below the 2005 level by 2030. Ireland has also set a long-term goal to achieve climate neutrality by 2050.

283. The Party's total GHG emissions excluding emissions and removals from LULUCF and including indirect CO₂ increased by 9.9 per cent between 1990 and 2018, owing mainly to increased emissions in the transport sector caused by the combined challenges of population growth, economic growth, high reliance on car travel and a rurally dispersed population. Despite the overall increase in emissions, emissions from the energy sector fell during this period owing to the efficiency gains associated with replacing peat- and oil-fired plants with modern gas-fired power plants; an increasing share of RES (mainly wind power) in energy production; and improved interconnectivity of the electricity grid. Waste emissions also fell significantly over this period.

284. Mr. Finnegan presented key PaMs for achieving the Party's targets, including new carbon pricing legislation; increased funding for residential and community retrofit programmes in the buildings sector; new funding to support the delivery of improved walking and cycling infrastructure in the transport sector; the restoration of over 22,000 ha peatland in the LULUCF sector; and citizen engagement to increase climate action at the local level. In addition, Mr. Finnegan highlighted efforts to close the peat-fired power stations in the Midlands region and end peat harvesting as part of its work to achieve a just transition. These actions are supported by its EUR 26 million Just Transition Fund for increasing the economic, social and environmental sustainability of the region and a Just Transition Commissioner, who is responsible for facilitating discussions with stakeholders.

285. Ireland's more recent actions include its 2021 Climate Action and Low Carbon Development Bill and Climate Action Plan, which sets out its commitment to achieve carbon neutrality by 2050; a series of five-year carbon budgets, which include sectoral emission targets; annual updates to the Climate Action Plan; and the publication of a national long-term climate action strategy at least every five years. The Action Plan is intended to drive climate action closer to the goal of a 51 per cent reduction in emissions below the 1990 level by 2030 and to demonstrate broad political and social support for a just transition.

286. Given that its emissions covered by the EU ETS are subject to an EU-wide cap, Ireland presented the projected level of emissions by 2020 from ESD sectors under the WEM scenario, which is 18.4 per cent above the AEA for 2020. Without the use of the flexibility allowed under the ESD, Ireland may face challenges in meeting its target under the WEM scenario. According to the report on the technical review of the Party's BR4, it plans to use units from market-based mechanisms (certified emission reductions and emission reduction units) to help meet its ESD targets.

287. Mr. Finnegan commented on Ireland's provision of financial support to developing country Parties, which amounted to EUR 93 million in 2019. In particular, Ireland is aiming to double its official development assistance considered as climate finance to achieve the target of 0.7 per cent of gross national income by 2030. Moreover, Ireland's support is heavily focused on adaptation initiatives, involving the provision of grant-based support to the least developed countries, including sub-Saharan Africa and small island developing States.

288. The presentation was followed by interventions and questions from the following delegations: Australia, China, Saudi Arabia, United Kingdom and United States.

289. Questions on PaMs related to:

- (a) Coordinating government responses to climate change across various departments and bodies;
- (b) Plans to increase use of electric vehicles;
- (c) Estimating the impact of PaMs outlined in the 2019 Climate Action Plan;

- (d) Additional PaMs planned to assist in reducing energy sector emissions;
- (e) Planned additional PaMs to assist in reducing agriculture sector emissions;
- (f) Experience with zero-energy building policies.

290. In response, the Party explained that:

(a) The targets in the 2019 Climate Action Plan were set at the highest level of government, with successive editions complementing the 2019 Plan and serving to identify and coordinate all public sector actions for reaching the targets. Work on preparing and implementing the action plans is led by the Department of Environment, Climate and Communications with the engagement of various working groups that include representatives of other government departments, public sector bodies and stakeholder groups. Implementation is also monitored directly by the Prime Minister's Office. Ireland expects this interdepartmental collaboration to be further reinforced thanks to the adoption of the 2021 Climate Bill;

(b) Although its electric vehicle fleet doubled from only 16,000 to 32,000 between 2019 and March 2021, Ireland expects these numbers to increase significantly in the future as charging infrastructure is expanded, public awareness grows, and the quality and range of electric vehicles available increases. In addition to its electric vehicle policies, Ireland is also investing in greener modes of travel, including cycling, walking and greener public transport. At the same time, the Party is looking to improve its spatial planning through a national strategy aimed at targeting population growth to areas that would accommodate high-density living; reducing the need to commute for work and leisure; and investing in greener public transport (e.g. fully electrified bus fleets and further rail electrification);

(c) The Irish Environmental Protection Agency publishes annual projections and has updated the WEM and WAM scenarios since the submission of the Party's BR4. The most recent projections (June 2020) indicate that under the WAM scenario the measures included in the 2019 Climate Action Plan are associated with an estimated emission reduction of 23 per cent below the 1990 level by 2030. Further projections will soon be available;

(d) It has made some progress in reducing emissions from the energy sector following the phaseout of coal-fired power plants as part of a plan to completely eliminate coal-fired electricity generation by 2035. There are similar plans to phase out the use of peat-fired electricity generation by 2030 by closing Ireland's three remaining peat-fired power plants. In addition, the Party is investing heavily in RES, which currently provide over 30 per cent of its energy, with the installation of offshore wind generation expected to lead to significant future growth;

(e) Reducing emissions from the agriculture sector is challenging as a biological system is involved, but Ireland nevertheless aims to reduce agricultural emissions by 10–15 per cent under the 2019 Climate Action Plan. Efforts to reduce emissions are laid out in the 2020 Ag Climatise road map, which includes 29 actions specific to the agriculture sector. One key measure involves reducing fertilizer use, particularly N₂O, and shifting from calcium ammonium nitrate fertilizers to urea-based products with a urease inhibitor. Ireland expects to increase the ambition of its agriculture sector targets as part of its 2021 Climate Action Plan;

(f) It included extensive information on this topic in its written responses to questions from Parties. Ireland noted that it began by establishing technical standards and definitions for energy efficiency in buildings, then created aspirational standards that, once embraced by the construction industry, were gradually tightened and made compulsory. More specifically, Ireland's first step was to launch, in 2007, an energy assessment procedure for those willing to make voluntary improvements, before establishing standards and methodologies using the lessons learned. In 2012 Ireland introduced energy ratings for buildings and certified a number of assessors to oversee the standardized implementation of new practices and provide energy efficiency ratings for existing buildings. In June 2019 Ireland amended its building regulations and introduced mandatory standards for all newly constructed buildings, including a requirement for them to emit 70 per cent less than new buildings in 2005. Ireland noted that, although improving the energy efficiency of buildings involves long-term investment, the payback is significant, and adhering to the new standards

has increased overall costs by just 0.7–4.2 per cent, depending on the type and size of the building.

M. Japan

291. The fourth MA of Japan took place on 15 June 2021. Questions for Japan had been submitted in writing two months before the working group session by the following delegations: Australia, Canada, EU, New Zealand, Switzerland, Thailand, United Kingdom and United States. A list of the questions received and the answers provided by Japan, as well as the webcast of the session, can be found on the MA web page for Japan.³⁴

292. The working group session was chaired by the additional SBI Rapporteur. Japan was represented by Keiko Segawa from the Ministry of the Environment.

293. Ms. Segawa made a presentation summarizing Japan's progress towards achieving its quantified economy-wide emission reduction targets. Under the Convention Japan made a commitment to reduce its GHG emissions by 3.8 per cent or more below the 2005 fiscal-year level by fiscal year 2020.

294. Ms. Segawa presented Japan's NDC target under the Paris Agreement, which is to reduce GHG emissions by 26 per cent below the 2013 fiscal-year level by fiscal year 2030. In 2021 the Party announced a revised target to reduce its GHG emissions by 46 per cent below the 2013 fiscal-year level. Japan has also set a long-term target to achieve net zero emissions by 2050.

295. The Party's total GHG emissions excluding emissions and removals from LULUCF decreased by 12.3 per cent between fiscal years 2005 and 2019, owing mainly to the decrease in CO₂ emissions in the energy sector since 2014. Attributable to the introduction of energy efficiency measures and a decrease in thermal power generation, the emission reduction in that sector was offset to some extent by an increase in emissions from the IPPU sector.

296. Ms. Segawa presented key PaMs for achieving the Party's targets, including the Act on Promotion of Global Warming Countermeasures and the Plan for Global Warming Countermeasures, which provide the legislative and policy frameworks that enable the national Government, local governments, businesses and individuals to reduce GHG emissions in a comprehensive and strategic manner. The main PaMs include promoting high efficiency in thermal power generation; voluntary emission reduction targets for industrial organizations; promoting compliance with energy saving standards for new buildings and homes, renovating existing buildings and homes to save energy and promoting net zero energy buildings and houses in the commercial and residential sectors; diffusing next-generation automobiles and improving fuel efficiency in the transport sector; and expanding the use of renewable energy through feed-in tariffs and grid system maintenance and by consolidating the rules governing grid system operation.

297. Other cross-sectoral policies include establishing a hydrogen society; requiring businesses to estimate and report their GHG emissions; implementing the Joint Crediting Mechanism (a project-based bilateral offset crediting mechanism that facilitates the diffusion of low-carbon technologies in developing countries); introducing a green tax system; and developing a green finance system. Japan has also been promoting international cooperation on reducing GHG emissions by supporting decarbonization in infrastructure development through public–private partnerships, mainly in the Indo-Pacific region.

298. According to the report on the technical review of Japan's BR4, the Party's total GHG emissions excluding LULUCF in 2020 and 2030 are projected to be 1,399,565.40 and 1,079,000.00 kt CO₂ eq, respectively, under the WEM scenario, which is 1.3 per cent above and 21.9 per cent below, respectively, the base-year (fiscal year 2005) level.

299. The 2020 WEM projection suggests that Japan may face challenges in achieving its 2020 target under the Convention. To do so, Japan plans to implement additional mitigation measures and account for removals from the LULUCF sector.

³⁴ <https://unfccc.int/MA/Japan>.

300. The presentation was followed by interventions and questions from the following delegations: Australia, China, EU, Germany, Ghana, India, Luxembourg, Singapore, Switzerland and United Kingdom.

301. Questions on targets related to how Japan's target of reducing emissions by 46 per cent below the 2013 level by 2030 translates into emission reductions compared with the 1990 level and whether the Party's cumulative emissions since 1990 amount to a fair share of the global carbon budget consumed in that period. In response, the Party explained that it is currently examining the new 2030 target, and the details of future countermeasures for achieving this target are under discussion by the Cabinet. As such, it was not possible for the Party to provide a detailed answer to the question.

302. On GHG emission trends, the questions related to whether Japan used rough estimates for its 2020 emission calculations, and its experience in estimating GHG emissions for 2019. In response, the Party explained that the 2020 emission data are not yet available, and the emission estimates reported for 2020 are projections that do not consider the emission reduction achieved by restarting nuclear power plants, because Japan's nuclear policy was under review when the estimates were prepared. Japan's emissions in 2019, the most recent year for which emission data are available, are projected to be 12.3 per cent below the 2005 level, far exceeding the 3.8 per cent reduction target for 2020. If the latest emission trends continue, emissions in 2020 will be significantly below the target level.

303. Questions on PaMs related to:

(a) The Party's experience of implementing its global warming countermeasures system and the challenges involved;

(b) Campaigns designed to increase public awareness of climate change and the benefits of increasing individual and public action to tackle climate change;

(c) A specific measure or sector as an example of improving energy efficiency in recent years;

(d) The potential contribution of CCS to the achievement of Japan's long-term target;

(e) The benefits of using indicators to track and monitor industries' progress under Japan's industry action plan for a low-carbon economy, the challenges involved and measures for addressing non-compliance;

(f) PaMs for regulating and restricting the use of HFCs, and the most promising measures for curbing HFC emissions in the short term;

(g) Implemented or planned PaMs targeting CH₄ emissions from rice cultivation, and examples of good practice and measures linked to the decline in CH₄ emissions from manure management.

304. In response, the Party explained that:

(a) The Plan for Global Warming Countermeasures was established and reviewed by the Cabinet, with responsibility for the various countermeasures falling to the relevant ministries with the aim of reducing GHG emissions in line with the Party's 2030 and 2050 targets. As per the Act on Promotion of Global Warming Countermeasures, the monitoring system provides for a review every three years to assess progress in relation to the countermeasures by sector and by ministry, and the measures are strengthened if there is a significant lack of progress (e.g. if the HFC recovery rate is lower than expected). The monitoring system for the Plan for Global Warming Countermeasures is effective in terms of enhancing existing PaMs because it leads to legal amendments aimed at strengthening PaMs and enables the national Government to implement supplementary budgetary measures or provide subsidies to local government;

(b) Raising public awareness in relation to reducing emissions and the carbon footprint has been key. Since 1990 the Party has run various awareness-raising campaigns related to global warming and actions that individuals can take in their daily lives. The Government of Japan has gradually increased the scope of public awareness campaigns since the 1990s, with the level of promoted actions rising from day-to-day behaviours such as

reducing water usage or avoiding packaging to encompass higher-level actions such as buying solar power systems and other products in recent years. Public awareness campaigns on climate change differ by sector and according to the type of device being promoted. Notably, the Minister of the Environment regularly meets with youth representatives and decision makers in local government to encourage them to take specific actions to reduce their emissions;

(c) High-efficiency devices, that is highly efficient large-scale energy-consuming equipment, such as industrial furnaces and boilers in the industry sector and air conditioners, lighting and water heaters in the commercial and residential sectors, are a relevant example. Their use is encouraged through regulatory measures stemming from the Act on the Rational Use of Energy and support measures such as subsidies. In particular, the Top Runner programme sets targets for efficient energy consumption that apply to 29 of the most energy-intensive devices. These targets are mandatory for importers and manufacturers and are aimed at improving their energy efficiency;

(d) Many agencies in Japan are involved in the development of CCUS. The Ministry of the Environment has implemented many demonstration projects, including a CCS project in a biomass-fired power plant (the largest facility in a power plant in Japan) and a carbon dioxide capture and use project to produce CH_4 and ethanol (raw materials for fuel and chemical products) from waste incineration facilities. It is also working on capturing CO_2 directly from the atmosphere. In addition to setting up a CCUS demonstration project on the island of Hokkaido and releasing a carbon recycling road map, the Ministry of Economy, Trade and Industry is also involved in research and development activities. Although the Party has a long-term vision for CCUS in the context of its 2050 target, it is too soon to provide quantitative data and indicators as the technology is still under development;

(e) In Japan, each industrial association can opt to draw up a decarbonization plan, setting its own targets. Industrial associations carry out annual evaluation and monitoring using a system based on peer review. The challenges stem from the absence of a legally binding framework: a successful framework would require industrial players to take a serious approach to implementing their decarbonization plans. However, the advantages of this system are clear considering that in 2013–2019 industry emissions fell by 10.9 per cent, exceeding the emission reduction target of 6.5 per cent;

(f) As HFC emissions are rising, it is important to implement measures to reduce emissions throughout the life cycle of products using HFCs, spanning production, use and disposal. The Party's HFC emissions were estimated to be 49.7 Mt CO_2 eq in 2019, which is 5.1 Mt CO_2 eq (10 per cent) below the WOM scenario level. This reduction was achieved through the Act on Rational Use and Proper Management of Fluorocarbons. Japan aims to increase the recovery rate of refrigerants from commercial refrigeration and air-conditioning equipment being disposed of, which currently remains below 40 per cent, to 50 and 70 per cent by 2020 and 2030, respectively, through the Revised Act on Rational Use and Proper Management of Fluorocarbons. The Act came into force on 1 April 2020. In addition, with the aim of accelerating the shift to zero fluorocarbon emissions, the production and use of HFCs is and will be reduced through the revised Act on the Protection of the Ozone Layer based on the Kigali Amendment to the Montreal Protocol. Japan also promotes the technological development of green refrigerants without ozone-depleting substances that also have minimal impact in terms of GHG emissions, and of related equipment;

(g) CH_4 emissions from the agriculture sector decreased by 1.8 Mt CO_2 eq in 1990–2018 owing to the implementation of PaMs such as reducing the area of land used for rice paddy cultivation and training farmers to reduce emissions from rice fields by replacing traditional fertilizer systems involving rice straw incorporation in paddy fields with less CH_4 -intensive systems.

305. On projections, the Party was asked about challenges and lessons learned in reporting projection data for the LULUCF sector using the activity-based approach. In response, Japan explained that the LULUCF sector's contribution to emission reductions is accounted for in accordance with the rules for the second commitment period of the Kyoto Protocol. LULUCF contributions are expected to amount to 38.0 Mt CO_2 eq from forests, 7.7 Mt CO_2 eq from

agricultural soils and 1.2 Mt CO₂ eq from revegetation for 2020, and to 27.8 Mt CO₂ eq from forests, 7.9 Mt CO₂ eq from agricultural soils and 1.2 Mt CO₂ eq from revegetation for 2030.

N. Latvia

306. The fourth MA of Latvia took place on 15 June 2021. Questions for Latvia had been submitted in writing two months before the working group session by the following delegations: New Zealand, United Kingdom and United States. A list of the questions received and the answers provided by Latvia, as well as the webcast of the session, can be found on the MA web page for Latvia.³⁵

307. The working group session was chaired by the additional SBI Rapporteur. Latvia was represented by Alda Ozola from the Ministry of Environmental Protection and Regional Development.

308. Ms. Ozola made a presentation summarizing Latvia's progress towards achieving its quantified economy-wide emission reduction targets. As an EU member State, Latvia is committed to contributing to the achievement of the joint EU quantified economy-wide emission reduction target of 20 per cent below the 1990 level by 2020. Latvia's target for ESD sectors is to limit emission growth to 17 per cent above the 2005 level by 2020.

309. Ms. Ozola presented Latvia's NDC target under the Paris Agreement, which, as an EU member State, is to contribute to the achievement of the EU NDC target to reduce its GHG emissions by 55 per cent below the 1990 level by 2030. Latvia's target is to reduce GHG emissions from ESD sectors by 6 per cent below the 2005 level by 2030. Latvia has also set a long-term goal to achieve climate neutrality by 2050.

310. The Party's total GHG emissions excluding emissions and removals from LULUCF decreased by 55 per cent between 1990 and 2018, owing mainly to the transition to a market economy in the early 1990s and the switch to using less-carbon-intensive fuels.

311. Ms. Ozola presented key PaMs for achieving the Party's target, which are governed by the Law on Pollution, which defines the policy framework and sets out key responsibilities. Latvia recently approved its Strategy for the Achievement of Climate Neutrality by 2050, which sets out its overall vision encompassing all sectors. In 2018 Latvia had one of the highest shares (40 per cent) of renewable energy in final energy consumption in the EU. As a result, the Party already has its own target for 2020. Latvia is aiming to source 50 per cent of final gross energy consumption from RES by 2030.

312. High emissions from agriculture and transport continue to present challenges. Measures such as precision farming are aimed at improving the situation in the agriculture sector. Latvia has one of the oldest car fleets in the EU but intends to modernize its fleet by implementing measures to support the uptake of electric vehicles. A key overarching measure is the CO₂ tax for installations not covered by the EU ETS. Introduced in 2005, the tax was increased to EUR 12/t CO₂ in 2021 and is set to rise to EUR 15/t CO₂ from 2022. Further measures include removing tax exemptions for peat use in combustion in 2021. Measures in the buildings sector include promoting energy-efficient buildings, including by providing financial support for the renovation of public and private buildings, which will continue up to 2030. In addition to efficiency in buildings, the Party has a strong interest in heat system efficiency, which involves, for example, replacing existing systems with renewable heat options. Latvia stressed that it intends to direct investment from EU recovery funds towards climate measures, for example to provide support for sustainable transport infrastructure in the city of Riga.

313. Given that its emissions covered by the EU ETS are subject to an EU-wide cap, Latvia presented the projected level of emissions by 2020 from ESD sectors under the WEM scenario, which is 8.9 per cent below the AEA for 2020. Ms. Ozola noted that almost 80 per cent of Latvia's emissions are not covered by the EU ETS, with transport and agriculture

³⁵ <https://unfccc.int/MA/Latvia>.

representing the largest share of those emissions. Latvia expects to meet its 2020 target under the WEM scenario.

314. The presentation was followed by interventions and questions from the following delegations: China, Ghana, India and United Kingdom.

315. On GHG emission trends, Latvia was asked to explain the slight increase in its total GHG emissions between 2019 and 2020. In response, the Party explained that this was due mainly to the meteorological situation in 2020; for example, the dry summer led to an increase in use of natural gas. Additionally, the area of agricultural land under active management increased as formerly abandoned land was recultivated, increasing emissions from the agriculture sector.

316. On projections, Latvia was asked to provide more detailed information on the energy sector projections for the WAM scenario. In response, the Party explained that the main PaMs included in the WAM scenario are cross-sectoral energy efficiency measures, including measures for industrial efficiency, promoting biogas use in transport and railway electrification.

317. Questions on PaMs related to:

- (a) Free parking for electric vehicles;
- (b) Activities implemented to raise awareness on climate change;
- (c) Latvia's experience in introducing carbon taxes and removing fossil fuel subsidies;
- (d) Plans to monitor and evaluate measures for which no estimates of emission impacts have yet been provided;
- (e) The role of the transport and agriculture sectors and Latvia's plans for achieving carbon neutrality in those sectors, which currently represent 37 and 30 per cent, respectively, of total national emissions and are both hard to decarbonize.

318. In response, the Party explained that:

- (a) Municipalities have different approaches to introducing free parking for electric vehicles: Riga, for example, already did so in 2014. Additionally, electric vehicles are permitted to use lanes otherwise reserved for public transport, which has also worked well as an incentive;
- (b) Financial support for awareness-raising is provided to campaigns that are publicly tendered and to public consultation processes during the drafting of new policies and legislation;
- (c) The carbon tax, which is a component of the Natural Resources Tax, was set at low rates when it was first introduced. The rates are revised every few years and further increases are planned in acknowledgment of the fact that fiscal incentives are an important measure on the road to decarbonization;
- (d) Although there are challenges in estimating the impact of some measures, it is continuously improving and updating its system. Latvia stressed that it carries out annual reporting on GHG emissions and other aspects of implementation to enable tracking of progress and assessment of whether measures are sufficient;
- (e) It is aware of the challenges, which are further exacerbated by its ageing car fleet and low density of settlement. The Party envisages a range of measures for the transport sector, including developing rail as the backbone of public transport, especially in Riga's suburbs; fiscal incentives to renew the car fleet; and support for low-carbon vehicles. In agriculture, key measures include precision fertilizer application, crop rotation, diversifying crops and better monitoring the impacts of measures. There are detailed requirements for the collection and disposal of manure and measures to promote organic farming and biogas production from animal manure. To achieve climate neutrality, Latvia will need to offset the remaining emissions from forestry.

319. On institutional arrangements, Latvia was asked whether it expects to make any changes to its existing national system to enable compliance with the requirements under the Paris Agreement. In response, the Party explained that its existing system works well, with smooth interministerial coordination, and no changes are envisaged.

O. Lithuania

320. The fourth MA of Lithuania took place on 15 June 2021. Questions for Lithuania had been submitted in writing two months before the working group session by the following delegations: New Zealand, United Kingdom and United States. A list of the questions received and the answers provided by Lithuania, as well as the webcast of the session, can be found on the MA web page for Lithuania.³⁶

321. The working group session was chaired by the additional SBI Rapporteur. Lithuania was represented by Tomas Aukštinaitis from the Climate Policy Group of the Ministry of Environment.

322. Mr. Aukštinaitis made a presentation summarizing Lithuania's progress towards achieving its quantified economy-wide emission reduction targets. As an EU member State, Lithuania is committed to contributing to the achievement of the joint EU quantified economy-wide emission reduction target of 20 per cent below the 1990 level by 2020. Lithuania's target for ESD sectors is to limit emission growth to 15 per cent above the 2005 level by 2020.

323. Mr. Aukštinaitis presented Lithuania's NDC target under the Paris Agreement, which, as an EU member State, is to contribute to the achievement of the EU NDC target to reduce its GHG emissions by 55 per cent below the 1990 level by 2030. According to the report on the technical review of its BR4, Lithuania's target is to reduce GHG emissions from ESD sectors by 9 per cent below the 2005 level by 2030. Lithuania has also set a long-term goal to reduce emissions by 80 per cent by 2050, and the Party indicated that it is currently updating its climate change framework with a view to achieving carbon neutrality by 2050.

324. The Party's total GHG emissions excluding emissions and removals from LULUCF decreased by 57.5 per cent between 1990 and 2019, owing mainly to the move to a market-based economy, which triggered a considerable decline in the use of fossil fuels, especially fuel oil but also coal, petrol and natural gas, from the beginning of the 1990s. Restrictions on the sulfur content of fuel oil introduced in 2004 and 2008 led to a shift to natural gas, which caused annual GHG emissions to fall. The latest significant decrease in emissions occurred in 2009 as a result of the global financial crisis.

325. Mr. Aukštinaitis presented key PaMs for achieving the Party's targets, including the Strategy for the National Climate Change Management Policy (2012) and the updated National Energy Independence Strategy (2018), which provides the basis for the Party's approach to promoting renewables and energy efficiency. Actions in the transport sector focus on achieving sustainable mobility in cities by improving transport planning in municipalities and making public transport a more appealing option. For industry, the focus continues to be the implementation of best practice. Although the agriculture sector faces ongoing challenges as a result of sustained growth in the use of mineral fertilizers following increases in the area of land used for crops, the Party has introduced measures aimed at promoting efficient use of fertilizers and encouraging the replacement of traditional fertilizers with organic alternatives. Biogas plants are also being promoted. The Party plans to remove fossil fuel subsidies with the aim of phasing out fossil fuel use across all sectors.

326. Given that its emissions covered by the EU ETS are subject to an EU-wide cap, Lithuania presented the projected level of emissions by 2020 from ESD sectors under the WEM and WAM scenarios, which, according to the report on the technical review of the Party's BR4, is 4.5 and 4.8 per cent, respectively, below the AEA for 2020. ESD sectors are responsible for 70 per cent of the Party's total emissions. Lithuania expects to meet its target under the WEM scenario for 2020. However, the Party stressed that it will face challenges in

³⁶ <https://unfccc.int/MA/Lithuania>.

meeting its 2030 ESR targets under the WEM scenario unless it swiftly implements the measures included in the WAM scenario.

327. The presentation was followed by interventions and questions from the following delegations: Australia, China, Ghana, India and United Kingdom.

328. On targets, Lithuania was asked whether it would encounter any challenges if it adopted a more ambitious target than its current goal under the ESR. In response, the Party explained that it is currently revising its climate strategy. In the context of its existing target to reduce emissions from ESD sectors by 9 per cent below the 2005 level by 2030, analysis currently indicates that implementing the additional measures in Lithuania's energy and climate plan may reduce emissions further by enabling a 30 per cent reduction between 2005 and 2030.

329. Questions on PaMs related to:

(a) Challenges related to successfully moving from fuel oil to gas under the Party's plans to phase out fossil fuels;

(b) The impact of the rise in transportation fuel taxes on GHG emissions and whether the taxes are sufficient to achieve carbon neutrality;

(c) PaMs in agriculture and, in particular, the Party's experience of ecological farming and the barriers to reaching its target to bring 10 per cent of its farmland under certified ecological production by 2020;

(d) PaMs in the forestry sector and insights into implementing successful afforestation measures.

330. In response, the Party explained that:

(a) Around 60 per cent of its energy used for heating is based on biomass. The main success factor for this were subsidies enabling old equipment (boilers) to be exchanged for biomass-based boilers;

(b) The Law on Alternative Fuels provides incentives for suppliers to increase their offer of renewable energy. Lithuania explained that it does not yet have access to specific studies analysing the impacts of the change to the taxes on transportation fuels, but it is currently working on a green tax reform, which will cover the phaseout of fossil fuel subsidies, the introduction of a carbon tax on fossil fuels and further increases in excise duties for gasoline and diesel. In this context, an in-depth analysis of the emission impacts is planned;

(c) The main challenge is that traditional agricultural practices are well established. The Government is introducing a range of measures to overcome this, including subsidies for acquiring appropriate farming equipment, measures to introduce efficient farming techniques and the green taxation reform, which will discourage diesel use in farming;

(d) It has increased forest cover to 33.7 per cent of total land area and aims to further increase this to 35 per cent. Activities are focused on areas with low-fertility soils, with support for farmers to plant forests instead of producing low-yield crops.

P. Malta

331. The fourth MA of Malta took place on 4 June 2021. Questions for Malta had been submitted in writing two months before the working group session by the following delegations: New Zealand, United Kingdom and United States. A list of the questions received and the answers provided by Malta, as well as the webcast of the session, can be found on the MA web page for Malta.³⁷

³⁷ <https://unfccc.int/MA/Malta>.

332. The working group session was chaired by the additional SBI Rapporteur. Malta was represented by Ruth Debrincat from the Ministry for the Environment, Climate Change and Planning.

333. Ms. Debrincat made a presentation summarizing Malta's progress towards achieving its quantified economy-wide emission reduction targets. As an EU member State, Malta is committed to contributing to the achievement of the joint EU quantified economy-wide emission reduction target of 20 per cent below the 1990 level by 2020. Malta's target for ESD sectors is to limit emission growth to 5 per cent above the 2005 level by 2020.

334. Ms. Debrincat presented Malta's NDC target under the Paris Agreement, which, as an EU member State, is to contribute to the achievement of the EU NDC target to reduce its GHG emissions by 55 per cent below the 1990 level by 2030. Malta's target is to reduce GHG emissions from ESD sectors by 19 per cent below the 2005 level by 2030. The Government has identified carbon neutrality as one of the five pillars of Malta's economic vision.

335. The Party's total GHG emissions excluding emissions and removals from LULUCF decreased by 14.9 per cent between 1990 and 2018, owing mainly to investment in power generation, which has supported power plant decommissioning, fuel switching and a new connection with the European electricity grid for importing power.

336. Ms. Debrincat presented key PaMs for achieving the Party's targets, including two key policy documents, namely a climate emergency motion adopted by Parliament in 2019 to reaffirm the Party's commitment to continue contributing to the global fight against climate change, and Malta's Low Carbon Development Strategy. The latter, which is currently undergoing ministerial consultation and will be issued for public consultation in mid-2021, builds on the existing vision to achieve carbon neutrality by 2050. Ms. Debrincat described the PaMs that have contributed to the significant decrease in GHG emissions from the energy sector since 2012, which was primarily achieved through supply-side investment in electricity generation. PaMs of note include investing in more efficient generation capacity, moving towards use of natural gas for fuel, installing an interconnector to the European grid and increasing the contribution of RES to 8.5 per cent of gross final energy consumption in 2019.

337. PaMs with a view to 2030 relate to extending free public transport; electrification of vehicles; electrification of the government fleet and public transport; increasing the number of remote workers; investing in photovoltaic systems; increasing energy efficiency and carrying out renovations in public buildings; and waste prevention. Key long-term measures (for 2050) include exploring alternative sources of supply, such as hydrogen, offshore wind and solar. In terms of the challenges involved in achieving further emission reductions, there are structural impediments related to the country's insularity and economic structure, which is heavily focused on services. These factors result in high mitigation costs, as the cost-effectiveness of measures is limited by unfavourable economies of scale. The low additional mitigation potential associated with the Party's economic structure, which already has a low carbon intensity, presents a particular challenge.

338. Given that its emissions covered by the EU ETS are subject to an EU-wide cap, Malta presented the projected level of emissions by 2020 from ESD sectors under the WEM scenario, which is 25.3 per cent above the AEA for 2020. Malta may face challenges in meeting its target under the WEM scenario without using the flexibility mechanisms under the ESD.

339. The presentation was followed by interventions and questions from the following delegations: China, United Kingdom and United States.

340. On GHG emission trends and related PaMs, Malta was asked about additional planned actions for reducing the continually increasing emissions from the IPPU and waste sectors. In response, the Party explained that it will address this situation by implementing the EU F-gas regulation. Another question related to the reasons for the considerable decrease in emissions in the power sector, to which Malta responded that since 2012 it has been moving towards a fuel mix that is dominated by natural gas thanks to fuel switching. In addition, the use of solar energy has increased and demand-side efficiency has improved.

341. On PaMs, Malta was asked about lessons learned in coordinating climate action across ministries through its government structures, which include an interministerial steering committee and working groups. In response, the Party explained that the steering committee, which was set up to create the NECP, involved representatives of various ministries across the Government, and the range of perspectives was a key enabler of progress during the planning and design phases of the NECP. A similar set-up was used to draw up the Low Carbon Development Strategy, helping to ensure that climate action is mainstreamed and drawing attention to the fact that taking coordinated action across the different ministry portfolios is a crucial step for successful implementation of the NECP.

342. Regarding its plans to use offshore wind power, considering the difficulties of onshore wind generation, the Party confirmed that it plans to explore offshore wind as part of its long-term measures. Malta is keeping abreast of related innovations and technological developments and assessing how they can be adapted to the local context.

Q. New Zealand

343. The fourth MA of New Zealand took place on 12 June 2021. Questions for New Zealand had been submitted in writing two months before the working group session by the following delegations: Australia, Canada, EU, Japan, Thailand, United Kingdom and United States. A list of the questions received and the answers provided by New Zealand, as well as the webcast of the session, can be found on the MA web page for New Zealand.³⁸

344. The working group session was chaired by the SBI Vice-Chair. New Zealand was represented by Lisa Daniell from the Ministry for the Environment and Kay Harrison from the Ministry of Foreign Affairs and Trade.

345. Ms. Harrison and Ms. Daniell made a presentation summarizing New Zealand's progress towards achieving its quantified economy-wide emission reduction targets. Under the Convention New Zealand made a commitment to reduce its GHG emissions by 5 per cent by 2020 below the 1990 level, including the contribution from forest activities. New Zealand will use an emission budget approach for 2013–2020, with an emission budget of 509,775.00 kt CO₂ eq.

346. Ms. Harrison and Ms. Daniell presented New Zealand's NDC target under the Paris Agreement, which is to reduce GHG emissions by 30 per cent below the 2005 level by 2030. New Zealand is currently reviewing its NDC with a view to submitting an updated NDC in 2021. The Party has also set long-term goals to reach net zero emissions for all GHGs except biogenic CH₄ by 2050 and to reduce biogenic CH₄ emissions by 10 and 24–47 per cent below the 2017 level by 2030 and 2050, respectively.

347. The Party's total GHG emissions excluding emissions and removals from LULUCF increased by 24 per cent between 1990 and 2018, owing mainly to increases in CH₄ emissions from dairy cattle, CO₂ emissions from road transportation and N₂O emissions from agricultural soils; increases in HFC use in industrial and household refrigeration and air conditioning; and increases in CO₂ from manufacturing industries and construction. Although New Zealand continues to maintain a considerable net sink in the LULUCF sector (equivalent to 29.7 per cent of its total emissions in 2018), the net sink decreased in 1990–2018 as a result of increased forest harvesting.

348. Ms. Harrison and Ms. Daniell presented key PaMs for achieving the Party's targets, including its Climate Change Response (Zero Carbon) Amendment Act of 2019. The Act, which introduced a zero-carbon framework and established policies to assist in holding warming below 1.5 °C, is intended to help New Zealand prepare for and adapt to the effects of climate change. Under this legislation, New Zealand also established the Climate Change Commission in 2019, an independent body tasked with advising the Government on climate-related matters and monitoring the progress of mitigation and adaptation actions. In addition, the Act establishes domestic reduction targets for 2030 and 2050, including a series of

³⁸ https://unfccc.int/MA/New_Zealand.

emission budgets to establish a trajectory towards the targets and emission reduction plans to help achieve the objectives.

349. New Zealand's total GHG emissions excluding LULUCF in 2020 and 2030 are projected to be 80,928.58 and 75,265.73 kt CO₂ eq, respectively, under the WEM scenario, which is an increase of 23.2 and 14.6 per cent, respectively, above the 1990 level. Under the WAM scenario, emissions in 2020 and 2030, amounting to around 80,934.94 and 74,701.79 kt CO₂ eq, respectively, are projected to be higher than those in 1990 by 23.2 and 13.8 per cent, respectively.

350. The 2020 WEM projection suggests that New Zealand would need to use carry-over units from the first commitment period of the Kyoto Protocol and account for the LULUCF contribution to achieve its 2020 target under the Convention.

351. The presentation was followed by interventions and questions from the following delegations: Australia, China, EU, Germany, India, Indonesia, Luxembourg, Malaysia, Saudi Arabia and Singapore.

352. Questions on PaMs related to:

(a) The benefits of a climate change commission and the challenges related to the work of New Zealand's Climate Change Commission;

(b) Updates to the 2019 Ministry for the Environment report on offsetting guidance, given that the report applied until the end of December 2020;

(c) New Zealand's energy efficiency measures, and in particular any related success factors;

(d) New Zealand's plans for reducing emissions from the agriculture sector.

353. In response, the Party explained that:

(a) The Climate Change Commission recently released its first report on emission budgets until 2035, the suite of PaMs needed to meet the 2035 target, New Zealand's NDC and biogenic CH₄. The Commission is seen to have provided a significant amount of useful advice to the Government, particularly in the areas of GHG emission modelling and pathways to meeting its international obligations;

(b) No update has yet been released, but there are plans for an update to be published in 2021;

(c) The work programme under the Energy Efficiency and Conservation Authority to establish a business and product regulatory programme is an example, covering investment in decarbonizing industry amounting to 70 million New Zealand dollars and efforts to develop a national directive that would require the phaseout of low- to medium-temperature coal boilers;

(d) Its primary agricultural programme, including to address biogenic CH₄, is a partnership between the agriculture sector, the Government and the Maori, which will help to prepare for an on-farm reporting and pricing system for agricultural emissions, to be in place from 2025. New Zealand indicated that it is investing heavily in research and development to improve productivity and reduce emissions. An additional example of an agricultural measure is the Pastoral Greenhouse Gas Research Consortium, which focuses on reducing CH₄ emissions and is exploring vaccine inhibitors and animal breeding. Another example is New Zealand's provision of support to and participation in the Global Research Alliance on Agricultural Greenhouse Gases.

354. Questions on targets related to:

(a) New Zealand's base year and related assumptions;

(b) New Zealand's domestically produced Net Position Report, which tracks progress towards the Party's 2020 target, and whether any updates have been published since the BR4;

(c) Whether New Zealand intends to use any Kyoto Protocol units towards its target.

355. In response, the Party explained that:

(a) Although it did not include an uncertainty analysis for the base year in its 2019 inventory submission, it provided this information in both the 2020 and 2021 submissions and will continue to report this information in future submissions;

(b) This is a regular report and an update has been published since the BR4. The reports can be accessed on the website of the Ministry for the Environment;

(c) It intends to use carry-over units from the first commitment period of the Kyoto Protocol, as indicated in its latest Net Position Report.

356. On projections, New Zealand was asked about the supply and demand energy model that was used for most of the energy sector projections, with the exception of land transport, for which a different approach was taken. In response, New Zealand indicated that the models and approaches applied have both strengths and weaknesses: the generation expansion model provides a comprehensive model of the electricity sector but does not cover all assumptions; whereas the supply and demand energy model projects energy supply and demand across all sectors but does not incorporate all of the latest technologies adopted in response to the pricing of carbon. Moreover, as the main drivers of the supply and demand energy model are exogenous (e.g. GDP), secondary effects are not captured.

357. On GHG emission trends, a question was raised about improvements to the national GHG inventory estimates, including the design and development of computerized quality control tools. New Zealand indicated that it uses an Excel-based tool to check the data reported in the common reporting format for simple errors and omissions, which are then corrected by sector experts. This approach helps to focus attention on the most significant issues across the many common reporting format tables.

358. New Zealand was asked if it considers its NDC to be fair and equitable, which is outside the scope of the MA and was thus not considered by New Zealand.

R. Russian Federation

359. The fourth MA of the Russian Federation took place on 15 June 2021. Questions for the Russian Federation had been submitted in writing two months before the working group session by the following delegations: Canada, EU, New Zealand, Switzerland, United Kingdom and United States. A list of the questions received and the answers provided by the Russian Federation, as well as the webcast of the session, can be found on the MA web page for the Russian Federation.³⁹

360. The working group session was chaired by the additional SBI Rapporteur. The Russian Federation was represented by Alexander Nakhutin from the Institute of Global Climate and Ecology.

361. Mr. Nakhutin made a presentation summarizing the Russian Federation's progress towards achieving its quantified economy-wide emission reduction targets. Under the Convention the Russian Federation made a commitment to reduce its GHG emissions to a level not exceeding 75 per cent of the 1990 level by 2020.

362. Mr. Nakhutin presented the Russian Federation's NDC target under the Paris Agreement, which is to ensure by 2030 a reduction of GHG emissions to 70 per cent compared with the 1990 level, taking into account the maximum possible absorptive capacity of forests and other ecosystems and subject to the Party's sustainable and balanced socioeconomic development.

363. The Party's total GHG emissions excluding emissions and removals from LULUCF decreased by 32.9 per cent between 1990 and 2019 and by 34.2 per cent between 1990 and 2020. Emissions fell considerably between 1990 and 1998 owing to the restructuring of the economy. After 1998 the emission trend stabilized, with slight inter-annual variations driven mainly by fluctuations in GDP and changes in energy consumption and production.

³⁹ https://unfccc.int/MA/Russian_Federation.

364. Mr. Nakhutin presented key PaMs for achieving the Party's 2020 and 2030 targets, focusing on PaMs adopted and implemented in 2020 and 2021 after the submission of the Party's BR4. Recent measures include the federal law on limiting GHG emissions, which introduces mandatory reporting for legal entities with emissions above 150 kt CO₂ eq/year from 2023 and above 50 kt CO₂ eq/year after 2025. The law also provides for the establishment of a carbon unit registry and trading system and for an amendment to the legal framework through the elaboration of a national low-carbon development strategy, a new comprehensive energy efficiency plan and a long-term programme for developing liquefied natural gas production. The development of hydrogen energy is among the PaMs included in the energy strategy of the Russian Federation approved in 2020. Green bonds have been issued at a regional level since 2021 and at a corporate level since 2018. A law on green certificates is planned for 2021, aimed at promoting the development of renewable and low-carbon energy and helping exporters to reduce the carbon footprint of their products.

365. Mr. Nakhutin also presented the Sakhalin regional pilot project, which is aimed at achieving carbon neutrality by 2025 and may be a pivotal example for other regions to follow. The project will involve building a hydrogen production complex and organizing a hydrogen supply chain to foreign markets and local consumers. The first delivery of carbon-neutral liquefied natural gas produced in Sakhalin was arranged in 2020.

366. According to the report on the technical review of the Party's BR4, its total GHG emissions excluding LULUCF in 2020 and 2030 are projected to be 2,177.30 and 2,296.30 Mt CO₂ eq, respectively, under the WEM scenario, which is a decrease of 31.7 and 27.9 per cent, respectively, below the 1990 level. Under the WAM scenario, emissions in 2020 and 2030, amounting to around 2,164.00 and 2,104.00 Mt CO₂ eq, respectively, are projected to be lower than those in 1990 by 32.1 and 34.0 per cent, respectively. The 2020 WEM projection suggests that the Russian Federation expects to achieve its 2020 target under the Convention. The inventory results for 2020 presented by Mr. Nakhutin point to total GHG emissions excluding LULUCF in 2020 of about 2,077 Mt CO₂ eq, or 34.2 per cent below the 1990 level, indicating that the 2020 target has been met.

367. The presentation was followed by interventions and questions from the following delegations: China, EU, India, Luxembourg, Singapore, Switzerland and United Kingdom.⁴⁰

368. On the issue of the key factors driving the increasing GHG emission trends after 1999, the Party explained that the main drivers were the growth in its GDP and population and the rise in living standards, which naturally led to an increase in energy consumption, together with the large share of emissions related to fuel exports (i.e. emissions from oil and gas production and transportation). However, the Russian Federation noted that the carbon intensity of its GDP has fallen owing to the technological modernization taking place in the energy, industry and transport sectors and the general growth in the economy's energy efficiency.

369. On projections, the Party was asked for details of the methodology used to estimate the sensitivity of projections and whether there were difficulties involved in developing the WEM and WAM projections. In response, the Russian Federation explained that complete sensitivity analyses were not performed for projections. The emission scenarios presented in the BR4 were not obtained by directly summing the effects of different measures, but by using more complex models describing the change in emissions over time under the influence of various drivers. According to the simplified analyses, the sensitivity to the GDP annual growth rate is approximately 44 and 69 Mt CO₂ eq per 1 per cent of annual GDP growth in 2025 and 2030, respectively.

370. In addition, the Party was asked to clarify whether the methods used to produce projections vary among regions given that inventory data are collected at a regional level, and to share examples of best practice in relation to the LULUCF sector. In response, the Party explained that, in addition to the bottom-up system of GHG accounting for organizations and companies, a voluntary system of accounting has been established for regions, with a common methodological framework created and adopted by the Ministry of

⁴⁰ Four questions could not be answered by the Russian Federation within the allocated time during the MA. The Party's written responses are available at <https://unfccc.int/event/SBI-may-june-2021#eq-6>.

National Resources and Environment. Many regions collect data and compile their inventories, which are the basis for emission projections.

371. Most of the questions for the Party sought further clarification on reported PaMs and related to:

(a) The latest activities conducted under the State Programme for Forestry Sector Development and the main challenges encountered by the Party in relation to the forestry sector;

(b) The accounting system and institutional arrangements established under the federal law on limiting GHG emissions, and lessons learned in changing the institutional arrangements for domestic measurement, reporting and verification;

(c) Lessons learned from hydrogen energy development and which industrial sectors will be best placed to use this energy;

(d) Experience in mainstreaming climate change and engaging the private sector in GHG emission reduction programmes;

(e) Instruments used by the Government to promote installation of additional capacity and use of energy from renewables, and specific targets and time frames with regard to the share of renewables in the energy mix;

(f) The measures set in the national transport strategy to meet the target of reducing emissions from civil aviation by 34 per cent by 2030 compared with the 2011 level;

(g) Specific examples of PaMs aimed at reducing CH₄ emissions.

372. In response, the Party explained that:

(a) The State Programme for Forestry Sector Development is aimed at the protection, preservation and rehabilitation of forests, mainly in relation to forest fires and felling. The different aspects of forest preservation are also covered by the national strategy for the sector, and sustainable forest management is part of the federal programme on ecology and climate. In 2021 the first phase of a national forest inventory will be finalized using a combination of remote sensing and verification by ground measurements. The Party is also focusing on methodologies to increase the accuracy of estimates for the sector;

(b) The federal law on limiting GHG emissions establishes a system for accounting for GHG emissions to complement the existing inventory system, which covers all large emitters. The annual reports will be verified and maintained in a register and can provide a basis for future PaMs. A legal framework is also being established to allow for the implementation of GHG emission reduction projects resulting in 'carbon units'. There are plans for the carbon unit register to be maintained by an operator – a legal entity authorized by the Government of the Russian Federation. Further details on the institutional arrangements will be specified through the set of legal acts developed and adopted by the Government after the entry into force of the law;

(c) The key players involved in the development of hydrogen energy are Gazprom, Rusal (aluminium industry) and Rosatom (nuclear energy). At present, the project is at the technology development stage, with two technologies under consideration (producing hydrogen from natural gas and from water);

(d) The Russian private sector is involved in the climate change process and many large Russian companies have their own corporate programmes for GHG inventories and emission reduction (e.g. Rusal, Gazprom, Lukoil and companies in the pulp and paper industry) and participate in international initiatives for GHG emission accounting and reduction;

(e) Low-carbon energy production is widely used in the Russian Federation (hydro and nuclear energy account for 37 per cent of total electricity production). Other renewables are responsible for less than 1 per cent of electricity production; the technologies are mainly developed in remote regions that are not connected to the power grids. The existing energy mix is due to the availability of large amounts of relatively cheap fossil fuel resources. The Government has a support programme for renewables and there are plans to increase their

share in the energy mix to 3 per cent by 2035. If technologies for using RES become cheaper, the target may be revised;

(f) It plans to reduce CO₂ emissions from civil aviation by increasing the fuel efficiency of the aircraft fleet (mainly by replacing the current fleet with modern, fuel-efficient models), optimizing the route network, reducing the duration of non-flight operation of aircraft engines and optimizing the energy efficiency of supporting ground activities (e.g. the operation of airport vehicles and special equipment, buildings and structures);

(g) Some PaMs with a specific focus on CH₄ are included in its Energy Strategy 2035 (e.g. closing CH₄-rich mines and increasing open mining, and increasing the use of associated petroleum gas to 95 per cent by 2035) or feature in companies' plans (e.g. Gazprom's long-term programme to reduce CH₄ emissions from gas production, transportation and storage). The specific measures considered for the waste sector are reducing waste disposal by introducing widespread sorting and recycling of municipal solid waste and by recultivating landfills (included in the Ecology national project); incinerating and composting solid waste; and collecting landfill CH₄.

S. Slovakia

373. The fourth MA of Slovakia took place on 4 June 2021. Questions for Slovakia had been submitted in writing two months before the working group session by the following delegations: New Zealand, United Kingdom and United States. A list of the questions received and the answers provided by Slovakia, as well as the webcast of the session, can be found on the MA web page for Slovakia.⁴¹

374. The working group session was chaired by the additional SBI Rapporteur. Slovakia was represented by Milan Zvara from the Emissions Trading Department of the Ministry of the Environment.

375. Mr. Zvara made a presentation summarizing Slovakia's progress towards achieving its quantified economy-wide emission reduction targets. As an EU member State, Slovakia is committed to contributing to the achievement of the joint EU quantified economy-wide emission reduction target of 20 per cent below the 1990 level by 2020. Slovakia's target for ESD sectors is to limit emission growth to 13 per cent above the 2005 level by 2020.

376. Mr. Zvara presented Slovakia's NDC target under the Paris Agreement, which, as an EU member State, is to contribute to the achievement of the EU NDC target to reduce its GHG emissions by 55 per cent below the 1990 level by 2030. Slovakia's target for ESD sectors is to reduce emissions by 12 per cent compared with the 2005 level by 2030, though this was amended in its Low-carbon Development Strategy, which set a more ambitious target of a 20 per cent emission reduction by 2030. As an EU member State, Slovakia has also set a long-term goal to achieve climate neutrality by 2050.

377. The Party's total GHG emissions excluding emissions and removals from LULUCF decreased by 46 per cent between 1990 and 2019, owing mainly to structural changes in the national economy in favour of less-energy-intensive activities and the implementation of stricter air protection legislation; the introduction of fees for basic pollutants; the requirement to use best available technologies for the renovation and construction of new installations; energy efficiency improvements; and significant progress in fuel switching from oil and coal to natural gas and renewables. Mr. Zvara noted that emission trends have stabilized in the last three years, indicating that Slovakia is aware of the additional measures needed for further emission reductions.

378. According to the report on the technical review of the Party's BR4, key PaMs for achieving its GHG emission reduction targets alongside the EU ETS include four overarching policy documents: the Energy Policy, Envirostrategy 2030, the NECP and the Low-Carbon Development Strategy until 2030 with a view to 2050. Mr. Zvara indicated that implemented PaMs have led to the decoupling of GHG emissions and GDP growth, with a 69 per cent reduction in the emission intensity of GDP between 1995 and 2019, and led to a 47 per cent

⁴¹ <https://unfccc.int/MA/Slovakia>.

reduction in GHG emissions per capita between 1990 and 2019 (i.e. from 13.9 to 7.3 t CO₂ eq/capita). Mr. Zvara noted that in 2020 the share of ESD emissions surpassed that of EU ETS emissions, demonstrating the importance of PaMs in sectors such as transport and agriculture, and presented some of the latest PaMs in those sectors, including the Action Plan for the Development of Electromobility, the Strategic Transport Development Plan, the national hydrogen strategy and the Farm to Fork Strategy.

379. Given that its emissions covered by the EU ETS are subject to an EU-wide cap, Slovakia presented the projected level of emissions by 2020 from ESD sectors under the WEM and WAM scenarios, which, according to the report on the technical review of the Party's BR4, is 11.2 and 3.4 per cent, respectively, above the AEA for 2020, despite an overall emission reduction over the historical years. Slovakia expects to meet its 2020 target thanks to its cumulative surplus of AEAs. Mr. Zvara explained that the BR4 projections indicate that the Party will not reach the target for 2030 under the WEM scenario but will narrowly meet it under the WAM scenario. The Party noted that new measures included in the projections after the BR4 submission are under development, including in the transport and agriculture sectors, in support of meeting the 2030 target.

380. The presentation was followed by interventions and questions from the following delegations: Australia, China and India.

381. Questions on GHG emission trends and projections related to:

- (a) The slowing pace of energy intensity reductions after 2014;
- (b) The increasing trend in F-gas emissions across the time series;
- (c) Updates made to projections for the agriculture sector for the BR4 owing to updated input data and changes in methodologies since the BR3.

382. In response, the Party explained that:

(a) The halt in the decreasing trend in emissions in the last few years is linked to the current structure of the industry sector, which is not conducive to further significant emission reductions, and energy efficiency improvements reaching their current limitations. New packages of measures would be needed to maintain the decreasing emission trend, and the Party is working on restructuring the economy in favour of low- and zero-carbon technologies;

(b) The trends in F-gases are due to the increased availability of air conditioning and the rapid uptake of high-capacity refrigeration and cooling systems in the food industry. Existing legislation, control measures, technologies and F-gas alternatives are expected to reduce emissions from F-gases in the coming years;

(c) The improvements to projections in the agriculture sector since the BR3 noted in the BR4 were linked to improved internal approaches to data handling, collecting and processing and quality assurance (e.g. data for pasture and wetlands).

383. Questions on PaMs related to:

- (a) Planned PaMs for agriculture;
- (b) Planned PaMs for the IPPU and waste sectors, where emissions still show an increasing trend;
- (c) Examples of PaMs for low-carbon development that can be adopted by other Parties.

384. In response, the Party explained that:

(a) When its BR4 was prepared, there were no agreed measures to be included in the PaMs and projection scenarios. However, there was a development in the sector after the BR4 submission, and additional measures are now envisaged. The PaMs in question ensure synergy with air-quality goals and are included in different policy documents, including the updated Low-carbon Development Strategy;

(b) These sectors are covered by new legislation. In the waste sector, for example, the bans on landfilling communal waste and the obligations imposed on municipalities with regard to collecting and recycling biological waste are expected to reduce GHG emissions;

(c) Implementing strict air protection legislation after 1990 had a significant impact, and the benefits of investing in the best available technologies are worth highlighting.

T. Spain

385. The fourth MA of Spain took place on 4 June 2021. Questions for Spain had been submitted in writing two months before the working group session by the following delegations: Canada, New Zealand, United Kingdom and United States. A list of the questions received and the answers provided by Spain, as well as the webcast of the session, can be found on the MA web page for Spain.⁴²

386. The working group session was chaired by the additional SBI Rapporteur. Spain was represented by Eduardo González Fernández from the Climate Change Office of the Ministry for the Ecological Transition and the Demographic Challenge.

387. Mr. González Fernández made a presentation summarizing Spain's progress towards achieving its quantified economy-wide emission reduction targets. As an EU member State, Spain is committed to contributing to the achievement of the joint EU quantified economy-wide emission reduction target of 20 per cent below the 1990 level by 2020. Spain's emission reduction target for ESD sectors is 10 per cent below the 2005 level by 2020.

388. Mr. González Fernández presented Spain's Law on Climate Change and Energy Transition adopted on 20 May 2021, which sets a goal to reduce national GHG emissions by at least 49 per cent below the 2005 level by 2030. This translates into GHG emission reductions of at least 60 and 38 per cent for the EU ETS and ESD sectors, respectively. The Law also establishes other goals for 2030, namely achieving shares of at least 42 per cent for renewable energy in final energy consumption and at least 74 per cent for renewable energy in power generation; improving energy efficiency by at least 39.5 per cent compared with the baseline in accordance with European rules; and banning new fossil fuel subsidies and fossil fuel exploration and production. Spain has a long-term goal to achieve carbon neutrality and develop a 100 per cent renewable electricity system by 2050.

389. The Party's total GHG emissions excluding emissions and removals from LULUCF increased by 8.5 per cent between 1990 and 2019, owing mainly to an increase in emissions from power generation and transport. However, the Party stressed that, following a peak in 2005–2007, emissions have since fallen despite continued GDP growth, effectively a decoupling of emissions and GDP. Emissions were 28.9 per cent below the 2005 level in 2019, while population and GDP per capita increased by 8 and 14 per cent, respectively, over the same period. The main driver for the decrease in emissions is the shift from coal to other less-carbon-intensive fuels and renewables in power generation.

390. Mr. González Fernández presented key PaMs for achieving the Party's targets, including the Law on Climate Change and Energy Transition adopted in 2021, the Integrated National Energy and Climate Plan 2021–2030 and the 2050 long-term decarbonization strategy adopted in 2020 (see para. 388 above for examples of goals and PaMs included in the Law on Climate Change and Energy Transition). Spain's Recovery, Transformation and Resilience Plan was highlighted, with 40.3 per cent of the total EUR 69.5 million budget allocated to green transformation, including the implementation of renewable energy, electrical infrastructure, smart grids and storage, renewable hydrogen and an urban agenda. The Plan includes adaptation PaMs.

391. Spain's emissions covered by the EU ETS are subject to an EU-wide cap. According to the report on the technical review of its BR4, the Party's projected level of emissions by 2020 from ESD sectors under the WEM and WAM scenarios is 4.6 and 7.8 per cent, respectively, below the AEA for 2020. Therefore, Spain expects to meet its 2020 target under the WEM scenario. Mr. González Fernández indicated that provisional data show that Spain

⁴² <https://unfccc.int/MA/Spain>.

has met its 2020 targets for both the EU ETS and ESD sectors. Furthermore, the Party expects to meet the ESD target for 2030 under the WAM scenario but not under the WEM scenario and to achieve the 2030 EU ETS target under both scenarios.

392. The presentation was followed by interventions and questions from the following delegations: China, India, Saudi Arabia, Singapore, United Kingdom and United States.

393. Questions on PaMs related to:

- (a) Adaptation measures in Spain;
- (b) The tax on F-gases, specifically the industry sector's reaction to it, its level of success in attracting investment for green technology for F-gases, and other benefits of the tax;
- (c) Sustainable management of resources and the circular carbon economy;
- (d) The long-term strategy for decarbonization;
- (e) Specific measures for addressing challenges arising from the just energy transition.

394. In response, the Party explained that:

(a) It is one of the most vulnerable countries in the EU and adaptation is very important. The 2021 Climate and Energy Law includes a chapter on adaptation and requires the Government to produce a national adaptation plan, to be implemented through work programmes, and to establish a system of indicators to track the impacts of climate change across sectors, including water resources, tourism and coastal management;

(b) Initially, industry players did not react very positively to the tax on F-gases because it added an additional cost for their sector. However, when the Government reached out to industry to explain the tax and its purpose, the reaction improved. Spain is very satisfied with the decrease in F-gas emissions achieved as a result of the tax and the ongoing development of green technologies;

(c) There are strong linkages between circular economy and climate change, as shown by the strategies developed by Spain on circular economy and decarbonization and the level of consistency between the two strategies. For example, the emission reductions considered in the circular economy strategy are fully aligned with the NECP. The circular economy strategy calls for action plans to be developed, and Spain has just approved the 2021–2023 action plans, with a budget of more than EUR 1.5 billion;

(d) The objective of the long-term strategy for decarbonization is to achieve climate neutrality by 2050, with GHG emissions at least 90 per cent below the 1990 level (as a result of measures such as generating electricity from RES only) and unavoidable emissions compensated for through natural carbon sinks. The 2050 climate-neutrality target is also incorporated in Spain's 2021 Climate and Energy Law, making it a very powerful tool for increasing climate action;

(e) In the chapter on the just transition, the 2021 Climate and Energy Law requires a just transition strategy to be developed and introduces just transition agreements between regions, business, municipalities and other stakeholders. There are already 13 signed agreements. In addition, up to 30 per cent of the revenue from auctioning EU emission allowances every year could be allocated to addressing social issues, including the just transition and energy poverty.

395. Questions on targets related to:

(a) Spain's indication that it has met its 2020 target, given that total GHG emissions excluding emissions and removals from LULUCF in 2018 were 15 per cent higher than in 1990;

(b) The fact that Spain's 2030 emission reduction target is relatively low compared with the EU target.

396. In response, the Party explained that:

(a) Total national emissions show an increasing trend until 2005–2007. The trend has since reversed, with a decoupling of the economy and emissions in all sectors, but at different rates. Emissions decreased significantly in the power generation and transport sectors owing to the introduction of renewables, but less so in the agriculture sector. Going forward, according to the NECP, all sectors are expected to contribute to the decrease in emissions under the WEM and WAM scenarios, especially transport (e.g. through electric vehicles). In addition, the 2021 Climate and Energy Law requires all municipalities with more than 50,000 inhabitants to establish low-emission zones for transport, which will help reduce transport emissions in cities;

(b) It considers its 2030 target, which requires it to almost halve its emissions between 2005 and 2030, to be ambitious. Currently, approximately 35 per cent of electricity generation is from RES (mainly hydro, wind and solar). The 2030 target is 74 per cent for renewable energy in power generation, which requires the amount of energy generated from RES to be more than doubled compared with the current level. In addition, per capita emissions in Spain are currently below the EU average and the per capita emissions of many major economies.

397. On projections, Spain was asked about the use of different emission projection methodologies and modelling tools, and related challenges. In response, the Party explained that it used a new model for the NECP, and integrating different projection methodologies resulted in additional challenges. However, its efforts will make integration easier in future, and the new model has additional advantages.

IV. Summary reports on multilateral assessments at the fifty-second to fifty-fifth session of the Subsidiary Body for Implementation

398. The third MA working group session of the fourth cycle of the IAR process was convened during SBI 52–55, from 5 to 6 November 2021, under the guidance of the SBI Chair, SBI Vice-Chair and additional SBI Rapporteur. During the SBI opening plenary, a representative of Ukraine made a statement⁴³ regarding the presentation made by the Russian Federation at the MA working group session in June 2021.

A. Croatia

399. The fourth MA of Croatia took place on 5 November 2021. Questions for Croatia had been submitted in writing two months before the working group session by the following delegations: Canada, EU, Japan, New Zealand, Switzerland, United Kingdom and United States. A list of the questions received and the answers provided by Croatia, as well as the webcast of the session, can be found on the MA web page for Croatia.⁴⁴

400. The working group session was chaired by the SBI Vice-Chair. Croatia was represented by Visnja Grgasovic from the Ministry of the Economy and Sustainable Development.

401. Ms. Grgasovic made a presentation summarizing Croatia's progress towards achieving its quantified economy-wide emission reduction targets. As an EU member State, Croatia is committed to contributing to the achievement of the joint EU quantified economy-wide emission reduction target of 20 per cent below the 1990 level by 2020. Croatia's target for ESD sectors is to limit emission growth to 11 per cent above the 2005 level by 2020.

402. Ms. Grgasovic presented Croatia's NDC target under the Paris Agreement. As an EU member State, Croatia is committed to contributing to the achievement of the EU NDC target to reduce its GHG emissions by 55 per cent below the 1990 level by 2030. Croatia's target is

⁴³ The statement is available at https://www4.unfccc.int/sites/SubmissionsStaging/Documents/202111061752---Statement%20of%20Ukraine_rev.pdf.

⁴⁴ <https://unfccc.int/MA/Croatia>.

to reduce GHG emissions from ESD sectors by 16.7 per cent below the 2005 level by 2030. Croatia has also set a long-term goal to achieve climate neutrality by 2050.

403. The Party's total GHG emissions excluding emissions and removals from LULUCF decreased by 24.1 per cent between 1990 and 2019, owing mainly to factors such as changes in economic activity and energy consumption as a consequence of the war in Croatia, the subsequent recovery of the economy and the 2008 global financial crisis, which had an impact on economic growth in Croatia, leading to a decrease in fuel consumption.

404. Ms. Grgasovic presented key PaMs for achieving the Party's targets, including the newly adopted National Development Strategy, in which the Party committed to achieving climate neutrality by 2050. The Low-Carbon Development Strategy was adopted in June 2021 and the corresponding Action Plan is currently under development. To achieve carbon neutrality, Croatia plans to accelerate the Low-Carbon Development Strategy, for example by increasing the rate of renovation of buildings, speeding up the construction of infrastructure for alternative fuel use for road transport and supporting the purchase of zero-emission vehicles. The Party plans to phase out use of coal by 2033 at the latest. In addition, it has increased its target for the share of renewables to 39 per cent of final energy consumption by 2030 and aims to plant an additional 1 million trees per year to compensate for emissions from tourism.

405. Given that its emissions covered by the EU ETS are subject to an EU-wide cap, Croatia presented the projected level of emissions by 2020 from ESD sectors under the WEM and WAM scenarios, which is 17.7 and 18.1 per cent, respectively, below the AEA for 2020. Therefore, Croatia expects to meet its target under the WEM scenario. It also presented projections under its climate-neutrality scenario up to 2050, which indicate that by 2030 emissions would be 45.7 per cent below the 1990 level.

406. The opening presentation was followed by interventions and questions from the following delegations: Australia, China, India, United Kingdom and United States.

407. Questions on GHG emission trends related to the reasons for the increase in emissions since 2014 and if Croatia has any plans to contain this growth. In response, the Party explained that emissions started to increase in 2014 after the country had recovered from the economic depression after the financial crisis in 2008. However, it has managed to decouple economic growth from emissions since then.

408. Questions on PaMs related to:

(a) Specific plans for institutional arrangements to facilitate effective action and achievement of targets;

(b) Plans to address the steep increase in emissions from the transport sector, which increased by 65.6 per cent between 1990 and 2017, and whether there are any targets for the transport sector, such as in relation to electrification or charging infrastructure;

(c) The plan to establish a hydrogen platform;

(d) The status of implementation of measures for energy efficiency and renewable energy in the residential sector, such as renovating buildings;

(e) The extent to which Croatia is dependent on EU mitigation actions, including those still under development, to achieve domestic emission reductions and targets.

409. In response, the Party explained that:

(a) A committee for preparing the national inventory and a body for implementing PaMs have been established. There are also a coordination group consisting of directors of different ministries and two technical working groups, one for adaptation and one for mitigation, which include broader stakeholders;

(b) Transport is a key concern. Croatia has started to implement more ambitious measures and allocated more than 300 million Croatian kunas in auction revenue for expanding infrastructure for use of alternative fuels and providing subsidies for purchasing zero-emission vehicles. Higher emission standards at the EU level and including the sector in the EU ETS would also help to reduce emissions;

(c) It is in the process of developing its hydrogen strategy, which is expected to be completed by the end of 2021;

(d) It will use 500 million Croatian kunas in auction revenue to support the renovation of buildings up to 2025. Implementation is challenging owing to the recent earthquakes and resulting damage to buildings, which now need to meet higher seismic standards, thus adding to the cost of renovation;

(e) Many EU policies influence emission reductions in Croatia, including the EU ETS, Croatia's target under the ESD and EU-wide LULUCF measures.

B. Iceland

410. The fourth MA of Iceland took place on 5 November 2021. Questions for Iceland had been submitted in writing two months before the working group session by the following delegations: Canada, EU, Germany, Japan, New Zealand, Switzerland, United Kingdom and United States. A list of the questions received and the answers provided by Iceland, as well as the webcast of the session, can be found on the MA web page for Iceland.⁴⁵

411. The working group session was chaired by the SBI Vice-Chair. Iceland was represented by Helga Bardadóttir from the Ministry for the Environment and Natural Resources.

412. Ms. Bardadóttir made a presentation summarizing Iceland's progress towards achieving its quantified economy-wide emission reduction targets. Under the Convention Iceland committed to contributing to the achievement of the joint EU quantified economy-wide emission reduction target of a 20 per cent reduction in emissions below the 1990 level by 2020. Iceland's non-ETS emissions are not covered by the ESD but are subject to a bilateral effort-sharing agreement between Iceland and the EU and its member States that covers all non-ETS sources, including LULUCF. Under the agreement Iceland has cumulative allocated emissions for non-ETS sectors of 15,327.22 kt CO₂ eq for 2013–2020.

413. Ms. Bardadóttir presented Iceland's updated NDC (as at February 2021) under the Paris Agreement, which is to, in conjunction with the EU member States and Norway, contribute to reducing GHG emissions by at least 55 per cent below the 1990 level by 2030. Iceland has also set a long-term goal to achieve climate neutrality by 2040 (at the latest) and to be 'fossil fuel free' by 2050.

414. The Party's total GHG emissions excluding emissions and removals from LULUCF increased by 28 per cent between 1990 and 2019, owing mainly to rising emissions from industrial processes, mostly from energy-intensive aluminium production, and from road transportation, owing to the growth of Iceland's tourism sector.

415. Ms. Bardadóttir presented key PaMs for achieving the Party's targets, including the update in 2020 of the 2017 Climate Action Plan, which now consists of 50 mitigation measures focusing on a rapid clean-energy transition in land transport. Measures include reducing emissions from all major emissions sources (i.e. energy, transport and industry), implementing land-use measures (i.e. afforestation, reforestation and wetland restoration and drainage management) and engaging stakeholders in the preparation of the Climate Action Plan. In addition, Iceland is undertaking regular monitoring and providing annual updates on its progress through status reports.

416. According to the report on the technical review of the Party's BR4, its cumulative emissions from non-ETS sectors in 2013–2017 totalled 12,004 kt CO₂ eq after accounting for LULUCF (using Kyoto Protocol second commitment period accounting methods), which indicates that Iceland has 3,323 kt CO₂ eq remaining in its non-ETS emission budget for 2018–2020. Non-ETS emissions under the WEM scenario are projected to amount to 2,965 kt CO₂ eq in 2020 (excluding LULUCF), which indicates that Iceland is unlikely to meet its 2020 target for non-ETS sectors under the WEM scenario without using units from market-based mechanisms.

⁴⁵ <https://unfccc.int/MA/Iceland>.

417. The opening presentation was followed by interventions and questions from the following delegations: Czechia, EU, India, Japan, Luxembourg, Switzerland and United Kingdom.

418. Questions on PaMs related to:

(a) Iceland's electric vehicle policies and expansion of charging infrastructure to support its transition to a fossil-free transport sector, including the role of government and the public and private sectors in supporting the approach and how changes to regulations in the buildings sector can help to promote installation of charging stations;

(b) The challenges associated with and lessons learned from applying new mitigation technologies, in particular carbon dioxide capture and mineralization and direct air capture;

(c) Clarifying which actors are obliged to pay tax on F-gases and what the revenue is used for;

(d) Examples of mitigation actions in the LULUCF sector;

(e) Measures to address emissions from the industry sector, namely those related to aluminium production;

(f) Costs and timelines for implementing Iceland's new electric ferries;

(g) Experience and lessons learned from geothermal energy production and opportunities to share the technology with other interested Parties.

419. In response, the Party explained that:

(a) The Government has played – and will continue to play – a major role in expanding electric vehicle charging infrastructure, including by providing financial support to both individuals and private businesses to cover up to 50 per cent of the cost of installation, as well as to hotels and tourist areas to install charging stations around the main ring road in Iceland. The Government has also changed the building codes and regulations to require both new buildings and major renovations of existing buildings to include electric vehicle charging infrastructure. Additionally, there have been tax exemptions for electric vehicles since 2012, which, combined with expanding charging infrastructure and comparatively cheaper electricity (relative to gasoline), has helped to increase uptake of electric vehicles;

(b) The existing direct air capture plant uses new technology and is still relatively small. The plant operates in collaboration with Carbfix, where CO₂ is injected below the earth's surface into the basalt rock layer where it mineralizes within two years. The Party sees this as a technology that may have broader application in the future;

(c) Importers of F-gases are responsible for paying the tax, which goes directly into the State budget;

(d) The Government is supporting a range of measures, including providing incentives to landowners to implement mitigation actions in the LULUCF sector. Similarly, the Government is implementing various measures on State-owned land that combine mitigation and other objectives, such as conservation of biodiversity. These measures are expected to play a key role in helping Iceland reach its 2030 target as well as its longer-term objective of carbon neutrality. The Party is also working to reduce the uncertainty of its estimates of LULUCF emissions and removals;

(e) Measures to address industrial emissions from aluminium production are taken through the EU ETS as smelters are covered, and, as a result, there are no additional domestic measures in place to reduce emissions from the sector;

(f) Although there are relatively few ferries in Iceland, the transition to electric ferries is seen as a significant improvement in maritime transport;

(g) It has supported a number of geothermal projects in Africa and China, where expertise in implementing district heating programmes has been shared.

420. Iceland was requested to provide further information on its national adaptation plan and strategy, as well as on synergies and co-benefits between mitigation and adaptation

measures. In response, the Party clarified that it issued its first adaptation strategy in September 2021, which focused on existing programmes and strategies and identified action to address any gaps in the existing adaptation programmes. Iceland indicated that its adaptation programmes are in their early stages and are focused on generating and sharing adaptation-related knowledge. The Party expects adaptation to be mainstreamed in all government planning and decision-making in the future. It is exploring diverse climate change related measures such as revegetating slopes to reduce the risk of avalanches and coordinating meteorological experts to identify climate risks, and remains open to learning from the experience of other Parties.

C. Kazakhstan

421. The fourth MA of Kazakhstan took place on 5 November 2021. Questions for Kazakhstan had been submitted in writing two months before the working group session by the following delegations: EU, Germany, Japan, New Zealand, United Kingdom and United States. A list of the questions received and the answers provided by Kazakhstan, as well as the webcast of the session, can be found on the MA web page for Kazakhstan.⁴⁶

422. The working group session was chaired by the SBI Vice-Chair. Kazakhstan was represented by Ainur Kopbaeva from the Ministry of Ecology, Geology and Natural Resources.

423. Ms. Kopbaeva made a presentation summarizing Kazakhstan's progress towards achieving its quantified economy-wide emission reduction targets. Under the Convention Kazakhstan made a commitment to reduce its GHG emissions by 15 per cent below the 1990 level by 2020.

424. According to the report on the technical review of its BR4, Kazakhstan's NDC under the Paris Agreement has unconditional and conditional targets, namely to reduce GHG emissions by 15 and 25 per cent, respectively, below the 1990 level by 2030. Kazakhstan has also set a long-term goal to increase the share of alternative and renewable sources in energy production to 50 per cent by 2050 and announced a plan to achieve carbon neutrality by 2060.

425. According to the same report, the Party's total GHG emissions excluding emissions and removals from LULUCF decreased by 1.3 per cent between 1990 and 2018, owing mainly to the restructuring of Kazakhstan's economy in the 1990s, which was marked by an overall decline in economic output and energy consumption, with the lowest level of emissions in 1999, and then rapidly increasing emissions owing to population growth, economic recovery and transformation, and the discovery and large-scale production and export of oil and gas in 2000–2018.

426. Also according to that report, Kazakhstan's main policy framework relating to energy and climate change, the Kazakhstan 2050 Strategy, provides the development framework for the country's transition to a low-carbon green economy, which is further defined in its concept for transition to a green economy and the related action plan for 2013–2020. Key legislation supporting Kazakhstan's climate change goals includes the Environmental Code, adopted in 2007, which includes the ETS that covers 225 facilities in the energy and industrial processes sectors and is based on the benchmark allocation approach.

427. Ms. Kopbaeva presented key PaMs for achieving and implementing the Party's NDC, including further decreasing the energy and carbon intensity of the Party's GDP, decreasing coal use in electricity production, lowering the cap on emissions in the ETS and increasing the carbon price, and introducing a carbon tax for small-scale emitters.

428. Kazakhstan's total GHG emissions excluding emissions and removals from LULUCF in 2020 and 2030 are projected to be, under the WEM scenario, 5.2 per cent below and 7.0 per cent above, respectively, the 1990 level. Under the WAM scenario, emissions in 2020 and 2030 are expected to be 4.7 per cent below and 3.9 per cent above, respectively, the 1990 level. The 2020 WEM projection suggests that Kazakhstan faces challenges in achieving its

⁴⁶ <https://unfccc.int/MA/Kazakhstan>.

2020 target under the Convention, particularly taking into account that it reported in its BR4 that it does not plan to make use of market-based mechanisms.

429. The opening presentation was followed by interventions and questions from the following delegations: Australia, China, Czechia, EU, India, Japan, Slovakia and United Kingdom.⁴⁷

430. Questions on PaMs related to:

(a) The emission reduction impacts of PaMs envisaged in the Strategic Plan of the Ministry of Energy for 2017–2021;

(b) Challenges in implementing PaMs for addressing fugitive CH₄ emissions in the energy sector;

(c) Any planned PaMs in the agriculture sector aimed at mitigating projected emissions, particularly CH₄ and N₂O emissions from livestock, rice cultivation and agricultural soils;

(d) Challenges and lessons learned in building collaboration between government, the business sector, civil society and academia for implementing climate change policies;

(e) Experience and lessons learned from renewable energy auctions;

(f) Planned PaMs in the State Programme for Industrial and Innovative Development for 2015–2019, particularly those aimed at increasing the output of industrial processes while decreasing the power intensity;

(g) The time needed to achieve the envisaged increase of the carbon price from USD 1.1 to 50.8 and ensuring the stability of the ETS.

431. In response, the Party explained that:

(a) According to the State planning reform, responsibility for GHG emission mitigation has been transferred to the newly created Ministry of Ecology, Geology and Natural Resources. The goals for GHG emission reduction are included in the Strategic Plan of the Ministry for 2020–2024, including to decrease emissions by 5 per cent below the 1990 level by 2020, with subsequent reductions of 1 per cent/year until 2030;

(b) There are currently no plans or programmes in place to address fugitive CH₄ emissions in the energy sector, but there is a plan to include them in the next phase of the ETS;

(c) Measures in the agriculture sector include diversifying agricultural crops, phasing out water-intensive crops, switching to water-saving technologies, modernizing drip irrigation and related infrastructure, and taking into account changes and redistribution of river flow over the year. Other measures include shifting to modern organic farming and better soil management to maintain carbon, changing animal feed to reduce CH₄ emissions from cattle and prevent overgrazing, and responsible management and conservation of pastures. One planned activity is to conduct an agroclimatic assessment zoning of the territory, taking into account the observed changes in the conditions for growing crops;

(d) Collaboration between all stakeholders needs to be further improved, particularly in developing approaches to achieving the NDC by 2030 and carbon neutrality in the long term;

(e) Renewable energy auctions have turned out to be a tool that suits all participants, namely investors, the State and society, and they significantly reduce risks for project developers and help attract financial support on favourable terms. The essence of the auction is that the investor promises the lowest production price per kWh green electricity. At that price, a contract for 20 years is concluded with the investor (according to the latest auctions), which guarantees the sale;

⁴⁷ As requested by the Party, written responses were provided to six questions and are available at <https://unfccc.int/MA/Kazakhstan#eq-1>.

(f) According to the Environmental Code of Kazakhstan, it is expected that the 50 largest companies in the country, which account for 80 per cent of its emissions, will replace their old technologies with the best available technologies by 2025 and thus further reduce emissions;

(g) As part of implementing the NDC and in accordance with the Environmental Code, Kazakhstan is making efforts to revitalize and strengthen the carbon market by reducing the issuance of free allowances in the ETS. According to experts' estimates, reaching the maximum carbon price is possible by 2030, but this is dependent on many factors that can influence the price.

432. Questions on targets related to:

- (a) The achievement of 2020 targets related to the energy intensity of GDP;
- (b) Progress towards achieving renewable energy targets in 2020.

433. In response, the Party explained that:

(a) By 2020 it had achieved an approximate 20 per cent reduction of the energy intensity of GDP below the 2008 level and therefore progress is being made towards the target (25 per cent reduction below the 2008 level);

(b) By 2020 it had achieved close to 4 per cent of renewable energy in power generation, which is above the target of 3 per cent set in the Strategic Plan of the Ministry of Energy for 2017–2021. More specifically, the volume of electricity generated from RES in 2020 amounted to 3.24 billion kWh against the planned 3.15 billion kWh. In 2020, 25 renewable energy projects were implemented with a total electricity production capacity of 583 MW.

434. Questions on GHG emission trends related to:

- (a) Why LULUCF is a net emitting sector and steps envisaged to enhance removals;
- (b) The emission fluctuations in the other sectors category in 2001–2017.

435. In response, the Party explained that:

(a) LULUCF is a net emitting sector owing to the soil degradation processes and subsequent loss of carbon in the cropland category, but other categories in the LULUCF sector are net sinks. Kazakhstan is developing mitigation measures to address emissions from cropland;

(b) The fluctuations are due mainly to the impacts of the global economic crises that occurred in 2001–2017 on the economic development of Kazakhstan.

D. Liechtenstein

436. The fourth MA of Liechtenstein took place on 5 November 2021. Questions for Liechtenstein had been submitted in writing two months before the working group session by the following delegations: EU, New Zealand, Switzerland, United Kingdom and United States. A list of the questions received and the answers provided by Liechtenstein, as well as the webcast of the session, can be found on the MA web page for Liechtenstein.⁴⁸

437. The working group session was chaired by the SBI Vice-Chair. Liechtenstein was represented by Heike Summer from the Office of Environment.

438. Ms. Summer made a presentation summarizing Liechtenstein's progress towards achieving its quantified economy-wide emission reduction targets. Under the Convention Liechtenstein made a commitment to reduce its GHG emissions by 20 per cent below the 1990 level by 2020.

⁴⁸ <https://unfccc.int/MA/Liechtenstein>.

439. Ms. Summer presented Liechtenstein's NDC target under the Paris Agreement, which is to reduce GHG emissions by 40 per cent below the 1990 level by 2030. Liechtenstein has also set a long-term goal to achieve net zero emissions by 2050.

440. The Party's total GHG emissions excluding emissions and removals from LULUCF decreased by 18.1 per cent between 1990 and 2019, owing mainly to factors such as fuel prices (influenced by, inter alia, the CO₂ levy on fuels) and the intensified efforts to reduce fuel combustion activities in the energy sector, particularly in transport.

441. Ms. Summer presented key PaMs for achieving the Party's targets, including the CO₂ Act (currently being revised), participation in the EU ETS (although Liechtenstein is not an EU member State), the Energy Efficiency Act and the Energy Strategy for 2030. The Party is preparing a long-term low-emission development strategy to facilitate progress towards its net zero goal by 2050, and intends to update its NDC, with both the 2050 goal and the updated NDC subject to parliamentary approval.

442. Ms. Summer highlighted that, as an alpine country, Liechtenstein is vulnerable to climate change. Average temperatures in the country have risen by 2 °C over the last 150 years. The Party's national adaptation strategy was published in 2018, with plans to update it soon.

443. Liechtenstein's total GHG emissions excluding emissions and removals from LULUCF in 2020 and 2030 are projected to be 187.55 and 168.43 kt CO₂, respectively, under the WEM scenario, which is a decrease of 18.1 and 26.4 per cent, respectively, below the 1990 level. Under the WAM scenario, emissions in 2020 and 2030, amounting to 187.26 and 155.55 kt CO₂ eq, respectively, are projected to be lower than those in 1990 by 18.2 and 26.4 per cent, respectively.

444. The 2020 WEM projection suggests that Liechtenstein expects to achieve its 2020 target under the Convention by using units from market-based mechanisms.

445. The opening presentation was followed by interventions and questions from the following delegations: China, Czechia, EU, India, Luxembourg, Switzerland and United Kingdom.

446. One question on GHG emission trends related to the sources of energy-related emissions reported in common tabular format table 1.A.4 under the sector other. The Party responded that they are heating-related emissions from buildings that are mostly determined by the external temperature. Liechtenstein noted that, as part of its Energy Efficiency Act, it is promoting use of insulation, replacement of windows and other mitigation measures, which are supported by the provision of renovation subsidies.

447. Questions on PaMs related to:

(a) Education and awareness-raising approaches used to engage the public and civil society as part of the Energy Strategy for 2030;

(b) Assumptions related to the achievement of the Net Zero Strategy by 2050 regarding the need for GHG removals, such as those related to carbon sinks or CCS;

(c) Innovations in relation to wastewater treatment and discharge;

(d) Measures to reduce emissions from industrial processes;

(e) Achievements and lessons learned in implementing the Energy Strategy for 2020, and key changes reflected in the Energy Strategy for 2030;

(f) Measures, including regulations and incentives, used to increase generation of solar power;

(g) Transport sector policies aimed at addressing the large share of cross-border commuters and the associated emissions;

(h) The Party's experience of being the smallest country participating in the EU ETS.

448. In response, the Party explained that:

(a) It collaborated with a foundation to develop two youth engagement projects, Energy Pioneers and Climate Pioneers, which involved all schoolchildren in discussions on the importance of energy efficiency and climate mitigation;

(b) Under its Climate Vision 2050, it intends to reduce all domestic GHG emissions prior to engaging in negative-emission technologies. ‘Natural’ carbon sink projects are under consideration, but their implementation depends on the outcome of the negotiations related to Article 6 of the Paris Agreement;

(c) Innovations include efforts to capture phosphorus in order to reduce long-term use of synthetic fertilizers;

(d) Reducing emissions from industrial processes is covered by the Energy Efficiency Act, and the CO₂ levy also addresses the sector;

(e) The Energy Strategy for 2020 was a useful basis for developing the Energy Strategy for 2030. While some measures were added, the focus was on enforcing the existing measures, including subsidies for solar panels and renovation of buildings. The 2030 Strategy is linked to the Climate Vision for 2050, which envisions a fossil-fuel-free energy sector and increased energy efficiency;

(f) As part of the Energy Efficiency Act, subsidies were provided for installation of solar panels;

(g) To reduce emissions from the transport sector, it had envisioned a range of measures, but the country remains highly dependent on cross-border commuters. Moreover, as Liechtenstein’s Mobility Concept is currently under review, a stronger focus is expected on public transport, including buses and bus lanes. Although there are already mobility management systems in place, the Government is reviewing additional measures for the sector;

(h) It has two installations in the EU ETS. Over time they have achieved significant emission reductions and can now benefit from the small emitters provisions and are thus currently in the process of being excluded from the EU ETS. Liechtenstein noted that, in terms of disadvantages, participation in the EU ETS involves a considerable administrative burden, particularly if only a small number of installations participate.

E. Luxembourg

449. The fourth MA of Luxembourg took place on 5 November 2021. Questions for Luxembourg had been submitted in writing two months before the working group session by the following delegations: Canada, Japan, New Zealand, United Kingdom and United States. A list of the questions received and the answers provided by Luxembourg, as well as the webcast of the session, can be found on the MA web page for Luxembourg.⁴⁹

450. The working group session was chaired by the SBI Vice-Chair. Luxembourg was represented by André Weidenhaupt from the Ministry of the Environment, Climate and Sustainable Development.

451. Mr. Weidenhaupt made a presentation summarizing Luxembourg’s progress towards achieving its quantified economy-wide emission reduction targets. As an EU member State, Luxembourg is committed to contributing to the achievement of the joint EU quantified economy-wide emission reduction target of 20 per cent below the 1990 level by 2020. Luxembourg’s emission reduction target for ESD sectors is 20 per cent below the 2005 level by 2020.

452. As an EU member State, Luxembourg is committed to contributing to the achievement of the EU NDC target to reduce its GHG emissions by 55 per cent below the 1990 level by 2030. Luxembourg’s target is to reduce GHG emissions from ESD sectors by 40 per cent below the 2005 level by 2030. As part of its 2020 Climate Law, Luxembourg has also set a unilateral national target of reducing its ESD emissions by 55 per cent below the 2005 level

⁴⁹ <https://unfccc.int/MA/Luxembourg>.

by 2030 as well as a long-term objective of achieving climate neutrality by 2050, and is currently identifying the main areas of focus and measures needed for meeting the 2050 objective.

453. The Party's total GHG emissions excluding emissions and removals from LULUCF decreased by 27 per cent between 1990 and 2019, owing mainly to changes in the energy mix, including fuel switching, structural changes in the energy and industry sectors, and a significant decrease in the carbon intensity of its ESD sectors. Luxembourg was the EU member State with the second-lowest GHG emission intensity in 2019. Total GHG emissions per capita in Luxembourg fell from 27.8 t CO₂ eq in 2005 to 14.6 t CO₂ eq in 2020. Luxembourg's 2030 target, as enshrined in its national Climate Law, is to reach a GHG emission intensity of 5.9 t CO₂ eq per capita.

454. Mr. Weidenhaupt presented key PaMs for achieving the Party's targets, including Luxembourg's 2020 Climate Law, which establishes the legal and institutional framework for achieving its short-, medium- and long-term goals and sets out sectoral targets; its NECP, which serves as a road map for 2021–2030 towards a low-carbon future; and the National Long-Term Strategy for Climate Action, which serves as a road map towards climate neutrality by 2050. Mr. Weidenhaupt noted that these measures are aimed at helping Luxembourg overcome a number of challenges, including high population growth, a large number of cross-border commuters, its relatively small size compared with other EU member States, and its high dependence on energy imports.

455. Mr. Weidenhaupt also presented the roles of various institutions in supporting the overall climate plan, including the Climate Action and Energy Transition Platform, which provides policy advice; the Climate Policy Observatory, which provides scientific advice; the Interdepartmental Committee for Climate Action, which assists in monitoring, assessing and revising climate PaMs; and the Energy and Climate Fund for financing climate action. Additionally, Mr. Weidenhaupt noted recent developments, such as the January 2021 adoption of a carbon tax, and the implementation of the second phase of the Climate Pact, a climate awareness-raising initiative across all of Luxembourg's municipalities.

456. Given that its emissions covered by the EU ETS are subject to an EU-wide cap, Luxembourg presented the projected level of emissions by 2020 from ESD sectors under the WEM and WAM scenarios, which is 0.4 and 5.5 per cent, respectively, below the AEA for 2020. Therefore, Luxembourg expects to meet its 2020 target under the WEM scenario.

457. The opening presentation was followed by interventions and questions from India and the United Kingdom.

458. Questions on GHG emission trends related to the large fluctuations in emissions from the LULUCF sector (i.e. changing from net sink to net source) in 1991–2018 and the more recent significant increase in removals between 2017 and 2018. In response, the Party explained that the time series of emissions and removals from the LULUCF sector has fluctuated over time, owing in part to high windthrow-related emissions associated with windstorms in 1990–1991, as well as to the periodic (i.e. in 5- to 10-year intervals) collection of forest inventory data, which can result in significant recalculations of the time series. Luxembourg noted that, owing to the limitation on the use of LULUCF removals towards targets within the EU, it had not put in place many forest-related mitigation measures for 1990–2020; however, now that LULUCF removals are permitted to be used towards the EU 2030 target, it is planning to implement various measures in the sector, including improving data collection methods (e.g. using satellite imagery) and revising the forest emission estimates for the next national GHG inventory.

459. Questions on PaMs related to:

- (a) The Party's experience in coordinating climate actions across different levels of government, given that many of Luxembourg's municipalities are relatively autonomous;
- (b) The impact of various transport sector measures implemented in recent years.

460. In response, the Party explained that:

- (a) The legal framework governing Luxembourg's 102 municipalities grants the municipalities a high degree of autonomy. Given the absence of any intermediary level of

government between municipalities and the national Government, and the importance of local action, Luxembourg established its Climate Pact in 2013 and updated it for a second phase in 2020. The Pact establishes a legal framework, which initially asks for voluntary adherence to a set of climate measures but evolves into mandatory obligations with periodic assessment of progress. Over time the Pact helps to establish different levels of engagement, which help to spur competition between municipalities and establish benchmarks for action. Despite its initial voluntary nature, all municipalities joined the first phase of the Pact and more than 90 had joined the second phase as of mid-2021. Luxembourg highlighted how the revenue generated by the tax on fuel sales is used to provide subsidies for supporting various mitigation measures (e.g. renewable energy programmes), which has helped to increase the participation of municipalities;

(b) It has implemented a suite of measures to address emissions from the transport sector. One measure is aimed at increasing the sale of electric vehicles and, to date, a share of 17 per cent electric vehicles in the total fleet has been achieved. Other measures include providing support for free public transport, increasing use of second-generation biofuels, and a CO₂ tax on fuel sales introduced in 2021, including planned annual tax increases for non-residents of Luxembourg. The CO₂ tax has so far proven to be an effective way to decrease the price differential on fuel between Luxembourg and its three neighbouring countries and thereby reduce the sale of fuel to non-residents.

F. Monaco

461. The fourth MA of Monaco took place on 6 November 2021. Questions for Monaco had been submitted in writing two months before the working group session by the following delegations: EU, Switzerland, United Kingdom and United States. A list of the questions received and the answers provided by Monaco, as well as the webcast of the session, can be found on the MA web page for Monaco.⁵⁰

462. The working group session was chaired by the additional SBI Rapporteur. Monaco was represented by Jérémie Carles from the Department of Environment.

463. Mr. Carles made a presentation summarizing Monaco's progress towards achieving its quantified economy-wide emission reduction targets. Under the Convention Monaco made a commitment to reduce its GHG emissions by 30 per cent below the 1990 level by 2020.

464. Mr. Carles presented Monaco's updated NDC target (as at 24 December 2020) under the Paris Agreement, which is to reduce GHG emissions by 55 per cent below the 1990 level by 2030. Monaco has also pledged to achieve carbon neutrality by 2050. Both targets cover all sectors and GHGs.

465. The Party's total GHG emissions excluding emissions and removals from LULUCF decreased by 19.6 per cent between 1990 and 2019, owing mainly to the decrease in emissions in the buildings and transport sectors, although they remain the two highest-emitting sectors. Emissions in the buildings sector were reduced by switching from oil to natural gas for heating and implementing district heating systems, and transportation emissions by implementing EU CO₂ standards and biofuel requirements.

466. Mr. Carles presented key PaMs for achieving the Party's targets. In the transport sector, this includes providing subsidies for clean mobility, developing public transport infrastructure and deploying electric buses. In the buildings sector, key measures include banning use of fuel oil for heating and hot water in buildings by 2022; developing large district heating and cooling networks; introducing energy audit requirements for older buildings (by 2022) and others (by 2028), and requirements for environmental certification for the construction and renovation of buildings; producing green electricity; and providing financial support for renovations and renewable energy production. In the waste sector, key measures include establishing a waste management plan by 2030, including a target to phase out single-use plastic by 2030.

⁵⁰ <https://unfccc.int/MA/Monaco>.

467. According to the report on the technical review of its BR4, Monaco's total GHG emissions excluding emissions and removals from LULUCF in 2020 and 2030 are projected to be 77.88 and 59.13 kt CO₂, respectively, under the WEM scenario, which is a decrease of 23.3 and 41.8 per cent, respectively, below the 1990 level. Under the WAM scenario, emissions in 2020 and 2030, amounting to around 74.46 and 50.86 kt CO₂ eq, respectively, are projected to be lower than those in 1990 by 26.7 and 49.9 per cent, respectively.

468. The 2020 WEM projection suggests that Monaco may face challenges in achieving its 2020 target under the Convention without using flexible mechanisms. Monaco confirmed that it intends to use market-based mechanisms to achieve its target.

469. The opening presentation was followed by interventions and questions from the following delegations: Australia, China, EU, Luxembourg, Saudi Arabia, Slovakia, Switzerland and United Kingdom.

470. Questions on GHG emission trends related to emissions from incineration and construction in the buildings sector, why emissions from that sector have increased over time, and any measures Monaco is considering for reducing them. In response, the Party provided reasons why emissions from the sector have increased, including increased use of F-gases, ongoing waste incineration and increased fuel use associated with the construction of a new waste management facility.

471. Questions on PaMs related to:

(a) The construction of the new waste incineration plant to address environmental impacts of waste and the new sorting facility;

(b) Challenges in encouraging citizens and businesses to sign up to the National Energy Transition Pact and any advice for other Parties considering such an approach;

(c) The implementation of the ban on use of fuel oil for heating buildings by 2022, including which buildings will be affected and any impacts on buildings with built-in fuel oil heating systems;

(d) Experience with fluctuations in road transport emissions due to shifts in fuel prices in comparison with neighbouring countries and any associated challenges in implementing domestic transport policies;

(e) The evaluation of PaMs, including measures that were successfully evaluated and those that were more challenging to evaluate;

(f) How Monaco assesses the impact of response measures;

(g) How Monaco is expanding its charging infrastructure to support the uptake of clean electric and hybrid vehicles.

472. In response, the Party explained that:

(a) The new waste incineration plant is planned for construction in 2025–2030 and the objective is to reduce emissions from waste incineration. Options are being explored for limiting different pollutants and the incineration of plastic, including enforcing legislation;

(b) The Energy Transition Pact is one way of involving the public and private sectors in the energy transition. Monaco is implementing the second phase of the Pact, which will involve the general public, industry and the public sector. Originally launched in 2018, the Pact has proven to be an important tool for mobilizing the population and has since been signed by 1,500 individuals and 200 companies, representing more than 25 per cent of Monaco's employees. The Pact will be reviewed in 2022;

(c) The ban on use of fuel oil is one of its main measures for reducing emissions from the buildings sector. Use of fuel oil has been banned since 2003 for heating new buildings and sanitary water, and from 2022 onward its use will be banned for all buildings. Fuel oil energy will be substituted by connecting buildings to district heating and cooling networks or by generating electricity with natural gas;

(d) For a small country like Monaco it is very difficult to successfully evaluate measures taken within the transport sector. While information on fuel sales forms the basis

of the assessment of this measure for the purpose of the BR, other evaluations are also used, including territorial and vehicle fleet assessments. Monaco explained that it is challenging to evaluate the impact of measures related to fuel sales given the country's high urbanization and expensive fuel distribution networks, and the potential for lower fuel prices in neighbouring countries;

(e) Assessing the impact of transport measures is based on the vehicle fleet and the evolution of fuel demand. Monaco plans to implement several new transport policies, including new carpooling systems, electric bike sharing and post-pandemic incentives, and noted that, by the end of 2021, 10 per cent of its vehicle fleet would be electric or hybrid, with plans to move towards a fully electric fleet by 2030;

(f) It considers the impacts of its PaMs, in comparison with global GHG emissions, to be negligible;

(g) With the introduction of a green fund, it is working with the national energy provider to ensure that all new construction includes charging facilities for electric cars. In addition, Monaco will work to ensure that sufficient energy supply is accessible in both public and private parking areas.

G. Poland

473. The fourth MA of Poland took place on 6 November 2021. Questions for Poland had been submitted in writing two months before the working group session by the following delegations: Japan, New Zealand, United Kingdom and United States. A list of the questions received and the answers provided by Poland, as well as the webcast of the session, can be found on the MA web page for Poland.⁵¹

474. The working group session was chaired by the additional SBI Rapporteur. Poland was represented by Paweł Różycki from the Ministry of Climate and Environment.

475. Mr. Różycki made a presentation summarizing Poland's progress towards achieving its quantified economy-wide emission reduction targets. As an EU member State, Poland is committed to contributing to the achievement of the joint EU quantified economy-wide emission reduction target of 20 per cent below the 1990 level by 2020. Poland's emission target for ESD sectors is 14 per cent above the 2005 level by 2020.

476. Mr. Różycki presented Poland's NDC target under the Paris Agreement. As an EU member State, Poland is committed to contributing to the achievement of the EU NDC target to reduce its GHG emissions by 55 per cent below the 1990 level by 2030. Previously, the EU had an NDC target to reduce GHG emissions by 40 per cent below the 1990 level by 2030, and Poland's target was to reduce GHG emissions from ESD sectors by 7 per cent below the 2005 level by 2030. Under the EU's updated NDC target, Poland's target remains to be agreed. The European Council endorsed in December 2019 the objective of making the EU climate-neutral by 2050. As part of the European Green Deal, the European Commission proposed in March 2020 to enshrine the 2050 climate-neutrality target in the first European Climate Law. The 2050 target will also apply to Poland as an EU member State.

477. Poland's total GHG emissions excluding emissions and removals from LULUCF decreased by 13.1 per cent between 1990 and 2018, owing mainly to factors such as economic restructuring and modernization of energy-intensive industrial processes in the early 1990s; stricter environmental policy, particularly following Poland's accession to the EU in 2004; and the economic downturn in the late 2000s.

478. Mr. Różycki presented key PaMs for achieving the Party's targets, including the EU ETS and, at the national level, with the aim of achieving its ESD target, the Energy Security and Environment Strategy and the Operational Programme Infrastructure and Environment (2014–2020). The National Fund for Environmental Protection and Water Management supports many areas linked to climate protection, recently introducing the Clean Air Priority Programme, targeting, among others, energy efficiency in residential buildings. Furthermore,

⁵¹ <https://unfccc.int/MA/Poland>.

the My Electricity Priority Programme supports electricity production at micro photovoltaic installations.

479. Given that its emissions covered by the EU ETS are subject to an EU-wide cap, Poland presented the projected level of emissions by 2020 from ESD sectors under the WEM and WAM scenarios, which is 3.4 and 4.8 per cent, respectively, below the AEA for 2020. Therefore, Poland expects to meet its 2020 target under the WEM scenario.

480. The opening presentation was followed by interventions and questions from the following delegations: China, India, Republic of Korea, Saudi Arabia and United Kingdom.

481. Questions on PaMs related to:

- (a) Plans to reduce dependency on coal and natural gas;
- (b) Reasons for the increase in emissions from the agriculture sector and decrease in removals from forestry and land-use change under both the WEM and WAM scenarios by 2030;
- (c) Lessons learned from the My Electricity Priority Programme;
- (d) Challenges in reporting on economic and social consequences of response measures;
- (e) The consultations to establish Poland's target under the ESR and how they will ensure that Poland is allocated a just and fair share of the effort;
- (f) Challenges with regard to the energy transition.

482. In response, Poland explained that:

- (a) Projections indicate that the share of coal in electricity production will decrease to between 37 and 56 per cent of total power generation by 2030, depending on prices of emission allowances under the EU ETS. By 2040 the share of coal is projected to decrease to 11–28 per cent. Natural gas is seen as a transition fuel while decreasing the share of coal;
- (b) The projected increase in emissions from agriculture by 2030 is due to a projected increase in livestock numbers. The sink in the forestry and land-use sector is projected to decrease by 2030 owing to the changing age structure of Polish forests;
- (c) The My Electricity Priority Programme showed that best results were achieved when the solar micro photovoltaic installations were combined with energy efficiency measures in residential buildings, including heat pumps for heating purposes and individual charging stations for electric vehicles;
- (d) Social and economic consequences of response measures at the EU level are assessed first as part of the impact assessment for each EU legislative proposal. A further assessment step takes place for impacts at the national level and specific Polish regions likely to be most affected by a specific policy. With regard to the energy transition, the region of Silesia will be most affected and for this reason data will be collected for the assessment of impacts in Silesia. Poland will continue to engage with the European Commission in relation to the impacts of the implementation of policies;
- (e) The negotiation of the ESR target follows the existing procedures, whereby all EU member States are engaged in negotiations on various aspects of the ESR regulation and the targets attributed to each member State;
- (f) The EU energy transition leads to a number of social challenges. Silesia is the region most affected in Poland. Poland implemented just transition plans to provide adequate financial support for the transition, which include generating new jobs and retraining workers. A further challenge is the higher energy prices for society. Poland foresees that additional measures will be required for Poland's energy transition.

H. Romania

483. The fourth MA of Romania took place on 6 November 2021. Questions for Romania had been submitted in writing two months before the working group session by the following delegations: Japan, New Zealand and United Kingdom. A list of the questions received and the answers provided by Romania, as well as the webcast of the session, can be found on the MA web page for Romania.⁵²

484. The working group session was chaired by the additional SBI Rapporteur. Romania was represented by Sorin-Ionut Banciu from the Ministry of Environment, Waters and Forests.

485. Mr. Banciu made a presentation summarizing Romania's progress towards achieving its quantified economy-wide emission reduction targets. As an EU member State, Romania is committed to contributing to the achievement of the joint EU quantified economy-wide emission reduction target of 20 per cent below the 1990 level by 2020. Romania's target for ESD sectors is to limit its emission growth to 19 per cent above the 2005 level by 2020.

486. Mr. Banciu presented Romania's NDC target under the Paris Agreement. As an EU member State, Romania is committed to contributing to the achievement of the EU NDC target to reduce its GHG emissions by 55 per cent below the 1990 level by 2030. Romania's target is to reduce GHG emissions from ESD sectors by 2 per cent below the 2005 level by 2030.

487. The Party's total GHG emissions excluding emissions and removals from LULUCF decreased by 53.2 per cent between 1990 and 2018, owing mainly to the decline in economic activity in energy-intensive industries during the transition to a market-based economy. Between 1996 and 2000, emissions decreased by 24.5 per cent, owing mainly to a change in the energy mix: a nuclear power plant started operation in 1996, contributing about 10 per cent of total electricity production. In 2008–2010 emissions decreased significantly (by 17.2 per cent) as a result of the decline in economic activity owing to the global financial crisis. During the economic recovery, Romania's emissions decreased slightly, by 6.5 per cent, between 2010 and 2018, with a notable increase in electricity generated by wind power plants, from about 0.5 to 11.0 per cent of total electricity generation.

488. Mr. Banciu presented key PaMs for achieving the Party's targets, including a national resilience recovery plan that will enable a green economic and social recovery in line with the EU climate-neutrality target for 2050 and the NDC target under the Paris Agreement. The financing provided by the EU Recovery and Resilience Facility to support investments and reform measures by 2026 totals EUR 29.2 billion, 41 per cent of which will support climate objectives.

489. Given that its emissions covered by the EU ETS are subject to an EU-wide cap, Romania presented the projected level of emissions by 2020 from ESD sectors under the WEM and WAM scenarios, which is 18.5 and 19.5 per cent, respectively, below the AEA for 2020. Therefore, Romania expects to meet its 2020 target under the WEM scenario. The most significant absolute emission reductions are expected to occur in the energy sector (excluding transport), amounting to a projected reduction of 69.3 per cent between 1990 and 2020. All sectoral projections, except for the transport sector, show decreasing emission trends by 2020 compared with the 1990 level.

490. The opening presentation was followed by interventions and questions from the following delegations: China, India and United Kingdom.

491. Questions on GHG emission trends related to:

(a) The reasons for the increase in emissions from the transport and waste sectors, and the decrease in fugitive CH₄ emissions from coal handling;

(b) The drivers behind the increase in projected emissions from agriculture.

492. In response, the Party explained that:

⁵² <https://unfccc.int/MA/Romania>.

(a) Emissions from transport and waste have increased as a result of economic development and increased consumption of goods. The decrease in fugitive CH₄ emissions from coal handling is related to the significant decrease in coal extraction;

(b) The increase in projected emissions from agriculture is due to an expected increase in animal stock and agricultural production.

493. Questions on PaMs related to:

(a) The Party's working group on climate change education, environment and sustainable schools;

(b) The Carbon Border Adjustment Mechanism and recent progress in its implementation.

494. In response, the Party explained that:

(a) The working group was established during the Romanian presidency of the EU Council and it has the support of the President of Romania. The aim of the working group is to provide recommendations at all levels of education, including primary, secondary and university;

(b) The Mechanism is an EU regulation that is being negotiated by the EU member States. There are some challenges for Romania in implementing the regulation, in particular for the cement and aluminium industries.

I. Slovenia

495. The fourth MA of Slovenia took place on 6 November 2021. Questions for Slovenia had been submitted in writing two months before the working group session by the following delegations: Japan, New Zealand, Switzerland, United Kingdom and United States. A list of the questions received and the answers provided by Slovenia, as well as the webcast of the session, can be found on the MA web page for Slovenia.⁵³

496. The working group session was chaired by the additional SBI Rapporteur. Slovenia was represented by Martin Batič from the Ministry of the Environment and Spatial Planning.

497. Mr. Batič made a presentation summarizing Slovenia's progress towards achieving its quantified economy-wide emission reduction targets. As an EU member State, Slovenia is committed to contributing to the achievement of the joint EU quantified economy-wide emission reduction target of 20 per cent below the 1990 level by 2020. Slovenia's target for ESD sectors is to limit emission growth to 4 per cent above the 2005 level by 2020.

498. Mr. Batič presented Slovenia's NDC target under the Paris Agreement. As an EU member State, Slovenia is committed to contributing to the achievement of the EU NDC target to reduce its GHG emissions by 55 per cent below the 1990 level by 2030. Slovenia's target is to reduce GHG emissions from ESD sectors by 15 per cent below the 2005 level by 2030, and Slovenia has set a more ambitious national target of reducing emissions from ESD sectors by 20 per cent below the 2005 level. Slovenia has also set a long-term goal to achieve climate neutrality by 2050.

499. The Party's total GHG emissions excluding emissions and removals from LULUCF decreased by 6 per cent between 1990 and 2018, owing mainly to Slovenia gaining its independence, leading to a reduction of emissions from manufacturing industry, followed by a revival of industrial activity, reduced emissions as a result of measures in neighbouring countries to curb 'gasoline tourism' and increased energy supply from a nuclear power plant. Recently observed increases in emissions are driven by the transport sector, where emissions had increased by 113.5 per cent above the 1990 level by 2018.

500. Mr. Batič presented key PaMs for achieving the Party's targets, including the Operational Programme for Reducing Greenhouse Gas Emissions by 2020 and the Climate Mirror, which was established to monitor progress and inform and steer decision-making on

⁵³ <https://unfccc.int/MA/Slovenia>.

an annual basis. For future action, the integrated NECP for 2021–2030 and the Long-term Climate Strategy are important guiding policies. Slovenia highlighted the challenges in implementing measures due to two specific national circumstances: its location at the crossroads of three main transit corridors with increasing international traffic, and its highly scattered settlement structure with high levels of daily commuting.

501. Given that its emissions covered by the EU ETS are subject to an EU-wide cap, the Party presented its projected level of emissions by 2020 from ESD sectors under the WEM and WAM scenarios, which is 11.1 and 12.8 per cent, respectively, below the AEA for 2020. Therefore, Slovenia expects to meet its 2020 target under the WEM scenario.

502. The opening presentation was followed by interventions and questions from the following delegations: India, Switzerland and United Kingdom.

503. Questions on GHG emission trends related to the reasons for the decrease in the LULUCF sector sink and measures to counter the trend. In response, the Party explained that in 2007 the National Forest Programme was adopted, leading to an increase in regular timber harvesting owing to an allowable cut of up to 75 per cent of the increment specified in the forest management plans. In 2014 Slovenia experienced a large ice-break and in subsequent years bark beetle infestation, leading to sanitary felling.

504. Questions on PaMs related to:

(a) The status of implementation of measures to improve public transport infrastructure, where the highest potential for emission reduction is and general plans to mitigate emissions from the transport sector;

(b) Funding provided for the purchase of large energy-efficient appliances through the Eco Fund, and whether consumer attitude or finance is the biggest driver for uptake.

505. In response, the Party explained that:

(a) The main strategic document is the Transport Strategy, which contains a list of measures for reducing emissions, such as improving rail connections and transport hubs. The National Programme for Reducing Greenhouse Gas Emissions contains specific actions for implementing the Transport Strategy. For each action, clear timelines are defined and financing secured. The measures are also reflected in the Long-term Climate Strategy. The main measures that will contribute to emission reductions include electrifying passenger transport, using hydrogen and synthetic gas in freight transport, increasing the share of public transport and freight transported by rail, and increasing occupancy levels in cars and load factors in trucks;

(b) There is not a lot of interest in the soft loans provided by the Eco Fund for funding appliances. Labelling and minimum requirements for efficiency are more effective measures.

J. United Kingdom of Great Britain and Northern Ireland

506. The fourth MA of the United Kingdom took place on 6 November 2021. Questions for the United Kingdom had been submitted in writing two months before the working group session by the following delegations: Canada, EU, Germany, Japan, New Zealand, Switzerland and United States. A list of the questions received and the answers provided by the United Kingdom, as well as the webcast of the session, can be found on the MA web page for the United Kingdom.⁵⁴

507. The working group session was chaired by the additional SBI Rapporteur. The United Kingdom was represented by Kate Hughes from the Department for Business, Energy and Industrial Strategy.

508. Ms. Hughes made a presentation summarizing the United Kingdom's progress towards achieving its quantified economy-wide emission reduction targets. Despite leaving the EU, the United Kingdom remains committed to contributing to the achievement of the

⁵⁴ https://unfccc.int/MA/United_Kingdom.

joint EU quantified economy-wide emission reduction target of 20 per cent below the 1990 level by 2020. The United Kingdom's emission reduction target for ESD sectors is 16 per cent below the 2005 level by 2020.

509. Ms. Hughes presented the United Kingdom's NDC target under the Paris Agreement, which is to reduce GHG emissions by 68 per cent below the 1990 level by 2030. The United Kingdom has also set a long-term goal to reach net zero emissions by 2050.

510. The United Kingdom Climate Change Act (2008) underpins action to reduce GHG emissions in the country. The domestic target is presented as carbon budgets set under the Act. The Party successfully achieved the first and second carbon budgets for 2008–2012 and 2013–2017 and expects to meet the cap set under the third carbon budget for 2018–2022. The sixth carbon budget, for 2033–2037, set in 2021, requires reducing emissions by 78 per cent below the 1990 level by 2035. The recently published Net Zero Strategy (2021), which was submitted to the UNFCCC as the United Kingdom's long-term low-emission development strategy, sets out the Party's vision for a net zero emission future by 2050.

511. According to the report on the technical review of the Party's BR4, its total GHG emissions excluding emissions and removals from LULUCF decreased by 41.6 per cent between 1990 and 2018, owing mainly to factors such as the shift away from coal-fired power generation towards increased use of natural gas and RES, measures for reducing waste generation and measures aimed at reducing emissions from the IPPU sector.

512. Ms. Hughes presented key PaMs for achieving the Party's targets, including measures aimed at promoting use of low-carbon fuels and RES for energy supply, decarbonizing the transport sector, reducing waste generation and restoring peatland. The United Kingdom has seen a significant adoption of zero- and low-emission vehicles. As at July 2021, there were 175,000 zero-emission vehicles and 198,000 plug-in hybrid vehicles in the country. The share of fossil fuels in energy supply has been steadily decreasing, with coal-free energy generation increasing by 97 per cent in 1990–2019. The aim of the Nature for Climate Fund is to spend GBP 750 million on peatland restoration and wetland creation and management.

513. The Party's emissions covered by the EU ETS are subject to an EU-wide cap. According to the report on the technical review of the Party's BR4, its projected level of emissions by 2020 from ESD sectors under the WEM and WAM scenarios is 12.8 and 12.6 per cent, respectively, below the AEA for 2020. Therefore, the United Kingdom expects to meet its 2020 target under the WEM scenario.

514. The opening presentation was followed by interventions and questions from the following delegations: Australia, China, EU, India, Japan, Luxembourg, Monaco, Republic of Korea, Saudi Arabia and Switzerland.

515. Questions on GHG emission trends and targets related to:

- (a) The increase in fugitive CO₂ emissions by 23 per cent in the last five years;
- (b) The effect of Brexit on the 21 per cent emission reduction commitment for activities covered by the EU ETS.

516. In response, the Party explained that:

(a) Fugitive CO₂ emissions increased in 2012–2017 owing to the increase in upstream oil flaring, but had returned to the 2012 level by 2019. The emissions are relatively insignificant relative to the national total, with emissions from upstream oil and gas flaring comprising 1 per cent of national total CO₂ emissions;

(b) Its ETS was established in January 2021 as the key carbon pricing policy after leaving the EU. It is expected to promote cost-effective decarbonization by businesses. The United Kingdom's ETS cap is set at 5 per cent below the United Kingdom's expected national share of the EU ETS cap for phase four, which signals an increased level of ambition of the Party's carbon pricing policy while ensuring a smooth transition for industry. The ETS is expected to play a key role in achieving the Party's net zero goals. The United Kingdom will further explore how the ETS can be expanded to other sectors, including forestry, and will prioritize the development of robust low-cost arrangements for monitoring, reporting and verifying emissions and carbon abatement projects.

517. Questions on PaMs related to:

- (a) The role and importance of the Committee on Climate Change in policy development and implementation;
- (b) Experience and significant challenges in developing the Net Zero Strategy;
- (c) Experience and benefits of having the Department of Business, Energy and Industrial Strategy manage climate change issues;
- (d) The strategy to achieve 5 GW hydrogen production by 2030 and associated challenges;
- (e) The most significant challenges in achieving emission reductions in line with the fifth and sixth carbon budgets;
- (f) Experience in and key factors contributing to reducing waste sector emissions by 71 per cent in 1990–2019;
- (g) Additional measures considered to reduce emissions from the residential sector;
- (h) Plans to use nuclear power to achieve net zero emissions;
- (i) Challenges in reducing emissions from the agriculture and transport sectors, including the strategy to make all cars zero-emission capable by 2035;
- (j) Challenges in reducing use of coal in industries other than the power sector, and in reducing the import of biofuels;
- (k) Successes and challenges in harnessing business ambition.

518. In response, the Party explained that:

(a) The Committee on Climate Change is an independent body established under the Climate Change Act. Its responsibilities as set out in the Act include providing comprehensive advice on the United Kingdom's long-term emission target and on setting carbon budgets consistent with it, which is considered by the Government in deciding on its approach to reducing emissions, including putting in place relevant PaMs. The Committee also monitors the Government's progress in achieving emission reductions consistent with the carbon budgets, including by providing recommendations to government departments in a report to Parliament, to which the Government is obliged to respond. The Committee provides advice on adaptation and responses to ad hoc requests by the Government for advice on setting the NDC. It also provides advice to the devolved administrations of Scotland, Wales and Northern Ireland on their own targets under the climate legislation;

(b) Every sector of the economy has a role to play in the Net Zero Strategy. The aim is to transition to net zero emissions in an orderly and inclusive fashion by involving all sectors and providing high-quality jobs for green growth, thus contributing to the transition to a greener economy. Nearly one in five jobs in the United Kingdom is likely to be affected by the transition. The impacts of the transition to net zero emissions over the next three decades, which will vary across different regions and depend on individual household characteristics (e.g. housing type and current vehicle use), will be analysed to support the low-income households most affected by individual technology transitions;

(c) The Department of Energy and Climate Change becoming the Department of Business, Energy and Industrial Strategy provides huge advantages and synergies in terms of bringing together ministerial responsibilities for climate change and energy. Given the interplay between climate change and energy, it is critical to address them in such a way that also provides jobs and supports growth;

(d) It has a twin-track approach to supporting both electrolytic green and carbon dioxide capture and use enabled blue hydrogen production. With the largest offshore wind sector in the world, natural assets and expertise in CCS, the United Kingdom is well positioned to secure a competitive advantage in relation to both green and blue hydrogen. United Kingdom companies are already at the forefront of hydrogen technology

development. The Party will finalize the hydrogen business model, the net zero hydrogen framework and the low-carbon hydrogen standard by 2022;

(e) Some of the biggest challenges in achieving the fifth and sixth carbon budgets relate to working across Government to put policies and plans in place and implementing them in the future. The United Kingdom has a comprehensive strategy across the Government covering all sectors, aimed at identifying the most cost-efficient ways to achieve emission reductions that are consistent with the sixth carbon budget (78 per cent reduction in 2033–2037) and achieving net zero emissions by 2050;

(f) Waste management accounted for some 4 per cent of national total GHG emissions, with CH₄ emissions comprising nearly 90 per cent of the waste sector emissions. The United Kingdom is continuing to explore policies for eliminating biodegradable municipal waste disposed to landfill by 2028, including by providing GBP 295 million in capital funding to local authorities in England to prepare and implement three separate food waste collections for all households from 2025. The Resources and Waste Strategy (2018) includes three significant reforms to the waste system, namely introducing a deposit-return scheme for drink containers, extending producer responsibility for packaging, and ensuring consistency in household and business recycling collections. These measures are projected to deliver cumulative GHG emission reductions of 13 Mt CO₂ eq between 2023 and 2035;

(g) Regarding additional measures considered to reduce emissions from the residential sector, a building heating strategy was published alongside the Net Zero Strategy, aimed at supporting households in making the transition to net zero, and a GBP 450 million boiler upgrade scheme with GBP 5,000 in capital grants was announced. The United Kingdom is consulting on a new market-based incentive for heating system manufacturers to be introduced in 2024 and investing GBP 60 million in heat pump innovation to make them smaller and easier to install;

(h) Use of nuclear energy is a key component of the United Kingdom's Ten Point Plan and Net Zero Strategy. Following a recent announcement that by 2035 electricity generation will be entirely from clean sources subject to security of energy supply, the Party will secure a final investment decision on a large-scale nuclear plant by the end of the current parliamentary term and launch a GBP 120 million future nuclear enabling fund retaining options for future deployment of nuclear technologies, including small modular reactors;

(i) It has made great strides through the Net Zero Strategy in reducing emissions from the heating and buildings sector, transport and agriculture, as well as through technologies such as hydrogen. The United Kingdom has a zero-emission vehicle mandate to improve consumer choice and maximize the economic benefit of transitioning to zero-emission vehicles. This mandate is aimed at helping the Party to deliver on its commitments to end the sale of new petrol and diesel cars by 2030 and to ensure that all new cars are fully zero-emission capable by 2035 by providing a clear signal to investors. To support this mandate, the United Kingdom will provide further funding of GBP 620 million for grants for zero-emission vehicles and infrastructure for electric vehicles, including for local infrastructure, particularly street residential charging;

(j) The Industrial Decarbonisation Strategy published in 2021 sets out measures to reduce emissions from industries using coal, including new business models, use of hydrogen and CCS, and energy efficiency;

(k) It is committed to continuing to support domestic businesses in meeting their net zero commitments, including exploring a Government-led advice service to help businesses to achieve net zero emissions, working with businesses and industry to set strong regulatory signals to ensure that green choices are affordable and easy, and collaborating to reduce costs and provide better quality, longer lasting and lower environmental impact products and services. Setting clear targets through carbon budgets and net zero targets helps businesses by providing a clear signal for their investment decisions and planning alongside various incentives and initiatives, such as the Task Force on Climate-Related Financial Disclosures, which helps ensure alignment with the net zero target. The United Kingdom supports small and medium-sized enterprises, which often face a different set of challenges to larger businesses, through initiatives such as the Government-led advice service and small business campaign to help them move towards net zero emissions.

519. Questions on projections related to:

- (a) Emissions from the forestry sector projected for 2030 despite implementation of PaMs in the sector;
- (b) Use of the 2050 Calculator to estimate projections and evaluation of PaMs.

520. In response, the Party explained that:

(a) It is addressing every sector in its Net Zero Strategy. Although common tabular format table 3 in the United Kingdom's BR4 presents short-term losses of soil carbon stocks estimated by modelling, in the long term afforestation policies are expected to deliver large sinks. The United Kingdom Government and devolved administrations have committed to a significant increase in forest planting to enhance carbon storage and biodiversity, with the Nature for Climate Fund investing over GBP 500 million in trebling the woodland creation rate, towards a national target of 30,000 ha trees by the end of the current parliamentary term in 2024;

(b) The 2050 Calculator and the MacKay carbon calculator help in analysing the policy choices and trade-offs involved in different scenarios. In addition, the underlying data are used for the United Kingdom's projection calculations. The Party has worked with many other countries on developing their own 2050 calculators or equivalent tools. There is also a global calculator.
