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Report on the technical review of the fourth biennial report of Lithuania

Developed country Parties were requested by decision 2/CP.17 to submit their fourth biennial report to the secretariat by 1 January 2020. This report presents the results of the technical review of the fourth biennial report of Lithuania, conducted by an expert review team in accordance with the “Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention”. The review took place from 15 to 19 June 2020 remotely.

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Contents

	<i>Page</i>
Abbreviations and acronyms.....	3
I. Introduction and summary	4
A. Introduction	4
B. Summary.....	4
II. Technical review of the information reported in the fourth biennial report	5
A. Information on greenhouse gas emissions and removals related to the quantified economy-wide emission reduction target	5
B. Quantified economy-wide emission reduction target and related assumptions, conditions and methodologies	7
C. Progress made towards achievement of the quantified economy-wide emission reduction target	9
D. Provision of financial, technological and capacity-building support to developing country Parties.....	23
III. Conclusions and recommendations	24
Annex	
Documents and information used during the review.....	26

Abbreviations and acronyms

AEA	annual emission allocation
Annex II Party	Party included in Annex II to the Convention
AR	Assessment Report of the Intergovernmental Panel on Climate Change
BR	biennial report
CH ₄	methane
CO ₂	carbon dioxide
CO ₂ eq	carbon dioxide equivalent
CTF	common tabular format
ERT	expert review team
ESD	European Union effort-sharing decision
ESR	European Union effort-sharing regulation
EU	European Union
EU ETS	European Union Emissions Trading System
GDP	gross domestic product
GHG	greenhouse gas
GWP	global warming potential
HFC	hydrofluorocarbon
IPCC	Intergovernmental Panel on Climate Change
IPPU	industrial processes and product use
LULUCF	land use, land-use change and forestry
NA	not applicable
NC	national communication
NE	not estimated
NECP	National Energy and Climate Plan
NEIS	National Energy Independence Strategy of Lithuania
NF ₃	nitrogen trifluoride
NO	not occurring
N ₂ O	nitrous oxide
PaMs	policies and measures
PFC	perfluorocarbon
RES	renewable energy source(s)
SF ₆	sulfur hexafluoride
TEN-T	Trans-European Transport Network
UNFCCC reporting guidelines on BRs	“UNFCCC biennial reporting guidelines for developed country Parties”
UNFCCC reporting guidelines on NCs	“Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part II: UNFCCC reporting guidelines on national communications”
WAM	‘with additional measures’
WEM	‘with measures’
WOM	‘without measures’

I. Introduction and summary

A. Introduction

1. This is a report on the centralized technical review of the BR4¹ of Lithuania. The review was organized by the secretariat in accordance with the “Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention”, particularly “Part IV: UNFCCC guidelines for the technical review of biennial reports from Parties included in Annex I to the Convention” (annex to decision 13/CP.20).

2. In accordance with the same decision, a draft version of this report was transmitted to the Government of Lithuania, which provided comments that were considered and incorporated, as appropriate, into this final version of the report.

3. The review was conducted together with the review of five other Parties included in Annex I to the Convention from 15 to 19 June remotely² by the following team of nominated experts from the UNFCCC roster of experts: Bernadett Benkó (Hungary), Amnat Chidthaisong (Thailand), Alessandro Francesco Ferrara (Italy), Benti Firdissa (Ethiopia), Nicolo Macaluso (Canada), Sini Maaria Niinistö (Finland), Hartley Walimwipi (Zambia) and Germain Zasy Ngisako (Democratic Republic of the Congo). Mr. Chidthaisong and Mr. Macaluso were the lead reviewers. The review was coordinated by James Howland and Karin Simonson (secretariat).

B. Summary

4. The ERT conducted a technical review of the information reported in the BR4 of Lithuania in accordance with the UNFCCC reporting guidelines on BRs (annex I to decision 2/CP.17).

1. Timeliness

5. The BR4 was submitted on 6 January 2020, after the deadline of 1 January 2020 mandated by decision 2/CP.17. The CTF tables were also submitted on 6 January 2020. The CTF tables were resubmitted on 29 June 2020 to address issues raised during the review. The resubmission included additions to CTF tables 2, 2(f), 4 and 4(b), changes to CTF table 3 and a corrected value in CTF table 6(a). CTF table 4(a)I is provided for 2017 and 2018, while the initial submission covered 2018 and 2019. Unless otherwise specified, the information and values from the latest submission are used in this report.

6. Lithuania did not inform the secretariat about its difficulties with making a timely submission. In accordance with decision 13/CP.20, a Party should inform the secretariat thereof by the due date of the submission in order to facilitate the arrangement of the review process. The ERT noted with concern the delay in the submission and recommended that Lithuania make its next submission on time.

2. Completeness, transparency of reporting and adherence to the reporting guidelines

7. Issues and gaps identified by the ERT related to the reported information are presented in table 1. The information reported by Lithuania in its BR4 mostly adheres to the UNFCCC reporting guidelines on BRs.

¹ The BR submission comprises the text of the report and the CTF tables, which are both subject to the technical review.

² Owing to the circumstances related to the coronavirus disease 2019, the technical review of the BR submitted by Lithuania had to be conducted remotely.

Table 1

Summary of completeness and transparency of mandatory information reported by Lithuania in its fourth biennial report

<i>Section of BR</i>	<i>Completeness</i>	<i>Transparency</i>	<i>Reference to description of recommendation(s)</i>
GHG emissions and removals	Complete	Transparent	–
Quantified economy-wide emission reduction target and related assumptions, conditions and methodologies	Complete	Mostly transparent	Issue 1 in table 3
Progress in achievement of targets	Mostly complete	Mostly transparent	Issues 1 and 3 in table 5 Issue 1 in table 7
Provision of support to developing country Parties ^a	NA	NA	NA

Note: A list of recommendations pertaining to the completeness and transparency issues identified in this table is included in chap. III below. The assessment of completeness and transparency by the ERT in this table is based only on the “shall” reporting requirements.

^a Lithuania is not an Annex II Party and is therefore not obliged to adopt measures and fulfil obligations defined in Article 4, paras. 3–5, of the Convention.

II. Technical review of the information reported in the fourth biennial report

A. Information on greenhouse gas emissions and removals related to the quantified economy-wide emission reduction target

1. Technical assessment of the reported information

8. Total GHG emissions³ excluding emissions and removals from LULUCF decreased by 57.8 per cent between 1990 and 2018, whereas total GHG emissions including net emissions or removals from LULUCF decreased by 61.4 per cent over the same period. Emissions reached the highest point in 1991 (50,014 kt CO₂ eq) and decreased rapidly in the following two years (to 30,804 and 24,733 kt CO₂ eq in 1992 and 1993, respectively).

9. The steep decline in emissions in the early 1990s was caused by the collapse of the economy of the former Soviet Union and a blockade of resources imposed by the former Soviet Union from 1991 to 1993. Lithuania became independent in 1990 after 50 years as a part of the former Soviet Union. Economic activity shrank considerably, as reflected in the decrease in GDP during the early 1990s. With the change to a market-based economy, manufacturing industries, energy industries and the agriculture sector were restructured. Lithuania’s population has also decreased significantly since the early 1990s. The use of fossil fuels, especially fuel oil but also coal, petrol and natural gas, has declined considerably since the beginning of the 1990s. Restrictions on the sulfur content of fuel oil introduced in 2004 and 2008 led to a shift to the use of 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. Since 2010, annual emissions have remained at a level of approximately 21,000–22,000 kt CO₂ eq.

10. Table 2 illustrates the emission trends by sector and by gas for Lithuania. Note that information in this section and table 2 is based on Lithuania’s 2020 annual inventory submission, version 1, which has not yet been subject to review. All emission data in subsequent chapters are based on Lithuania’s BR4 CTF tables unless otherwise noted. The emissions reported in Lithuania’s BR4 CTF tables are based on its 2019 annual submission. The emissions reported in the 2020 annual submission differ from the data reported in CTF

³ In this report, the term “total GHG emissions” refers to the aggregated national GHG emissions expressed in terms of CO₂ eq excluding LULUCF, unless otherwise specified.

table 1 in that they contain data for an additional year (i.e. 2018) and the total emissions by sector reported for 2017 are up to 1 per cent lower than those reported in the previous (2019) submission for the same year, except for the LULUCF sector, where reported net removals are almost 30 per cent lower than those reported in the 2019 submission. Significant changes in estimated net removals from LULUCF between annual submissions are common because the lag in acquiring data on variables such as surface areas and growth and removals of tree biomass is typically greater than the length of the reporting cycle.

Table 2

Greenhouse gas emissions by sector and by gas for Lithuania for 1990–2018

Sector	GHG emissions (kt CO ₂ eq)					Change (%)		Share (%)	
	1990	2000	2010	2017	2018	1990–2018	2017–2018	1990	2018
1. Energy	33 128.54	10 917.63	13 136.00	11 545.56	11 906.72	–64.1	7.2	69.0	58.7
A1. Energy industries	13 552.63	5 055.97	5 329.66	2 573.03	2 447.80	–81.9	6.4	28.2	12.1
A2. Manufacturing industries and construction	6 164.93	1 094.62	1 290.68	1 181.02	1 265.53	–79.5	2.5	12.8	6.2
A3. Transport	5 822.01	3 219.93	4 428.29	5 745.18	6 111.40	5.0	2.9	12.1	30.2
A4. and A5. Other	7 300.01	1 243.46	1 589.93	1 521.07	1 559.24	–78.6	–20.9	15.2	7.7
B. Fugitive emissions from fuels	288.94	303.64	497.45	525.26	522.74	80.9	–0.5	0.6	2.6
C. CO ₂ transport and storage	NO	NO	NO	NO	NO	–	–	–	–
2. IPPU	4 464.32	3 062.51	2 216.05	3 623.82	3 158.58	–29.2	–12.8	9.3	15.6
3. Agriculture	8 853.43	4 004.59	4 193.43	4 386.98	4 280.66	–51.6	–2.4	18.4	21.1
4. LULUCF	–5 578.24	–9 466.76	–10 284.85	–3 734.41	–3 866.72	–30.7	3.5	NA	NA
5. Waste	1 570.15	1 538.45	1 342.10	1 061.26	920.87	–41.4	–13.2	3.3	4.5
6. Other ^a	NO	NO	NO	NO	NO	–	–	–	–
<i>Gas^b</i>									
CO ₂	35 771.82	11 873.92	13 926.74	13 545.85	13 669.49	–61.8	0.9	74.5	67.4
CH ₄	7 006.00	3 861.01	3 684.25	3 277.02	3 064.33	–56.3	–6.5	14.6	15.1
N ₂ O	5 238.61	3 765.72	3 013.85	3 068.37	2 955.35	–43.6	–3.7	10.9	14.6
HFCs	NO	21.80	256.76	718.63	571.22	–	–20.5	–	2.8
PFCs	NO	NO	NO	NO	NO	–	–	–	–
SF ₆	NO	0.72	5.99	7.73	6.41	–	–17.1	–	0.0
NF ₃	NO	NO	NO	0.01	0.03	–	133.3	–	0.0
Total GHG emissions excluding LULUCF	48 016.43	19 523.18	20 887.59	20 617.61	20 266.83	–57.8	–1.7	100.0	100.0
Total GHG emissions including LULUCF	42 438.19	10 056.41	10 602.75	16 883.20	16 400.11	–61.4	–2.9	–	–

Source: GHG emission data: Lithuania's 2020 annual submission, version 1.

^a Emissions and removals reported under the sector other (sector 6) are not included in the total GHG emissions.

^b Emissions by gas without LULUCF. The Party did not report indirect CO₂ emissions.

11. Lithuania's inventory arrangements are described in the BR4, which includes a reference to the 2019 national inventory report for more details. In brief, the Ministry of Environment is the national focal point to the UNFCCC and is designated as the single national entity responsible for the national GHG inventory. It has overall responsibility for the national GHG inventory system and is in charge of the related legal, institutional and procedural arrangements. The Lithuanian Environmental Protection Agency under the Ministry of Environment is the assigned institution responsible for GHG inventory compilation and acts as the quality assurance/quality control manager. The Agency is responsible for the compilation of the final report on the basis of the sectoral information

provided by the experts. The permanent expert working group for GHG inventory preparation consists of experts from the Lithuanian Energy Institute, the Center for Physical Sciences and Technology, the Institute of Animal Science of the Lithuanian University of Health Sciences, the Center for Environmental Policy, the Lithuanian State Forest Service and the Aleksandras Stulginskis University.⁴ The Environmental Protection Agency also provides information on IPPU and is responsible for the calculation of emissions and removals related to agricultural soils.

12. Before the final reports are submitted to the UNFCCC and the European Commission, they are forwarded to the National Climate Change Committee for comment and approval. The Committee consists of experts from academia, Government and non-governmental organizations and has an advisory role. During the review, the Party clarified that the Ministry of Environment provides final approval after consulting the National Climate Change Committee, and the inventory is then submitted to the European Commission and the UNFCCC. There have been no changes in these arrangements since the BR3.

2. Assessment of adherence to the reporting guidelines

13. The ERT assessed the information reported in the BR4 of Lithuania and recognized that the reporting is complete, transparent and thus adhering to the UNFCCC reporting guidelines on BRs. No issues relating to the topics discussed in this chapter of the review report were raised during the review.

B. Quantified economy-wide emission reduction target and related assumptions, conditions and methodologies

1. Technical assessment of the reported information

14. For Lithuania the Convention entered into force on 22 June 1995. Under the Convention Lithuania committed to contributing to the achievement of the joint EU economy-wide emission reduction target of 20 per cent below the 1990 level by 2020.

15. The target for the EU and its member States is formalized in the EU 2020 climate and energy package. The legislative package regulates emissions of CO₂, CH₄, N₂O, HFCs, PFCs and SF₆ using GWP values from the AR4 to aggregate the GHG emissions of the EU until 2020. Emissions and removals from the LULUCF sector are not included in the quantified economy-wide emission reduction target under the Convention. The EU generally allows its member States to use units from the Kyoto Protocol mechanisms for compliance purposes, subject to a number of restrictions in terms of origin and type of project and up to an established limit. Operators and airline operators can use such units to fulfil their requirements under the EU ETS, and member States can use such units for their national ESD targets, within specific limitations.

16. The EU 2020 climate and energy package includes the EU ETS and the ESD (see para. 30 below). The EU ETS covers mainly point emissions sources in the energy, industry and aviation sectors. An EU-wide emission cap has been put in place for 2013–2020 with the goal of reducing emissions by 21 per cent below the 2005 level by 2020. Emissions from ESD sectors are regulated through member State specific targets that add up to a reduction at the EU level of 10 per cent below the 2005 level by 2020.

17. Lithuania has a national target of limiting its emission growth to 15 per cent above the 2005 level by 2020 for sectors under the ESD. This target has been translated into binding quantified AEAs for 2013–2020. Lithuania's AEAs change following a path from 12,936.66 kt CO₂ eq in 2013 to 15,240.06 kt CO₂ eq in 2020.⁵ Lithuania does not intend to use credits from market-based mechanisms to meet its 2020 ESD target.

⁴ In January 2019, the university was integrated into the Vytautas Magnus University and was renamed the Agriculture Academy.

⁵ European Commission decision 2017/1471 amended decision 2013/162/EU to revise member States' AEAs for 2017–2020.

18. In addition, under the EU 2020 climate and energy package, Lithuania is required to increase its share of renewable energy to 23 per cent of total final energy consumption by 2020 and to 10 per cent of final energy consumption in the transport sector over the same period.

19. The BR4 contains a reference to the EU's offer to raise the overall emission reduction target to 30 per cent by 2020 on the condition that other developed countries also commit to achieving comparable emission reductions and that developing countries contribute adequately, according to their responsibilities and respective capabilities. This offer was reiterated in a submission to the UNFCCC by the EU, its member States and Iceland on 30 April 2014. During the review, Lithuania explained that it included the possibility of raising the target by 2020 in its Strategy for the National Climate Change Management Policy until 2050 (approved by the Lithuanian Parliament in 2012). However, as the EU's offer was not accepted by other Parties, the overall EU-level emission reduction target remains at 20 per cent below the 1990 level.

20. The 2030 climate and energy framework adopted by the European Council in October 2014 contains EU-wide emission reduction targets for 2021–2030. It includes a binding target to reduce emissions by at least 40 per cent compared with the 1990 level. The framework includes targets for renewables and energy efficiency that were revised upward in 2018. Achieving the target will require emission reductions of 43 per cent for EU ETS sectors and 30 per cent for ESD sectors compared with the 2005 level. The target for emissions outside the EU ETS has been translated into individual binding targets for EU member States. Under the ESR, Lithuania has a target of reducing emissions by 9 per cent below the 2005 level by 2030.

21. The European Commission set out its vision for a climate-neutral EU in November 2018, and in December 2019 presented the European Green Deal as a road map with actions for making the EU economy sustainable. 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 Commission proposed in March 2020 to enshrine the 2050 climate-neutrality target into the first European Climate Law. The European Green Deal calls for increased ambition in the 2030 emission reduction target to at least 50 per cent below the 1990 level. Member States will set out any increased ambition in the update of their NECPs.

22. Under the Paris Agreement, signed by Lithuania in 2016, the Party, jointly with the EU and its member States, committed to a binding target of at least a 40 per cent reduction in economy-wide GHG emissions by 2030 compared with the 1990 level for 2021–2030. This target is also in line with Lithuania's 2030 climate and energy framework. Lithuania has an emission reduction target of 9 per cent below the 2005 level in 2030 for emissions under the ESR.

2. Assessment of adherence to the reporting guidelines

23. The ERT assessed the information reported in the BR4 of Lithuania and identified an issue relating to transparency and thus adherence to the UNFCCC reporting guidelines on BRs. The finding is described in table 3.

Table 3

Findings on the assumptions, conditions and methodologies related to the quantified economy-wide emission reduction target from the review of the fourth biennial report of Lithuania

No.	Reporting requirement, issue type and assessment	Description of the finding with recommendation
1	Reporting requirement specified in paragraph 5 Issue type: transparency Assessment: recommendation	The Party submitted a blank table for CTF table 2(e)II, "Other market-based mechanisms". The BR4 states (p.80) that the Party does not intend to use credits from market-based mechanisms for compliance with the ESD 2020 target. During the review, the Party stated that it will make efforts to further increase the transparency of the CTF tables. The ERT recommends that Lithuania improve the transparency of its reporting by indicating in CTF table 2(e)II that it does not intend to use units from other market-

No.	Reporting requirement, issue type and assessment	Description of the finding with recommendation
		based mechanisms to achieve its emission reduction target. This could be done, for example, by using notation keys or including a custom footnote in the table.

Note: Item listed under reporting requirement refers to the relevant paragraph of the UNFCCC reporting guidelines on BRs. The reporting on the requirements not included in this table is considered to be complete, transparent and thus adhering to the UNFCCC reporting guidelines on BRs.

C. Progress made towards achievement of the quantified economy-wide emission reduction target

1. Mitigation actions and their effects

(a) Technical assessment of the reported information

24. Lithuania provided information on its package of PaMs implemented, adopted and planned, by sector and by gas, in order to fulfil its commitments under the Convention. Lithuania reported on its policy context and legal and institutional arrangements in place for implementing its commitments and monitoring and evaluating the effectiveness of its PaMs.

25. Lithuania provided information on a set of PaMs similar to those previously reported, with a few exceptions. Lithuania confirmed during the review that in most cases the measures listed as adopted or implemented in CTF table 3 remain unchanged since the BR3. However, the additional measures or measures adopted in 2019 are new additions in the BR4. Lithuania also indicated that there have been no changes since its previous submission to its institutional, legal, administrative and procedural arrangements used for domestic compliance, monitoring, reporting, archiving of information and evaluation of progress towards its target.

26. The BR4 describes Lithuania's process for monitoring and evaluating its PaMs. Discussions with expert groups from different areas determine the ex ante effect of planned measures. The estimated sectoral parameters and assessments provided by these experts serve as input to the GHG mitigation effects estimated by Lithuania's Environmental Protection Agency, which applies the *2006 IPCC Guidelines for National Greenhouse Gas Inventories*. For some PaMs, Lithuania carries out periodic analysis to determine their effectiveness.

27. In its reporting on its PaMs, Lithuania provided the estimated emission reduction impacts for many of its PaMs. Where estimated impacts were not provided, the Party explained that, owing to a change in its approach to analysing its PaMs, the estimated mitigation impacts were not calculated in time. For example, for many of the PaMs for reducing electricity demand an estimate for the amount of energy saved was reported, but not for the reduction in GHG emissions. With regard to electricity, Lithuania imports a significant share of its electricity supply, making it challenging to calculate the avoided emissions. For other fuels such as gasoline, diesel and natural gas, the analytical tools for reporting GHG emission reductions were not available.

28. For its BR4, the Party used a different approach for estimating the impacts of PaMs in the energy sector compared with that reported in the BR3, while the approach used for estimating the impacts of PaMs in the other sectors remained largely the same.

29. Lithuania did not report on its self-assessment of compliance with its emission reduction targets or the level of emission reduction that is required by science and national rules for taking action against non-compliance. During the review, the Party provided a description of its national framework and means of assessing compliance with its emission reduction commitments. The Inter-institutional Action Plan for the Implementation of the Goals and Objectives for 2013–2020 (approved by the Government in 2013) under the Strategy for the National Climate Change Management Policy until 2050 consists of general provisions, targets, objectives, measures, financial resources, implementing institutions, assessment criteria and values. The action plan always covers a three-year period and is updated annually. With a view to meeting its annual GHG emission reduction targets for ESD sectors, quantitative yearly GHG emission reduction targets are set for sectors such as

transport, agriculture, waste management, industries not covered by the EU ETS and other sectors. State and municipal institutions that are engaged in the implementation of the Strategy for the National Climate Change Management Policy until 2050 and the Inter-institutional Action Plan for the Implementation of the Goals and Objectives for 2013–2020 report to the Government via the monitoring information system and provide annual activity reports on progress. The implementation of the action plan is funded by the State budget, municipal budgets, European structural and investment funds and other sources. In addition to the self-assessment of compliance carried out by the Lithuanian Government, compliance is monitored by the EU and set rules for action against non-compliance are applied (per article 7 of EU decision 406/2009).

30. The key overarching related cross-sectoral policy in the EU is the 2020 climate and energy package, adopted in 2009, which includes the revised EU ETS and the ESD. The package is supplemented by renewable energy and energy efficiency legislation and legislative proposals on the 2020 targets for CO₂ emissions from cars and vans, the carbon capture and storage directive, and the general programmes for environmental conservation, namely the 7th Environment Action Programme and the clean air policy package. The 2030 climate and energy framework, adopted in 2014, includes more ambitious targets that will be updated as part of the European Green Deal.

31. The achievement of the Energy Union objectives and targets is ensured through a combination of Energy Union initiatives and national policies set out in the integrated NECPs. The NECPs are periodically updated to reflect changes to EU policy, such as the implementation of the European Green Deal. Lithuania's NECP states that there are specific GHG reduction goals for ESR sectors for 2030 (reduction of 9 per cent for agriculture, transport and IPPU and 40 per cent for waste management compared with the 2005 level) and also sets adaptation goals, such as ensuring that climate-related economic losses are kept within 0.08 per cent of the Party's GDP each year. The energy sector targets are the same as those set out in the NEIS; for example, by 2030 at least 45 per cent of electrical power consumed in Lithuania is to be produced from RES. The measures listed in the NECP are to be mainstreamed in updated sectoral programmes for implementation, such as the Multi-Apartment Building Renovation Programme, the National Waste Management Plan and the Energy Efficiency Action Plan. The total investment needs for the NECP measures amount to EUR 14.1 billion. The NECP also refers to the Party's domestic long-term target to decrease overall emissions by 80 per cent by 2050 compared with the 1990 level, with removals from the LULUCF sector accounting for the remaining 20 per cent.

32. In operation since 2005, the EU ETS is a cap-and-trade system that covers all significant energy-intensive installations (mainly large point emissions sources such as power plants and industrial facilities), which produce 40–45 per cent of the GHG emissions of the EU. It is expected that the EU ETS will guarantee that the 2020 target (a 21 per cent emission reduction below the 2005 level) will be achieved for sectors under the scheme. The third phase of the EU ETS started in 2013 and the system now includes aircraft operations (since 2012) as well as N₂O emissions from the chemical industry, PFC emissions from aluminium production and CO₂ emissions from some industrial processes that were not covered in the previous phases of the EU ETS (since 2013). Auctioning is the default method for allocating allowances; however, harmonized rules for free allocations, based on benchmark values achieved by the most efficient 10 per cent of installations, are still in place as a safeguard for the international competitiveness of industrial sectors at risk of carbon leakage. For 2030, an emission reduction target of 43 per cent below the 2005 level has been set for the EU ETS.

33. The ESD became operational in 2013 and covers transport (excluding domestic and international aviation, and international maritime transport), residential and commercial buildings, agriculture and waste, together accounting for 55–60 per cent of the GHG emissions of the EU. The aim of the ESD is to decrease GHG emissions in the EU by 10 per cent below the 2005 level by 2020, and it includes binding annual targets for each member State for 2013–2020. The ESR, successor to the ESD, was adopted in 2018. It sets national emission reduction targets for 2030 ranging from 0 to 40 per cent below the 2005 level, and trajectories with annual limits for 2021–2030, for all member States, and keeps many of the flexibilities of the ESD. The national targets will collectively deliver a reduction of 30 per

cent in total EU emissions from the sectors covered by 2030 compared with the 2005 level. Under the ESR Lithuania has a domestic target of reducing GHG emissions by 9 per cent by 2030 compared with the 2005 level.

34. Lithuania highlighted the EU-wide mitigation actions that are under development, such as promoting the development of a low-carbon and climate-resilient economy in order to jointly reduce GHG emissions by 80–90 per cent and achieve climate neutrality by the second half of the century. Many of the mitigation actions that will have a significant impact on future emissions will be prescribed in the EU legal acts for the implementation of the 2030 climate and energy targets.

35. Lithuania introduced national-level policies to achieve its targets under the ESD and domestic emission reduction targets. The key policies reported are the NEIS, the Multi-Apartment Building Renovation Programme, the National Programme on the Development of Transport and Communications, the National Waste Management Plan for 2014–2020 and Lithuania’s Rural Development Programme 2014–2020. Of the measures that were quantified, the one with the most significant mitigation impact by 2020 is the introduction of best available technology in industry. Other policies that have delivered significant emission reductions include reducing the quantity of landfilled waste and renovating multi-apartment buildings. Table 4 provides information on some of the PaMs with the highest mitigation impacts. The ERT notes that a mitigation action of particular interest is the measure to safely and reliably integrate new generators that use RES into Lithuania’s transmission and distribution networks, which will enable a projected 1,944.5 MW increase in renewable power capacity between 2021 and 2030. In addition, this measure will support other PaMs focused on increasing the contribution of renewable energy to Lithuania’s energy system. Lithuania has also provided estimates of the impacts of some measures in the LULUCF sector, even though the LULUCF sector is excluded from its 2020 target. For example, the increase in forest coverage could cause GHG removals to rise by 31.47 kt CO₂ eq in 2020 (see table 4).

36. Lithuania highlighted the domestic mitigation actions that are under development, such as network integration of RES, energy efficiency improvements in non-industrial enterprises, renewal of the transport fleet using green public procurement for transport, compensation awarded to farms for long-term obligations related to climate change mitigation, and further measures promoting afforestation and restoration of damaged forests. Among the mitigation actions that provide a foundation for significant additional action are the support scheme for electricity generated from RES, aligning vehicle registration fees with pollution levels and the development of the liquid natural gas distribution system. The ERT notes that planned mitigation actions of particular interest are the measures aimed at enhancing and maintaining carbon stocks in soils because their role will be essential in terms of reaching Lithuania’s EU and domestic long-term climate and sustainability goals. Table 4 provides a summary of the reported information on the PaMs of Lithuania.

Table 4

Summary of information on policies and measures reported by Lithuania

<i>Sector</i>	<i>Key PaMs</i>	<i>Estimate of mitigation impact in 2020 (kt CO₂ eq)</i>	<i>Estimate of mitigation impact in 2030 (kt CO₂ eq)</i>
Policy framework and cross-sectoral measures	Strategy for the National Climate Change Management Policy	NE	NE
	NEIS	NE	NE
Energy			
Transport	Implementation of measures stipulated in the plans of sustainable mobility in the cities	40.64	243.86
	Vehicle re-registration fee by level of pollution	NA	381.82
	Yearly car pollution tax	NA	485.66
Renewable energy	RES integration in networks	NA	NE

<i>Sector</i>	<i>Key PaMs</i>	<i>Estimate of mitigation impact in 2020 (kt CO₂ eq)</i>	<i>Estimate of mitigation impact in 2030 (kt CO₂ eq)</i>
Energy efficiency	Consumer education and consulting (by energy suppliers)	NA	55.00
	Renovation of multi-apartment buildings	335.00	NE
	Public service obligations privilege for industrial companies implementing energy efficiency measures	NA	IE
IPPU	Introduction of best available technologies	500.00	NE
	Implementation of the Kigali Amendment to the Montreal Protocol	223.03	887.61
Agriculture	Implementation of the EU nitrates directive	100.00	NE
	Sustainable farming (Lithuania's Rural Development Programme 2014–2020)	NE	NE
	Balanced use of mineral fertilizers	NA	353.90
LULUCF	Increasing forest area	31.47	NA
	Afforestation and restoration of damaged forest	NA	371.17
	Restoring wetlands in arable peatlands and protecting their 'green bedding'	NA	95.43
Waste	Reduction of the quantity of waste in landfills	451.92	NE
	Prevention of food waste	NA	13.66

Note: The estimates of mitigation impact are estimates of emissions of CO₂ eq avoided in a given year as a result of the implementation of mitigation actions.

37. The ERT notes that Lithuania provided incorrect information in its submission regarding the mitigation impacts of certain PaMs. Lithuania indicated that there were several editorial mistakes in both the BR4 text and in CTF table 3, and updated, accurate information was provided during the review. Table 4 reflects the updated information.

38. The National Climate Change Committee was established for advisory purposes in the area of climate change policy development and implementation. The Party provided information on the progress of implementation of certain policies with an end date of 2020, such as its Rural Development Programme 2014–2020, promoting the competitiveness of the agriculture sector and containing environmental and climate elements, and the National Forest Area Development Programme 2012–2020 with the aim of increasing the forest area. This information is reflected in paragraphs 48–50 below.

(b) Policies and measures in the energy sector

39. The NEIS, renewed in June 2018, sets national energy goals, determines their implementation route to 2030 and provides energy development guidelines to 2050. The main strategic priorities of Lithuanian energy policy development are energy security, competitiveness, green energy development and innovation. The PaMs identified below aim to enable Lithuania to achieve its energy policy objective of ensuring security of energy supply at competitive prices and with the lowest possible environmental impacts.

40. **Energy efficiency.** The revised NEIS sets out energy efficiency improvement objectives, including total final energy savings of 11.67 TWh by 2020 and targets to reduce energy intensity by 1.5 and 2.4 times in relation to the 2017 level by 2030 and 2050, respectively. The priorities of PaMs related to energy efficiency are, firstly, to promote integrated renovation of multi-apartment and public buildings with the goal of reducing energy consumption by 2.6–3.0 TWh by 2020 and by 5–6 TWh by 2030, and secondly, to ensure rapidly developing low-energy and energy-efficient industries by installing new environmentally friendly technologies and equipment. These priorities are supported by a number of plans and programmes, such as the Energy Efficiency Action Plan. The Law on Energy Efficiency sets out mandatory energy savings from final demand. The Energy Efficiency Action Plan for 2017–2019 includes improvements to policies related to fuel

taxation, public and residential building renovation, energy audits in industry, energy savings in companies and replacement of household boilers. Energy efficiency PaMs targeting individual sectors are discussed below.

41. **Energy supply and renewables.** The main goal of the revised NEIS, which incorporates targets and goals set out in existing laws, plans and strategies, is to ensure Lithuania's energy independence by growing the share of electricity produced from RES, increasing biogas extraction and reducing electricity imports. The National Progress Programme also seeks to enhance energy supply through actions such as connecting the Lithuanian natural gas system with that of the EU and improving access to the international liquid natural gas market; linking the national electricity system with the continental European power system for synchronous operation; and promoting sustainable use of natural resources, thereby strengthening the Party's climate change mitigation effort and increasing its resilience.

42. Lithuania reported PaMs focused on RES that aim to increase the share of electricity and district heating produced from RES and promote the use of RES in industry, transport and households. These PaMs, which are enshrined in the revised NEIS and in Lithuania's Law on Energy from Renewable Sources, apply to multiple sectors. For example, the revised NEIS aims to increase the share of electricity produced from RES to 30 per cent of final electricity consumption in 2020, rising to 45 per cent in 2030 and 80 per cent in 2050. Likewise, the Law on Energy from Renewable Sources sets targets for electricity from RES to account for 23 per cent of final energy consumption by 2020. The key support instruments associated with these PaMs to enhance RES are feed-in tariffs, discounts for connecting renewables to the grid, prioritization of transmission from renewable sources, purchase of energy from renewable sources and support for investments in renewable energy.

43. **Residential and commercial sectors.** Lithuania has implemented or plans to implement a wide range of PaMs promoting energy efficiency and the use of RES in residential and commercial buildings. For example, the Multi-Apartment Building Renovation Programme targets apartment buildings built before 1993 and seeks to reduce energy consumption by about 20 per cent by 2020. The energy consumption of these buildings is expected to be reduced by at least 1,000 GWh per year. The National Programme for the Development of the Heat Industry for 2015–2021 aims to contribute to the development and modernization of the industry through technical solutions and an appropriate mix of fuels for thermal energy production. The programme also targets the potential for higher-efficiency cogeneration and investment. The PaMs supporting this programme aim to achieve a 5 per cent reduction in centralized heat consumption from the 2014 level by 2021 by improving energy efficiency in public and multi-apartment buildings. Lithuania also targets public buildings through the Public Building Renovation Programme, which provides for the renovation of 700,000 m² floor area by 2020 and is expected to reduce primary energy consumption by 60 GWh per year and lead to a GHG emission reduction of 14 kt CO₂ eq. It is expected that by 2030 some 510,000 m² central government public buildings and 450,000 m² municipal public buildings will have been renovated. Under the current law, public buildings are required to achieve an energy performance rating of class C or above after renovation, resulting in an estimated saving of approximately 10 GWh energy each year and about 0.55 TWh energy in total.

44. **Transport sector.** The National Renewable Energy Resources Development Strategy sets a target to increase the use of renewable energy resources in the transport sector from 4.3 per cent of final energy consumption in 2008 to 10 per cent in 2020. The Law on Energy from Renewable Sources, which was updated in 2017, aims to promote the use of energy from renewable sources in all modes of transport, thus implementing the EU renewable energy directive. The objectives set out in the National Programme on the Development of Transport and Communications for 2014–2022 include increasing the mobility of goods and passengers, improving the corridors of the TEN-T and its connections with national and local transport networks, increasing the energy efficiency of transport, mitigating the adverse impacts of transport on the environment and improving traffic safety and security. The programme analyses how road, rail, maritime, inland waterway and air transport could develop in future. The programme also identifies the main infrastructure development goals for transport powered by alternative energy sources, including electricity.

45. In 2017 the programme was updated to enhance its focus on the deployment of alternative fuel infrastructure. The goals of this updated programme include the installation of 28 public electric fast-charging access points near the TEN-T road network and 100 public access points for electric vehicle charging in urban and suburban clusters with more than 25,000 inhabitants by 2020; the installation of a refuelling point for liquefied natural gas (e.g. port of Klaipėda and in Kaunas along the TEN-T Core Network); and installation of refuelling points for compressed natural gas in Vilnius, Kaunas, Klaipėda, Šiauliai, Panevėžys, Telšiai, Ukmergė, Marijampolė and Elektrėnai and in TEN-T Core Network corridors. Lithuania has implemented or plans to implement a wide range of transport-focused PaMs targeting vehicle or transport fuel-specific taxes, biking and transit programmes, electric vehicle incentives and vehicle efficiency standards.

46. **Industrial sector.** Lithuania has implemented or plans to implement industrial sector PaMs that focus on key concepts of the circular economy, such as increased resource efficiency, recycling and use of natural resources and waste reduction. The Programme for Investment Incentives and Industry Development for 2014–2020 is aimed at more efficient use of energy and increased use of RES. The implementation of this programme is financed through the EU structural and investment funds. While large industrial emitters are covered under the EU ETS, Lithuania has implemented or plans to implement PaMs targeting industrial sectors not covered by the EU ETS. These PaMs aim to reduce the intensity of energy consumption in industrial companies by increasing generation and consumption of renewable energy. They also support the development of low-energy and energy-efficient industries and help them to install and acquire new environmentally friendly technologies and equipment.

(c) **Policies and measures in other sectors**

47. **Industrial processes.** PaMs in this sector are linked to waste management, energy efficiency and air quality targets. Lithuania has updated its national legislation to support the EU goal of reducing fluorinated gases by two thirds by 2030 compared with the 2014 level. The implementation of the Kigali Amendment to the Montreal Protocol, which entered into force at the beginning of 2019, has the potential to achieve the highest mitigation impact in this sector by 2030. The Party supports research and innovation and plans to introduce incentives for start-ups, microenterprises and small and medium-sized enterprises to encourage the use of technological and non-technological eco-innovations. In addition, Lithuania will promote the transformation of traditional industries. In 2002, Lithuania also introduced legislation to limit emissions of volatile organic compounds (released by paints, solvents and adhesives), which has co-benefits in terms of human health and air quality.

48. **Agriculture.** Owing to its national circumstances, over half of Lithuania's land is suitable for agricultural use. The defining policy document for this sector is Lithuania's Rural Development Programme 2014–2020, which not only promotes the growth and competitiveness of the agriculture sector, but also emphasizes aspects that are beneficial to the environment and the climate. Financial support for forestry measures was received under the European Agricultural Fund for Rural Development. Lithuania indicated that, although the programme is ending soon, most of the measures will be renewed in 2020.

49. Lithuania has a number of planned additional educational and awareness-raising actions in this sector that aim to inform and advise farmers on sustainable and climate-friendly farming practices. Furthermore, the Party will provide financial incentives for complying with long-term obligations related to the mitigation of climate change, especially with regard to the balanced use of mineral fertilizers. With a view to protecting waters from pollution and improving the status of groundwater and surface-water bodies, Lithuania elaborated the Water Sector Development Programme, introduced environmental requirements for manure management and adopted a programme to minimize water pollution caused by agricultural activity. All of these policies were also reported in the BR3 and, with the exception of the Water Sector Development Programme, are connected to the implementation of the EU nitrates directive.

50. **LULUCF.** For the LULUCF sector, the main actions are set out in the National Forest Area Development Programme 2012–2020. The main goal of the programme is to increase forest area up to 34.2 per cent of the country's total land area, which would increase GHG

removals by 1,064 kt CO₂ eq by 2020. At the beginning of 2020, forest cover in the country had reached 33.7 per cent. Afforestation and the restoration of damaged forests are key measures that will continue in the post-2020 period and could result in removals of 2,091 kt CO₂ eq by 2030. The EU has adopted the LULUCF regulation (regulation 2018/841), which stipulates that each member State needs to ensure that emissions from the LULUCF sector are compensated by an equivalent removal of CO₂ (the ‘no debit’ rule). This regulation incentivizes sustainable and climate-friendly forestry and agricultural practices, which will play an important role in achieving the 2050 EU climate-neutrality target, with the LULUCF sector acting as a sink, and also supports domestic long-term goals. In addition to forest management measures, the Party also plans to preserve and enhance carbon stocks through wetland restoration and the protection of organic soils.

51. **Waste management.** The National Waste Management Plan for 2014–2020 is the guiding policy document in this sector in relation to GHG emission reduction. The document will be updated in 2020 and its time frame will extend to 2027. The reduction of biodegradable municipal waste sent to landfill is expected to achieve a significant mitigation impact by 2020. In 2014–2020, investments of EUR 82.2 million were allocated to support the further development of the separate collection of waste, modernize the Party’s capacities for waste preparation in terms of recycling, reuse and recovery, and improve its waste management information and monitoring systems. Lithuania has adopted the ‘recycle, repair, reuse’ approach with a view to avoiding waste at all stages of the value chain. Many awareness-raising and education actions are planned in this area and are expected to achieve a considerable mitigation impact by 2030. With regard to these new ‘soft’ measures, which are difficult to quantify, the ERT noted that Lithuania provided estimated mitigation impacts for the prevention of food waste (13.66 kt CO₂ eq in 2030) and for improvements in the waste sorting skills of residents (18.94 kt CO₂ eq in 2030).

(d) Response measures

52. Lithuania did not report on its assessment of the economic and social consequences of its response measures. During the review, the Party provided references to the NC7 (chap. 4.12) and the projects listed in its BR4 (chap. 5).

53. According to Lithuania’s NC7 and its 2019 national inventory report, as an EU member State the Party’s efforts to minimize adverse impacts on developing countries are largely driven by the EU’s climate change policy and by its policies and programmes affecting developing countries. EU regulations also control or influence market conditions, fiscal incentives, tax and duty regulations and subsidies in all economic sectors. The EU has an established impact assessment process for new policy initiatives, which allows member States to identify and limit potential adverse social, environmental and economic consequences for various stakeholders, including developing country Parties, at an early stage of the legislative process. In addition, the Party explained during the review that, as reported in the BR4, it finances various projects that minimize adverse social, environmental and economic impacts on developing countries.

(e) Assessment of adherence to the reporting guidelines

54. The ERT assessed the information reported in the BR4 of Lithuania and identified issues relating to completeness, transparency and thus adherence to the UNFCCC reporting guidelines on BRs. The findings are described in table 5.

Table 5

Findings on mitigation actions and their effects from the review of the fourth biennial report of Lithuania

<i>No.</i>	<i>Reporting requirement, issue type and assessment</i>	<i>Description of the finding with recommendation or encouragement</i>
1	Reporting requirement specified in paragraph 6 Issue type: transparency	The PaMs reported in the BR4 did not always clearly link to the corresponding entry in CTF table 3, particularly for the LULUCF sector. There were also several inconsistencies in the status and start date of implementation of the PaMs. Lithuania did not provide information on the status of implementation of measures with an end

No.	<i>Reporting requirement, issue type and assessment</i>	<i>Description of the finding with recommendation or encouragement</i>
	Assessment: recommendation	<p>date in 2020, such as the progress in increasing the area of forests or progress towards the climate-related targets of the Rural Development Programme.</p> <p>During the review Lithuania updated the ERT on the implementation of some key policy plans, such as Lithuania’s Rural Development Programme 2014–2020 and the National Forest Area Development Programme 2012–2020. The Party also informed the ERT of the expected date the Parliament will approve its revised National Climate Change Management Policy until 2050, which includes new objectives such as reducing GHG emissions by 70 per cent by 2040 compared with the 1990 level.</p> <p>The ERT recommends that Lithuania improve the transparency of its reporting by providing consistent information on PaMs reported between the textual part of the BR and in CTF table 3 and by providing consistent information on the start date and status of implementation of the various PaMs. The ERT notes that updates on the progress of implementation of key PaMs, especially those that are close to completion, would further enhance transparency.</p>
2	Reporting requirement specified in paragraph 8 Issue type: completeness Assessment: encouragement	<p>The Party did not provide in its BR4 information on the assessment of the economic and social consequences of its response measures.</p> <p>During the review, the Party provided a reference to the NC7 (chap. 4.12) and to chapter 5 of the BR4, where projects are listed.</p> <p>The ERT reiterates the encouragement from the previous review report for the Party to improve the completeness of its reporting in its next BR by providing, to the extent possible, information on the assessment of the economic and social consequences of response measures or by including a reference to the section of its most recent NC or to other relevant documents that provide this information.</p>
3	Reporting requirement specified in CTF table 3 Issue type: completeness Assessment: recommendation	<p>Lithuania reported the quantified mitigation impacts of some of its mitigation actions as “NE” in CTF table 3 and did not provide an explanation as to why the impacts of mitigation actions were not estimated.</p> <p>During the review, the Party explained that reporting the estimated impacts of its PaMs is not a simple process, as the PaMs vary in nature and all require separate analysis and assumptions. For example, the Party did not calculate the estimated impact of some of the ‘soft’ PaMs related to education or awareness-raising. For the energy-related PaMs, the estimated impact was calculated as a package associated with the WAM scenario rather than for individual PaMs. Lithuania also explained that mitigation impacts were not estimated for PaMs that do not have a direct impact on GHG emissions.</p> <p>The ERT recommends that, in its next submission, Lithuania provide estimates of the mitigation impacts of individual PaMs or explain why this was not possible owing to national circumstances. For example, a custom footnote could be included in CTF table 3 to explain why some information is not included. The ERT notes that, if impacts are estimated for a group of PaMs, the Party could improve transparency by explaining which PaMs are included and why their mitigation impact could only be estimated as a group.</p>
4	Reporting requirement specified in paragraph 24 Issue type: completeness Assessment: encouragement	<p>Lithuania did not report on the arrangements established for the process of self-assessment of compliance with emission reduction commitments or the level of emission reduction that is required by science. Lithuania also did not report on its progress towards establishing national rules for taking national action against domestic non-compliance with emission reduction targets.</p> <p>During the review the Party explained that its self-assessment of compliance is carried out at the national level through the Inter-institutional Action Plan for the Implementation of the Goals and Objectives for 2013–2020 of the Strategy for National Climate Change Management Policy. The Party explained further that its compliance is also monitored by the EU and EU rules for action against non-compliance are applied.</p> <p>The ERT reiterates the encouragement from the previous review report for the Party to improve the completeness of its reporting by providing in the next BR, to the extent possible, information on its self-assessment of compliance with emission reduction commitments and of its progress towards establishing national rules for taking action against non-compliance.</p>

Note: Item listed under reporting requirement refers to the relevant paragraph of the UNFCCC reporting guidelines on BRs or to the CTF table number from the “Common tabular format for UNFCCC biennial reporting guidelines for developed country Parties”. The reporting on the requirements not included in this table is considered to be complete, transparent and thus adhering to the UNFCCC reporting guidelines on BRs.

2. Estimates of emission reductions and removals and the use of units from market-based mechanisms and land use, land-use change and forestry

(a) Technical assessment of the reported information

55. Lithuania reported that it does not intend to use units from market-based mechanisms under the Kyoto Protocol, other market-based mechanisms under the Convention or other market-based mechanisms to meet its commitment under the ESD. Given that the contribution of LULUCF activities is not included in the joint EU target under the Convention, reporting of contributions of LULUCF activities is not applicable for Lithuania. Table 6 illustrates Lithuania’s ESD emissions and the use of units from market-based mechanisms to achieve its ESD target.

Table 6

Summary of information on the use of units from market-based mechanisms by Lithuania to achieve its target

<i>Year</i>	<i>ESD emissions (kt CO₂ eq)</i>	<i>AEA (kt CO₂ eq)</i>	<i>Use of units from market- based mechanisms (kt CO₂ eq)^a</i>	<i>Annual AEA surplus/deficit (kt CO₂ eq)^b</i>	<i>Cumulative AEA surplus/deficit (kt CO₂ eq)</i>
2013	12 449.46	12 936.66	NA	487.20	487.20
2014	12 922.27	13 297.65	NA	375.38	862.58
2015	13 250.96	13 658.63	NA	407.67	1 270.25
2016	13 921.70	14 019.61	NA	97.91	1 368.16
2017	14 132.50	14 125.63	NA	-6.87	1 361.29

Source: Lithuania’s BR4.

^a The use of “NA” indicates that Lithuania stated in its BR that it does not intend to use market-based mechanisms to achieve its target.

^b A positive number (surplus) indicates that ESD emissions were lower than the AEA, while a negative number (deficit) indicates that ESD emissions were greater than the AEA.

56. In assessing the progress towards achieving the 2020 joint EU target, the ERT noted that Lithuania’s emission reduction target for the ESD is 15 per cent above the base-year level (see para. 17 above). In 2017, Lithuania’s emissions covered by the ESD were 0.1 per cent (6.87 kt CO₂ eq) above the AEA. However, Lithuania has a cumulative surplus of 1,361.29 kt CO₂ eq with respect to its AEAs between 2013 and 2017.

57. The EU performs an ESD compliance assessment every year. The assessment has been completed for 2013–2017. During the review, the Party explained that, according to the EU ESD compliance assessment, Lithuania has met its targets, as the ESD allows member States to use flexibility provisions to meet their annual targets, with certain limitations. In 2017, Lithuania’s emissions exceeded the AEA and to cover this the Party used its banked surplus of AEAs from previous years.

58. The ERT noted that Lithuania is making progress towards its ESD target by implementing mitigation actions that are limiting growth in emissions.

(b) Assessment of adherence to the reporting guidelines

59. The ERT assessed the information reported in the BR4 of Lithuania and identified an issue relating to transparency and thus adherence to the UNFCCC reporting guidelines on BRs. The finding is described in table 7.

Table 7

Findings on estimates of emission reductions and removals and on the use of units from market-based mechanisms and land use, land-use change and forestry from the review of the fourth biennial report of Lithuania

No.	<i>Reporting requirement, issue type and assessment</i>	<i>Description of the finding with recommendation</i>
1	Reporting requirement specified in paragraph 10 Issue type: transparency Assessment: recommendation	<p>The contribution of LULUCF and market-based mechanisms was generally not reported in CTF table 4, except for 2016 and 2017, for which “NA” was reported for the contribution of LULUCF. The use of units from market-based mechanisms under the Convention was reported as “NA” for 2017 and as “0” for 2016. Furthermore, the ERT noted that CTF tables 4(a)I_n and 4(b) were reported for 2017 and 2018 instead of for 2016 and 2017. In CTF table 4(b), units for market-based mechanisms were not given, although Kyoto Protocol units and totals were reported as “0” or “NA”. Lithuania reported in its BR4 that it does not intend to use credits from market-based mechanisms to comply with the 2020 ESD target.</p> <p>During the review, Lithuania stated that it will work to increase the transparency of the CTF tables.</p> <p>The ERT recommends that Lithuania report in CTF table 4 the intended contribution of LULUCF for all relevant years, and in CTF tables 4 and 4(b) the Party’s intention not to use units from market-based mechanisms under the Convention or other market-based mechanisms or Kyoto Protocol units. The ERT notes that the Party could do this by using notation keys or custom footnotes, or by reporting the quantity of units from market-based mechanisms or the quantity of Kyoto Protocol units used to meet the ESD target. The ERT also recommends that the Party provide information in CTF tables 4(a)I and 4(b) for the two last years, consistent with the time range reported in CTF table 4.</p>

Note: Item listed under reporting requirement refers to the relevant paragraph of the UNFCCC reporting guidelines on BRs. The reporting on the requirements not included in this table is considered to be complete, transparent and thus adhering to the UNFCCC reporting guidelines on BRs.

3. Projections overview, methodology and results

(a) Technical assessment of the reported information

60. Lithuania reported updated projections for 2020 and 2030 relative to actual inventory data for 2017 under the WEM scenario. The WEM scenario reported by Lithuania includes implemented and adopted PaMs up to 2019; implementation of some these PaMs will begin as late as 2023.

61. In addition to the WEM scenario, Lithuania reported the WAM scenario. The WAM scenario includes planned PaMs. Lithuania provided a definition of its scenarios, explaining that its WEM scenario includes existing measures, such as the support scheme for RES, the blending mandate for biofuels and the renovation of multi-apartment buildings, while its WAM scenario includes further measures such as incentives for combined freight transport and investment support for climate-friendly farming methods in livestock farms. The definitions indicate that the scenarios were prepared according to the UNFCCC reporting guidelines on BRs.

62. The projections are presented on a sectoral basis, using the same sectoral categories as those used in the reporting on mitigation actions, and on a gas-by-gas basis for CO₂, CH₄, N₂O, PFCs, HFCs and SF₆ as well as NF₃ for 2020 and 2030. Projections by sectoral category were also provided for a longer time series (i.e. 2020, 2025, 2030, 2035 and 2040). The projections are also provided in an aggregated format for each sector and for a Party total using GWP values from the AR4. Lithuania reported on factors and activities affecting emissions for each sector.

(b) Methodology, assumptions and changes since the previous submission

63. Lithuania provided information on the changes since the submission of its NC7 in the assumptions, methodologies, models and approaches used in the projection scenarios. The methodology used for the preparation of the projections is different from that used for the preparation of the emission projections for the NC7. Lithuania reported supporting

information further explaining the methodologies and the changes made since the NC7. The changes included extending the projection time frame (i.e. from 1990–2035 to 1990–2040), using a different source for projected GDP growth rates (i.e. Baltic Energy Technology Scenarios 2018 prepared by the Nordic Council of Ministers) and preparing a WAM scenario for all sectors, among others. Lithuania reported in CTF table 5 the key variables and assumptions used in the preparation of the projection scenarios.

64. To prepare its projections, Lithuania relied on key underlying assumptions relating to population, economic development indicators and the EU ETS carbon price. The assumptions were updated on the basis of the most recent economic developments known at the time of the preparation of the projections. CTF table 5 reported variables and assumptions related to population, the population growth rate and the GDP growth rate. The table contained no information on domestic or international key energy prices. During the review, Lithuania explained that energy prices are not an input to its projections model. Lithuania's BR4 did not report information on the models and tools used for the projections, but during the review the Party provided information on the tools used to prepare its projections. The tools are sector specific and are best described as spreadsheet calculators.

65. Lithuania provided information on sensitivity analyses. Sensitivity analyses were conducted for a number of important assumptions, such as the EU ETS carbon price, population trends, real GDP growth rates, crude oil production levels, livestock numbers and carbon stock changes. A sensitivity analysis was undertaken for each sectoral category. For the energy sector, the sensitivity analysis on alternative EU ETS carbon prices (a stable carbon price and an increasing carbon price until 2040) shows a considerable difference in projected GHG emissions between the two scenarios. The variation can be explained by the corresponding increase in expenditure for GHG emissions for operators, leading more operators to switch to biofuels and invest in efficiency improvements. The results also show that an increase in EU emission allowance prices to EUR 50/t CO₂ leads to a significant reduction in emissions from public electricity and heat production and from the manufacturing and construction sectors. For the IPPU sector, emissions in 2030 could be 1.4 per cent below the WEM scenario projections (198 kt CO₂ eq compared with 201 kt CO₂ eq).

(c) Results of projections

66. The projected emission levels under different scenarios and information on the quantified economy-wide emission reduction target are presented in table 8 and figure 1.

67. Lithuania's total GHG emissions excluding LULUCF in 2020 and 2030 are projected under the WEM scenario to decrease by 56.4 and 59.3 per cent, respectively, below the 1990 level. Under the WAM scenario, emissions in 2020 and 2030 are projected to be lower than those in 1990 by 56.5 and 67.0 per cent, respectively.

Table 8

Summary of greenhouse gas emission projections for Lithuania

	Total GHG emissions		Emissions under the ESD	
	GHG emissions (kt CO ₂ eq per year)	Change in relation to 1990 level (%)	ESD emissions (kt CO ₂ eq per year)	Comparison to 2020 AEA (%)
2020 AEA under the ESD ^a	NA	NA	15 240.06	100.0
Inventory data 1990	48 241.51	NA	NA	NA
Inventory data 2017	20 705.94	-57.1	14 132.50	92.7
WEM projections for 2020	21 026.83	-56.4	14 550.75	95.5
WAM projections for 2020	20 979.12	-56.5	14 503.78	95.2
WEM projections for 2030	19 635.12	-59.3	13 648.51	NA
WAM projections for 2030	15 920.12	-67.0	10 211.30	NA

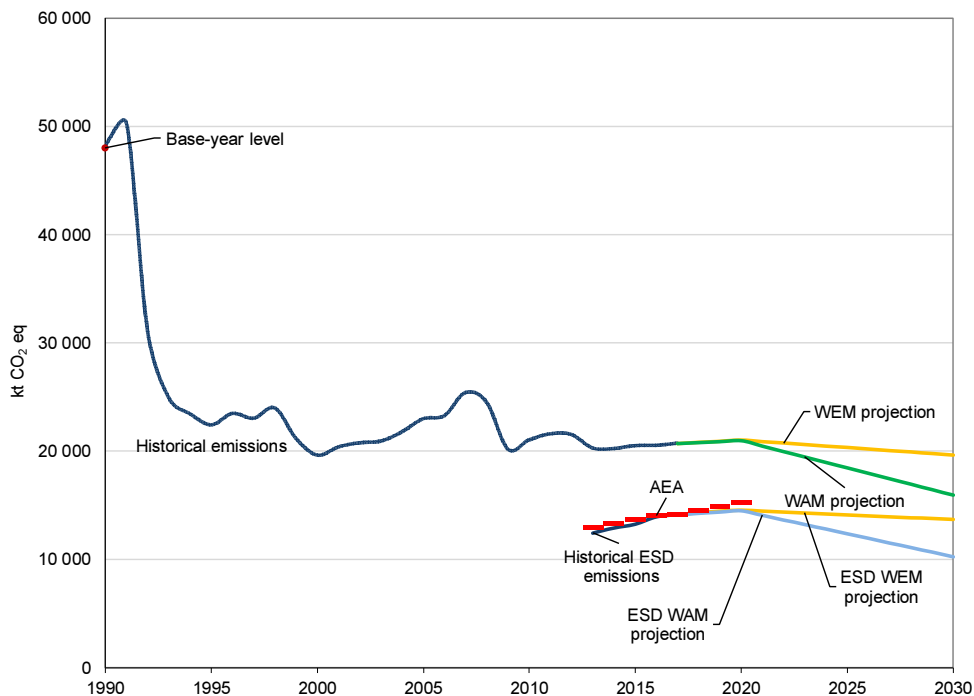
Sources: Lithuania's BR4 and CTF table 6. ESD projections data provided by Lithuania during the review.

Note: The projections are for GHG emissions excluding LULUCF and excluding indirect CO₂.

^a The quantified economy-wide emission reduction target under the Convention is a joint target of the EU and its member States. The target is to reduce emissions by 20 per cent compared with the base-year (1990) level by 2020. Lithuania's target under the ESD is 15 per cent above the 2005 level by 2020.

68. Lithuania’s target under the ESD is to limit its ESD emission growth to 15 per cent above the 2005 level by 2020 (see para. 17 above). Lithuania’s AEAs, which correspond to its national emission target for ESD sectors, change from 12,936.66 kt CO₂ eq in 2013 to 15,240.06 kt CO₂ eq for 2020. The projected level of emissions under the WEM and WAM scenarios is 4.5 and 4.8 per cent, respectively, below the AEAs for 2020. The ERT noted that the Party’s cumulative surplus of AEAs is 1,361.29 kt CO₂ eq for 2013–2017, which suggests that Lithuania expects to meet its target under the WEM scenario.

Figure 1
Greenhouse gas emission projections reported by Lithuania

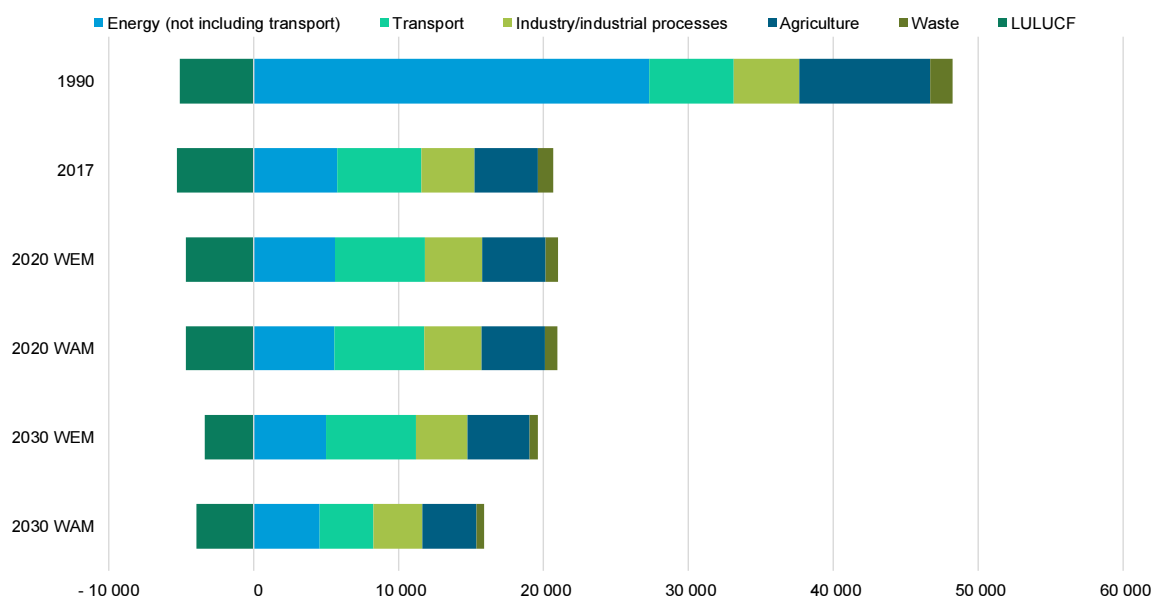


Sources: EU transaction log (AEAs) and Lithuania’s BR4 and CTF tables 1 and 6. ESD projections data were provided by Lithuania during the review.

69. Lithuania presented the WEM and WAM scenarios by sector for 2020 and 2030, as summarized in figure 2 and table 9.

Figure 2
Greenhouse gas emission projections for Lithuania presented by sector

(kt CO₂ eq)



Source: Lithuania's BR4 CTF table 6.

Table 9
Summary of greenhouse gas emission projections for Lithuania presented by sector

Sector	GHG emissions and removals (kt CO ₂ eq)					Change (%)			
	1990	2020		2030		1990–2020		1990–2030	
		WEM	WAM	WEM	WAM	WEM	WAM	WEM	WAM
Energy (not including transport)	27 306.16	5 646.00	5 606.00	5 020.00	4 580.00	-79.3	-79.5	-81.6	-83.2
Transport	5 843.47	6 194.00	6 187.00	6 186.00	3 681.00	6.0	5.9	5.9	-37.0
Industry/industrial processes	4 481.82	3 929.00	3 929.00	3 557.00	3 376.00	-12.3	-12.3	-20.6	-24.7
Agriculture	9 039.90	4 399.00	4 399.00	4 304.00	3 756.00	-51.3	-51.3	-52.4	-58.5
LULUCF	-5 061.80	-4 663.00	-4 663.00	-3 329.00	-3 936.00	-7.9	-7.9	-34.2	-22.2
Waste	1 570.14	857.00	857.00	567.00	527.00	-45.4	-45.4	-63.9	-66.4
Other	-	-	-	-	-	-	-	-	-
Total GHG emissions excluding LULUCF	48 241.50	21 026.83	20 979.12	19 635.12	15 920.12	-56.4	-56.5	-59.3	-67.0

Source: Lithuania's BR4 CTF table 6.

70. According to the projections reported for 2020 under the WEM scenario, the most significant emission reductions are expected to occur in the energy sector (not including transport), amounting to projected reductions of 79.3 per cent between 1990 and 2020. The pattern of projected emissions reported for 2030 under the same scenario remains the same: the energy sector (not including transport) is projected to have the most significant reduction, with projected reductions of 81.6 per cent between 1990 and 2030.

71. If additional measures are considered (i.e. under the WAM scenario), the patterns of emission reductions by 2020 presented by sector remain the same.

72. Lithuania presented the WEM and WAM scenarios by gas for 2020 and 2030, as summarized in table 10. The ERT notes that providing the data for each gas in a tabular

format within the textual portion of the Party's next BR could facilitate a better understanding of the projections.

Table 10

Summary of greenhouse gas emission projections for Lithuania presented by gas

Gas	GHG emissions and removals (kt CO ₂ eq)					Change (%)			
	2020		2030			1990–2020		1990–2030	
	1990	WEM	WAM	WEM	WAM	WEM	WAM	WEM	WAM
CO ₂ ^a	35 810.39	14 252.62	14 207.00	13 649.00	10 551.00	-60.2	-60.3	-61.9	-70.5
CH ₄	7 006.01	3 041.00	3 040.00	2 597.00	2 477.00	-56.6	-56.6	-62.9	-64.6
N ₂ O	5 425.10	3 155.00	3 155.00	3 180.00	2 708.00	-41.8	-41.8	-41.4	-50.1
HFCs	–	569.00	560.99	201.00	176.00	–	–	–	–
PFCs	–	–	–	–	–	–	–	–	–
SF ₆	–	8.00	8.00	8.00	8.00	–	–	–	–
NF ₃	–	0.12	0.12	0.12	0.12	–	–	–	–
Total GHG emissions without LULUCF	48 241.50	21 026.83	20 979.12	19 635.12	15 920.12	-56.4	-56.5	-59.3	-67.0

Source: Lithuania's BR4 CTF table 6.

^a Lithuania did not include indirect CO₂ emissions in its projections.

73. For 2020, the most significant reductions are projected for CO₂, followed by CH₄ and N₂O emissions: 60.2, 56.6 and 41.8 per cent, respectively, between 1990 and 2020. For 2030, the projected pattern remains the same, with the most significant reductions projected for CO₂, followed by CH₄ and N₂O emissions: 61.9, 62.9 and 41.4 per cent, respectively, between 1990 and 2030. Lithuania reported emissions of HFCs, PFCs, SF₆ and NF₃ as not occurring.

74. If additional measures are considered (i.e. under the WAM scenario), the patterns of emission reductions by 2020 presented by gas remain the same.

(d) Assessment of adherence to the reporting guidelines

75. The ERT assessed the information reported in the BR4 of Lithuania and identified issues relating to completeness, transparency and thus adherence to the UNFCCC reporting guidelines on BRs. The findings are described in table 11.

Table 11

Findings on greenhouse gas emission projections reported in the fourth biennial report of Lithuania

No.	Reporting requirement, issue type and assessment	Description of the finding with recommendation or encouragement
1	Reporting requirement specified in paragraph 28 Issue type: completeness Assessment: encouragement	Lithuania reported WAM projections in its BR4, but did not report a WOM projection. During the review, the Party explained that since a WOM projection was provided in the NC6, it did not see the value in providing a new WOM scenario, focusing its efforts instead on the WEM and WAM scenarios. Lithuania also explained that the need for a WOM scenario is still under debate by the Party and that it has started work on ex post evaluations of PaMs. This ex post analysis may allow Lithuania to develop a methodology for a WOM projection. The ERT reiterates the encouragement from the previous review report for Lithuania to improve the completeness of its reporting by including a WOM scenario in its next BR or to provide a duly substantiated explanation as to why this information was not included in the BR owing to Lithuania's national circumstances.
2	Reporting requirement specified in paragraph 35 Issue type: completeness	Lithuania did not report a projection of indirect GHG emissions in its BR4. However, the BR4 included a link to the data submitted under the EU directive on national emission ceilings for certain atmospheric pollutants.

No.	<i>Reporting requirement, issue type and assessment</i>	<i>Description of the finding with recommendation or encouragement</i>
	Assessment: encouragement	During the review, the Party provided projections for indirect GHG emissions. Lithuania explained that the department responsible for these projections currently uses different reporting methods. In addition, Lithuania explained that the input data and base year might differ. Taking these differences into account and considering that reporting projections for indirect GHG emissions is not a mandatory provision, the Party decided not to provide this information in its BR4. Lithuania also noted that it hopes to harmonize reporting methods in the future.
3	Reporting requirement specified in paragraph 38	Lithuania did not provide diagrams of its projections on a gas-by-gas basis in its BR4.
	Issue type: completeness	During the review, the Party noted that the gas-by-gas projection data were provided in CTF tables 6(a) and 6(c). It also noted that it recognized the value of including this information in its BR.
	Assessment: encouragement	The ERT encourages Lithuania to provide diagrams illustrating its projections on a gas-by-gas basis in its next BR.
4	Reporting requirement specified in paragraph 43	In the BR4, Lithuania reported general assumptions and methodologies and referred to the “Methodological guidance for the preparation of national GHG emission projections” published by the Lithuanian Energy Institute without specifically addressing some of the requirements of the UNFCCC reporting guidelines on NCs, such as the gases and sectors considered and the type of model used (key characteristics, original purpose), including its strengths and weaknesses and how it accounts for any overlap or synergies that may exist between different PaMs.
	Issue type: transparency	During the review, the Party provided information on the tools used to develop its projections and the approach and methodologies used to estimate the impacts of its PaMs. The Party noted that new tools were used to develop projections and estimate the mitigation impact of its PaMs.
	Assessment: encouragement	The ERT reiterates the encouragement from the previous review report for the Party to increase transparency by not only providing general information on the models and approaches used but also including detailed information that describes each model and approach used for projections: the gases and sectors considered, the type of model used (key characteristics, original purpose) and the model’s strengths and weaknesses, as well as how it accounts for any overlap or synergies that may exist between different PaMs.

Note: Item listed under reporting requirement refers to the relevant paragraph of the UNFCCC reporting guidelines on NCs, as per para. 11 of the UNFCCC reporting guidelines on BRs. The reporting on the requirements not included in this table is considered to be complete, transparent and thus adhering to the UNFCCC reporting guidelines on NCs and on BRs.

D. Provision of financial, technological and capacity-building support to developing country Parties

76. Lithuania is not an Annex II Party and is therefore not obliged to adopt measures and fulfil obligations defined in Article 4, paragraphs 3–5, of the Convention. However, Lithuania provided information in its BR4 on its provision of support to developing country Parties. The ERT commends Lithuania for reporting this information and suggests that it continue to do so in future BRs.

77. According to the BR4, Lithuania has provided technical and financial support related to climate change adaptation and mitigation to developing countries since 2011. In addition, the EU has provided significant amounts of financial support to developing countries, increasing from EUR 9.5 billion in 2017 to EUR 20.4 billion in 2017. Lithuania reported information in its CTF tables on support provided in 2017–2018 and gave more information in the textual part of its BR4. The framework for Lithuania’s climate change related support

consists of legislation on development cooperation policy and on financial instruments for climate change management, together with national action plans for development cooperation and for climate change management strategy.

78. Lithuania has provided climate finance through various multilateral and regional funds, including the Green Climate Fund and the Eastern Partnership Technical Assistance Trust Fund, administered by the European Investment Bank. In recent years, the focus of Lithuania's support has shifted to bilateral support, reflecting new government policy and legislation. According to the BR4, annual financial support provided by Lithuania to developing countries ranged from EUR 337,000 to 1,600,000 in 2016–2019, for projects like the installation of solar power plants in Georgia, Malaysia and Mali. Lithuania has also carried out training and capacity-building projects in several countries, for example, in North Macedonia and Serbia, in fields such as sustainable forest management and nature protection.

III. Conclusions and recommendations

79. The ERT conducted a technical review of the information reported in the BR4 and CTF tables of Lithuania in accordance with the UNFCCC reporting guidelines on BRs. The ERT concludes that the reported information mostly adheres to the UNFCCC reporting guidelines on BRs and provides an overview of emissions and removals related to the Party's quantified economy-wide emission reduction target; assumptions, conditions and methodologies related to the attainment of the target; the progress of Lithuania towards achieving its target; and the Party's provision of support to developing country Parties.

80. Lithuania's total GHG emissions excluding LULUCF covered by its quantified economy-wide emission reduction target were estimated to be 57.8 per cent below its 1990 level, whereas total GHG emissions including LULUCF were 61.4 per cent below its 1990 level, in 2018. Emissions reached the highest point in 1991 (50,014 kt CO₂ eq) and decreased rapidly in the following two years, falling to 24,733 kt CO₂ eq in 1993. Since 2010, annual emissions have remained at a level of approximately 21,000–22,000 kt CO₂ eq. The steep decline in emissions in the early 1990s was caused by the collapse of the economy of the former Soviet Union and a resulting blockade of resources imposed by the former Soviet Union from 1991 to 1993. The shift to a market-based economy led to manufacturing industries, energy industries and the agriculture sector being restructured. Moreover, since the early 1990s, the country's population has decreased significantly and the use of fossil fuels, especially oil but also coal, petrol and natural gas, has fallen considerably.

81. Under the Convention Lithuania 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. The target covers all sectors (except LULUCF) and CO₂, CH₄, N₂O, HFCs, PFCs and SF₆, expressed using GWP values from the AR4. Emissions and removals from the LULUCF sector are not included.

82. Under the ESD Lithuania has a target of limiting its emission growth to 15 per cent above the 2005 level by 2020. The 2013–2020 progression in Lithuania's AEAs (its national emission target under the ESD) is 12,936.66–15,240.06 kt CO₂ eq.

83. In 2017, Lithuania's ESD emissions were 0.1 per cent (6.87 kt CO₂ eq) above the AEA under the ESD. Lithuania does not intend to use credits from market-based mechanisms to meet its 2020 ESD target. However, Lithuania has a cumulative surplus of 1,361.29 kt CO₂ eq with respect to its AEAs for 2013–2017. The ERT noted that the Party has met its targets according to the EU ESD compliance assessment for this period, as the ESD allows EU member States to use flexibility provisions in order to meet their annual targets, with certain limitations. As Lithuania's emissions exceeded the AEA in 2017, the Party used its banked surplus of AEAs from previous years. The ERT noted that Lithuania is making progress towards its ESD target by limiting the growth of emissions.

84. The GHG emission projections provided by Lithuania in its BR4 correspond to the WEM and WAM scenarios. Under these scenarios, emissions are projected to be 56.4 and 56.5 per cent below the 1990 level by 2020, respectively. According to the projections under the WEM scenario, ESD emissions are estimated to reach 14,550.75 kt CO₂ eq by 2020.

Under the WAM scenario, Lithuania's emissions from ESD sectors in 2020 are projected to be 14,503.78 kt CO₂ eq. The projected level of emissions under the WEM and WAM scenarios is 4.5 and 4.8 per cent, respectively, below the AEAs for 2020. The ERT noted that the Party's cumulative surplus of AEAs is 1,361.29 kt CO₂ eq, which suggests that Lithuania expects to meet its target under the WEM scenario.

85. Lithuania's main policy framework relating to energy and climate change is the EU 2020 climate and energy package, and the EU's Energy Union strategy for the post-2020 period. Key policy and legislation supporting Lithuania's climate change goals includes the Strategy for the National Climate Change Management Policy, the NEIS, the Multi-Apartment Building Renovation Programme, the National Programme on the Development of Transport and Communications, Lithuania's Rural Development Programme 2014–2020, the National Forest Area Development Programme 2012–2020 and the National Waste Management Plan for 2014–2020. The mitigation action with the most significant mitigation impact is the introduction of best available technology in industry. Other policies that have delivered significant emission reductions include reducing the quantity of landfilled waste and renovating multi-apartment buildings.

86. For the post-2020 period Lithuania has a diverse portfolio of PaMs in all sectors and has increased the number of measures included in its NECP; this now includes new PaMs as well as PaMs that were adopted to achieve the 2020 economy-wide emission reduction target and continue to be implemented. Lithuania intends to focus on introducing electricity from renewable sources in industrial companies, renewing the transport fleet by using green public procurement for transport, reducing emissions of fluorinated gases, supporting the balanced use of mineral fertilizers and maintaining and increasing the sink capacity of the LULUCF sector through afforestation, restoration of damaged forest and the protection of soils. Lithuania also plans measures in many sectors to encourage behavioural change and raise awareness.

87. Lithuania is not an Annex II Party and is therefore not obliged to adopt measures and fulfil obligations defined in Article 4, paragraphs 3–5, of the Convention. However, Lithuania provided information on its provision of support to developing country Parties. The Party has provided climate finance through various multilateral and regional funds, including the Green Climate Fund. However, Lithuania has focused more on bilateral support in recent years, through funding, for example, the installation of solar power plants in Georgia, Malaysia and Mali, and training and capacity-building activities in North Macedonia and Serbia.

88. In the course of the review, the ERT formulated the following recommendations for Lithuania to improve its adherence to the UNFCCC reporting guidelines on BRs in its next BR:

- (a) To improve the completeness of its reporting by providing estimates of the mitigation impacts of individual PaMs or explaining why this was not possible owing to national circumstances (see issue 3 in table 5);
 - (b) To improve the transparency of its reporting by:
 - (i) Indicating in CTF table 2(e)II the use of units from other market-based mechanisms for achieving its emission reduction target (see issue 1 in table 3);
 - (ii) Providing consistent information on the PaMs reported in the textual part of the BR and in CTF table 3, including consistent and complete information on their start date and status of implementation (see issue 1 in table 5);
 - (iii) Reporting in CTF table 4 the intended contribution of LULUCF for all relevant years and in CTF tables 4 and 4(b) the Party's intention not to use units from the market-based mechanisms under the Convention or other market-based mechanisms or Kyoto Protocol units, and providing information in CTF tables 4(a)I and 4(b) for the two last years, consistent with the time range reported in CTF table 4 (see issue 1 in table 7);
 - (c) To improve the timeliness of its reporting by submitting its next BR on time (see para. 6 above).

Annex

Documents and information used during the review

A. Reference documents

2019 GHG inventory submission of Lithuania. Available at <https://unfccc.int/process-and-meetings/transparency-and-reporting/reporting-and-review-under-the-convention/greenhouse-gas-inventories-annex-i-parties/national-inventory-submissions-2019>.

2020 GHG inventory submission of Lithuania. Available at <https://unfccc.int/ghg-inventories-annex-i-parties/2020>.

BR3 of Lithuania. Available at <https://unfccc.int/process-and-meetings/transparency-and-reporting/reporting-and-review-under-the-convention/national-communications-and-biennial-reports-annex-i-parties/biennial-report-submissions/third-biennial-reports-annex-i>.

BR4 of the EU. Available at <https://unfccc.int/BRs>.

BR4 of Lithuania. Available at <https://unfccc.int/BRs>.

BR4 CTF tables of Lithuania. Available at <https://unfccc.int/BRs>.

“Common tabular format for ‘UNFCCC biennial reporting guidelines for developed country Parties’”. Annex to decision 19/CP.18. Available at <https://unfccc.int/resource/docs/2012/cop18/eng/08a03.pdf>.

“Compilation of economy-wide emission reduction targets to be implemented by Parties included in Annex I to the Convention”. FCCC/SBSTA/2014/INF.6. Available at <http://unfccc.int/resource/docs/2014/sbsta/eng/inf06.pdf>.

European Green Deal. Available at https://ec.europa.eu/info/files/communication-european-green-deal_en.

“Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part I: UNFCCC reporting guidelines on annual greenhouse gas inventories”. Annex to decision 24/CP.19. Available at <http://unfccc.int/resource/docs/2013/cop19/eng/10a03.pdf>.

“Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part II: UNFCCC reporting guidelines on national communications”. FCCC/CP/1999/7. Available at <http://unfccc.int/resource/docs/cop5/07.pdf>.

“Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention”. Annex to decision 13/CP.20. Available at <http://unfccc.int/resource/docs/2014/cop20/eng/10a03.pdf>.

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Report on the technical review of the third biennial report of Lithuania. FCCC/TRR.3/LTU. Available at <https://unfccc.int/documents/180565>.

“UNFCCC biennial reporting guidelines for developed country Parties”. Annex I to decision 2/CP.17. Available at <http://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf>.

B. Additional information provided by the Party

Responses to questions during the review were received from Dovilė Karlonienė (Ministry of Environment of Lithuania), including additional material. The following documents¹ were provided by Lithuania:

- (a) Lithuania's Final National Energy and Climate Plan (PowerPoint presentation);
 - (b) Excel file describing models and tools used by Lithuania to develop its projection;
 - (c) Excel file providing a comparison of the parameters used for the projections for the BR3 and BR4 for 2020 and 2030;
 - (d) Excel file providing indirect GHG emissions;
 - (e) Excel file reporting emission projections related to fuel sold to ships and aircraft engaged in international transport;
 - (f) Excel file reporting projections for ETS and ESD sectors.
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¹ Reproduced as received from the Party.