



## SEIMAS OF THE REPUBLIC OF LITHUANIA

### RESOLUTION

### APPROVING THE NATIONAL CLIMATE CHANGE MANAGEMENT AGENDA

30 June 2021 No XIV-490

Vilnius

The Seimas of the Republic of Lithuania, in adhering to Article 3(3) and point 1 of Article 4 of the Law of the Republic of Lithuania on Financial Instruments for Climate Change Management and in implementing Articles 15 and 19 of Regulation (EU) 2018/1999 of the European Parliament and of the Council of 11 December 2018 on the Governance of the Energy Union and Climate Action, amending Regulations (EC) No 663/2009 and (EC) No 715/2009 of the European Parliament and of the Council, Directives 94/22/EC, 98/70/EC, 2009/31/EC, 2009/73/EC, 2010/31/EU, 2012/27/EU and 2013/30/EU of the European Parliament and of the Council, Council Directives 2009/119/EC and (EU) 2015/652 and repealing Regulation (EU) No 525/2013 of the European Parliament and of the Council and Articles 4 and 7 of Regulation (EU) 2018/842 of the European Parliament and of the Council of 30 May 2018 on binding annual greenhouse gas emission reductions by Member States from 2021 to 2030 contributing to climate action to meet commitments under the Paris Agreement and amending Regulation (EU) No 525/2013, resolves:

**Article 1.**

To approve the National Climate Change Management Agenda (annexed).

**Article 2.**

To repeal Resolution No XI-2375 of the Seimas of the Republic of Lithuania of 6 November 2012 on the Approval of the National Strategy for Climate Change Management Policy.

Speaker of the Seimas

Viktorija Čmilytė-Nielsen

APPROVED BY  
Resolution No XIV-490  
of the Seimas of the Republic of Lithuania  
of 30 June 2021

## NATIONAL CLIMATE CHANGE MANAGEMENT AGENDA

### CHAPTER I INTRODUCTION

1. The climate crisis, which poses an existential threat to natural ecosystems and humanity and increases risk factors for national security and social stability, remains the most important challenge of our times. The last five years have been the warmest on record in the entire history of meteorological observations. In 2020, the global average air temperature was 1.2 °C above pre-industrial levels. The year 2020 was the warmest year in Lithuania in the history of meteorological observations. The average annual air temperature in Lithuania was 9.2 °C, which is 2.3 °C above the long-term average (based on the 1981-2010 average). The effects of global warming are undeniably reflected in the increase in droughts, storms and other extreme meteorological phenomena. The latest reports from the Intergovernmental Panel on Climate Change (hereinafter: the 'IPCC') on climate change<sup>1</sup> and 1.5 °C global warming<sup>2</sup> as well as land use<sup>3</sup>, oceans and cryosphere<sup>4</sup> highlight that climate change will have devastating consequences if it is not halted. Increased frequency of extreme climate-related events is leading to higher economic losses. In the European Union (hereinafter: the 'EU'), these losses are already averaging more than EUR 12 billion per year. A global temperature rise of 3 °C above pre-industrial levels would result in an annual loss of at least EUR 170 billion to the current EU economy (equivalent to 1.36 % of EU GDP)<sup>5</sup>. Research shows that the risks posed by climate change are much greater than previously thought. There is a significant risk that a

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<sup>1</sup> Fifth Assessment Report (IPCC, 2014).

<sup>2</sup> Special Report on the impacts of global warming of 1.5 °C above pre-industrial levels (IPCC, 2018).

<sup>3</sup> Special Report on Climate Change and Land (IPCC, 2019).

<sup>4</sup> Special Report on the Ocean and Cryosphere in a Changing Climate (IPCC, 2019).

<sup>5</sup> Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions of 24 February 2021. Forging a climate-resilient Europe - the new EU Strategy on Adaptation to Climate Change.

tipping point in the Earth system, such as a slowdown in the Gulf Stream or instability in the Greenland and West Antarctic ice sheets, will occur at temperatures lower than those suggested in the IPCC Fifth Assessment Report. The climate crisis is linked to global biodiversity loss<sup>6</sup> and therefore the decisions taken must be appropriately tailored to address both. Determined long-term action is urgently needed to preserve the environment, human well-being, prosperity and health, as it may be too late afterwards<sup>7</sup>.

2. According to the latest scientific information, human activity is a determining factor in global warming. The rise in concentration of greenhouse gas<sup>8</sup> (hereinafter: the ‘GHG’) emissions from human economic activities increases the natural greenhouse effect, leading to an increase in global average temperatures<sup>9</sup>. The Paris Agreement sets a long-term goal of keeping the increase in global air temperature well below 2 °C, compared to pre-industrial levels, with efforts to keep the increase below 1.5 °C<sup>10</sup> and, crucially, to adapt to the adverse impacts of climate change and to ensure sufficient funding to achieve these goals. The IPCC Special Report on Global Warming of 1.5 °C, published in October 2018, states that in order to keep temperature rise below 1.5 °C, global annual carbon dioxide emissions must be halved by 2030 and climate neutrality achieved by 2050.

3. Lithuania’s climate change management policy is formulated and implemented in accordance with the following international agreements: the United Nations Framework Convention on Climate Change (hereinafter: the ‘UNFCCC’)<sup>11</sup> adopted in New York in 1992, which is implemented through specific national commitments and mechanisms to reduce GHG emissions, the Kyoto Protocol signed in 1997, which sets two commitment periods: the first from 2008-2012<sup>12</sup> and the second from 2013-2020<sup>13</sup>, the Paris Agreement signed in 2015 with

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<sup>6</sup> Global Assessment Report on Biodiversity and Ecosystem Services (IPBES, 2019).

<sup>7</sup> Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions of 17 September 2020. Stepping up Europe’s 2030 climate ambition. Investing in a climate-neutral future for the benefit of our people. COM (2020) 562 final (hereinafter: the ‘Communication from the Commission “Stepping up Europe’s 2030 climate ambition”’).

<sup>8</sup> Greenhouse gases include the following: carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), sulphur hexafluoride (SF<sub>6</sub>), perfluorocarbons (PFCs) and nitrogen trifluoride (NF<sub>3</sub>).

<sup>9</sup> Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee, the Committee of the Regions and the European Investment Bank of 28 November 2018. A Clean Planet for all. A European strategic long-term vision for a prosperous, modern, competitive and climate neutral economy. COM (2018) 773 final.

<sup>10</sup> Law of the Republic of Lithuania on Ratification of the Paris Agreement under the United Nations Framework Convention on Climate Change.

<sup>11</sup> Law of the Republic of Lithuania on Ratification of the United Nations Framework Convention on Climate Change.

<sup>12</sup> Law of the Republic of Lithuania on Ratification of the Kyoto Protocol to the United Nations Framework Convention on Climate Change.

<sup>13</sup> Law of the Republic of Lithuania on Ratification of the Doha Amendment to the Kyoto Protocol to the United Nations Framework Convention on Climate Change. Law of the Republic of Lithuania on Ratification of the Agreement between the European Union and its Member States, of the one part, and Iceland, of the other part, concerning Iceland’s participation in

a commitment period of 2021-2030, the United Nations' 2030 Agenda for Sustainable Development adopted by the United Nations General Assembly in 2015, which sets out Goal 13 'Take urgent action to combat climate change and its impacts' for tackling climate change as well as challenges for achieving this Goal, the legislation to implement the EU's 2030 climate change and energy goals, the EU Green Deal initiatives, the EU Strategy on Adaptation to Climate Change and long-term climate change policy planning documents, outlining the EU's vision for a climate-neutral economy by 2050.

4. The National Climate Change Management Agenda (hereinafter: the 'Agenda') sets out targets and objectives for Lithuania's climate change management policy up to 2030, up to 2040 and in the long term up to 2050 in the areas of climate change mitigation and adaptation to the effects of climate change. The climate change mitigation policy aims at reducing GHG emissions and increasing their removals. Climate change mitigation is particularly important in the energy, transport, industry, agriculture, waste and forestry sectors. The climate change adaptation policy aims at strengthening adaptive capacity, increasing resilience and reducing vulnerability to the impacts of climate change with a view to contributing to sustainable development, and ensuring adequate adaptation responses.

5. The implementation of the targets and objectives of the Agenda is based on the concept of the comprehensive plan of the territory of the Republic of Lithuania, contributes to the directions and principles of Lithuania's Progress Strategy,<sup>14</sup> to the goals and objectives of the National Progress Plan<sup>15</sup> and the National Energy Independence Strategy<sup>16</sup> as well as to the national security interests enshrined in the National Security Strategy<sup>17</sup> in ensuring the sustainable development of the State.

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the joint fulfilment of the commitments of the European Union, its Member States and Iceland for the second commitment period of the Kyoto Protocol to the United Nations Framework Convention on Climate Change.

<sup>14</sup> Resolution No XI-2015 of the Seimas of the Republic of Lithuania of 15 May 2012 on the Approval of the National Progress Strategy 'Lithuania 2030'.

<sup>15</sup> Resolution No 998 of the Government of the Republic of Lithuania of 9 September 2020 on the Approval of the 2021-2030 National Progress Plan.

<sup>16</sup> Resolution No XI-2133 of the Seimas of the Republic of Lithuania of 26 June 2012 on the Approval of the National Energy Independence Strategy.

<sup>17</sup> Resolution No IX-907 of the Seimas of the Republic of Lithuania of 28 May 2002 on the Approval of the National Security Strategy.

## CHAPTER II

### LEGAL AND POLITICAL CONTEXT

6. In order to achieve the goals of the Paris Agreement and maintain the EU's international leadership on climate change, Lithuania together with other EU Member States is seeking to increase the ambitions for the next decade and long-term climate and energy policy goals. Following on from this, on 12 December 2019, the European Council endorsed the EU's target of achieving a climate-neutral EU by 2050. On 11 December 2019, the European Commission (hereinafter: the 'EC') presented its Communication "A European Green Deal"<sup>18</sup>, which proposes a new growth strategy to transform the EU economy into a modern, competitive, climate-neutral economy, decoupling growth from resource use. The Communication "A European Green Deal" points out that a transformation to neutralise climate impacts requires changes in all policy areas and a concerted effort by all sectors of the economy and society. It also sets out a framework for sustainable and inclusive growth in the areas of energy, smart and sustainable mobility, industry, the circular economy, production and consumption, sustainable agriculture, retrofitting of buildings, protection of ecosystems and biodiversity, environmental sustainability, taxation and social welfare, where progress towards the goal of an environmentally friendly and climate-neutral economy by 2050 is to be achieved by fully exploiting the benefits of the bioeconomy, increasing carbon sequestration and reducing carbon dioxide emissions through the application of environmentally safe carbon capture and utilisation (CCU) technologies.

7. On 4 March 2020, the EC presented a draft European Climate Regulation to consolidate the EU's 2050 climate neutrality target and to increase the 40 % GHG reduction target for 2030 to at least 55 % compared to 1990<sup>19</sup>. It concluded that it is both feasible and beneficial to reduce the EU's GHG emissions by at least 55 % by 2030, but that efforts to reduce GHG emissions will need to be made across all sectors and the quantities of removals will have to be increased.

8. The 2030 climate and energy policy goal of reducing GHG emissions by at least 55 % compared to 1990 levels was endorsed by the European Council (hereinafter: the 'EU CO')

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<sup>18</sup> Communication from the Commission to the European Parliament, the European Council, the European Economic and Social Committee and the Committee of the Regions of 11 December 2019 "A European Green Deal". COM (2019) 640 final.

<sup>19</sup> Proposal for a Regulation of the European Parliament and of the Council of 4 March 2020 establishing the framework for achieving climate neutrality and amending Regulation (EU) 2018/1999 (European Climate Law) COM/2020/80 final.

in its conclusions of 10-11 December 2020. Based on the conclusions of the EUCO, on 17 December 2020, the Environment Council approved the European Climate Regulation. The implementation of the EU's 2030 climate and energy targets is governed by the following key legislative acts: EU Emissions Trading Scheme Directive 2003/87/EC<sup>20</sup>, Effort Sharing Regulation<sup>21</sup> (EU) 2018/842, Land Use, Land Use Change and Forestry (hereinafter: the 'LULUCF') Regulation (EU) 2018/841<sup>22</sup>, Energy Efficiency Directive (EU) 2018/2002<sup>23</sup>, Directive on the Promotion of Renewable Energy Sources (EU) 2018/2001<sup>24</sup> and Regulation on the Governance of the Energy Union and Climate Action (EU) 2018/1999<sup>25</sup>.

9. It is important to avoid loss and damage caused by the adverse impacts of climate change, which is why Article 7 of the Paris Agreement stipulates that countries should intensify their cooperation in improving adaptation actions under the Cancun Adaptation Framework. The Warsaw International Mechanism for Loss and Damage associated with Climate Change Impacts was established by the UNFCCC in 2019 to improve knowledge and understanding of a range of risk management approaches to eliminate loss and damage associated with the adverse impacts of climate change. The Sendai Framework for Disaster Risk Reduction 2015-2030<sup>26</sup> places particular emphasis on the role of local and regional authorities in supporting Member States' efforts to reduce disaster risks. Article 19 of Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action requires Member States to develop national adaptation plans and strategies and to indicate the actions implemented and planned to facilitate adaptation to climate change. The EU Strategy on Adaptation to Climate Change<sup>27</sup>,

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<sup>20</sup> Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC.

<sup>21</sup> Regulation (EU) 2018/842 of the European Parliament and of the Council of 30 May 2018 on binding annual greenhouse gas emission reductions by Member States from 2021 to 2030 contributing to climate action to meet commitments under the Paris Agreement and amending Regulation (EU) No 525/2013.

<sup>22</sup> Regulation (EU) 2018/841 of the European Parliament and of the Council of 30 May 2018 on the inclusion of greenhouse gas emissions and removals from land use, land use change and forestry in the 2030 climate and energy framework, and amending Regulation (EU) No 525/2013 and Decision No 529/2013/EU.

<sup>23</sup> Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC as last amended by Directive (EU) 2018/844 of the European Parliament and of the Council of 30 May 2018.

<sup>24</sup> Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources.

<sup>25</sup> Regulation (EU) 2018/1999 of the European Parliament and of the Council of 11 December 2018 on the Governance of the Energy Union and Climate Action, amending Regulations (EC) No 663/2009 and (EC) No 715/2009 of the European Parliament and of the Council, Directives 94/22/EC, 98/70/EC, 2009/31/EC, 2009/73/EC, 2010/31/EU, 2012/27/EU and 2013/30/EU of the European Parliament and of the Council, Council Directives 2009/119/EC and (EU) 2015/652 and repealing Regulation (EU) No 525/2013 of the European Parliament and of the Council.

<sup>26</sup> The United Nations Sendai Framework for Disaster Risk Reduction 2015-2030. 2015.

<sup>27</sup> Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions of 24 February 2021 Forging a climate-resilient Europe - the new EU Strategy on Adaptation to Climate Change. COM/2021/82 final.

adopted in 2021, has set the goal of fulfilling the vision of a climate-resilient Union by 2050 through smarter, more systemic and swifter adaptation and stepping up support for international action. This means that the entire policy cycle needs to be based on more detailed knowledge and data, supporting policy-making and climate risk management at all levels and accelerating the implementation of adaptation actions in all areas.

### **CHAPTER III**

#### **OVERVIEW OF THE NATIONAL CLIMATE POLICY IN TERMS OF STRENGTHS, WEAKNESSES, OPPORTUNITIES AND THREATS**

#### **SECTION ONE**

##### **CLIMATE CHANGE MITIGATION: STRENGTHS, WEAKNESSES, OPPORTUNITIES AND THREATS**

#### 10. Strengths:

10.1. In the energy sector (excluding transport), the country has successfully applied the envisaged measures to increase the use of renewable energy sources (hereinafter: the 'RES'), which has led to a reduction in GHG emissions in the energy sector (excluding transport). These results were mainly driven by the share of RES in the heat sector, which accounted for 47.38 %. The share of RES in electricity production was 18.79 %. The increase in the share of RES has been influenced by positive public attitudes towards the use of RES, the increasing number of companies willing to use energy from RES in their operations and the favourable conditions for RES development.

10.2. Solar energy technology and biomass industry have been developed with competences acquired to exploit technologies for energy production. The transition to RES is economically, socially and politically acceptable, leading to the development of state-of-the-art technologies that are increasingly affordable.

10.3. A framework for the retrofitting and renovation of buildings has been established and is being developed, improving energy efficiency, reducing energy poverty and moving steadily towards the renovation of residential areas.

10.4. According to the National GHG Emission Inventory Report, GHG emissions from the waste sector are relatively low and are being reduced through the promotion of waste prevention, the expansion of separate collection and sorting systems and the implementation of reuse and recycling technology solutions.

10.5. The Law of the Republic of Lithuania on Alternative Fuels creates preconditions for promoting the use of RES fuels by imposing obligations on fuel suppliers to supply RES fuels and increasing the use of advanced biofuels. The Law on Alternative Fuels aims to promote the use of electricity in road transport, the development of infrastructure for the production, purification and supply of biogas to the transport sector and to support the acquisition of alternative fuel vehicles and the development of infrastructure for them. This will pave the way for a consistent diversification of energy sources in the transport sector, the use of indigenous resources, a reduction of the transport sector's dependence on fossil fuels and a reduction of the transport sector's impact on climate change.

#### 11. Weaknesses:

11.1. According to the National GHG Emission Inventory Report, the transport sector is the largest contributor to GHG emissions (around 44 % of GHG emissions from sectors not participating in the EU Emissions Trading System (hereinafter: the 'EU ETS') in 2019), with almost 96 % of transport GHG emissions, or 30 % of the country's total GHG emissions, occurring in the road transport sub-sector and rising for the last 7 years. Passenger cars are the biggest emitters of GHG - the number of cars in the country is increasing, with an average age of 15 years. Government efforts to make a difference through planning documents have not yet yielded tangible results in terms of GHG reductions due to a lack of economic and financial instruments and a lack of orientation of tax policy towards environmental and climate change goals and behavioural change.

11.2. According to the National GHG Emission Inventory Report, agriculture is the third largest sector in Lithuania in terms of GHG emissions (in 2019, around 30 % of GHG emissions from non-ETS sectors). To date, financial support from the State and the EU funds has mainly focused on the application of intensive farming methods. Farmers often lack the expertise, knowledge, motivation and incentives to switch to new technologies and implement environmentally friendly production practices that reduce GHG emissions. Addressing these challenges would allow the sector's significant GHG emission reduction potential to be properly exploited.

11.3. There is insufficient cooperation between research institutions and business in order to carry out research, promote experimental development and innovation (hereinafter: the 'RDI') and deploy state-of-the-art low GHG emission technologies in individual sectors of the economy (energy, industry, transport, agriculture, etc.).

11.4. Around 66 % of Lithuanian buildings are classified as below energy performance class C. These buildings are very inefficient in their energy use. Slow retrofitting and

renovation of buildings can have severe economic and social consequences in the long term, especially in the residential sector.

11.5. According to the National Air Pollutant Emission Inventory, emissions of pollutants that are particularly hazardous to health are increasing in Lithuania as a result of the production of heat energy from solid biofuels and other solid fuels, inefficiently operating heat producing installations and inefficient use of heat.

11.6. A large part of the country's population does not have the possibility to change and choose their home heating supplier and thus contribute to the development of heat production from less polluting sources.

11.7. According to the data of Statistics Lithuania, energy poverty is quite high in Lithuania. In 2019, 27 % of the population claimed they were unable to heat their homes sufficiently. Only Bulgaria has a worse indicator (~35 %).

11.8. In the agricultural sector, there is no system of accounting for GHG emissions and removals at farm level that would provide an economic incentive to reduce emissions by comparing GHG emissions between operators.

## 12. Opportunities:

12.1. The clear direction set out in EU legislation and national planning documents and in sectoral development programmes for individual economic sectors for a smooth transition to a climate-neutral, low-emission, climate-resilient economy will provide the appropriate conditions for planning long-term investments in RES, energy efficiency improvement measures and the reduction of GHG emissions.

12.2. The EC Communication “Sustainable and Smart Mobility Strategy”<sup>28</sup> sets out how the EU's transport system can achieve a green digital transformation and build resilience to future crises. The Communication sets a target of reducing GHG emissions by 90 % by 2050 through the development of an intelligent, competitive, safe, affordable and accessible transport system. The consolidated intermediate results in 2030, 2035 and 2050 will pave the way for the enhancement of measures to promote sustainable transport, sustainable mobility, and to develop alternative fuels infrastructure in the transport sector. Restricting the use of fossil-fuel-powered passenger cars by differentiating according to the vehicle's pollution level (restrictions on entry to the city or a part thereof, taxes) with the envisaged incentives will help

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<sup>28</sup> Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions of 9 December 2020 Sustainable and Smart Mobility Strategy – putting European transport on track for the future. COM/2020/789 final.

to halt and reduce the increase in GHG emissions, reduce air and noise pollution and improve the air quality of urbanised areas, quality of life and public health.

12.3. The EC's Impact Assessment accompanying the Communication "Stepping up Europe's 2030 Climate Ambition" foresees an increase in the use of RES in transport to 24 % in 2030 and a 50 % reduction in CO<sub>2</sub> emissions per kilometre from passenger cars compared to 2021. Standards for light and commercial vehicles and heavy goods vehicles are being updated, tightening CO<sub>2</sub> emission standards. The EU Hydrogen Strategy<sup>29</sup> has been adopted to reinforce the role of hydrogen in the industrial and transport sectors (heavy goods, maritime transport and aviation). The EU's GHG Reduction Initiative in the transport sector and the intensive development of low-emission technologies will make them more affordable, contribute to the national GHG emissions reduction target in the transport sector and help meet national air pollution reduction targets.

12.4. The target of at least 30 % of EU structural and investment funds (approximately EUR 547 billion)<sup>30</sup> for climate change goals, as set out in the priorities of the Multiannual Financial Framework 2021-2027 and the Next Generation EU initiative, will help to target EU and national budgets for sustainable investment, leveraging the private sector's contribution to all sectors of the economy. Regulation (EU) 2020/852<sup>31</sup> on the establishment of a framework to facilitate sustainable investment (Taxonomy Regulation) has been adopted to promote private investment, by both businesses and individuals, and to enhance sustainable finance, setting out the requirements for the avoidance of significant damage to the environment and the criteria for sustainable investment, which will lead to the achievement of the EU's long term goals of climate neutrality, a circular economy, biodiversity and sustainable development.

12.5. The transformation of the energy system to low-GHG technologies will reduce Lithuania's dependence on fossil fuel imports and strengthen energy independence. The EC's Impact Assessment accompanying the Communication "Stepping up Europe's 2030 Climate Ambition" foresees an increase in the EU's RES 2030 target to between 38 % and 40 % and in electricity production from RES to 65 %, while in heating and cooling to 40 % RES. In order to improve the energy performance of buildings, the EU's Renovation Wave strategy has been

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<sup>29</sup> Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions of 8 July 2020 A hydrogen strategy for a climate-neutral Europe COM/2020/301 final.

<sup>30</sup> Communication from the Commission to the European Parliament, the European Council, the European Economic and Social Committee and the Committee of the Regions "A Modern Budget for a Union that Protects, Empowers and Defends. The Multiannual Financial Framework for 2021-2027". COM/2018/321.

<sup>31</sup> Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088.

adopted, which envisages doubling the rate of renovation (from 1 % to 2 %), setting mandatory requirements for buildings in the worst state of repair and step-by-step minimum energy performance requirements.

12.6. The EC Communication “Investing in a smart, innovative and sustainable Industry. A renewed EU Industrial Policy Strategy” outlines the need to prepare for a broad industrial transformation by developing and implementing pathways for the development and dissemination of innovation, digitalisation and the circular economy, ensuring the integration of industry into Europe’s strategic value chains on the basis of smart specialisation. The EC Communication “Stepping up Europe’s 2030 Climate Ambition” highlights that accelerated transformation through best practices, energy from waste, biomass and electrification will help to modernise EU industry, increasing its ability to lead in clean technologies and to gain a competitive advantage in global markets. The funding from the Innovation Fund is envisaged for demonstration projects of zero-emission breakthrough technologies in the energy and industrial sectors. The Just Transition Fund and the Modernisation Fund are envisaged for accelerating the transformation of fossil fuel-based industries and CO<sub>2</sub>-intensive regions. Political initiative and active use of financial instruments will ensure Lithuania’s readiness for the transition to a low-GHG industry.

12.7. The planned EU Regulation on the Carbon Border Adjustment Mechanism will make it possible to maintain the competitiveness of the Lithuanian economy by ensuring that imported and domestically manufactured products are subject to the same environmental, including CO<sub>2</sub>, taxes.

12.8. The EU’s priorities for agriculture, as set out in the EC’s Communications “The Future of Food and Farming”<sup>32</sup> and “A Clean Planet for All”, will provide better opportunities for directing funds towards innovative low-emission technologies and sustainable farming practices in crop and livestock farming. The EU’s targets set out in the EC’s Communication “The Farm to Fork Strategy”<sup>33</sup> to reduce the use of pesticides by 50 %, to reduce the use of mineral fertilisers by at least 20% and to increase the area under organic farming to at least 25 % of land by 2030 will ensure a level playing field between Member States and will facilitate consumers’ choice of sustainably produced, wholesome food and healthy diets. The new Common Agricultural Policy (hereinafter: the ‘CAP’) 2023-2027 will promote the

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<sup>32</sup> Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions of 29 November 2017 “The Future of Food and Farming”. COM/2017/0713.

<sup>33</sup> Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions of 12 December 2019 “The Farm to Fork Strategy”. COM (2019).

development of agriculture that is sustainable, environmentally and climate friendly. According to the EC's legal proposals presented in 2018 for the post-2020 CAP, 40 % of the CAP is projected to be dedicated to climate-related objectives. There are already examples of good farming practices in Lithuania that use technologies which contribute to reducing GHG emissions, such as no-till farming, intercropping and fertilisation plans based on soil tests.

12.9. LULUCF Regulation (EU) 2018/841 sets a target for Member States to increase the potential removals in the LULUCF sector, thus creating incentives for the country to make sustainable use of agricultural and forest land and to restore damaged ecosystems. The aim is to increase the potential removals in the LULUCF sector and to protect and restore wetlands. The EC points out that active action by forest owners and farmers to increase the quantity of carbon stored in forests and farmland soils would make an important contribution to the EU's overall commitment to reduce GHG emissions. Farmers' actions and policy decisions in the agricultural sector will therefore have a significant impact on opportunities for GHG removals.

12.10. Lithuania's effective use of the available financial instruments, such as the EU's research and innovation programme "Horizon Europe", 35 % of whose funds will be earmarked for tackling climate change, would allow for more translational research to be carried out in the agricultural, LULUCF and other sectors, which is necessary to find alternatives to annual crop production, to apply methane-reducing feeding technologies or changes in feed composition, to breed low-methane-emitting cattle breeds, to explore changes in land use to increase GHG removals in biomass and/or soil, to explore industry-relevant low-GHG production pathways and circular economy solutions, to identify and improve ecosystem changes, to detect invasive species, etc..

12.11. The successful implementation of climate change mitigation measures will lead to a cleaner environment and have a positive impact on human health; the stabilisation of the global climate system will reduce the number of extreme events and losses caused by climate change, while better air quality will lead to fewer illnesses and deaths.

12.12. Widespread energy efficiency improvement programmes and energy savings in the medium and long term will improve the financial situation of residents and businesses, in particular by encouraging energy-producing consumers and home renovation.

12.13. The transition to a climate-neutral economy will have a positive impact on the economy and increase EU GDP by 2 %. The implementation of all measures of the National Energy and Climate Plan (hereinafter: the 'NECP') in the period 2020-2030 would result in an average increase in Lithuania's GDP by 1.72 %, and the implementation of the measures of the NECP in the period 2031-2040 would result in an average increase in Lithuania's GDP by 0.23

% than if the measures had not been implemented. Environmental taxes, the set-up of a CO<sub>2</sub> pricing system, the phasing out of fossil fuel subsidies and incentives for vulnerable groups will play a key role in stimulating the transition to less polluting technologies. This will help to target funds for the implementation of climate change mitigation measures and encourage investors to contribute to the achievement of climate change mitigation goals, ensuring Lithuania's competitiveness, socially equitable economic transformation and good environmental quality.

12.14. The increasing demand for technology and digitalisation to reduce GHG emissions will change business models, create new jobs and increase the need to retrain workers with innovative technologies. Four million green jobs have been created in the EU and their number is projected to grow in agriculture and forestry, energy production from RES, bioeconomy, green infrastructure, circular economy, etc. It is estimated that the implementation of the measures envisaged in the NECP for the period 2020-2030 would increase employment in Lithuania by an average of 1.56 %.

### 13. Threats:

13.1. In the non-ETS sectors (transport, agriculture, waste, industry, small-scale energy sector), failure to ensure, by internal efforts, that the established annual emission reduction limits (tCO<sub>2</sub> eq.) for the period 2021-2030 are not exceeded would oblige Lithuania to purchase the missing GHG emission reduction quota from other countries, which would endanger the state budget.

13.2. The biggest threat of failure to reduce the quantity of GHG emissions lies in the transport sector. High socio-economic sensitivity may delay decisions to restrict the use of fossil-fuelled passenger cars, leading to increased fuel consumption and GHG emissions. Urban sustainable mobility plans that focus only on the development of physical infrastructure rather than on behavioural change, avoiding bans and restrictions, risk failing to change the habits of the population that makes 90 % of its journeys by private car into sustainable mobility alternatives. Urban sprawl would make it difficult to ensure a network of practical, convenient and competitive public transport services. The insufficient development of alternative fuel infrastructure would not increase the demand for zero-emission vehicles and would put the transport sector at risk of failing to meet its RES targets.

13.3. Increasing environmental requirements may threaten the competitiveness of some companies and the growth of regional integrity. Therefore, in order to preserve the competitiveness of companies, it is essential to apply the same environmental requirements to domestic and imported products. To improve competitiveness, it is necessary to invest in the

deployment of innovative technologies in industrial enterprises, taking account of regional specificities. Financial and regulatory mechanisms are needed to meet this need.

13.4. The insufficiently rapid development of the adaptation of environmentally friendly agricultural technologies and practices, both in livestock and crop farming, together with the continuous tightening of EU requirements and support conditions, threaten to make the Lithuanian agricultural sector ineligible for EU support in the future and to increase the risk of a loss of competitiveness in the future, if it does not take advantage of the transition period's opportunities and incentives in time and if it does not reduce its GHG emissions as well as emissions of air pollutants, in particular ammonia and particulate matter.

13.5. The current rate of land use expansion in the cereal sector is encouraging the use of mineral fertilisers and pesticides, while intensive cultivation of infertile land for low-value-added but natural-resource depleting products would lead to the loss of perennial grasslands, which are significant GHG sinks, the decrease in spontaneously afforested and reforested areas, the loss of biodiversity, the loss of fertile topsoil and the limitation of restoration of damaged ecosystems and the expansion of forestry.

13.6. An insufficiently effective training and retraining system for workers in the relevant sectors of the economy would lead to a shortage of competent workers for the development of low GHG emission technologies.

13.7. Failure to ensure sufficient funding for RDI would result in the risk of missing out on the opportunities of transition to a sustainable, environmentally friendly economic development as well as on the EU and international financial incentives to boost economic competitiveness.

13.8. The underdeveloped market for secondary raw materials, the lack of competitive and circular economy-oriented technological solutions and the absence of a favourable green investment environment would limit the achievement of GHG emission reduction targets.

13.9. Failure to impose a single environmental tax on products produced both within the EU and imported from third countries would adversely affect Lithuania's, as the EU's frontier state, competition with third countries that have lower environmental standards.

**SECTION TWO**  
**ADAPTATION TO CLIMATE CHANGE: STRENGTHS, WEAKNESSES,**  
**OPPORTUNITIES AND THREATS**

14. Strengths:

14.1. Lithuanian economic entities in the energy, transport, industry and agriculture sectors are already implementing measures to adapt to the effects of climate change and can share their experience. There is cooperation between public authorities and academia to find ways for the health sector to adapt to climate change.

14.2. Joint activities of the institutions concerned have been developed; the measures and their implementation plan have been envisaged in the NECP.

14.3. A warning and information system for the population has been set up and is operational, indicators of natural and catastrophic hydrometeorological phenomena as well as their monitoring and forecasting system are continuously updated; comprehensive flood hazard and risk management maps have been prepared for the territory of Lithuania.

15. Weaknesses:

15.1. There is a lack of awareness of the potential risks of climate change and the need to adapt to climate change and its impacts among different sectors of the economy and the general population, a lack of assessment of the need for measures to be taken and their impact in the future and a frequent lack of insurance coverage of assets, leading to substantial losses.

15.2. Losses incurred due to climate change are the largest in the agricultural sector, with extreme events affecting farm productivity (especially crop production). Unfortunately, a large proportion of farms do not sufficiently apply the necessary adaptation measures to build resilience to climate change, for example, there is underdevelopment of the insurance system and the operation of self-help funds; the share of insured area in 2020 accounted for only about 10.9 % of the total declared area and 14.3 % of the arable land declared.

15.3. The transport sector is highly dependent on climate conditions. Extreme weather conditions can disrupt air, water, rail and road traffic and road surfaces are damaged due to temperature fluctuations. Failure to impose road traffic restrictions during hot weather damages the road surface, which is costly to restore.

15.4. The electricity distribution network infrastructure is vulnerable, especially in forested areas, to the factors induced by extreme weather conditions (storms, snowstorms, etc.) leading to power outages and threats to consumer safety.

15.5. There is no long-term accounting system for losses and damages resulting from climate change that would objectively assess the magnitude of losses at the country and sectoral level and encourage faster implementation of adaptation measures. Methodologies for assessing damage to human health and the state of ecosystems are lacking or ineffectively applied, and there is a lack of research and analysis on the impacts of climate change, on the vulnerability and sensitivity of different economic sectors and on the effectiveness of climate change adaptation measures. There is a lack of knowledge and awareness of the consequences of climate change and the need to adapt to it at the institutional level, especially at municipal and societal level.

15.6. There is a lack of initiative and expertise in municipalities and a lack of participation in planning and implementation of regionally relevant climate change adaptation plans and measures.

15.7. There is inadequate risk assessment and lack of investment in management measures. The key focus is on climate change response and remediation.

15.8. In order to increase adaptation to extreme events and reduce the damage they cause, there is a lack of focus on nature-based solutions (e.g. the development of green infrastructure in cities, the restoration of ecosystems), which often not only help to cope with risks, but also add value to the well-being of the population as well as to landscapes and biodiversity.

#### 16. Opportunities:

16.1. The EU and UN programmes focus on building resilience and adaptation to climate change, establishing international cooperation and assistance mechanisms as well as emergency management.

16.2. Taking into account climate projections and taking timely action can increase the resilience of sectors of the country's economy and avoid losses and reduce damages, thereby contributing to strengthening the long-term competitiveness of sectors and increasing economic returns.

16.3. Individual economic sectors, such as energy, including RES and electricity, agriculture or tourism, can reap the economic benefits of changing climate conditions through timely reorientation.

16.4. The growing international focus on climate change adaptation is generating a wide range of funding opportunities, both from various EU funds and from other funding sources, with a newly established research mission 'Adaptation to climate change including societal transformation' under the programme "Horizon Europe".

16.5. Increasing environmental awareness and concern about climate change among the public and business will create the right preconditions for better dissemination of information to institutions, economic entities and the general public on the need for and measures to adapt to climate change.

17. Threats:

17.1. The projected increasing negative impacts of climate change (temperature increases, decreasing snow cover, increasing and more frequent temperature contrasts, rising ocean water levels, droughts, etc.) on economic sectors and ecosystems and on the functions and services they provide will, if left unaddressed, lead to increased economic losses to business and society.

17.2. Financial investment will be reduced due to the threat of financial losses and the costs of compensation for damage caused by infrastructure damage or failure to implement measures to adapt to climate change (as impacts increase, the magnitude of negative consequences increases).

17.3. Rising and unchecked negative impacts of climate change on human health will slow economic growth and reduce competitiveness.

17.4. There may be significant risks and threats to national security as a result of regional and global instability caused by the effects of climate change.

17.5. As the area of impermeable surfaces (e.g. pavements, asphalt) is increasing in Lithuanian cities, it is becoming increasingly difficult for precipitation to soak into the ground, and the inability of the grey infrastructure to drain the increased precipitation will result in more frequent street flooding. In addition, hard surfaces will increase the formation of urban heat islands as temperatures and number of hot days increase.

17.6. Power outages caused by extreme natural events threaten the safety of the population and can disrupt various activities.

## **CHAPTER IV**

### **A VISION FOR CLIMATE CHANGE MANAGEMENT POLICY 2050**

18. Lithuania's economy is circular and climate neutral. The country's economic sectors and regions are resilient to the environmental changes brought about by climate change, with modern, resource-efficient, socially responsible and competitive development based on innovative technologies and research, while economic growth is decoupled from resource use. A reliable, sustainable, competitive and secure energy system has been created, ensuring the

supply of energy resources at competitive prices based on a well-functioning EU internal market. The use of natural sinks has been maximised and only environmentally safe carbon capture and utilisation (CCU) technologies are applied to offset GHG emissions in sectors where technological options for zero GHG emissions will not be available.

19. The biodiversity is protected and conserved, natural framework structures are strengthened, ensuring a climate-resilient balance of ecosystems, natural sinks are maintained and increased through sustainable use of forests, agricultural land and restoring degraded wetlands and other carbon-rich ecosystems. A balance between natural and urban elements is created in urbanised areas through the widespread application of green infrastructure and other solutions based on natural processes to improve the living and recreational conditions of residents.

20. A climate-resilient society, adapted to the inevitable impacts of climate change, is emerging. The environmental factors and risks having negative impacts on citizens' health and well-being have been contained; the society's vulnerability to climate change is being reduced and the well-being increased by ensuring that the planet's potential is not exceeded.

## **CHAPTER V**

### **CLIMATE CHANGE MITIGATION TARGETS AND OBJECTIVES**

21. The National Climate Change Mitigation Targets by 2030 are as follows:

21.1. to reduce GHG emissions by 30 % compared to 2005, including removals by sinks from the LULUCF sector, by shifting economic sectors towards innovative, low-emission and environmentally friendly technologies and the use of RES:

21.1.1. for ETS sectors (energy production and supply, industrial processes), a reduction of at least 50 % compared to 2005;

21.1.2. for non-ETS sectors (transport, industry, agriculture, waste, small-scale energy sector), a reduction of at least 25 % compared to 2005, including removals by sinks from the LULUCF sector, and not exceeding the annual GHG emission allocation quotas set for the period 2021-2030.

22. The National Climate Change Mitigation Targets by 2040 are as follows:

22.1. to reduce GHG emissions by 85 % compared to 1990, including up to 15 % of removals by sinks from the LULUCF sector, and a shift to innovative, low-emission and environmentally friendly technologies and the use of RES in all economic sectors.

23. The National Climate Change Mitigation Targets by 2050 are as follows:

23.1. to reduce GHG emissions by 100 % compared to 1990 levels by switching to innovative, low-emission, environmentally friendly technologies and the use of RES in all economic sectors, including up to 20 % of removals by natural sinks from the LULUCF sector, and the use of environmentally safe carbon capture and utilisation (CCU) technologies to offset GHG emissions in sectors where technological options for zero GHG emissions will not be available.

24. The National Climate Change Mitigation Targets are summarised in Table 1.

Table 1. National Climate Change Mitigation Targets

GHG emission reduction targets	Lithuania		
	2030	2040	2050
Compared to 1990 levels*	≥-70 %	-85 %	-100 %
Compared to 2005 levels*	≥-30 %	–	–
For ETS sectors, compared to 2005 levels	≥-50 %	–	–
For non-ETS sectors, compared to 2005 levels*	≥-25 %	–	–

\*Including removals by sinks from the LULUCF sector.

## **SECTION ONE**

### **SECTORAL CLIMATE CHANGE MITIGATION TARGETS AND OBJECTIVES IN ETS SECTORS**

25. In the energy production and supply sectors:

25.1. by 2030:

25.1.1. to achieve a 45 % share of RES in the country's total balance of final energy consumption;

25.1.2. to achieve that the country's electricity consumption from RES is 30 % by 2025 and 50 % by 2030;

25.1.3. to achieve a share of energy from RES of at least 90 % in district heating systems;

25.1.4. to achieve final energy savings of 27 TWh in 2030, of which 5.45 TWh in the industrial sector, 10.36 TWh in the services and residential sectors, 10.9 TWh in the transport sector and 0.54 TWh in the agricultural sector;

25.1.5. to find technological solutions for balancing surplus electricity from RES through pilot projects for the production of green hydrogen;

25.1.6. to adapt the existing natural gas network infrastructure to transport hydrogen and biogas by 2024, giving priority to gas from RES;

25.2. by 2040:

25.2.1. to ensure that the energy efficiency measures implemented (retrofitting of buildings, zero-energy buildings, high-efficiency home heating and cooling, development of zero-emission electrified vehicles of all types, high energy efficiency class industrial and household appliances, etc.) contribute to a reduction of primary and final energy intensity by a factor of 2 compared to 2017;

25.2.2. to achieve a share of RES of at least 75 % compared to the country's gross final energy consumption;

25.2.3. to achieve a 95 % share of RES in the electricity sector compared to the country's gross final energy consumption;

25.2.4. to achieve that a share of RES in the district heating sector is at least 95 % by 2035;

25.2.5. to achieve that the number of households connected to the district heating networks that contribute to environmental quality is doubled;

25.2.6. to phase out fossil fuels;

25.3. by 2050:

25.3.1. to achieve that the share of RES, compared to the country's gross final energy consumption, accounts for 90 %; the share of RES in the electricity sector, compared to the country's gross final energy consumption, accounts for 100 %; and the share of RES in the district heating sector accounts for 100 %;

25.3.2. to achieve at least a 2.4 times reduction in primary and final energy consumption compared to 2017 by increasing the energy efficiency of buildings through high-efficiency cogeneration of heat and electricity, the rapid development of low-energy industries and zero-emission, electrified vehicles of all types, the use of high energy efficiency class industrial and household appliances and other measures.

26. In the industrial sector:

26.1. by 2030:

26.1.1. to improve energy efficiency in the industrial sector by promoting the substitution of polluting technologies for less polluting ones, the application of circular

economy principles to save resources and prevent waste, the adoption of a wide range of innovative solutions and the introduction of new business models;

26.1.2. to promote the substitution of polluting industrial processes and raw materials in the country's main industrial enterprises by supporting skills development and reorientation programmes for workers, ensuring a fair transition to less climate-damaging technologies;

26.1.3. to encourage industrial enterprises to become prosumers through the use of RES;

26.1.4. to promote the use of hydrogen in industrial processes to produce fertilisers and/or other products;

26.1.5. to promote pilot projects for the production of green hydrogen, which would contribute to reducing the impact of industrial processes on climate change and environmental pollution and diversifying the conventional fuels and raw materials used in the industry sector;

26.1.6. to promote zero and low-waste production, circular economy models, waste reuse and/or recycling and industrial symbiosis in industrial enterprises;

26.1.7. to promote the rational use of resources, secondary and climate-friendly raw materials so that by 2025 the value of the circular material use rate (the circularity rate) is not less than the EU average (11.9 in 2019);

26.1.8. to promote innovations in industrial processes reducing energy consumption and industrial reorientation and digitalisation projects;

26.2. by 2050:

26.2.1. to phase out fossil fuels in favour of RES (green hydrogen, sustainable biomass, secondary raw materials and other high quality climate-neutral raw materials) and other non-fossil resources in industrial enterprises participating in the EU ETS by 2045;

26.2.2. to achieve a 100 % reduction in GHG emissions in the industrial sector compared to 2005 by using environmentally safe carbon capture and utilisation technologies.

## **SECTION TWO**

### **SECTORAL CLIMATE CHANGE MITIGATION TARGETS AND OBJECTIVES IN NON-ETS SECTORS**

27. In the transport sector:

27.1. aiming for a reduction of GHG emissions of at least 14 % by 2030 compared to 2005:

27.1.1. to increase energy efficiency, the use of RES, alternative fuels and promote zero-emission, interconnected, digitalised and sustainable mobility in multimodal transport;

27.1.2. to achieve that energy consumption from RES in the transport sector accounts for 15 %, of which 5 % from gaseous fuels from RES;

27.1.3. by 2023, municipal councils in cities are to designate low-emission zones;

27.1.4. by 2027, to achieve that all public transport, taxis and transport for ride hailing services in major cities use only RES energy;

27.1.5. to achieve that a minimum of 60 % of urban travel is made by public transport, cycling and walking:

27.1.5.1. to enhance the attractiveness of public transport through the deployment of intelligent transport systems, technological and other solutions to ensure the priority of public transport in traffic, the compatibility of urban and suburban public transport routes and the interconnection of different modes of public and private transport;

27.1.5.2. to ensure the development of infrastructure for cycling and walking by creating an attractive, safe network of cycle and pedestrian paths, integrated into the overall transport system, with at least 600 km of new or reconstructed cycle and pedestrian paths;

27.1.6. to promote the production of advanced biofuels and achieve that their share in the final energy consumption of the transport sector accounts for at least 3.5 %;

27.1.7. to electrify at least 35 % of Lithuania's rail network (8 % electrified in 2021);

27.1.8. to achieve a 20 % reduction in the use of fossil fuels in inland waterway transport;

27.1.9. to achieve that electric and zero-emission vehicles account for at least 20 % of the light duty vehicle fleet and ensure the development of the necessary charging and refuelling infrastructure;

27.1.10. by increasing the number of electric vehicles to achieve that:

27.1.10.1. by 2025, the number of electric vehicles of category M1 accounts for at least 10 % and electric vehicles of category N1 for at least 30 % of annual purchases;

27.1.10.2. by 2030, the number of electric vehicles of category M1 accounts for at least 50 % and electric vehicles of category N1 for 100 % of annual purchases;

27.1.10.3. as of 1 January 2030, electric vehicles of category N1 with internal combustion engines, except for electric vehicles of category N1 powered by alternative fuels, are not registered;

27.1.11. by 31 December 2030, to achieve that road vehicles publicly procured or used for the provision of services are zero-emission and, compared to the total number of road vehicles procured or used for the provision of services, account for:

27.1.11. 1. 100 % of vehicles of category M1, M2, M3 and N1;

27.1.11. 2. 16 % of vehicles of category N2 and N3;

27.1.12. to equip at least 60,000 charging points for electric vehicles, including 6,000 public and semi-public charging points for electric vehicles;

27.1.13. to ensure that, from 2023, all petrol stations, bus and railway stations, airports and seaports, whether under construction or reconstructed, must have at least one public charging point for electric vehicles with high or very high capacity;

27.2. by 2040:

27.2.1. to increase energy efficiency, the use of RES and alternative fuels, to promote zero-emission, interconnected, digitalised and sustainable mobility in multimodal transport, ensuring a 50 % reduction in the use of fossil fuels in road transport by 2035;

27.2.2. by 2035, to ensure that passenger transport and logistics services in cities are provided only by zero-emission vehicles;

27.2.3. the infrastructure for charging and refuelling vehicles is consistently expanded, taking into account the increasing number of zero-emission vehicles;

27.2.4. the attractiveness of comprehensively integrated travel modes as alternatives to the private car is developed not only in cities but also nationally, such as multi-modal public transport, non-polluting ridesharing services, cycle and pedestrian path infrastructure;

27.2.5. to ensure that the use of fossil fuels in inland waterway transport is reduced by 50 %;

27.3. by 2050:

27.3.1. to phase out fossil fuels in road transport by 2045;

27.3.2. to reduce GHG emissions in the transport sector by 90 % compared to 1990;

27.3.3. to achieve a share of RES in the energy consumption of the transport sector of at least 90 %;

27.3.4. to ensure that at least 50 % of road freight traffic over a distance of more than 300 km is transported by non-polluting rail or inland waterway transport, ensuring sustainable infrastructure development;

27.3.5. to ensure that 100 % of rail passengers on domestic routes are carried on trains powered by RES.

28. In the agricultural sector:

28.1. by 2030, aiming for a reduction in GHG emissions of at least 11 % compared to 2005:

28.1.1. to introduce innovative technologies, develop sustainable farming and increase added value in all sectors of agriculture;

28.1.2. to ensure the efficient, cost-effective and environmentally safe use of fertilisers and reduce the use of nitrogen mineral fertilisers in agriculture by at least 15 % compared to 2020;

28.1.3. to promote innovative, pollution-reducing technologies and practices in livestock farming, cattle feeding, digitalisation of livestock farms and to carry out productivity research;

28.1.4. with a view to reducing emissions of methane, nitrous oxide and ammonia from livestock farming, to increase the sustainability of manure and slurry management and to achieve the sustainable management of at least 70 % of manure and slurry generated;

28.1.5. to implement measures reducing direct and indirect releases of nitrogen compounds to the environment from agricultural activities;

28.1.6. to double the area under organic farming compared to 2020;

28.1.7. to achieve that 50 % of swine and cattle manure is used for the production of biogas;

28.1.8. to promote the use of scientifically sound, safe alternatives to protect crops from pests and diseases by reducing the use of chemical pesticides and expanding the system of integrated pest management;

28.1.9. to bring the food supply chain closer to consumers, promote agriculture in urbanised areas with a view to reducing transport needs and distances;

28.1.10. to develop and start the application of a GHG accounting system at farm level by 2025 at the latest;

28.2. by 2040:

28.2.1. to phase out fossil fuels in the agricultural sector.

29. In the industrial sector<sup>34</sup>:

29.1. by 2030, aiming for a reduction in GHG emissions of at least 19 % compared to 2005:

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<sup>34</sup> The industrial sector consists of enterprises not participating in the European Union Emissions Trading System, including combustion of fuels in industry with an installed capacity of less than 20 MW.

29.1.1. to deploy innovative, more energy-efficient technologies through the development of a competitive circular economy and a bioeconomy based on biomass feedstocks;

29.1.2. to reduce domestic use of fluorinated GHGs by 79 % through alternatives and enhancing control on imports and use;

29.1.3. to rapidly accelerate the development of RES and industries producing alternatives to fossil fuels;

29.1.4. to increase energy efficiency, achieving energy savings of 5.45 TWh and the use of RES and alternative fuels in industry;

29.1.5. to promote zero and low-waste production, circular economy models, waste reuse and/or recycling and industrial symbiosis in industrial enterprises through the Eco-innovation index (122 in 2025; 133 in 2030);

29.1.6. to reduce the use of natural resources by promoting the re-use of materials, products and waste, achieving the circular economy objectives in all sectors of the economy, with the aim of achieving that the value of the circular material use rate (the circularity rate) is not less than the EU average by 2025 (11.9 in 2019), while ensuring the use of recovered materials (8.1 in 2025; 10.6 in 2030);

29.1.7. to encourage energy-intensive businesses to introduce energy efficiency measures;

29.1.8. to achieve that by 2024 all public buildings are constructed with at least 50 % organic and wood-based construction materials, increasing the use of secondary raw materials and reducing construction waste;

29.2. by 2040:

29.2.1. to phase out fossil fuels.

30. In the waste sector:

30.1. aiming for a reduction in GHG emissions of at least 65 % by 2030 compared to 2005:

30.1.1. in tackling food waste, aim for a 50 % reduction in food waste per capita (41 kg in 2019);

30.1.2. to achieve that a share of municipal waste going to landfills accounts for a maximum of 5% of the generated municipal waste by weight;

30.1.3. to recycle at least 70 % of all packaging waste (by weight);

30.1.4. to reuse and recycle at least 60 % of municipal waste (by weight);

30.1.5. by 2025, to achieve that the value of the circular material use rate (the circularity rate) is not less than the EU average (11.9 in 2019);

30.2. by 2040:

30.2.1. to increase the amount of municipal waste prepared for reuse and recycled to at least 65 % of waste by weight by 2035;

30.3. by 2050:

30.3.1. to achieve that the value of the circular material use rate (the circularity rate) is 100.

31. In the small-scale energy sector<sup>35</sup>:

31.1. aiming for at least a 26 % reduction in GHG emissions by 2030 compared to 2005:

31.1.1. to increase energy efficiency and shift to locally emission-free heating and cooling technologies, with priority given to the use of RES;

31.1.2. to transform the current building sub-sector to be energy efficient (with conditions for conversion to near-zero energy buildings) and fossil fuel independent in 2050 compared to 2020, with a 60 % reduction in annual primary energy consumption, a 100 % reduction in fossil fuel primary energy consumption and GHG emissions and a 74 % share of renovated buildings;

31.1.3. to achieve energy savings of at least 6 TWh in individual homes and public buildings by promoting the comprehensive renovation of multi-apartment buildings, individual homes and public buildings (with priority given to the renovation of housing estates);

31.1.4. to achieve that 30 % of households are active energy prosumers by promoting decentralised electricity production and energy storage;

31.1.5. to advise end-users on energy-saving measures and solutions that change consumer behaviour and habits to improve energy efficiency;

31.1.6. to increase the number of consumers connected to district heating by promoting the efficient use of thermal energy;

31.2. by 2040:

31.2.1. to phase out fossil fuels.

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<sup>35</sup> Small-scale energy is defined as energy-producing installations (small combustion plants up to 20 MW) and the sectors that use them (households, public, services, construction, fisheries, forestry, etc.) that are not covered by the EU Emissions Trading System.

Table 2. GHG emission reduction targets for individual non-ETS sectors for the period 2021-2030, %.

Sector	Average for 2016-2018, compared to 2005, %	2025 target, compared to 2005, %	2030 target, compared to 2005, %
Transport	+36,2	+11,3	-14
Industry	+23,5	+2,2	-19
Agriculture	+3,2	-3,8	-11
Waste	-36,6	-50,6	-65
Small-scale energy	-3,2	-14,8	-26
Overall national target for non-ETS sectors			-25

### 32. In the LULUCF sector:

32.1. by 2030, sustainably using agricultural land and forest land, protecting and restoring natural habitats that store organic carbon (forests, grasslands, marshes, wetlands) and ensuring their good ecological status, increasing the use of wood in construction and the manufacture of durable products without additional negative impacts on ecosystems, to increase the potential for removal by sinks and its most efficient use, and to achieve that the quantity of removals significantly exceeds the sector's GHG emissions and reaches at least 6.5 million tonnes CO<sub>2</sub>eq over the period 2021-2030:

32.1.1. to achieve a sustained reduction in GHG emissions from cropland in the LULUCF sector through soil-friendly farming practices and soil improvement;

32.1.2. to increase organic carbon sinks in forests and wood products, intensify annual removals of organic carbon through the development of sustainable forestry and increase the use of locally sourced raw materials in wood products;

32.1.3. to increase the country's forest cover to at least 35 % by 2024, giving priority to areas of non-forest land naturally covered by trees and shrubs, in line with ecological principles;

32.1.4. to increase the area of permanent grassland by at least 8,000 ha;

32.1.5. to increase the area under no-till farming technologies by a factor of 1.5 by 2024 and by a factor of 3 by 2030;

32.1.6. to use at least 4 % of agricultural land for biodiversity-rich landscape features by 2024 and 10 % by 2030;

32.1.7. to restore at least 8,000 ha of carbon-rich ecosystems, ensure their sustainable use and stop the exploitation of new natural marshes by 2024;

32.1.8. to promote changes in consumption patterns by increasing the use of products and energy from renewable wood sources and reduce the use of more polluting non-renewable sources;

32.1.9. to ensure and continuously monitor the sustainability requirements for the production of renewable wood products in order to avoid additional negative impacts on ecosystems;

32.1.10. to promote the cultivation of industrial crops (fibre, etc.), their use and the use of timber in industries by increasing organic carbon stocks in durable products, while ensuring that this does not have additional negative impacts on ecosystems;

32.1.11. to develop a bioeconomy focused on high added value and moving towards circularity and increase its contribution to the national GDP;

32.2. by 2040:

32.2.1. to increase organic carbon sinks and annual removal by sinks through the sustainable use of agricultural and forestry land, the protection and restoration of natural habitats that store organic carbon (forests, grasslands, marshes, wetlands), ensuring their good ecological state and the increase in the annual sequestration of organic carbon in forests through the promotion of production of long-lived wood products from domestically harvested timber, as compared with 2030;

32.2.2. to increase organic carbon stocks, compared to 2030, through sustainable use of agricultural and forestry land;

32.2.3. to pay more attention to nature-based solutions in the search for long-term solutions to climate change.

## **CHAPTER VI**

### **CLIMATE CHANGE ADAPTATION TARGETS AND OBJECTIVES**

33. The goal of Lithuania's policy on adaptation to climate change is to reduce the current and foreseeable vulnerability of the country's natural ecosystems and economic sectors, to strengthen adaptive capacity, to cost-effectively mitigate risks and damage and to maintain and increase resilience to climate change, with a view to securing a favourable environment for public life and sustainable economic activity so as to ensure food production is not endangered. In implementing this goal, it will be aimed by 2030:

- 33.1. to apply flood protection measures to all residents in flood-prone areas;
- 33.2. to ensure that the share of climate-related economic losses in the country's GDP does not exceed 0.08 % per year;
- 33.3. the proportion of dangerous, natural disasters and catastrophic meteorological events predicted is at least 90 % of the actual events;
- 33.4. the climate change adaptation goal will be pursued through adaptation measures in climate-sensitive areas such as agriculture, energy, transport, industry, forestry, ecosystems and biodiversity, landscape, public health, water resources and the coastal zone, urbanised areas, etc., in line with the main short-term directions by 2030;
- 33.5. adaptation actions at local level: to promote regional cooperation, active involvement of municipal authorities and the local community in the planning and implementation of climate change adaptation measures;
- 33.6. more systematic adaptation: coherence and synergies between climate change mitigation and adaptation measures;
- 33.7. data-driven solutions: to increase knowledge and research on climate change impacts, vulnerability and adaptive capacity, promote RDI;
- 33.8. open data: to collect and disseminate information on ongoing climate change, the resulting damages and the magnitude of losses, to provide information to stakeholders and the public and to share best practices and examples.
34. Key long-term directions for adaptation to climate change by 2050:
  - 34.1. to continuously monitor the consequences and impacts of climate change and the implementation of cost-effective mitigation measures;
  - 34.2. to ensure the resilience of engineering infrastructure to climate change and the sustainable use of natural resources such as water, biodiversity and soil, promote the development of green infrastructure (e.g. sustainable alternatives to grey infrastructure and resilience-enhancing measures for living environments) and other nature-based solutions;
  - 34.3. to increase awareness, resilience, preparedness for climate-related hazards and emergencies among the public and public sector institutions;
  - 34.4. to ensure planning for disaster risk management, natural disasters and emergencies;
  - 34.5. to improve the meteorological and hydrological observation, forecasting and warning system.
35. Adaptation targets and objectives for 2030 in individual sectors most vulnerable to climate change:

35.1. in the public health sector, to reduce the negative impacts of climate change on human health. The key objectives for achieving the set target are as follows:

35.1.1. to improve the system for public information on climate change and its threats to human health;

35.1.2. to carry out and improve monitoring and forecasting of indicators (airborne pollen counts, phenological observations, etc.) relevant to determining the impact of climate change on human health;

35.1.3. to carry out the prevention of the emergence and spread of diseases potentially caused by the effects of climate change;

35.1.4. to design infrastructure, residential and non-residential buildings taking account of changes in meteorological conditions due to climate change and the impact on human health;

35.1.5. to carry out the prevention of heat waves by developing elements of green infrastructure in urbanised areas and by installing cooling and heat recovery systems in buildings under construction and renovation, with priority given to the areas most vulnerable to heat impacts;

35.1.6. to revise hygiene standards adapting them to changing climatic conditions and protecting human health;

35.1.7. to develop inter-institutional cooperation with a view to increasing the resilience of the population to the impacts of climate change;

35.2. in agriculture, the target is to increase the resilience of the agricultural sector to climate change. The key objectives for achieving the set target are as follows:

35.2.1. to ensure the sustainable use of natural resources – water, soil, etc.;

35.2.2. to apply financial instruments for risk and crisis management to address the economic consequences of climate change;

35.2.3. to carry out continuous monitoring of soil conditions at national and farm level, improve farming practices to reduce loss of topsoil and restore soil fertility, ensure the selection of climate-resilient crop varieties and development of new varieties;

35.2.4. to promote behavioural change among farmers and build capacity and competence to adapt to climate change;

35.2.5. to restore lost and create new landscape features that improve the microclimate of agricultural areas, increasing the resilience of the most deprived agrarian landscapes to climate change;

35.3. in forestry, ecosystems, biodiversity and landscape conservation, the target is to preserve and enhance the resilience of ecosystems and the scale and value of ecosystem

services, with a greater focus on nature-based solutions. The key objectives for achieving the set target are as follows:

35.3.1. to carry out research and monitoring to determine the services and values provided by ecosystems and to assess ecosystem services for decision-making;

35.3.2. to stop biodiversity loss, limit the spread of invasive species due to the effects of climate change;

35.3.3. to increase the resilience of forest ecosystems and to promote the restoration of the hydrological regime of swamp forests;

35.3.4. to encourage forest owners and managers to protect old-growth forests, to use close-to-nature forestry practices in production forests and to carry out economic activities designed to maintain and conserve elements of biodiversity;

35.3.5. when carrying out forest management design works, to envisage and apply effective measures to protect forests from fires and pests, to preserve small forests, spring areas, small rivers, swamps, forest clearings and other elements of forest ecosystems important for biodiversity;

35.4. The key objectives for achieving the set target are as follows:

35.4.1. to implement effective flood management, risk assessment and mitigation;

35.4.2. to improve the management of surface water, groundwater and Baltic Sea water resources, to ensure good groundwater quality, good environmental status of surface water bodies and the Baltic Sea;

35.4.3. to modernise surface and rainwater run-off management infrastructure and to ensure its development in urbanised areas with a view to protecting them from the risks of excess water and to prevent pollutants from entering the environment and surface water bodies;

35.4.4. when upgrading or creating rainwater collection and cooling infrastructure, priority should be given to green infrastructure and other solutions based on natural processes;

35.4.5. to reduce the negative impact of water level rise, natural and catastrophic hydrometeorological phenomena on the coastal zone of the Baltic Sea by applying coastal management measures based on natural analogues;

35.5. in the energy, transport and industrial sectors, the target is to increase the resilience of engineering infrastructure to the threats of climate change. The key objectives for achieving the set target are as follows:

35.5.1. to reduce the impact of natural and catastrophic meteorological events on electricity transmission and supply networks, district heating, transport infrastructure and industrial enterprises;

35.5.2. to implement measures to adapt energy infrastructure to climate change and increase resilience to extreme events, reduce the length of electricity grids that are vulnerable to the effects of climate change, develop automated management of the energy system and to adapt it to increased production of electricity from renewable energy sources;

35.5.3. to increase the resilience of road transport infrastructure to temperature changes and flooding;

35.5.4. to reduce losses by insuring against natural and meteorological events caused by climate change;

35.5.5. to take into account climate change projections when designing buildings and infrastructure (with particular emphasis on rainwater run-off and heating and cooling systems);

35.6. in the cultural sector, the target is to increase the resilience of cultural heritage sites to natural and catastrophic meteorological events. The key objectives for achieving the set target are as follows:

35.6.1. to identify the sensitivity and vulnerability of cultural sites to climate change;

35.6.2. to enhance the resilience of cultural sites through climate change adaptation measures.

36. Short-term cross-sectoral climate change adaptation targets and objectives are as follows:

36.1. in urbanised areas, to plan settlements, urban areas and spaces according to the principles of sustainable development and green infrastructure, the valuation of ecosystem services, the protection of nature and the building of resilience;

36.1.1. to provide for climate-resilient municipal and sustainable mobility infrastructure, green spaces and other measures in spatial planning documents;

36.1.2. to assess the vulnerability of the territory of Lithuania (at municipal level) to the effects of climate change and to provide for measures to manage the risks and threats of climate change in municipal action plans;

36.1.3. for cities with more than 20,000 inhabitants, to prepare urban greening plans and implement them with communities;

36.1.4. to carry out urban planning ensuring the reduction of formation of “heat islands” effect by creating permeable green rainfall retention areas (e.g. artificial water bodies) and permeable ground surfaces; to reduce heat loads in cities by planting trees and developing green spaces;

36.1.5. to set climate change adaptation requirements for all new buildings, renovations and infrastructure projects;

36.1.6. to prepare municipal climate change adaptation plans;

36.2. in the management of emergencies that may arise as a result of the effects of climate change, to ensure the planning and coordination of the activities of state and municipal authorities responsible for disaster risk management, prevention of emergencies arising from climate change, warning systems and response measures. The key objectives for achieving the set target are as follows:

36.2.1. to ensure the continuous, high-quality operation of meteorological and hydrological observation systems;

36.2.2. to improve the public warning system and emergency response measures in potentially hazardous areas;

36.2.3. to promote effective planning, disaster risk assessment and preparedness, capacity building and coordination for managing the impacts of climate change within the country and in other countries, particularly least developed ones, through development cooperation support;

36.2.4. to encourage municipalities to strengthen their disaster risk assessments and plan more responsibly for climate change preparedness;

36.3. in the area of financial management, the target is to adapt internal processes, policies, products and services to meet the challenges of climate change. The key objectives for achieving the set target are as follows:

36.3.1. to ensure that disaster risks are taken into account in the regulation and provision of funding and that no new disadvantages are created;

36.3.2. to incorporate a range of plausible climate change scenarios into economic policy and understand disaster risk management to ensure macro-fiscal resilience;

36.3.3. to envisage actions to mitigate the fiscal impact of climate-related events and risks to fiscal sustainability;

36.3.4. to develop effective insurance, loss and compensation mechanisms to encourage preventive measures to reduce potential damage and losses;

36.3.5. to promote close cooperation between the private and public sectors, in particular in the area of climate change adaptation financing;

36.4. in data and information collection and dissemination, the target is to continuously monitor and assess risks, vulnerability and adaptation options in different sectors of the economy at international, national, regional and municipal levels. The key objectives for achieving the set target are as follows:

36.4.1. to update climate change projections based on socio-economic scenarios for the territory of Lithuania and individual municipalities;

36.4.2. to carry out research and monitoring, assess adaptation options and alternatives in different sectors of the economy; to analyse and summarise climate change-related losses;

36.4.3. to carry out the identification and monitoring of damages and losses at municipal level in order to assess vulnerability and resilience at regional and national level when planning the most effective climate change adaptation measures;

36.4.4. to participate in Baltic Sea Region and international climate monitoring programmes, to share experience, information and best practices on climate change adaptation in the most climate-vulnerable sectors of the economy;

36.4.5. to implement measures ensuring effective information and action on climate change adaptation by the public and interest groups (state and municipal authorities, industry, academia, associations and others).

## **CHAPTER VII**

### **HORIZONTAL POLICIES FOR MANAGING CLIMATE CHANGE**

37. The key horizontal policies for managing climate change are as follows:

37.1. to assess the impact of policy measures (new or amended legislation and investment projects) in terms of GHG emissions and other measurable environmental indicators for decision-making;

37.2. to establish an effective system for assessing the impact of climate change management policies (*ex ante* and *ex post*), ensuring cooperation between stakeholders, planning measures and to carry out monitoring of the implementation of climate targets:

37.2.1. to develop and implement an information monitoring system for the implementation of the NECP which would allow for collection, organisation and analysis of data related to the NECP implementation indicators;

37.2.2. to promote interdisciplinary debate and research on climate change in order to reconcile the goals of mitigation and adaptation, and to strengthen their links with those of public health, biodiversity, landscape and other areas;

37.2.3. to establish sectoral working groups, bringing together representatives of state and municipal authorities, industry and academia, to coordinate the management of climate change and the implementation of Lithuania's GHG emission reduction targets in individual economic sectors;

37.2.4. to strengthen the inter-institutional capacity for national GHG emissions forecasting and assessment of the projected impacts of individual policy measures, moving towards an integrated modelling-based process from 2022;

37.3. to implement the ‘polluter pays’ principle with a view to ensuring that tax policy creates economic incentives to mitigate climate change:

37.3.1. to set specific deadlines for phasing out all tax incentives for the use of fossil fuels by 2030 at the latest;

37.3.2. to introduce carbon taxation for energy products;

37.3.3. to improve the taxation of vehicle emissions, with a view to introducing a global motor vehicle pollution tax by 2024;

37.4. to integrate climate change management targets, objectives and measures into national development frameworks, ensuring coherence of national policies and sending a clear signal to capital markets and investors that the transition to a climate-neutral economy is irreversible, and fostering the development of innovations to make sustainable solutions economically feasible;

37.5. to effectively plan actions and financial resources needed for the implementation of climate change management policies;

37.5.1. through the application of requirements for avoiding significant harm to environmental goals and sustainable investment criteria, to mobilise and make appropriate use of sustainable finance and private sector investment, to attract venture capital funding, to invest in green infrastructure and harness the potential of the single market;

37.5.2. to make the assessment of the environmental performance of public investments and compliance with Green Deal priorities a mandatory part of public investment planning;

37.5.3. to transform polluting industrial processes and raw materials in the country’s major industrial enterprises through regulatory and innovation incentive measures;

37.5.4. to develop and apply economic, financial and educational measures to reduce energy poverty and other inequalities exacerbated by climate change;

37.6. to make the Government climate neutral from 2024 and make the entire public sector climate neutral from 2027; to obligate public bodies, from 2023, to use only green electricity and heat, to use only zero-emission transport, and to purchase goods and services only through green procurement;

37.7. to promote sustainable and green procurement, prioritising equipment and labelled products that meet the latest energy efficiency standards in all sectors of the economy,

with a view to making green procurement the predominant type of public procurement from 2023;

37.8. to strengthen the role of municipalities:

37.8.1. to coordinate national policies with those of regional and municipal authorities to ensure that the transition is well managed and equitable and that no region, community, worker or citizen is left behind;

37.8.2. to reduce the CO<sub>2</sub> footprint of urbanised areas by one third by 2030;

37.8.3. to have the first climate-neutral and waste-free city in Lithuania by 2030;

37.9. to create an urban environmental index, encouraging municipalities to compete on the Green Deal and share best practices;

37.10. to improve public education and engagement:

37.10.1. to implement an information and education initiative, promoting public environmental awareness, consciousness, engagement and responsible, environmentally friendly and climate-friendly behaviour;

37.10.2. to increase the proportion of the country's population that is well informed about the environment to 65 % by 2023, and reach a minimum of 50 % of the population involved in environmental protection by 2030;

37.10.3. to strengthen communication on EU policy issues with a view to ensuring greater involvement of politicians, businesses, academia, NGOs and civil society in EU policy-making and implementation;

37.10.4. to invest in human resources by training, re-skilling and up-skilling professionals, to ensure that current and future generations have the best education, training and skills in the relevant fields, including green and digital technologies, in frameworks that are rapidly adaptable to changing labour market needs:

37.10.4.1. to mainstream climate change into all education curricula, to train professionals who can competently address climate change management issues and to up-skill and re-skill professionals to work with cutting-edge technologies and solutions;

37.11. to strengthen international cooperation:

37.11.1. to ensure that Lithuania's interests are adequately represented in international climate change negotiations, supporting the strengthening of global ambition in the fight against climate change and the EU's leadership in the field of climate policy, and, using all available means, including climate diplomacy, to strengthen the global response to climate change;

37.11.2. to participate in the activities of the World Meteorological Organisation (WMO), the European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT), the European Centre for Medium-Range Weather Forecasts (ECMWF), the European Meteorological Services Network (EUMETNET) and other global and regional programmes;

37.11.3. to anticipate and prepare for geopolitical changes, including migratory pressures, to strengthen bilateral and multilateral partnerships in the development of projects in the areas of climate change mitigation, adaptation, loss and damage, emergencies and natural phenomena and to contribute to the achievement of climate change targets, loss and damage, emergency and natural phenomena management in other countries, especially the least developed ones, by means of financial and technological support and best practice examples;

37.11.4. in order to maintain the vitality and competitiveness of the Lithuanian economy, to actively participate in the development of the EU's Carbon Border Adjustment Mechanism, and to ensure that imported and domestically produced products are subject to the same environmental taxes.

## **CHAPTER VIII**

### **RELEVANT RESEARCH, TECHNOLOGICAL DEVELOPMENT AND INNOVATION POLICIES**

38. To promote RDI with a priority for innovation towards the implementation of the EU's Green Deal, turning sustainable solutions into cost-effective ones:

38.1. to ensure the development of RDI that contributes to a transition to low-emissions in all sectors of the economy in the following areas: integrated research and economics on the interlinkages of economic sectors, prospective development and climate change, renewable energy, smart energy systems, electrification, zero-emission solutions for all modes of transport, research on alternatives to fossil fuels (green hydrogen, etc.), energy harvesting and storage, conversion of energy-intensive industries to zero-carbon technologies, circular economy, bioeconomy, sustainable food systems and climate-smart agriculture and forestry, digitalisation of all sectors of the economy, carbon capture and utilisation (CCU), etc.;

38.2. to provide incentives for the development of low-emission RDI in all sectors of the economy by strengthening cooperation between public and municipal authorities, academia, business and financial institutions, promoting collaborative research and increasing the practical application of RDI;

38.3. to ensure the efficient use of public and EU funds by providing additional support to international and EU-funded projects and programmes, including the programme “Horizon Europe”, to promote interdisciplinary green research;

38.4. to ensure that the state innovation system promotes the technological renewal of Lithuanian enterprises in line with the goals of the Green Deal and the reorientation towards the production and export of innovative, environmentally friendly goods and services;

38.5. to consistently increase the leverage of public and private investment in RDI activities, reaching 2 % of GDP by 2030 through public and private investment and 4 % of GDP by 2040;

38.6. to develop and implement a programme to improve the skills of the professionals needed for research related to the Green Deal (its implementation activities);

38.7. to carry out the assessment of national (industry-level) pollution indicators for specific industries.

## **CHAPTER IX**

### **IMPLEMENTATION OF THE AGENDA AND ACCOUNTABILITY**

39. The Ministry of Environment of the Republic of Lithuania shall be the coordinator of the Agenda. The Agenda shall, within their remit, be implemented by the Ministry of Environment of the Republic of Lithuania, the Ministry of Economy and Innovation of the Republic of Lithuania, the Ministry of Energy of the Republic of Lithuania, the Ministry of Finance of the Republic of Lithuania, the Ministry of National Defence of the Republic of Lithuania, the Ministry of Culture of the Republic of Lithuania, the Ministry of Social Security and Labour of the Republic of Lithuania, the Ministry of Transport and Communications of the Republic of Lithuania, the Ministry of Health of the Republic of Lithuania, the Ministry of Education, Science and Sport of the Republic of Lithuania, the Ministry of Foreign Affairs of the Republic of Lithuania, the Ministry of the Interior of the Republic of Lithuania and the Ministry of Agriculture of the Republic of Lithuania. The institutions coordinating the achievement of the GHG emission reduction targets are summarised in Table 3.

Table 3. Institutions coordinating the achievement of the GHG emission reduction targets

Sector	Institution
Transport	Ministry of Transport and Communications
Industry (including EU ETS )	Ministry of Economy and Innovation Ministry of Environment (construction)
Agriculture	Ministry of Agriculture
Energy (including buildings)	Ministry of Energy Ministry of Environment
Waste	Ministry of Environment
Promotion of green investments	Ministry of Finance
Carbon Border Adjustment Mechanism	Ministry of Foreign Affairs
Overall target of Lithuania	Government of the Republic of Lithuania

40. The targets and objectives set out in the Agenda for the period 2021-2030 shall be pursued through the implementation of the National Progress Plan and the Agenda Plan, i.e. the NECP, which shall comply with the requirements of Regulation (EU) 2018/1999<sup>36</sup> on the Governance of the Energy Union and Climate Action.

41. The NECP shall be approved by the Government. The NECP shall be prepared and updated by the Ministry of Energy in cooperation with the Ministry of Environment.

42. The implementation of the Agenda shall be financed from the state budget of the Republic of Lithuania, municipal budgets, the EU, international organisations, the private sector and other sources. The Ministry of Finance shall prioritise green, environmentally friendly investments in its public expenditure planning, in line with the long-term goal of a climate-neutral, resilient economy, by making environmental performance one of the main criteria for evaluating investments, and shall promote the creation of an environment conducive to sustainable investments and attract investments in sustainable products on the financial market.

43. The agenda shall be updated every 10 years or in the event of changes in the legal framework, assessing the feasibility of establishing adaptation indicators and reducing GHG emissions in all sectors of the economy, taking into account the technological and economic feasibility of RDI.

<sup>36</sup> Regulation (EU) 2018/1999 of the European Parliament and of the Council of 11 December 2018 on the Governance of the Energy Union and Climate Action, amending Regulations (EC) No 663/2009 and (EC) No 715/2009 of the European Parliament and of the Council, Directives 94/22/EC, 98/70/EC, 2009/31/EC, 2009/73/EC, 2010/31/EU, 2012/27/EU and 2013/30/EU of the European Parliament and of the Council, Council Directives 2009/119/EC and (EU) 2015/652 and repealing Regulation (EU) No 525/2013 of the European Parliament and of the Council.