INTERSESSIONAL PANEL OF THE UNITED NATIONS COMMISSION ON SCIENCE AND TECHNOLOGY FOR DEVELOPMENT (CSTD)

Geneva, Switzerland 25-26 October 2022

Contribution by Latvia

to the CSTD 2022-2023 priority theme on "Technology and innovation for cleaner and more productive and competitive production"

DISCLAIMER: The views presented here are the contributors' and do not necessarily reflect the views and position of the United Nations or the United Nations Conference on Trade and Development

United Nations Commission on Science and Technology for Development (CSTD)

<u>PRIORITY THEME 1</u>: Technology and innovation for cleaner and more productive and competitive production

1. What are some specific examples (from the public and private sectors) of green technology and innovation for cleaner and more productive and competitive production in your country? Please include contact, website, link to reports and any other relevant information concerning these projects and initiatives.

NGO solutions

Institute for Environmental Solutions

Website: https://www.vri.lv/en/home-2/

The Institute for Environmental Solutions (IES), founded in 2008, is a multidisciplinary team of scientists, researchers, and innovators. IES creates solutions for sustainable natural resource management by combining practical experience, scientific approaches, and cutting-edge technologies. They address issues that farmers, foresters, municipalities, decision-makers and policymakers, and nature conservation organizations face daily. In the space domain, IES specializes in Earth Observation and the development of data-driven services. IES is a Copernicus Relay and a Copernicus Academy, and a regular supplier to ESA.

Green-Tech Cluster

Website: https://greentechlatvia.eu/en/home/

Green-Tech Cluster or Green and Smart Technology Cluster deals with cross-sectoral cooperation bringing together companies, educational and research institutions, as well as other organizations that partly or fully operate in the industries of green and smart technologies. The cluster includes industries important to the sustainable development of Latvia, which also are priority sectors of smart specialization strategy: mechanical engineering and engineering, information, and communication technology and space technology, energy-efficient buildings, efficient production and environmentally-friendly raw materials. This synergy ensures efficient use of available resources and allows to achieve the most efficient development of Latvian economic environment. Cluster brings together fastest growing companies with significant share in exports and potential for international cooperation.

Green Liberty

Website: https://www.zalabriviba.lv/greenliberty/

Green Liberty is a non-profit NGO founded in 1993. Green Liberty's mission is to contribute to the development of a society where people live in harmony with each other and the environment. Green Liberty aims at raising awareness about social and environmental implications of current trends in consumerism, trade and globalization, empowering people to make meaningful decisions connected with their lives directly and indirectly and opposing abuses of power.

Bioeconomy Working Group

Website: https://scanbalt.org/bioeconomy/

Bioeconomy Working Group is supporting the development of the Baltic Sea Region Bioeconomy Network. Discussing the legal and regulatory frameworks related to bioeconomy in the South Baltic Area.

Latvian Biomass Association

Website: http://latbio.lv/en/home

Latvian Hydrogen Association partners

Website: http://www.h2lv.eu/partner/

Private sector solutions

Hemp Eco Systems

Website: https://www.hempecosystems.org/

Hemp Eco Systems is developing a new type of building materials that include hemp shives to be used as a healthier and more sustainable alternative to usual types of insulation.

Ekubirojs

Website: https://ekubirojs.lv/en/#pll_switcher

Ekubirojs promotes Energy Efficiency and green investment in the Baltics and Eastern Europe by bringing people, experts, developers and financing together to renovate old buildings and to create eco-friendly environment.

East Metal

Website: https://www.eastmetal.com/

East Metal has over 40,000 m2 of production space at its disposal divided into four plants in Latvia and Denmark. East Metal excels as a reliable partner in handling projects of complex steel structures and components as well as manufacturing projects for the wind energy sector, transport equipment, cranes, and lifting gear. It also produces machinery and machine parts for the manufacturing industry.

Getliņi

Website: https://www.getlini.lv/

Getlini is the largest municipal solid waste landfill in the Baltics and one of the most modern in Europe. Developed as a safe waste recycling centre, produces biogas from biodegradable waste.

Ko Tu Elpo

Website: https://en.kotuelpo.lv/

Ko Tu Elpo offers smart air biofilters that improve indoor air quality by combining technology and the power of nature by purifying the indoor air from pollutants.

Aerones

Website: https://aerones.com/

Aerones develops state-of-the-art robotic, IoT technologies and provides wind turbine maintenance services worldwide. Technicians operate the robotic tools to perform inspections, repairs, and cleanings. The solution reduces turbine downtime, minimizes idle stay, optimizes costs, and enhances energy production efficiency, reducing greenhouse gas emissions.

Baltic Satellite Service

Website: www.baltsat.lv

The company provides space data services and applications for research, educational and commercial organisations. BSS develops proprietary ForestRadar (www.forestradar.com) technology for the big forest management companies to monitor clear-cut processes using both optical and radar satellite imagery. Commercial services have been provided since 2018.

Primex

Website: https://primekss.com/contacts/latvia

Primex is manufacturing concrete that is 50% stronger, produces up to 70% less CO2 emissions and is 30% faster to install. Their aim is for 80% of concrete structures worldwide to be built using their solutions, thus making the construction greener.

Blueshockrace

Website: https://blueshockrace.com/

Blueshockrace is developing electric go-karts, taking the next step in electric transport solutions, thus improving the tech and providing knowledge about the possibilities of electric vehicles. https://blueshockrace.com/

CNC SAAN

Website: https://cncsaan.lv/en/

CNC SAAN is a metal processing company working with metal milling, turning, welding, and CMM measuring. The major export countries of the company are Sweden, Norway, Germany, and Denmark. The further development of CSNN includes such industries as machine-building, power industry, agriculture, forest exploitation, the field of oil/gas, and furniture.

Jauda

Website: http://www.jauda.com/en/catalogue/services

Energo company "Jauda" is one of the largest producers of electrical materials and equipment in the Baltic countries with more than 50 years of experience. The company produces products for energetics and electrification, including compact substations, low and medium voltage equipment, metal constructions, and metalware.

Environment and Renewable Energy Industry in Latvia

Website: http://environment-industry-companies.liaa.gov.lv/

Green Tech fact sheet

Website: https://investinlatvia.org/en/key-sectors/sectors/green-technology

2. What are the national strategies, policies, and laws concerning green technology and innovation for cleaner and more productive and competitive production in your country?

Green technology and innovation is addressed in a range of national policy/strategic planning documents, including the <u>National Development Plan 2021-2027</u>, the National Energy and Climate Plan 2021-2030, the Sustainable Development Strategy of Latvia for 2030, the Sustainable Development Strategy of Riga for 2030, the Latvian Bioeconomy Strategy 2030, Strategy for the Achievement of Climate Neutrality by 2050, and the <u>Digital Transformation Guidelines 2021-2027</u>¹.

National Industrial Policy Guidelines of Latvia for 2021-2027. The guidelines are a medium-term policy planning document that covers all sectors of the economy and sets out goals and identifies directions for action to promote economic growth for the next seven years. These guidelines recognise the context of a rapidly changing labour market, the need for employees to constantly acquire new knowledge, and the need for employers to invest in technological development and the education of their employees. The guidelines also emphasise the necessity to specialize Latvia's industrial policy in the RIS3 (smart specialization) fields, which includes also smart energy and mobility, as well knowledge-based bioeconomy. Available as only in Latvian:

¹ Green aspects of digital transition are reflected in the strategy both horizontally, and in specific actions (i.e. 4.4.1. moving to a "servitization" model for public sector services), and in ongoing work in the RIS3 smart specialisation area "Smart Energy".

https://likumi.lv/ta/id/321037-par-nacionalas-industrialas-politikas-pamatnostadnem-20212027-gadam

National Climate and Energy Plan of Latvia 2021-2030 is a ten-year integrated document mandated by the European Union to each of its member states in order for the EU to meet its overall greenhouse gases emissions targets. The Energy and Climate Plan addresses all five dimensions of the EU Energy Union: decarbonisation, energy efficiency, energy security, internal energy markets and research, innovation, and competitiveness. The plan sets targets including on greenhouse emissions reduction, share of RES in energy consumption in transport, share of advanced biofuels and biogas in energy consumption in transport, share of advanced biofuels set out in the Plan are based on full introduction and implementation of the 'polluter pays' principle. Available only in Latvian: https://likumi.lv/ta/id/312423-par-latvijas-nacionalo-energetikas-un-klimata-planu-20212030-gadam

Sustainable Development Strategy of Saeima (Parliament) of the Republic of Latvia until 2030.

Sustainable Development Strategy of Riga until 2030 and Development Programme of Riga for 2014-2020.

Informative Report "Latvian Bioeconomy Strategy 2030".

Strategy of Latvia for the Achievement of Climate Neutrality by 2050.

Latvia's National Energy and Climate Plan 2021-2030.

3. What are the key industries that are pioneering green innovation in the country? List the key actors in the national ecosystem of innovation related to green innovation in your country (firms, universities, financial institutions, regulators)? What are the key networks of the ecosystem in your country (including online networks, innovation hubs, forums, etc.)?

Key industries pioneering green innovation overlap with Latvia's Smart Specialization Strategy for Research and Innovation (RIS3) areas. Detailed monitoring reports of all RIS3 areas, including RIs' areas of specialisation can be found on this site.

Latvia participates in international and EU activities and networks, including EU climate missions and joint undertakings such as PARC, CETP, DUT, Water4All and the European Biodiversity Partnership. A national mission ("Sea 2030") has been launched, aiming to create conditions and incentives for the burgeoning of a blue and green economy, providing grants for developing technologies for commercialisation, digital twinning, etc.

Latvian institutions are involved in a range of EIT hubs; most recently, an EIT Awareness Day was organised on April 29th to meet with representatives from a range of EITs. The Ministry of Education and Science has a working plan for 2022-2023 with the EIT Hub for Latvia (Riga Technical University). An EIT RIS Hub will be developed in Latvia as an EIT pilot project.

Companies	Universities/Institutes	Financial institutions	Regulators	Ecosystems/Networks
Aerones Blueshockrace Getliņi Primex	Riga Technical University University of Latvia Riga Stradiņš University (RSU) Institute of Electronics and Computer Science Latvian University of Life Sciences and Technologies (LLU)	Altum Investment and development agency of Latvia (LIAA) The Latvian Council of Science	Ministry of Environmental Protection and Regional Development of the Republic of Latvia Ministry of Economics Ministry of	Green and Smart Technology Cluster

Contribution of the Government of the Republic of Latvia

Latvian State Forest	Science	and	
Research Institute "Silava"	education		
Latvian State Institute of Wood Chemistry (LSIWC)			
Institute of Food Safety "BIOR" the Baltic Studies Centre (BSC)			
Daugavpils University (DU) Institute for Environmental Solutions			
Latvian Institute of Organic Synthesis (LOSI)			
Latvian Biomedical Research and Study Centre			
Baltic Biomaterials Centre of Excellence (BBCE)			
Institute of Solid State Physics of the University of Latvia			
Latvian State Institute of Wood Chemistry			

4. What are the challenges that your government have faced or may face in promoting green technology and innovation in your country to contribute to national development priorities and accelerate the progress towards the SDGs?

As globally interegated country Latvia faces similar challenges as most of the countries around the globle. The COVID-19 pandemic has significantly affected economic development and advancement of new projects. Other elements include need for detailed coordination across sectors, raising awareness about the benefits of promoting green technologies and sustainable financing.

5. What should governments, the private sector, organized civil society, and other stakeholders do so that developing countries can benefit from these technologies?

To create support mechanisms and informativeness development initiatives that will define green technologies as a more competitive and high-potential option of technological development.

To stimulate cooperation among companies and creation of clusters to enable an easier and more competitive green technology development.

To introduce more support mechanisms for start-ups that support green development.

To create demand for innovation from the public sector by using green and innovation procurement.

Invest into education in sustainable and greener industries.

To develop the role of municipalities (and thus, civil societies) to develop and demonstrate the benefits of green innovation in local communities.

Ensure support for research and innovation and effective technology transfer ecosystems.

6. What are some examples of international cooperation mechanisms, projects, programmes or strategies, including triangular and South-South cooperation, in green technology and innovation that your country is part of?

Latvia takes part in a range of EU projects, including the EU climate missions, and the Clean Energy Transition Partnership (CETP), Driving Urban Transition (DUT), Water4All and the European Biodiversity Partnership.

Clean Hydrogen JU (more information: <u>https://www.clean-hydrogen.europa.eu/index_en).</u>

Circular Bio-based Europe Joint Undertaking (more information: https://www.cbe.europa.eu/)

<u>Norwegian Financial Mechanism (NFI) 2014-2021 – Funding of 14.7 million is available for</u> <u>entrepreneurs in the NFI programme</u>. 12.5 million EUR Norwegian Financial Mechanism and 2.2 million EUR State budget funding for the development of innovative entrepreneurship. The objective of the NFI programme is to promote the creation of higher value-added products and services in three areas: (1) <u>Green innovations</u>, (2) information and communication technologies and (3) life-standards technologies. Funding under the NFI programme is available to SMEs for the development of new products and technologies (small-scale grant schemes), as well as for the modernisation of production facilities (open tender). A total of 116 applications were received under small grant schemes and pen competitions and 40 projects were supported. At the same time, the LIAA Technology Business Centre (TBC), which is part of the NFI program, opened on October 7, 2021. The project is being implemented in cooperation with TBC partners – the University of Latvia, Riga Technical University and Riga Stradins University and aims to promote the development of business ideas aimed at the development of technologically intensive products.

7. What actions can the international community, including the CSTD, take to help your country take advantage of green technology and innovation for cleaner and more productive and competitive production?

As a platform for networking within the industries for collaboration projects.

As an informativeness development platform on the benefits of green technologies and on global initiatives in this context.

As a platform for countries to exchange information on national initiatives supporting green technology and innovation development.

Could you suggest some contact persons of the nodal agency responsible for projects/policies and international collaboration in this context as well as any experts (from academia, private sector, civil society or government) dealing with projects in this area? We might contact them directly for further input or invite some of them as speakers for the CSTD inter-sessional panel and annual session.

Mr. Tālis Juhna, Vice-Rector of Riga Technical University, advisor of the United Nations highlevel group supporting the Technology Facilitation Mechanism, <u>talis.juhna@rtu.lv</u>

Mr. Salvis Roga, Chairman of the board at Green tech cluster, <u>salvis@kbi.lv</u>, +371 28663400

Ms Inese Pelša, Senior Expert at the Strategy and Sustainable Development Department, Ministry of Environmental Protection and Regional Development, +371 67026457, <u>inese.pelsa@varam.gov.lv</u>

Mr. Aivars Starikovs, Clean Hydrogen Partnership, Hydrogen Association of Latvia, Mob. +371 29242995, <u>aivars@h2lv.eu</u>, <u>http://www.h2lv.eu/</u>

Mr. Pēteris Lesničenoks, RTU FMSAC Materials science, Researcher at ISSP, UL, Member of Hydrogen Association of Latvia, Mob. +371 29100445, <u>peteris.lesnicenoks@cfi.lu.lv</u>

8. Do you have any documentation, references, technological assessments, future studies or reports on the priority theme in your country or region?

National Development Plan of Latvia for 2021-2027.

The reports of all RIS3 areas including Smart Energy for 2014-2018 can be found on this site.

<u>National Industrial Policy Guidelines of Latvia for 2021-2027</u> (available only in Latvian; <u>summary in English</u>).

National Climate and Energy Plan of Latvia 2021-2030.

<u>The Bioeconomy Strategy of Latvia (LIBRA)</u> – available only in Latvian. <u>Wastewater management investment plan for 2021 – 2027</u> - available only in Latvian.

- 1. What are some specific examples (from the public and private sectors) of green technology and innovation for cleaner and more productive and competitive production in your country? Please include contact, website, link to reports and any other relevant information concerning these projects and initiatives.
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 - **Ekubirojs** promotes Energy Efficiency and green investment in the Baltics and Eastern Europe, by bringing people, experts, developers and financing together to renovate old Soviet Era buildings. <u>https://ekubirojs.lv/en/</u>
 - **Hemp Eco Systems** is developing a new type of building materials that include hemp shives to be used as a healthier and more sustainable alternative to usual types of insulation. https://hempecosystems.lv/
 - Ko Tu Elpo offers smart air biofilters that improve indoor air quality by combining technology and the power of nature by purifying the indoor air from pollutants. <u>https://en.kotuelpo.lv/</u>
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 - Latvian Hydrogen Association partners <u>http://www.h2lv.eu/partner/</u>
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 - CNC SAAN is a metal processing company working with metal milling, turning, welding, and CMM measuring. The major export countries of the company are Sweden, Norway, Germany, and Denmark. The further development of CSNN includes such industries as machine-building, power industry, agriculture, forest exploitation, the field of oil/gas, and furniture. https://cncsaan.lv/en/
 - Energofirma Jauda is one of the largest producers of electrical materials and equipment in the Baltic countries with more than 50 years of experience. The company produces products for energetics and electrification, including compact substations, low and medium voltage equipment, metal constructions, and metalware. http://www.jauda.com/en/catalogue/services
 - Green Tech fact sheet, Smart Energy presentation available on <u>https://investinlatvia.org/en/key-sectors/sectors/green-technology</u>

- Environment and Renewable Energy Industry in Latvia available on <u>http://environment-industry-companies.liaa.gov.lv/</u>
- Latvian Biomass Association: <u>http://latbio.lv/en/home</u>
- Bioeconomy Working Group (Supporting the development of the Baltic Sea Region Bioeconomy Network. Discussing the legal and regulatory frameworks related to bioeconomy in the South Baltic Area) <u>https://scanbalt.org/bioeconomy/</u>
- 2. What are the national strategies, policies, and laws concerning green technology and innovation for cleaner and more productive and competitive production in your country?

Green technology and innovation is addressed in a range of national policy/strategic planning documents, including the National Development Plan 2021-2027, the National Energy and Climate Plan 2021-2030, the Sustainable Development Strategy of Latvia for 2030, the Sustainable Development Strategy of Riga for 2030, the Latvian Bioeconomy Strategy 2030, Strategy for the Achievement of Climate Neutrality by 2050, and the <u>Digital Transformation</u> <u>Guidelines 2021-2027</u>¹.

- National Development Plan of Latvia available on https://pkc.gov.lv/sites/default/files/inline-files/NAP2027_ENG.pdf
- Sustainable Development Strategy of SAEIMA OF THE REPUBLIC OF LATVIA Latvia until 2030 <u>https://pkc.gov.lv/sites/default/files/inline-files/LIAS_2030_en_1.pdf</u>
- Sustainable Development Strategy of Riga until 2030 and Development Programme of Riga for 2014-2020 SUMMARY <u>https://www.rdpad.lv/wp-</u> content/uploads/2014/11/ENG STRATEGIJA.pdf
- Informative Report Latvian Bioeconomy Strategy 2030 https://www.zm.gov.lv/public/files/CMS Static Page Doc/00/00/01/46/58/E2758-LatvianBioeconomyStrategy2030.pdf
- Strategy of Latvia for the Achievement of Climate Neutrality by 2050 <u>https://leap.unep.org/countries/lv/national-legislation/strategy-latvia-achievement-climate-neutrality-2050</u>
- Latvia's National Energy and Climate Plan 2021-2030 <u>https://www.climate-laws.org/geographies/latvia/policies/latvia-s-national-energy-and-climate-plan-2021-2030</u>
- 3. What are the key industries that are pioneering green innovation in the country? List the key actors in the national ecosystem of innovation related to green innovation in your country (firms, universities, financial institutions, regulators)? What are the key networks of the ecosystem in your country (including online networks, innovation hubs, forums, etc.)?

Key industries pioneering green innovation overlap with Latvia's Smart Specialization Strategy for Research and Innovation (RIS3) areas, which cover:

1) Knowledge-intensive bio-economy – key research institutions include the Latvian University of Life Sciences and Technologies (LLU), University of Latvia (LU), Riga Technical University (RTU), Latvian State Forest Research Institute "Silava", Latvian State Institute of Wood Chemistry (LSIWC), Institute of Food Safety, Animal Health and Environment "BIOR", the Baltic Studies Centre (BSC) and Daugavpils University (DU);

¹ Green aspects of digital transition are reflected in the strategy both horizontally, and in specific actions (i.e. 4.4.1. moving to a "servitization" model for public sector services), and in ongoing work in the RIS3 smart specialisation area "Smart Energy".

2) Biomedicine, medical technologies and bio-pharmacy – key research institutions include the University of Latvia (LU), Riga Stradiņš University (RSU), The Latvian Institute of Organic Synthesis (LOSI), and the Latvian Biomedical Research and Study Centre;

3) Smart materials, technologies and engineering systems – key research institutions include Riga Technical University (RTU), the Baltic Biomaterials Centre of Excellence (BBCE), Riga Stradiņš University (RSU), The Latvian Institute of Organic Synthesis (LOSI) and the Institute of Solid State Physics of the University of Latvia;

4) Smart energy – key research institutions include Riga Technical University, the University of Latvia, the Latvian University of Life Sciences and Technologies and the Latvian State Institute of Wood Chemistry;

5) Information and communication technologies – key research institutions include the Institute of Electronics and Computer Science, University of Latvia (LU Faculty of Computing, LU Institute of Mathematics and Informatics (UL MII), LU Institute of Solid State Physics (ISSP UL)), Riga Technical University (RTU Faculty of Computer Science and Information Technology (RTU FCSI) and RTU Faculty of Electronics and Telecommunications (RTU ETF).

Detailed monitoring reports of all RIS3 areas, including RIs' areas of specialisation can be found on <u>this site</u>.

Latvia participates in international and EU activities and networks, including EU climate missions and joint undertakings such as PARC, CETP, DUT, Water4All and the European Biodiversity Partnership. A national mission ("Sea 2030") has been launched, aiming to create conditions and incentives for the burgeoning of a blue and green economy, providing grants for developing technologies for commercialisation, digital twinning, etc.

Latvian institutions are involved with a range of EIT hubs; most recently, an EIT Awareness Day was organised on April 29th to meet with representatives from a range of EITs. The Ministry of Education and Science has a working plan for 2022-2023 with the EIT Hub for Latvia (Riga Technical University). An EIT RIS Hub will be developed in Latvia as an EIT pilot project.

4. What are the challenges that your government have faced or may face in promoting green technology and innovation in your country to contribute to national development priorities and accelerate the progress towards the SDGs?

As in other states, Latvia has been affected by the COVID-19 pandemic and the related economic, educational and national security crises, which has affected both political trust and economic development.

Tackling the environmental, economic and social impact of green technologies requires a huge transformation across all sectors.

Governments must lead, but progress is being held back by economic, political and regulatory obstacles, plus a lack of national and global leadership.

Per the Ministry of Environmental Protection and Regional Development, meeting ambitious sustainability targets requires a bold, whole-of-society approach sustained by long-term government commitment.

(https://www.varam.gov.lv/lv/jaunums/varam-digitalas-un-zalas-transformacijas-jomas-javeido-savstarpeji-saskanota-politika)

Local protest has slowed or halted attempts at installing wind farms as <u>recently as this January</u>, as municipal councils hold significant power over the deployment of such infrastructure projects.

5. What should governments, the private sector, organized civil society, and other stakeholders do so that developing countries can benefit from these technologies?

Ensure support for R&I and effective technology transfer ecosystems.

6. What are some examples of international cooperation mechanisms, projects, programmes or strategies, including triangular and South-South cooperation, in green technology and innovation that your country is part of?

Latvia takes part in a range of EU projects, including the EU climate missions, and the Clean Energy Transition Partnership (CETP), Driving Urban Transition (DUT), Water4All and the European Biodiversity Partnership. Clean Hydrogen JU <u>https://www.clean-hydrogen.europa.eu/index_en</u> Circular Bio-based Europe Joint Undertaking <u>https://www.cbe.europa.eu/</u>

- 7. What actions can the international community, including the CSTD, take to help your country take advantage of green technology and innovation for cleaner and more productive and competitive production?
- 8. Could you suggest some contact persons of the nodal agency responsible for projects/policies and international collaboration in this context as well as any experts (from academia, private sector, civil society or government) dealing with projects in this area? We might contact them directly for further input or invite some of them as speakers for the CSTD inter-sessional panel and annual session.

Environmental policy is chiefly under the purview of the Environmental Protection and Regional Development Ministry.

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9. Do you have any documentation, references, technological assessments, future studies or reports on the priority theme in your country or region?

The reports of all RIS3 areas including Smart Energy for 2014-2018 can be found on this site.