



Ekonomikas ministrija



**Latvian Peat
Association**

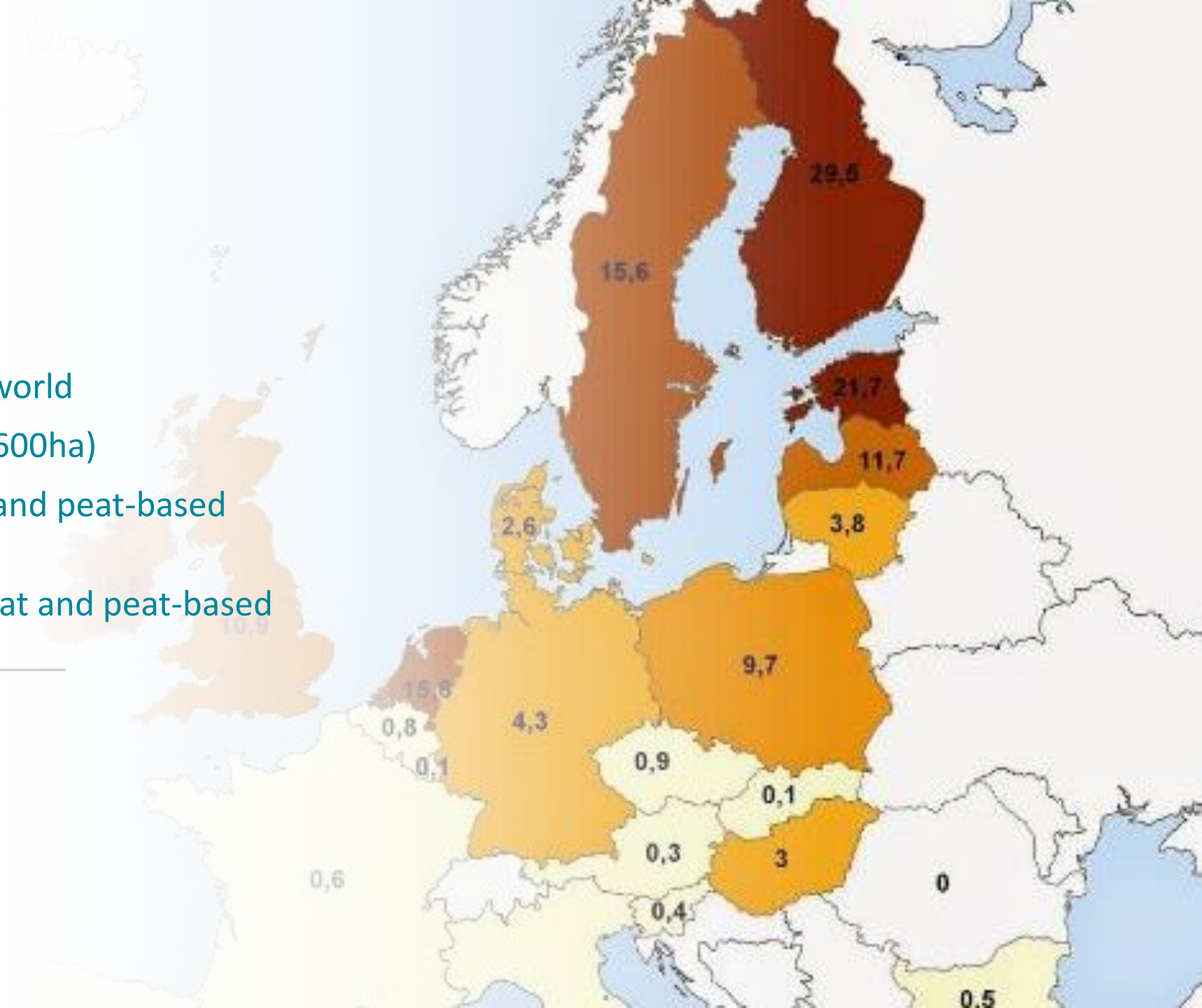
Territorial Just Transition Plan of Latvia

PEAT INDUSTRY

Latvia's national climate neutrality targets until 2050 in accordance with the JTF

	Base year 1990. year	Forecast 2020. year	Goals		
			2030. year	2040. year	2050. year
GHG emission (without LULUCF sector)	26299 ktCO ₂ ekv.	-55 % (comparison with 1990. year)	-65 % (comparison with 1990. year)	-85 % (comparison with 1990. year)	Climate neutrality (non - reducible GHG emissions are offset by removals in the LULUCF sector)
CO ₂ attraction and GHG emission LULUCF sector	-9828 ktCO ₂ ekv. (attraction)	2094 kt CO ₂ ekv. (emission)	≤1047 kt CO ₂ ekv. (emission)	Neto “0” emission (sector attraction offset sector emission)	
Towards climate neutrality (total GHG emission, Include LULUCF sector)	16471 ktCO ₂ ekv.	-16 % (comparison with 1990. year)	-38%* (comparison with 1990. year)	-76% * (comparison with 1990. year)	

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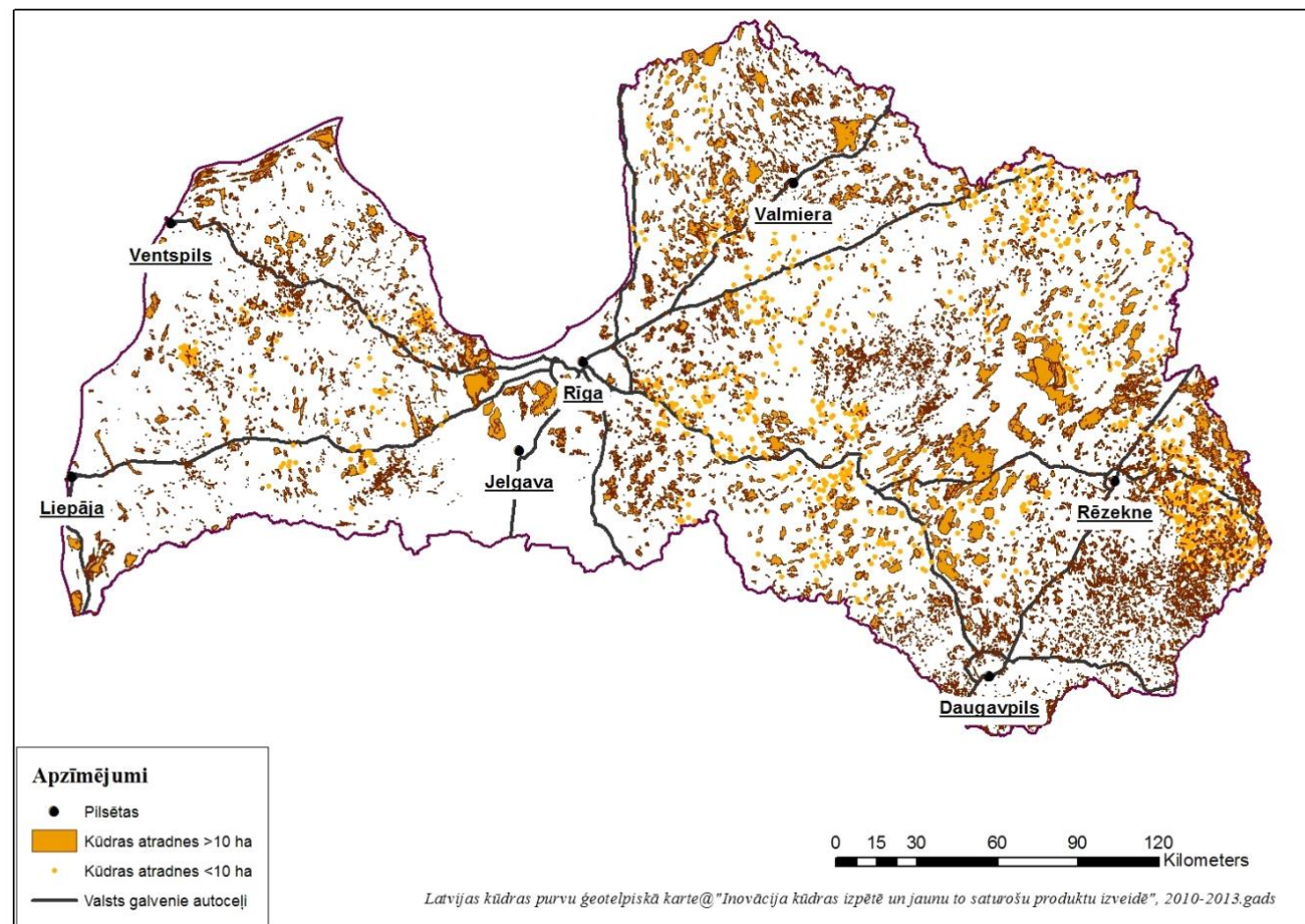


Peat resource in Latvia

- **Peatlands cover 10%** (peat deposits) of the territory of Latvia 645 100ha
- **4% peat extraction** or 0,4% of the territory of Latvia
- **Peat accumulation > Peat extraction amount** average accumulation rate is 2mm per year + **0,65 million t/year**

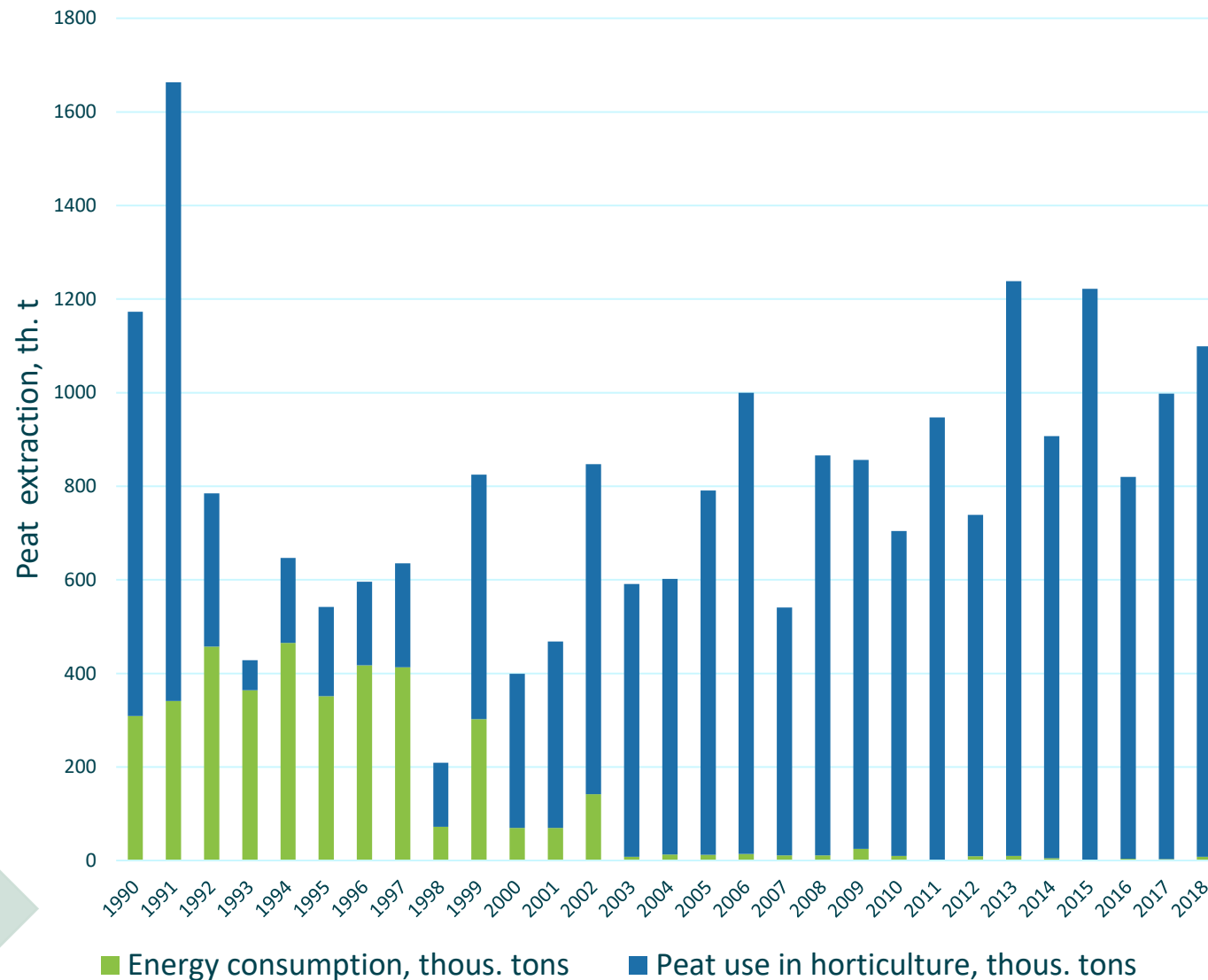
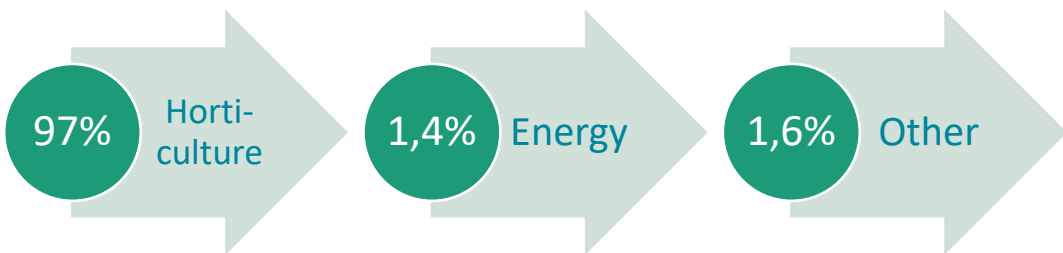
! 40% of peatland area is included in Specially Protected Nature Territories

! Peat accumulates in regions, where precipitation exceeds evaporation



Peat extraction and use in Latvia 1990-2018

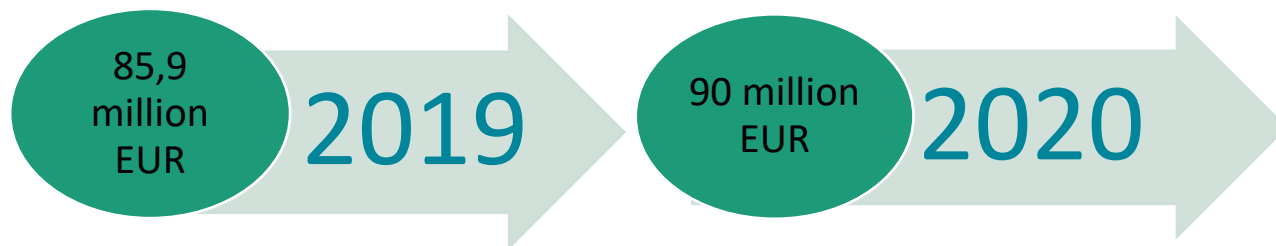
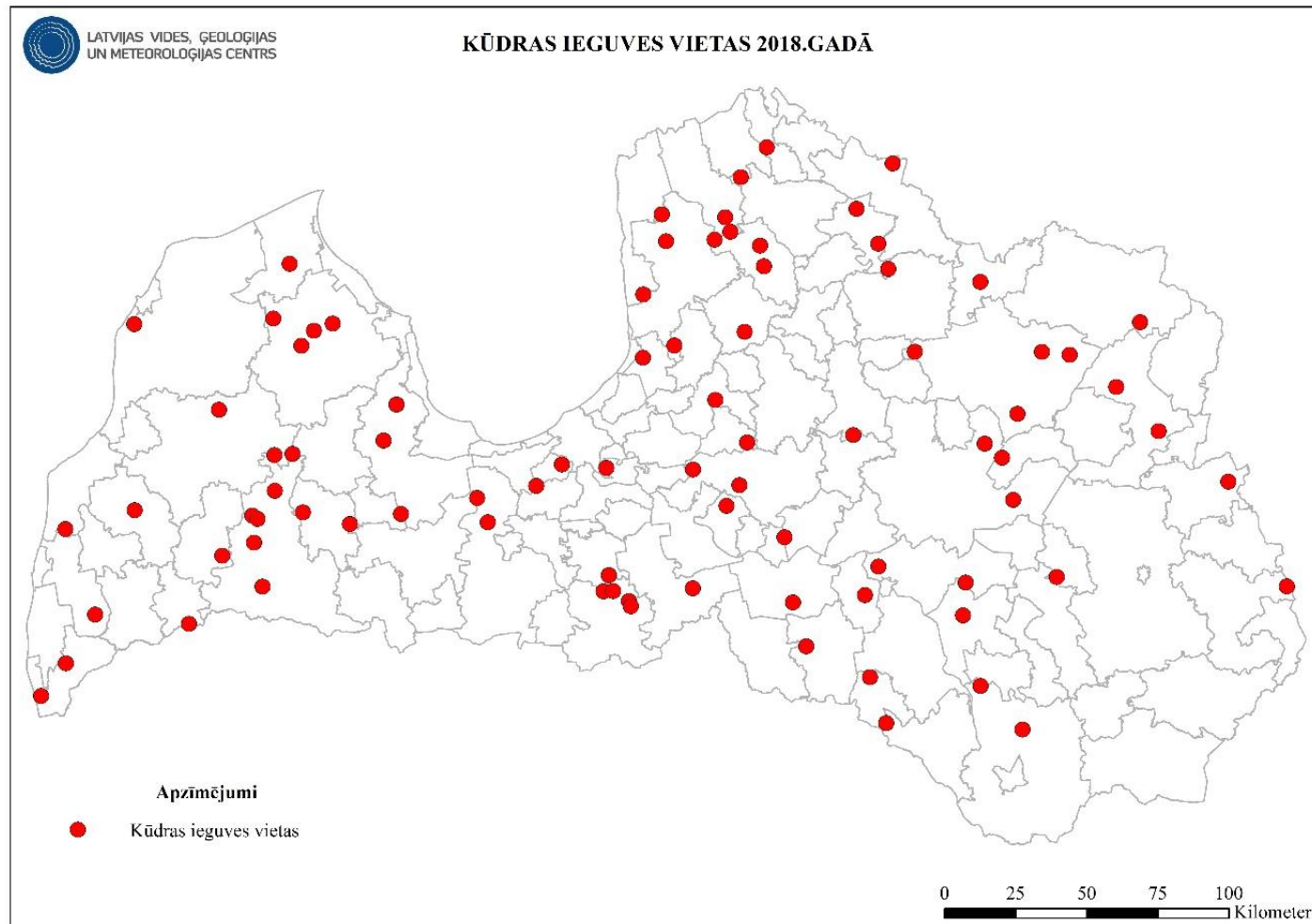
- Use of peat for energy has decreased by 95,8% since 1990
- Share of peat in total energy consumption in 2018 was 0,01%



Economic value

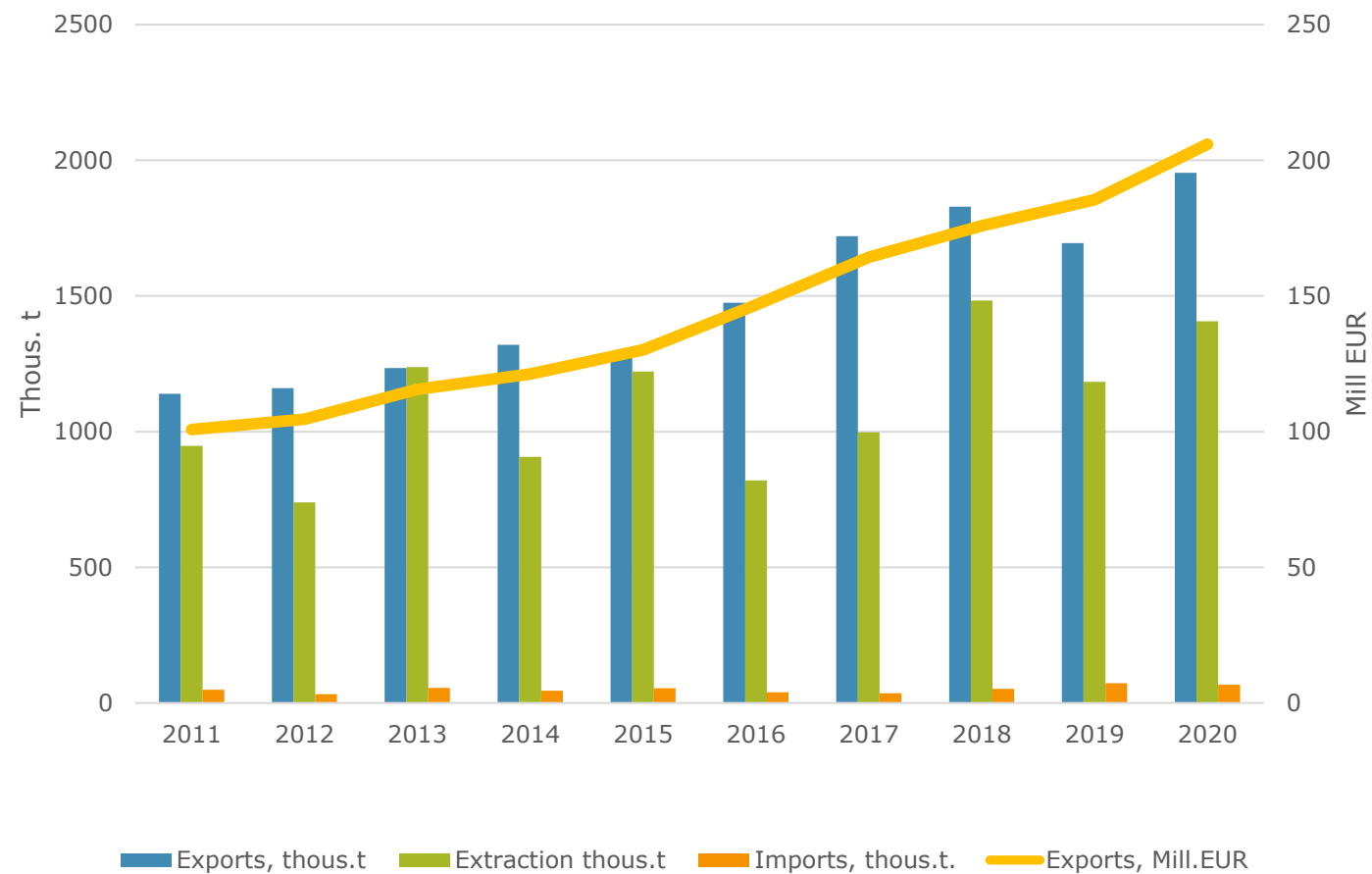
- Jobs 2000/3000 (mainly in the regions)
- Investments in 2020 ~19 million EUR
- Taxes in 2020 ~20 million EUR
- Above average salary

! Industry value added:



Peat exports

! Peat exports 1.55% of total national exports in 2020



Peat in horticulture

Latvian peat and peat products play an important role in European horticulture industry, providing **one third of the total peat-based substrates**:



! For now, there are no alternatives to peat in the volumes required by the horticulture industry



Social impact of peat use in horticulture in Latvia

- ~ 300 commercial vegetable producers
 - < 100 commercial young-plants producers
 - < 2000 jobs
-

! Several thousands of hobby gardeners



Peat in horticulture in EU

- Production of growing media, where peat is the most important constituent, represents an industry worth:

€1.3 billion
turnover



11,000
jobs

- It is the basis for the horticulture industry which is estimated*:

~ €60 billion
turnover



over 750,000
jobs

Latvia is the largest supplier of raw peat and ready-to-be-used substrates in the EU**

*<https://www.growing-media.eu/news-1>

** <https://comtrade.un.org/>

Forecast for growing media demand up till 2050

- By 2050, world's population is supposed to reach 10 billion
 - Food security, ornamentals and tree seedlings will require 415% more substrates (*Wageningen University & Research, Chris Blok*)
-
- In professional horticulture 70% of all substrates are peat-based substrates

Growing media	2017 Mm ³ /yr	2050 Mm ³ /y	Increase %
Peat	40	80??	250%
Coir	5	35	700%
Wood fibre	2	25	1250%
Bark	1	10	1000%
Compost	1	5	500%
Perlite	1,5	10	667%
Stone wool	0,9	4	433%
Soils/tuffs	8	33	413%
New		23	
Total	59	244	415%


! For the past 20 years research is on-going but no alternative material with necessary characteristics or volume has been developed or found so far.



Peat use in forestry – no alternative growing media

- 56 million plants marketed (spruce, birch, pines, black alder)
- 45 million plants used for replanting/rearing
- 11 million plants exported to Northern European countries
- Container/frame plants provide high productivity (1500-2000 plants/day) (94% of planting technologies)
- Consumed peat during the year:
 - 14 000 m³ peat substrate
 - 25 000 m³ milled peat
- Afforestation 10 000 ha a year

! EU Forest strategy ambition is to plant 3 billion trees till 2030



ONE-YEAR PEAT
EXTRACTION IN
LATVIA CAPTURES
300 MILLION T
CO₂

Research of innovative carbon-intensive peat products

- new substrates
- peat filters
- sorbents
- filtering materials
- construction materials (peat plaster, paint, composite materials, epoxy)
- raw materials for chemical, pulp and paper and textile industries

!Peat contains carbon for an extended period of time

Latvian
Pavillion
Expo Dubai
2020



Three seas initiative project

1ST STAGE: DEVELOPMENT OF A WIND FARM

- impact on environment – completed
- permits given by local municipalities
- wind speed monitoring tower – set up

2ND STAGE: GREEN INDUSTRIAL ZONE PROJECT

- renewable energy resources
- national energy and climate plan goal achievements
- companies with high energy consumption
- new product development

<https://projects.3seas.eu/projects/development-of-a-wind-farm-project>



- 
- An aerial photograph of a peat bog area, overlaid with a color-coded map showing various land use zones. The zones include forest plantations (green), peat extraction areas (orange), greenhouse complexes (yellow-green), residential locations (purple), green industrial centres (red), growing areas for additional cultures (light purple), cranberry plantations (light blue), and agricultural crops (light green). The map shows a complex arrangement of these zones, with some areas being more densely developed than others. The surrounding landscape is a mix of forest and open land.
- FOREST PLANTATION AREA**
 - PEAT EXTRACTION AREA**
 - GREENHOUSE COMPLEX AREA**
 - RES LOCATION AREA**
 - TERRITORY OF GREEN INDUSTRIAL CENTRE**
 - GROWING AREA OF ADDITIONAL CULTURES**
 - CRANBERRY PLANTATIONS**
 - AGRICULTURAL CROPS**

! SUSTAINABLE BUSINESS MODEL
WHILE EXTRACTING PEAT FOR
HORTICULTURE

VISION OF POTENTIAL RECULTIVATION OF PEAT BOGS

! GOAL – TRANSITION TO CLIMATE NEUTRALITY BY COMPENSATING EMISSIONS IN OTHER SECTORS

Good practices, peat products in development



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<https://www.degruyter.com/view/j/cons>

The Development of Peat and Wood-Based Thermal Insulation Material Production Technology

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Abstract – The article presents research results on a thermal insulation material made of low-moor peat. A model based on three components, including peat binder, frame component (wooden aggregate) and additives, was developed in the framework of this study. The conducted research showed that by grinding low-moor peat in water until the particle size is 2–5 mm increased peat cohesion strength with wooden aggregate 2.5 to 2.7 times as well as increased the compressive strength of peat binder 5.0 to 5.5 times. Optimal parameters of strength and density in the wood peat composition with discontinuous granulometry wooden aggregate were achieved by using two fraction wood filler with fractions 2.5 mm ... 1.25 mm and 0.63 mm ... 0.315 mm in the proportion 50:50 and 60:40. Introducing anionic surfactants and foam forming non-ionic surfactants with neutral reaction against the surface of the peat and wood filler allows to reduce the average density up to 210–220 kg/m³, thus maintaining the required strength, and to reduce the coefficient of thermal conduction to 0.046 W/mK.

Keywords – Foaming additives, peat, thermal insulation, wood peat composite.

1. INTRODUCTION

Much progress has been achieved in the research focused on the use of peat. This refers to the development of wood peat insulation materials, which are made with additional reinforcing components, resulting in quite good durability and safety of the materials. For example, peat plates and segments that are capable of withstanding critical temperatures from –60 to +100 degrees have been introduced in Russia. Extensive analysis of the materials showed positive dynamics for the potential use of these products. It is possible to assess the usefulness of further research involving peat building materials by performing regular checks on the utilization rates of these materials [2].

The raw material resource base in Latvia is characterised by significant amount of natural raw material resources, as well as significant amount of industrial waste, which can be used in the production of insulation materials with their subsequent use in construction of individual houses and low-rise buildings. These raw materials may include peat and wood processing residues. Structural characteristics and composition of peat allow its wide potential use in building construction. Peat has low thermal



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Estonians are turning soil into batteries

19.05.2021

As the world is running out of lithium, planet-friendlier batteries are waiting to hit the market. We are using up lithium, the essential metal in rechargeable batteries. Some experts estimate that there won't be any lithium left by 2035, and some say that it may already disappear within four years. Who should lose sleep over this? Anyone with a smartphone, a laptop or an electric car. Without lithium, they would have to be plugged in at all times.

But it's not just about comfort. Lithium also plays an important role in storing wind and solar energy, an increasingly important sector. Therefore, the world is in the midst of a battery revolution.



The President of Estonia Kersti Kaljulaid at the Tartu University laboratory where sodium ion batteries and supercapacitors are built. Photo: Mattias Tammet / Office of the President of the Republic of Estonia

Comment from the European Commission

Nr.1

Implementation of the TJTP in its current form would reduce the yearly emissions of the peat sector with 9%, equaling just 1.15% of total emissions of Latvia.

These targets do not live up to the ambitions of the European Green Deal, having little impact on lowering the volume of GHG emissions in Latvia.



Emission reduction - industry has transformed into horticultural peat extraction

The difference between the impact of reduced activity and the target and cost-effective projections for low-income Member States



! Latvia has a negative cost-effective CO2 reduction ratio

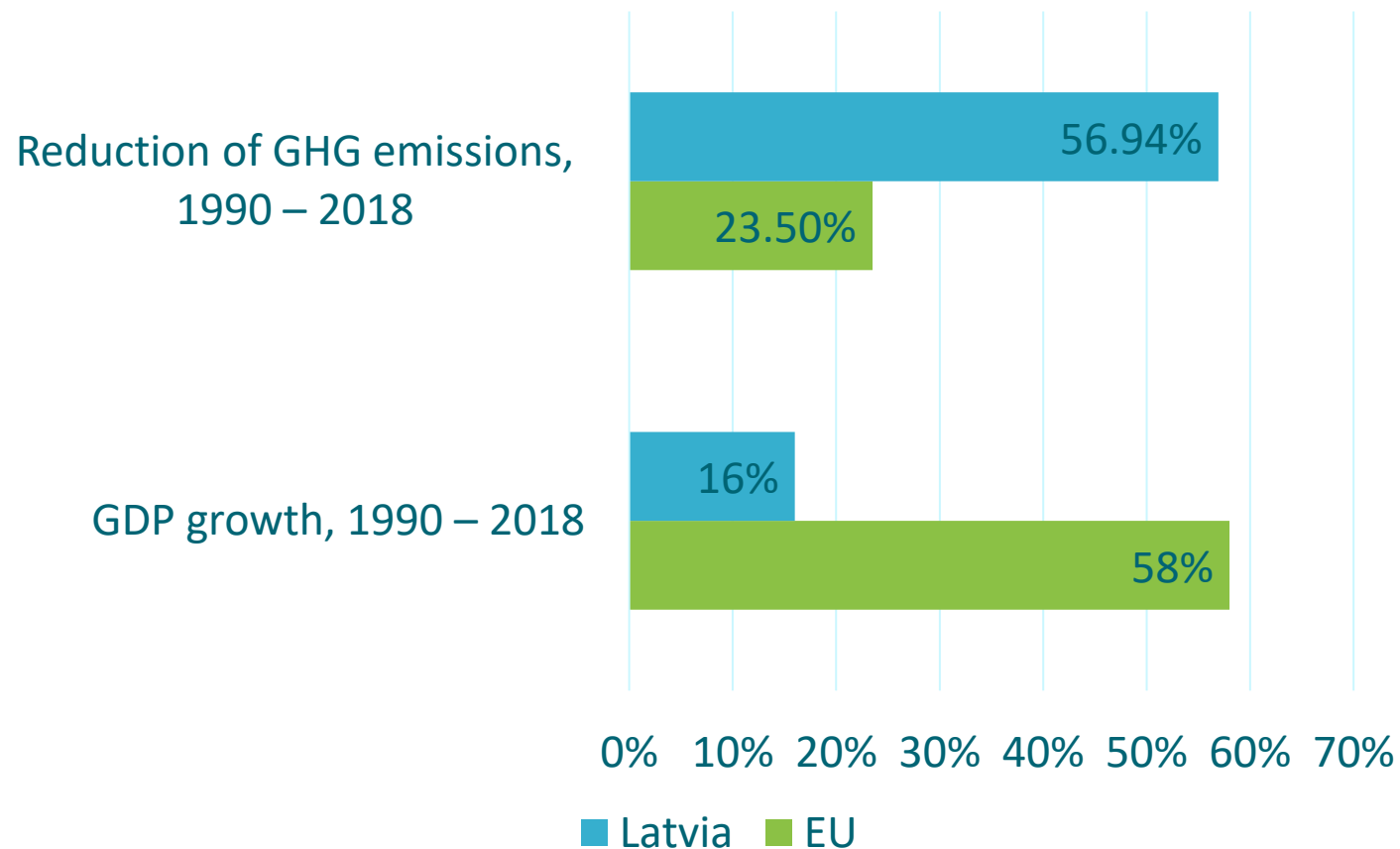
The 1.15% reduction in emissions is significant

- Latvia has **very few measures to reduce GHG emissions** that would be effective in the short term
- Positive **long - term effects on the socio - economic situation and productivity**
- **In rural areas**, economic activity and **prosperity** are linked to the peat sector
- Support for modernization and the development of new products **can help transform and put** the rural economy on a more sustainable path and help achieve the **climate goals**
- Countries with substantial peat extraction industry are working on improvement of emission calculation methodology to be able to use Tier 2 or Tier 3 (higher, more precise emission calculation method) instead of Tier 1 method (vague and universal emission calculation method) used in most EU countries

Emission reduction

In order to achieve a reduction in Latvia, significantly higher investment volumes must be considered

Comparison between Latvia and the EU:
reduction of GHG emissions and GDP growth
(1990-2017)



Comment from the European Commission



Nr.2

JTF support for regions that rely heavily on peat extraction should be based on the transition process with an impact by 2030 or before at the level of the territory for which a TJTP is submitted. The TJTP for Latvia, however, does not present a systematic elaboration of a transition process whereby the sector extracting peat for non-energy (mainly horticultural) use significantly reduces GHG emissions.

Therefore, any modernization of the peat sector for horticulture – the third pathway - cannot be supported by the JTF. Moreover, despite claims of the industry, sustainable extraction of peat for horticulture does not seem at all to be in line with the Do-No-Significant-Harm principle.

Peat extraction in Latvia does not contradict the Do-No-Significant-Harm principle: challenge nr. 1

Loss of biodiversity (as is the case for Western-Central Europe where almost all peat bogs have been destroyed)

- **According to Guidelines for Sustainable use of Peat 2030 (approved by Cabinet of ministers of Latvia 17.11.2020)**
- **Extraction is possible** only in peatlands that have **previously been affected by amelioration**
- An **environmental impact assessment** is performed before the extraction permit is issued
- **Biotope inventory of Latvia** finished in 2021 concludes that biotopes 7110 (Active raised bogs) and 7120 (Degraded raised bogs where rewetting is possible or is happening) **are not endangered.**

It is clear that mining Lithium or Cobalt is bad for the environment, but it is done to mitigate larger problem of burning fossil fuel in transport. Same with peat extraction in Baltic countries and Scandinavia – there is done harm (which is partly mitigated by restoration afterwards) but it solves larger issue of afforestation, greening of cities, securing healthy food supply and growing plants.

Peat extraction in Latvia does not contradict the Do-No-Significant-Harm principle: challenge nr. 2

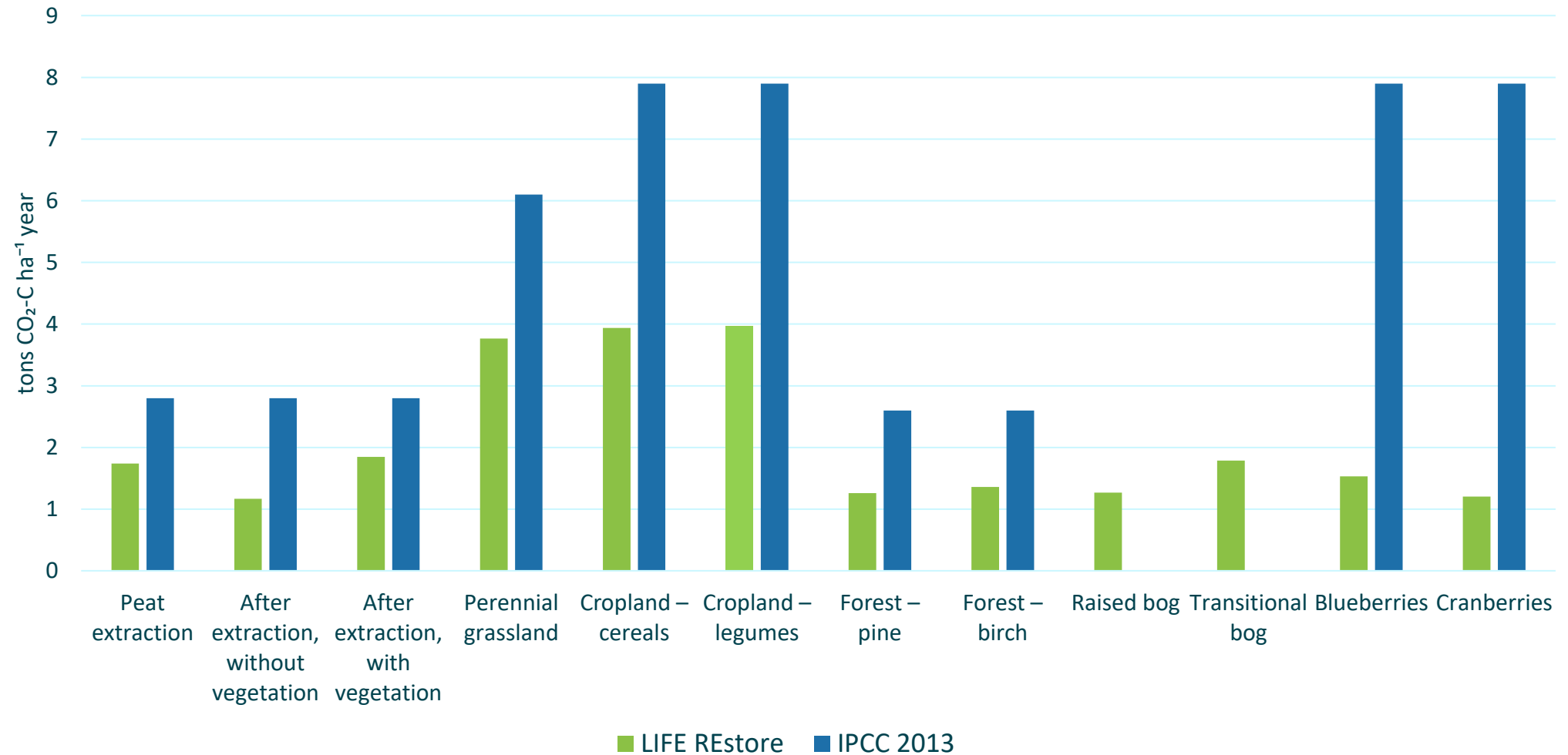
GHG emissions – as general IPCC methodology does not provide clear and precise layout on how off-site emissions should be calculated (see next slide)

Quote from 2006 IPCC Guidelines for National Greenhouse Gas Inventories Vol 4. Chapter 7:

“Off-site emission estimates are derived by converting the annual peat production data (either volume or air-dry weight) to the weight of carbon (Equation 7.5). All carbon in horticultural peat is assumed to be emitted during the extraction year. Countries may modify this assumption at higher tiers.”

Latvia together with other peat extraction countries (Estonia, Lithuania, Sweden and Finland) are working on a comprehensive, scientifically proven Life Cycle Assessment for horticultural peat. According to IPCC, GHG emission factors by geographical and meteorological conditions can differ and national factors should be taken into account.

Peat extraction in Latvia does not contradict the Do-No-Significant-Harm principle: LIFE Restore and IPCC 2013 soil CO₂ emission factors



Source: LIFE Restore, national GHG emissions factors for organic soils

Peat extraction in Latvia does not contradict the Do-No-Significant-Harm principle: Greenhouse gas (GHG) emissions from different types of vegetation and land use

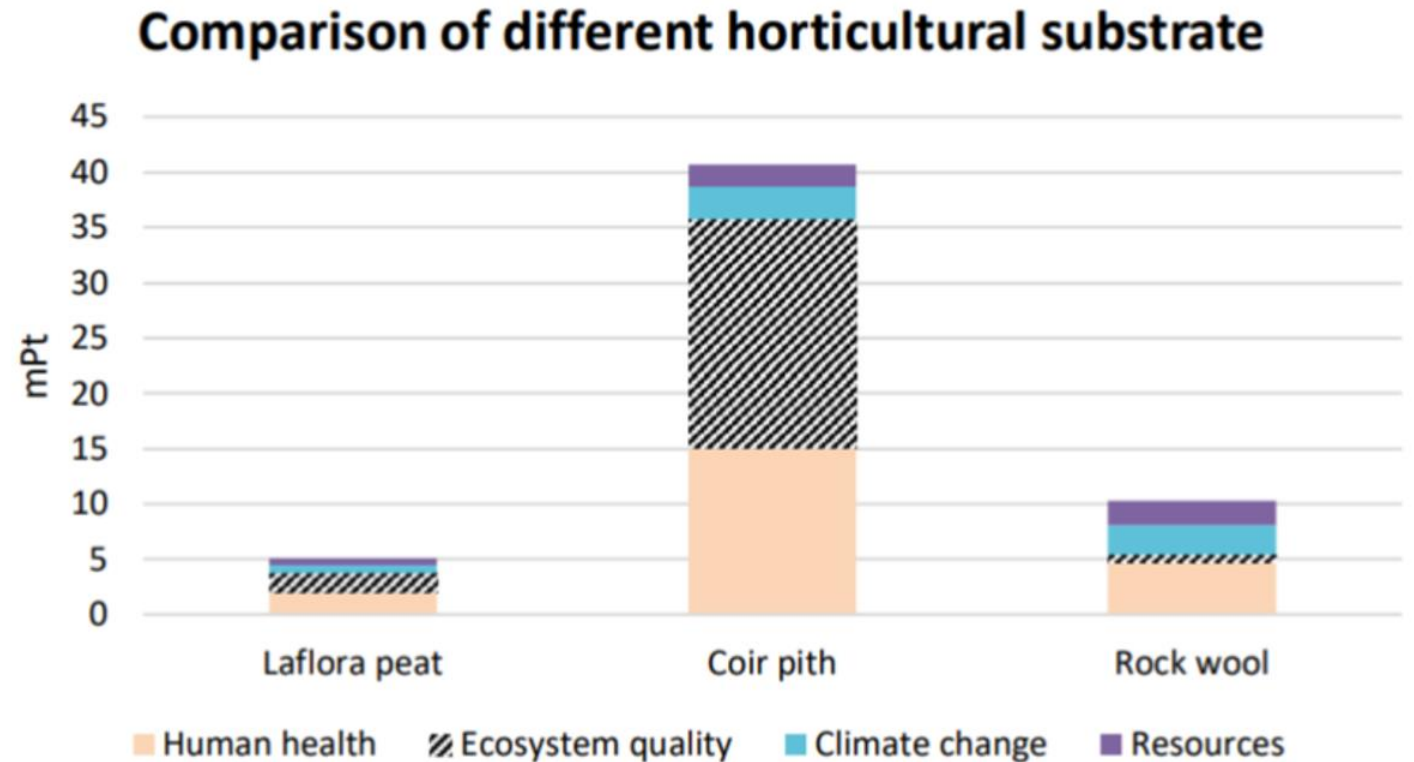
Type of reclamation	Actual emissions before remediation 1 ha (t CO2 eq.)	GHG emission reduction t CO2 eq. ha -1 per year after recultivation	GHG emissions from the measures, tons of CO2 eq. ha -1 per year	Explanation
Afforestation	7,62	11,20	-3,58	Emission reduction and removals
Blueberries	7,62	2,60	5,02	Emission reduction
Cranberries	7,62	1,40	6,22	Emission reduction
Renaturalization	7,62	-3,80	11,42	Increase in emissions

Source: LIFE REstore

Peat extraction in Latvia does not contradict the Do-No-Significant-Harm principle: peat substrate impact on environment

Peat substrate **Life Cycle Analysis** (LCA study according to ISO 14040), performed by Riga Technical University shows:

! PEAT SUBSTRATE HAS LESS NEGATIVE IMPACT ON ENVIRONMENT THAN OTHER COMMON GROWING MEDIA



Comment from the European Commission

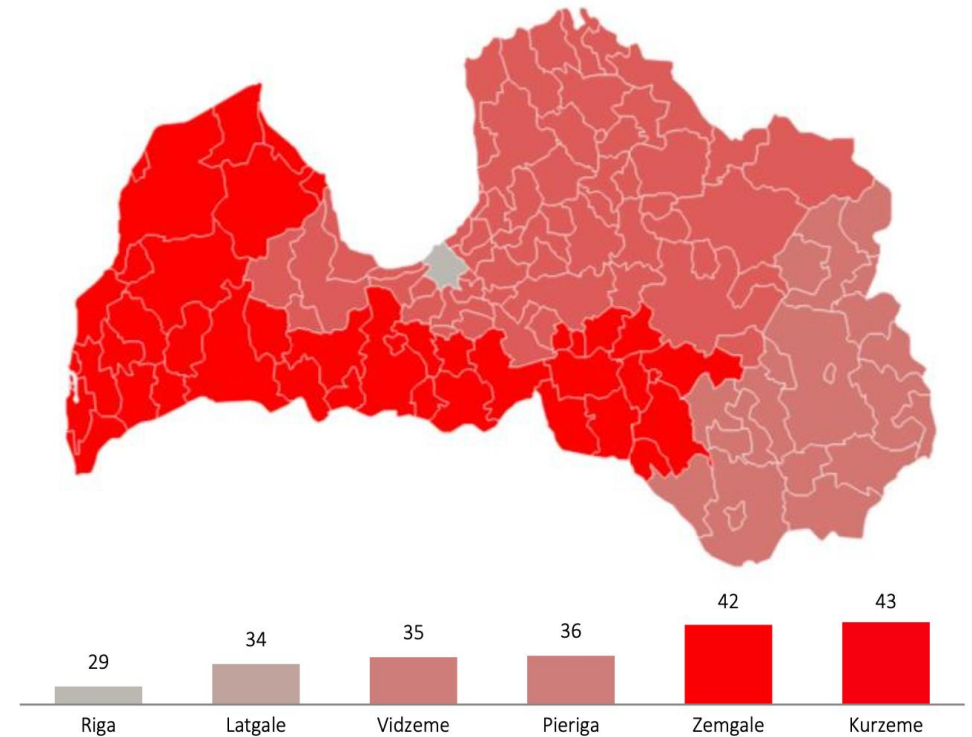
A green circle with a thin black outline, containing the text "Nr.3" in white.

Limiting the scope of transition to the phasing out of peat extracted and used only for energy and leaving out the horticulture sector, the justification for the JTF to limit any negative territorial socio-economic impact of the transition becomes very weak, with only 58 workers directly or indirectly affected by the phasing-out of peat for energy use.

The use of peat affects other industries

- Although the number of **directly affected workers is not large compared** to the overall economic data, peat sector also impacts related sectors, such as **agricultural, construction, medicine, beauty care, animal husbandry.**
 - **Employed in general ~ 66300 people** (within related industries)
-
- Upskilling is necessary in all 4 regions to transform local economy to green sustainable jobs

Geopolitical aspect : Peat sector provides employment for people who live at the European Union's external borders with a third country.



Avots: CSP, DSA

Share of the population with general secondary education, primary or lower education levels percentage of the total population aged 25-64

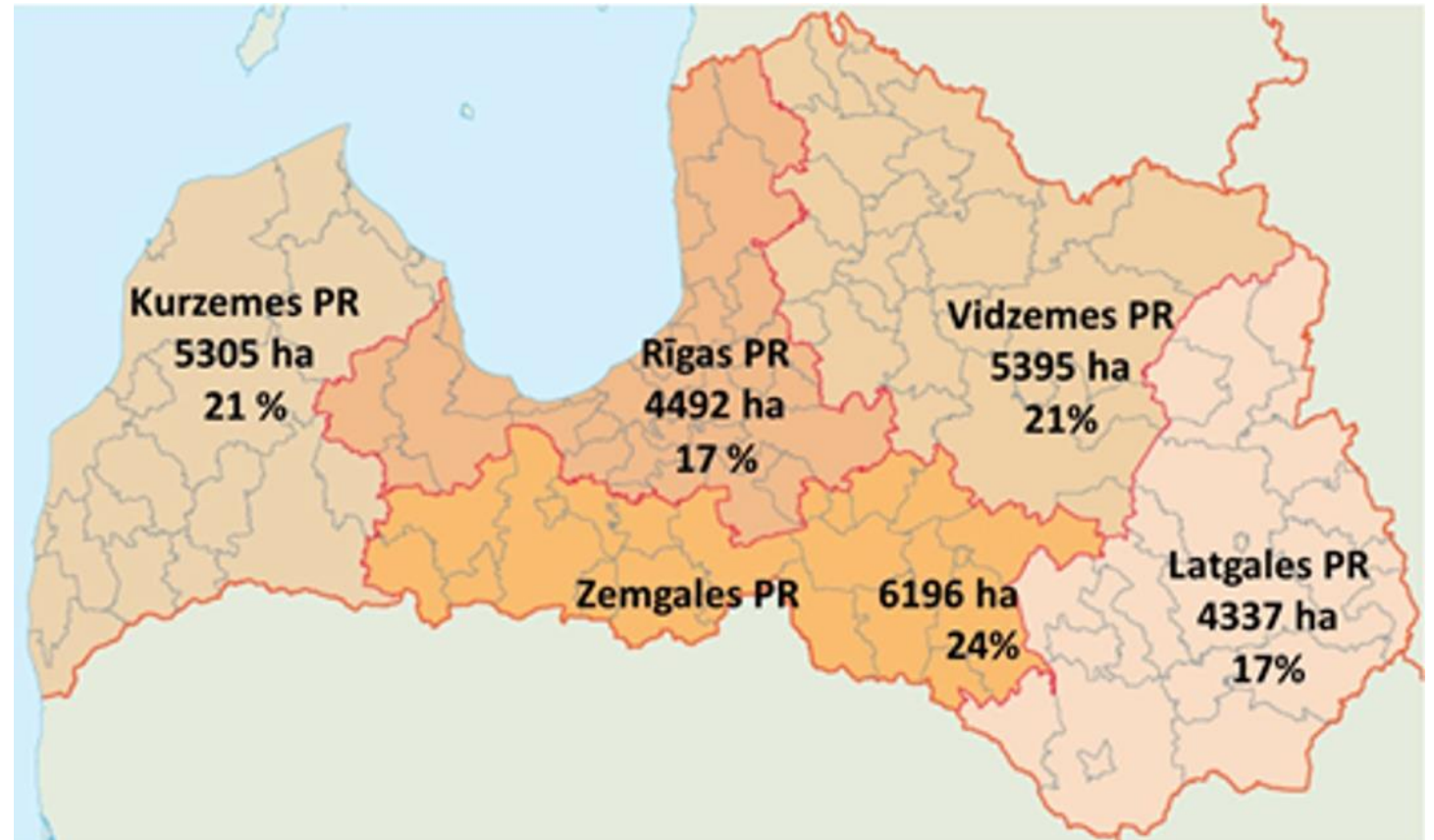
Comment from the European Commission

Nr.4

Because the overall transition and the socio-economic and territorial consequences have not been sufficiently elaborated in the TJTP, discussing other issues like the expansion of the eligible territory from two to four of the five NUTS 3 regions in Latvia or the development needs would be premature at this stage.


NUTS 3 regions in Latvia and peat extraction

- Peat extraction and related economical activities take place in 4 NUTS 3 regions of Latvia
- The estimated areas of historical peat extraction sites throughout Latvia cause GHG emissions of around 199.9 kt CO₂ eq. per year



Peat extraction in Latvia complies with environmental objectives





Latvia needs to create incentives for the development of new products that can be used for the climate economy, where energy technologies are changing

- **Promoting environmentally friendly and innovative technologies** in manufacturing companies would encourage investment by peat companies, which will promote the modernization of these companies
 - The achievement of environmental and climate neutrality goals will be promoted in a targeted manner
 - The restructuring of the private sector in the regions and the maintenance of climate-friendly jobs or the creation of new jobs will be ensured
 - **Skills development** and professional development measures will be updated
-
- Diversification **of regional activities will be encouraged**
 - The transition to more energy efficient solutions will be facilitated and the wider use of RES will be encouraged for businesses and industrial areas with high energy consumption
 - **The circular economy** will be promoted
 - **Effect on value chains**

6.1.1.4. Measure “Greening” of business and product development measures, promoting the increase of energy efficiency and introduction of energy efficient technologies in enterprises

- ✓ Financial instrument for investment "greening" projects
- ✓ **Loan with capital discount up to 30%**
 - energy efficiency measures in buildings and the purchase of energy efficient equipment
 - introduction of renewable energy technologies
 - research and development projects for the experimental development of energy efficient equipment
 - For energy audits of SMEs
- ✓ Discount at the fulfillment of certain criteria at the project level of merchants
- ✓ **Loan up to 10 000 000 euro**
- ✓ **Capital discount not more than 2 000 000 euro**
- ✓ Indicators to be achieved by June 30, 2028 :
 - total produced renewable energy (including electricity, heat) – 21 139 MWh/year
 - number of supported merchants – 123
 - attracted private investment – 50 000 000 euro
- ✓ Implemented by: Altum



Ekonomikas ministrija



**Latvian Peat
Association**

Thank you for attention!

Q&A session