



MAGNETIC  
**LATVIA**

# SMART ENERGY

Investment and Development Agency of Latvia

[www.investinlatvia.org](http://www.investinlatvia.org)

February, 2022





MISSION LATVIA:  
COUNTRY WITH A MISSION

# Smart energy

Latvia is one of the leaders in Europe in renewable energy consumption

3rd

in the EU in renewable energy consumption (Eurostat, 2019)

2nd

greenest country in the EU in terms of CO2 emissions (Eurostat, 2019)

2000

employees working in the field (CSB, 2020)

2nd

in Europe in renewable energy used for heating and cooling (Eurostat, 2019)

2nd

highest share of hydroelectric power in the EU (Ourworldindata, 2020)

66

active members of Green-Tech Cluster (GreentechLatvia, 2020)



# Diverse pool of talent

## Universities



## Professional schools



## EDUCATED

- 77 400 student pool
- 20 000 STEM students
- the highest foreign student share in the Baltics (13%).



## SCHOOLS AND PROGRAMMS FOR SMART ENERGY

- 9 Universities and 9 Professional schools
- Energy/ Chemistry and Chemical technology/ Mechanics and metalworking/ Electronics/ Construction and civil construction/ Environmental science and environmental management
- 8% (600) of the total number of Latvian scientific personnel works on energy-related topics



## WORKFORCE

- More than 9500 employees in energy sector
- More than 7000 students and 900 graduates in smart energy



# stakeholders

**WIND ENERGY  
ASSOCIATION**



**MECHANICAL ENGINEERING AND  
METALWORKING INDUSTRIES  
ASSOCIATION**



**PARTNERSHIP OF  
LATVIAN CONSTRUCTORS**



**LATVIAN CHAMBER OF  
COMMERCE AND INDUSTRY**



**FOREIGN INVESTORS  
COUNCIL IN LATVIA**



## GOVERNMENT BODIES



Ministry of Economics  
Republic of Latvia



Ministry of Environmental  
Protection and Regional  
Development  
Republic of Latvia



Latvian Investment and Development Agency of Latvia

## PORTS



FREEPORT OF RIGA



RIGA SHIPYARD



**TSO  
ELECTRICITY**



**TSO  
GAS**



**AERONES**

ROBOTIC BLADE CARE SYSTEMS



**BOTC**

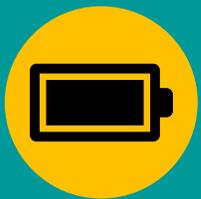
BALTIC OFFSHORE TRAINING CENTRE



**JAUDA**

Power in Future

ELECTRICAL EQUIPMENT PRODUCER



power to X and H2

## H2 DIRECTIONS



LATVIJAS UNIVERSITĀTES  
CIETVIELU FIZIKAS INSTITŪTS  
INSTITUTE OF SOLID STATE PHYSICS  
UNIVERSITY OF LATVIA

1. Hydrogen **production** i.e. Project Alice-Why;
2. Hydrogen **implementation into gas grids**;
3. Functional materials for hydrogen **production, detection, storage** (TiO<sub>2</sub>, WO<sub>3</sub>, Graphene, hytrites etc.)



## CO<sub>2</sub>-BASED ELECTROSYNTHESIS OF ETHYLENE OXIDE – CO2EXIDE

1. Laboratory of Hydrogen **Energy Materials**;
2. Laboratory of **Solid State Ionics**;
3. Laboratory **of Computer Modeling of Electronic Structure of Solids**;
4. From Faculty of Chemistry UL: Ass.Prof. Guntars Vaivars with students



**H2 in public transport** - 10 H2 buses and 1 station



**100% Latvian capital energy company** - expands the range of cleaner energy sources (electricity, biomethane, liquefied natural gas (LNG) and hydrogen)



**H2** - Electrical stability, anti-corrosion, catalysts for fuel cells and electrolyzers



**Retrofitting** electric buses, electric vans and electric minibuses in Europe

# Green corridor to enable new investment

Benefits: twice shorter administrative procedures including territorial planning, construction permits, foreign workforce relocation.

CRITERIA: 3 OUT OF 4 FOR A POSITIVE EVALUATION

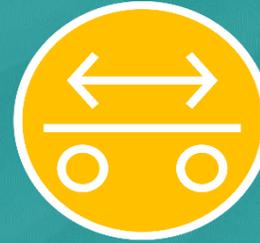


# Current EU support programme for large enterprises

Loan with a capital discount for projects worth at least 10 MEUR



Total available funding  
**100 million EUR**



Annual export increase  
**3 million EUR**



If the programme criteria are met,  
**the principal loan issued by  
ALTUM is forgiven**



Annual investment in R&D  
**250 000 EUR for each  
project**



Financing for each project up to  
**10 million EUR**



New jobs created  
**800**

Application: 9 January - 18 April 2022 - [business.gov.lv](https://business.gov.lv) and [altum.lv](https://altum.lv)



# EU Energy efficiency support programmes for entrepreneurs in 2022-2023

## INCREASING ENERGY EFFICIENCY

**Type:** loans with capital discount  
**Financing:** 81 mEUR (RRF); 42 mEUR (JTF)  
**Availability:** from 2022 year, Q2  
**Source:** Altum  
**Purpose:** increase in energy efficiency of renewable energy, R&D projects, development of efficiency equipment

## INCREASING ENERGY EFFICIENCY IN MANUFACTURING (GREENING)

**Type:** combined financial instrument  
**Financing:** 43,5 mEUR (ERAF)  
**Availability:** from 2022, Q4  
**Source:** Altum  
**Purpose:** modernization of existing industrial production capacities, RES technologies,

## INCREASING ENERGY EFFICIENCY IN BUSINESSES

**Type:** grants  
**Financing:** 40 mEUR  
**Availability:** from 2023, Q1  
**Source:** CFLA  
**Purpose:** Eligible costs, experimental development, feasibility study, industrial research, development of non-market products

## RENEWABLES

**Type:** combined financial instrument  
**Financing:** 23,49 mEUR (ERAF)  
**Target audience in addition to entrepreneurs:** municipalities, households  
**Availability:** from 2022, Q3  
**Source:** Altum  
**Purpose:** solar power generation, storage facilities, competence and capacity building for renewables



*ALTUM incentives*

## PROMOTION OF RENEWABLE ENERGY

- **Type:** Loan for energy efficiency of companies
- **Financing:** up to EUR 2 850 000 (Own participation of 10%)
- **Target audience:** For company in any sector
- **Availability:** Now
- **Source:** Altum
- **Eligible costs:**  
Installation of RES power generation sources, storage facilities and smart solutions related to their operation, change of equipment and electrical appliances, mobility





*ALTUM incentives*

## PROMOTION OF RENEWABLE ENERGY

- **Type:** Loan with capital discount
- **Financing:** up to 5 MEUR (20 years) with capital discount 30% (not exceeding 1,5 MEUR and reaching key indicators)
- **Target audience:** companies and manufacturing companies
- **Availability:** from 2022,Q3
- **Source:** Altum
- **Eligible costs:** energy efficient equipment; existing industrial production capacity upgrading by setting up more energy-efficient RES technologies; upgrading to more energy efficient engineering and communications systems; RE technology implementation





*ALTUM incentives*

## PROMOTION OF RENEWABLE ENERGY

- **Type:** financial instrument
- **Financing:** 30% of the total eligible funding of the project
- **Target audience:** electricity generation merchants, municipality, households
- **Availability:** from 2022,Q3
- **Source:** Altum
- **Eligible costs:** Installation of solar power generation plants, storage facilities and smart solutions related to their operation





Ekonomikas ministrija

# Elektroenerģijas pārvades un sadales tīklu modernizācija

## Atbalsta veids: grants

- Sasniedzamie rezultāti programmas līmenī:
  - Līdz 2024.gada 30.jūnijam stājusies spēkā normatīvo aktu bāze, lai nodrošinātu no AER saražotās elektroenerģijas nodošanu tīklos (tai skaitā mežu un citu publisko zemju izmantošana vēja enerģijas ražošanai) un veicinātu vēja enerģijas infrastruktūras attīstību
  - Līdz 2026.gada 31.augustam sasniegtais elektrisko transportlīdzekļu uzlādēšanas un/vai mikroģenerācijas ierīkošanai uzstādīto pieslēguma punktu apvienotais skaits ir 2060
- Attiecināmās izmaksas :
  - AS "Augstsprieguma tīkls":
    - Dispečeru centrs un datu centrs;
    - IT risinājumu izstrāde pārvades sistēmas un sadales sistēmas elastības un drošības paaugstināšanai, kā arī, veidojot nepieciešamo informācijas sistēmu infrastruktūru un attīstītu tīklu vadības digitalizāciju, klimata neitrālu risinājumu ieviešanai un darbībai;
  - AS "Sadales tīkls":
    - Elektrotīkla modernizācija. Elektroauto uzlādes un izkliedētās ģenerācijas pieslēgumiem atbilstošu un efektīvu elektrotīkla infrastruktūras izveide;
    - Nacionālā elektroenerģijas tirgus datu apmaiņas un uzglabāšanas platforma;
    - Automatizētā viedās uzskaites sistēma.

## Finansējums: 80 000 000 EUR (RRF)

- AS "Augstsprieguma tīkls" – 38 900 000 EUR
- AS "Sadales tīkls" – 41 100 000 EUR

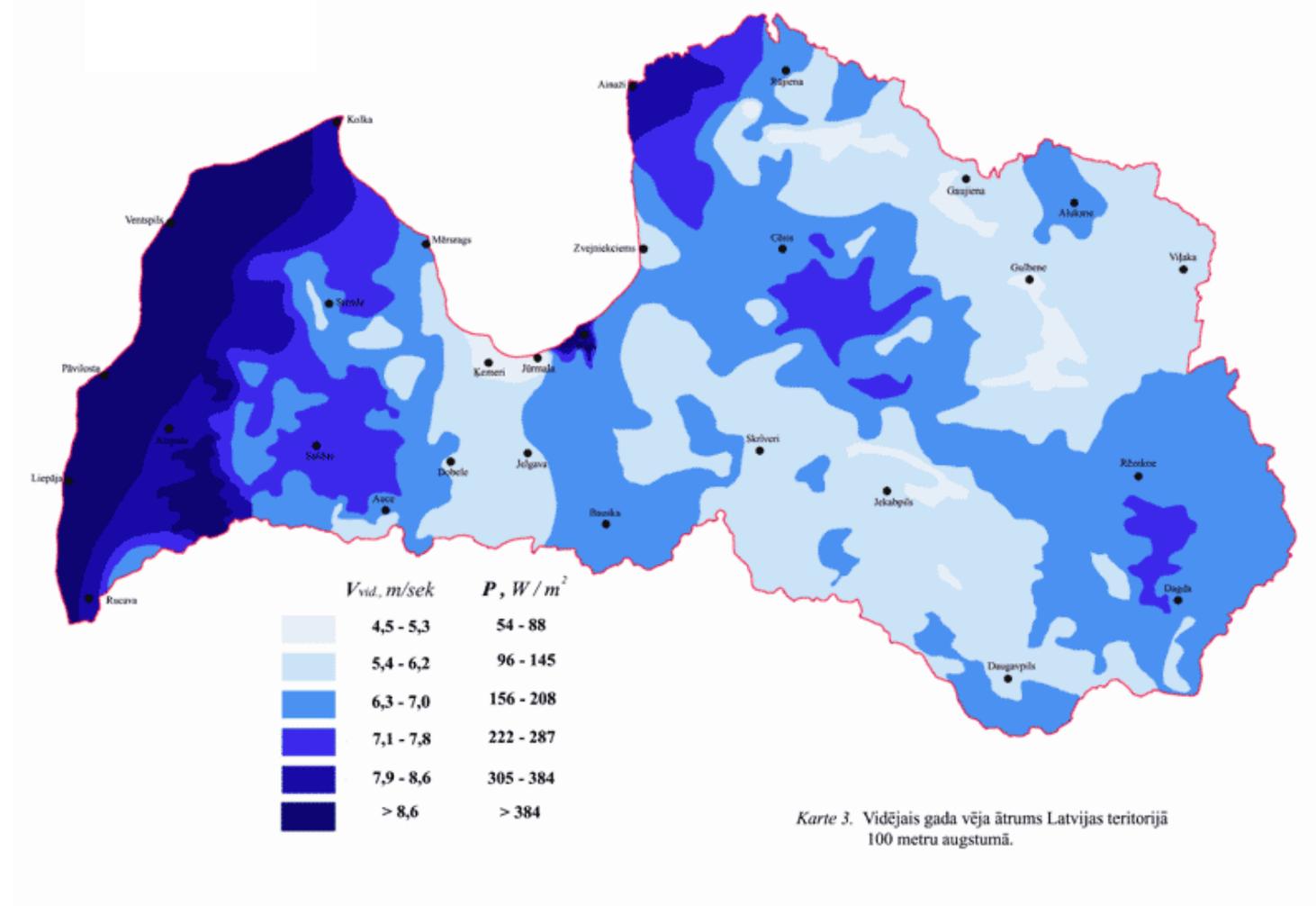
## Atbalsta sniedzējs: EM

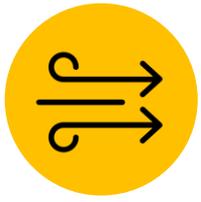
**Statuss: pieejams ar 2022.gada sākumu** (MK noteikumu projekts sagatavots)

# On-shore wind energy future

There are more than **1800 km<sup>2</sup>** of land in Latvia that is suitable for onshore wind energy

Map shows annual wind speed in Latvia measured at **100 m** height





*smart energy*

**500 KM  
COASTLINE**

Favourable wind conditions  
in sea > 9 m/s

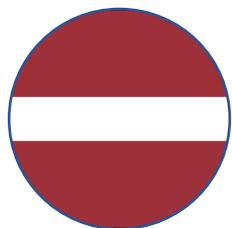
**15 GW  
POTENTIAL**

1/6th of the 90GW  
Baltic Sea region

**SEABED**

Shallow and stable  
conditions

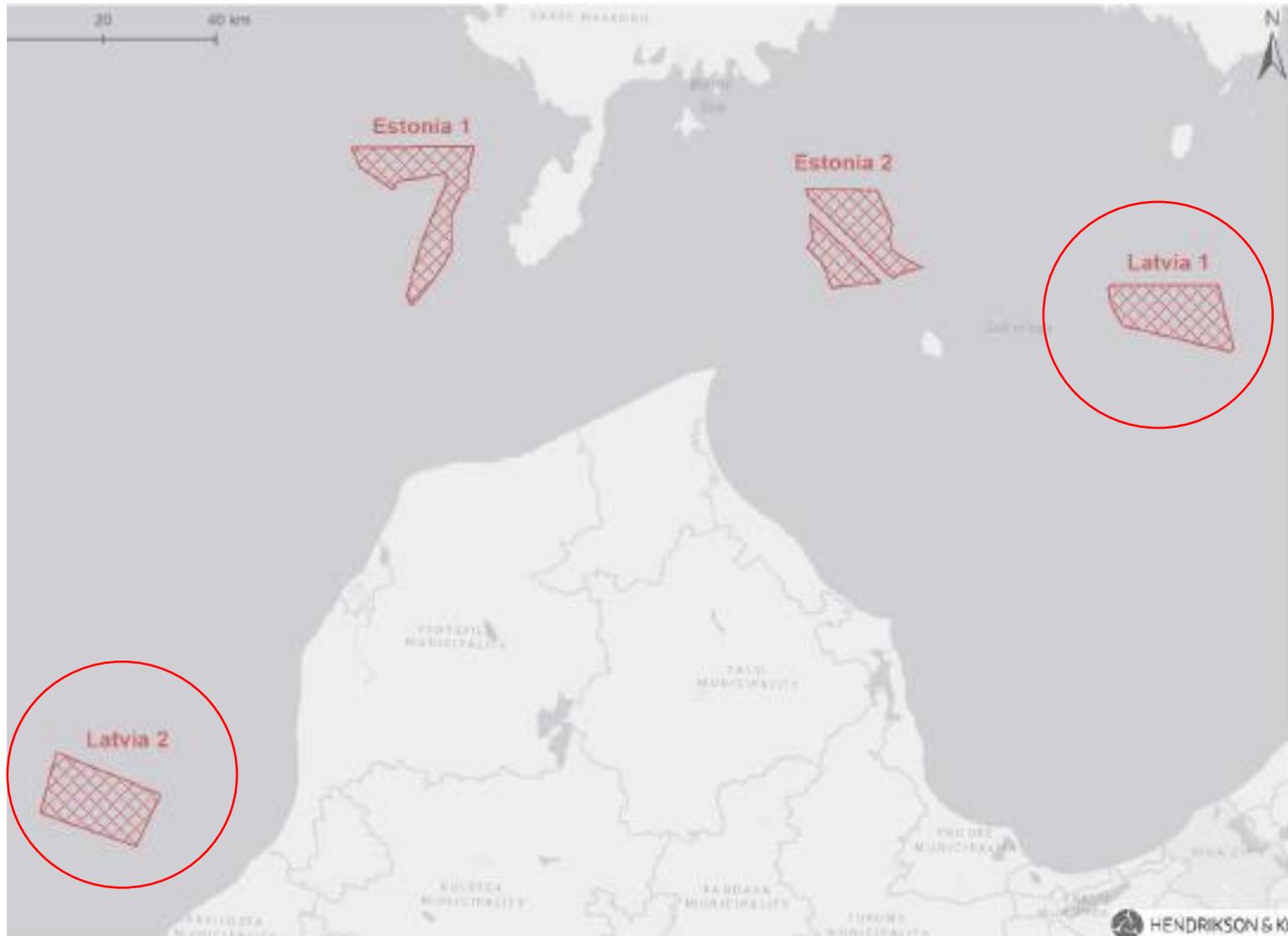
# Joint hybrid offshore wind project



- Pilot project
- EE-LV Memorandum of understanding
- 50/50 principle



# Considered ELWIND territories



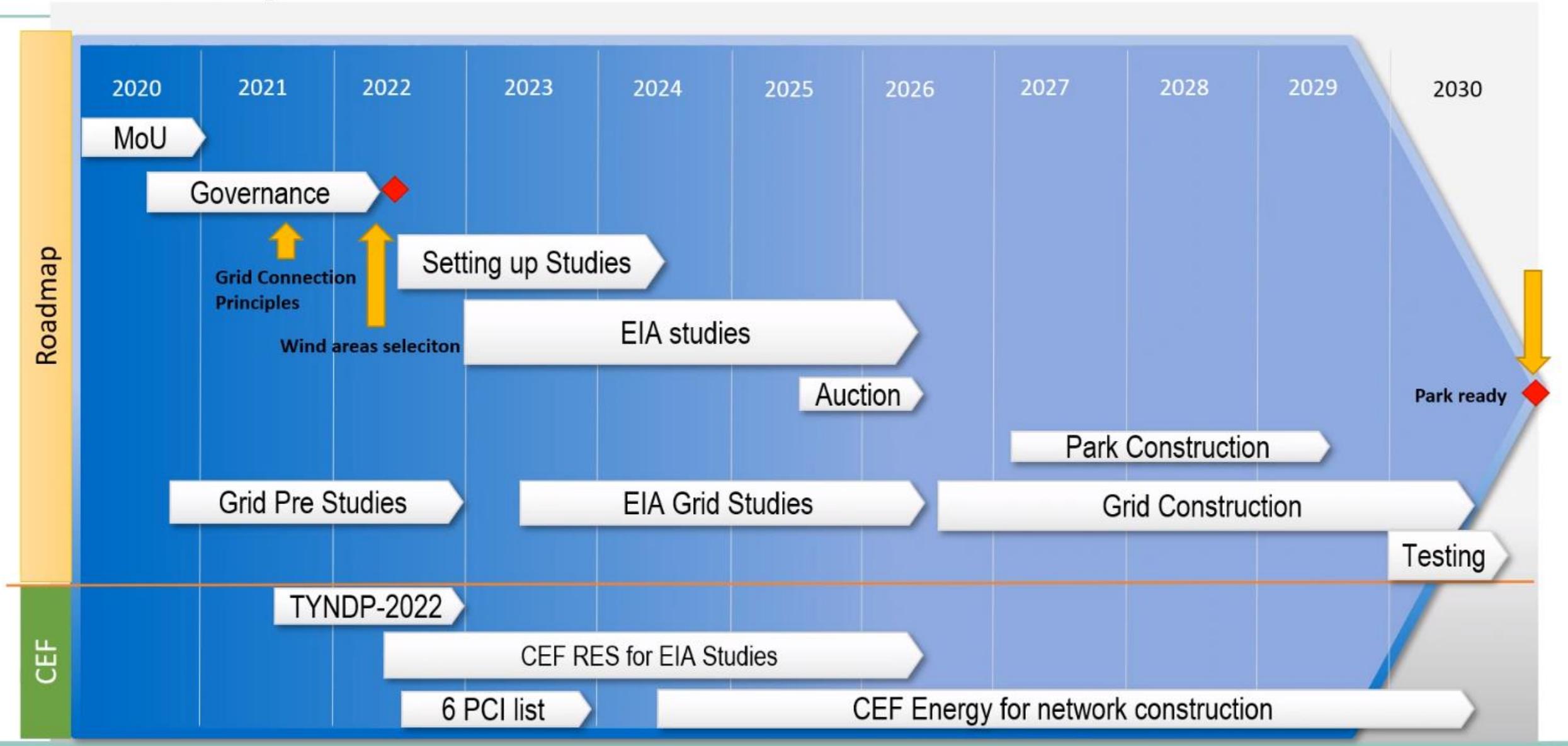
## Latvia 1:

- 183,8 km<sup>2</sup>
- 105 turbines
- 2100 MW

## Latvia 2:

- 200,1 km<sup>2</sup>
- 111 turbines
- 2220 MW

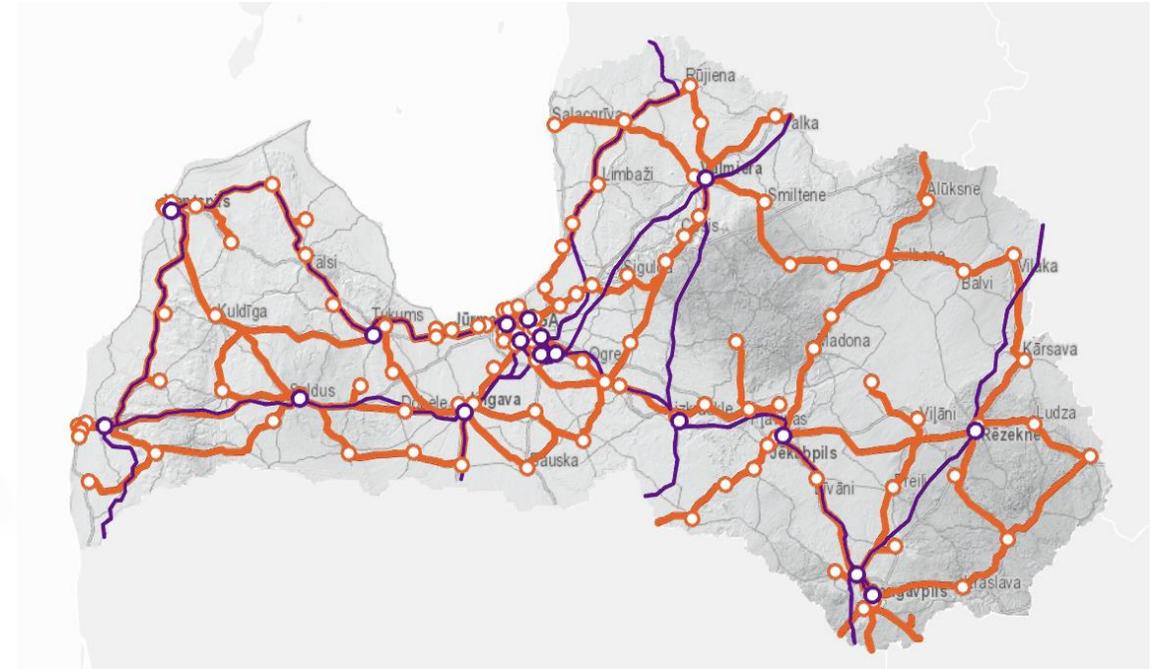
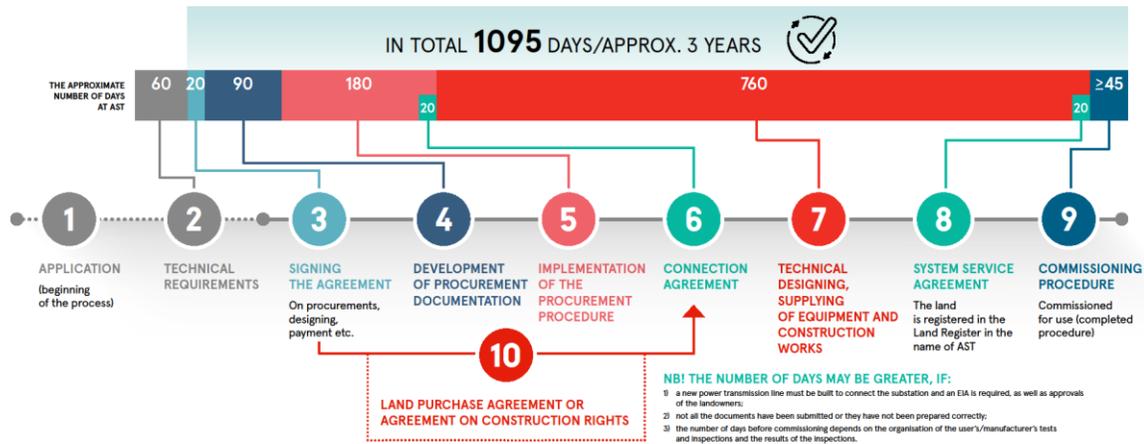
# ELWIND Roadmap



# Connection to Transmission Grid

The Electricity producers and the Users can get info on the available capacities by clicking on the map below

## PROCESS SCHEME AND TIME SCHEDULE FOR CONSTRUCTION OF A NEW SUBSTATION IN CASE OF TURN-KEY RELAYS



Map on available connection possibilities to the electricity transmission system in Latvia (Source: AST)



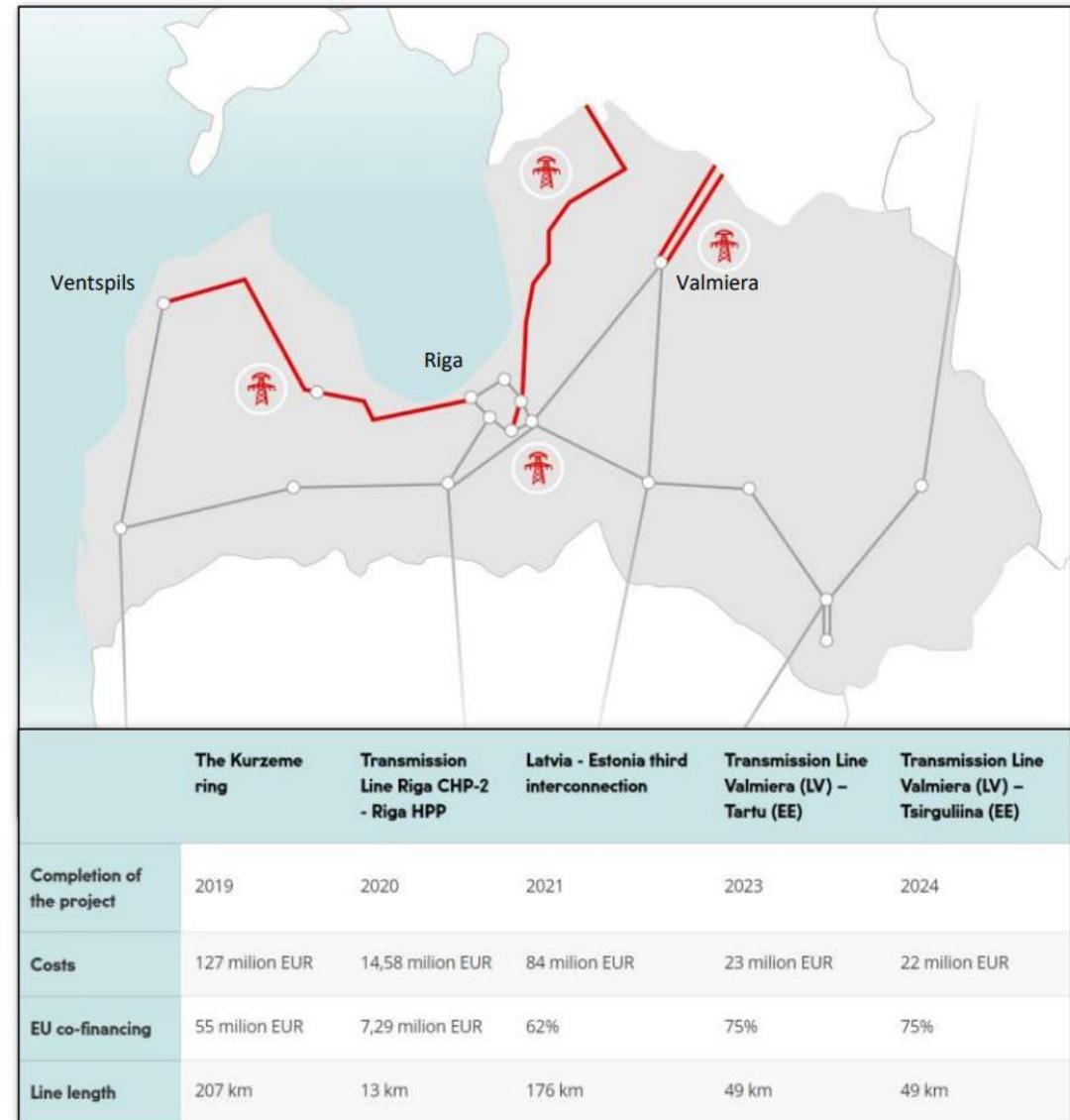
# Grid infrastructure plans

Augstsprieguma tīkls (AST) is the national state-owned TSO of Latvia responsible for the operation and development of the grid infrastructure

EU granted EUR 170 million (CEF) for the final phase of the Baltic Synchronisation project. The sources will be spent on grid reinforcements, frequency regulation equipment, and upgrading of IT control systems enabling the Baltic states to start operating in synchronous mode with the CESA.

## The synchronisation of the Baltic States' power system with the CESA is planned to be finalised by the end of 2025

AST is also one of the TSOs that has signed the "Baltic Offshore Grid Initiative"



Map and details of grid infrastructure development plans in Latvia (Source: AST)



# Welcome on board!

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