

# Elering's renewable energy 100 program

# RE100 goals

100% of renewable energy by  
2030



10 TWh of renewable energy

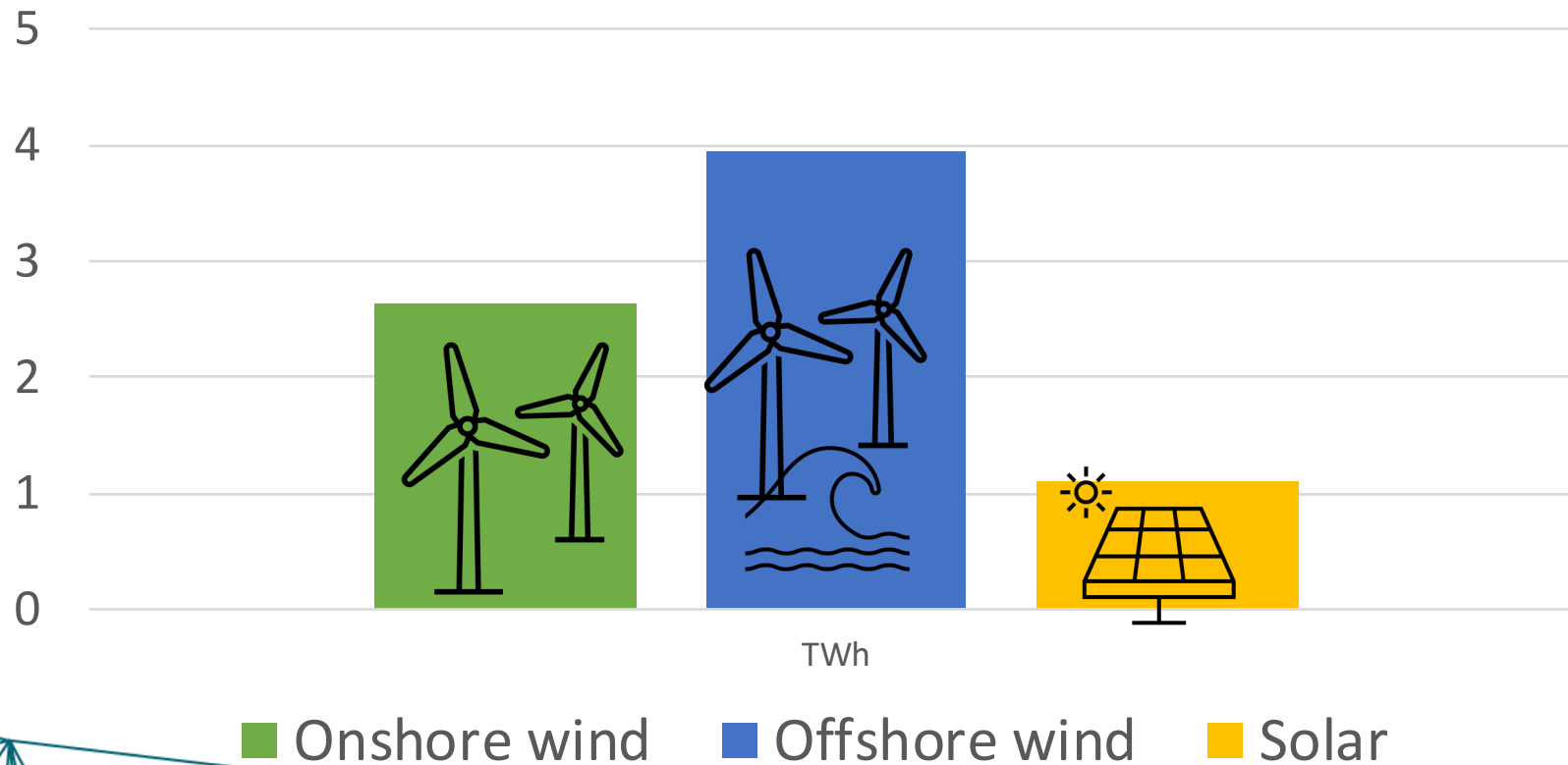


5500 MW in production  
portfolio



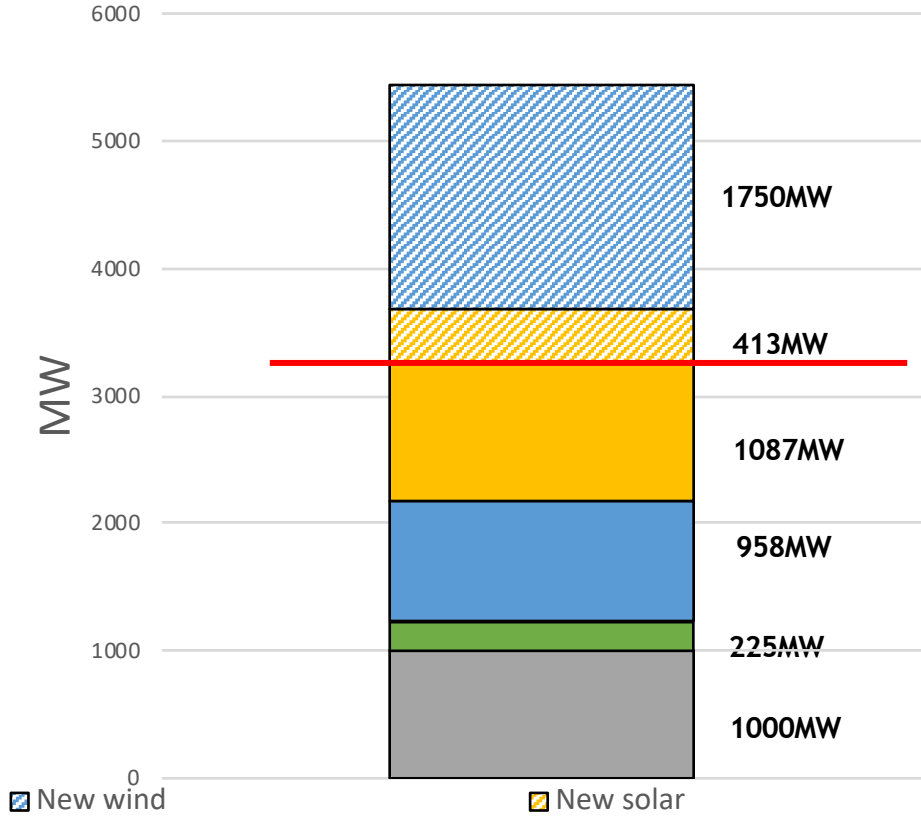
# What could provide the needed RES production?

Renewable energy production from **1GW**  
integrated power

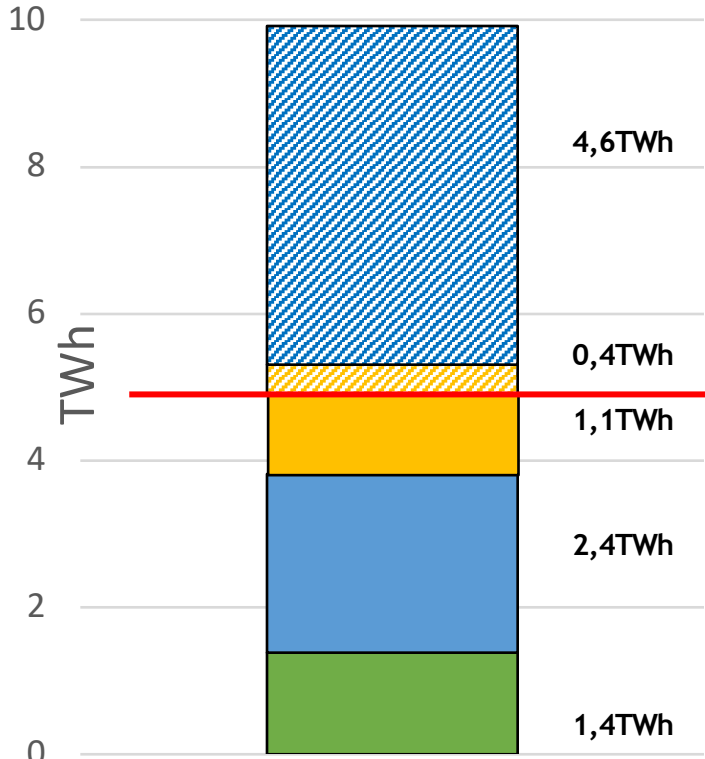


# Estonia's electricity assumable generation portfolio by 2030 - actual profile will be specified in time?

Generation of power in 2030



Generation of Renewable energy in 2030



- New wind
- Existing and planned solar
- Biomass and other renewables
- Controllable power
- New solar
- Existing and planned wind

**Needed  $\approx 10$  TWh RE**

- Planned power production according to connection contracts  $\approx 1,15$  TWh
- Additionally needed renewable energy  $\approx 4,5$  TWh

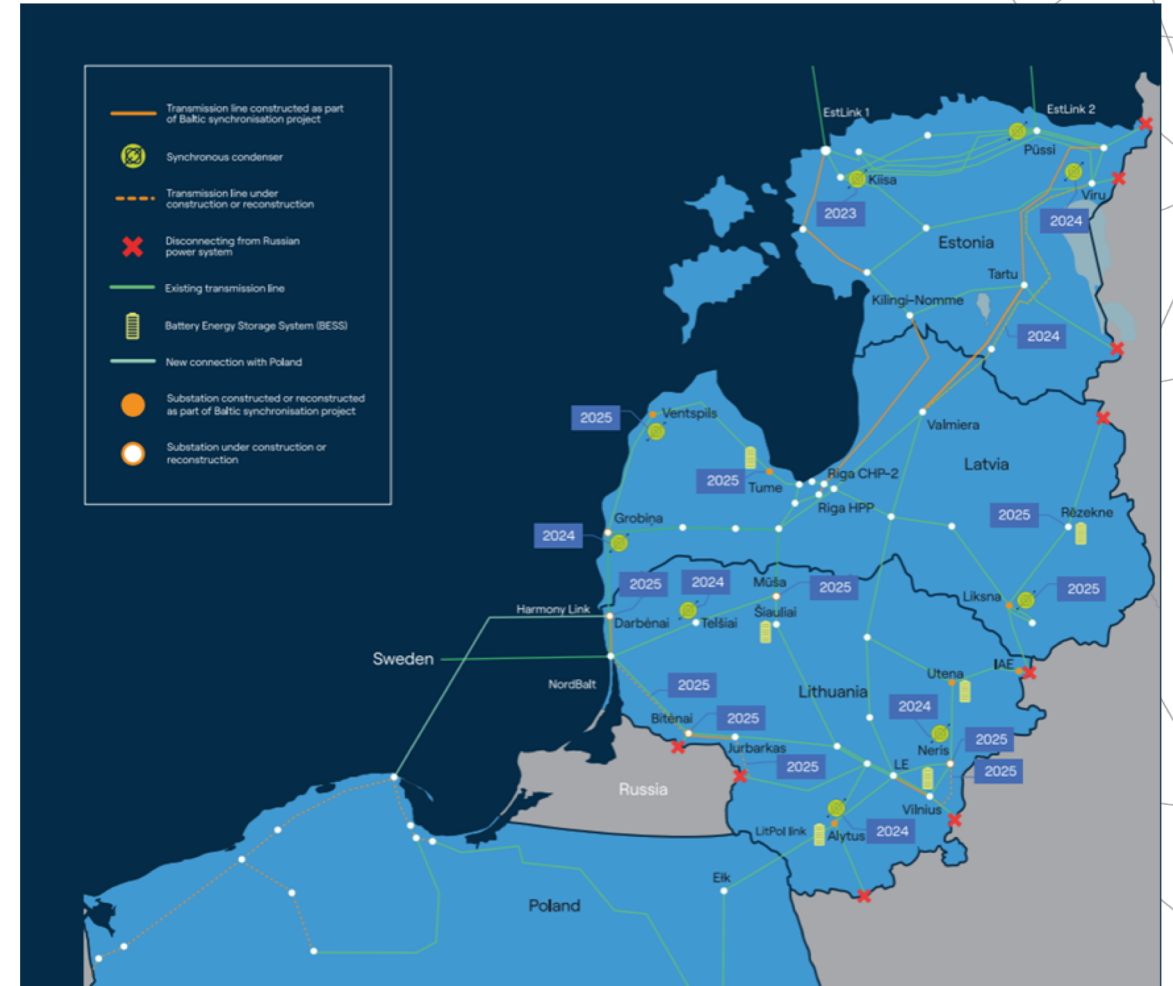
# Estonia's onshore wind potential is 3.9 GW, from which 2 GW is needed for achieving 2030 goals



Source: Kliimaministeerium

# Connecting renewable energy is supported by current investment plans, which can be called base assumptions

- 2100 km of overhead lines and 20 km of underground cables
  - Synchronization to Central Europe
  - RRF
  - Reconstruction of old 330 kV overhead lines for EstLink-3
    - Funding from congestion income and CEF
- + Additional investments



# According to approximate estimations RE100 requires ca 300 MEUR of extra investments for the period of 2025-2030



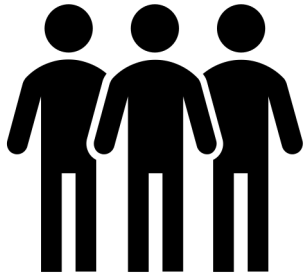
- 1017km of 110 kV overhead lines/cabels, **160 MEUR**

- substation constructions/expansions, **50 MEUR**
- 330/110 kV transformers and a reactors , **110 MEUR**

(All investments until 2033: <https://www.elering.ee/investeeringud-2024-2033>)

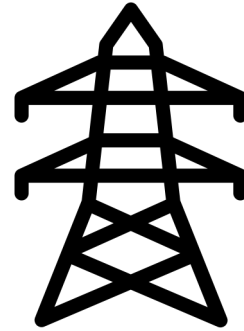
# Grid development conception needs to change

Costumers connecting  
renewable energy



2027-2028

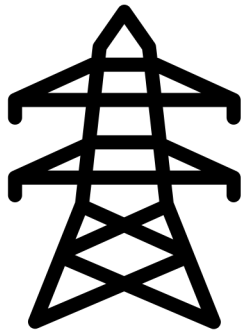
Grid developments



+ 5 years

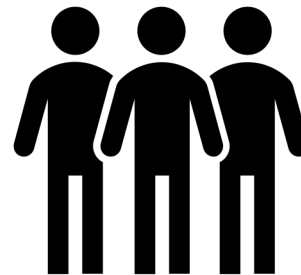
~~2030~~

Grid developments



5 years

Costumers connecting  
renewable energy



2027-2028

2030

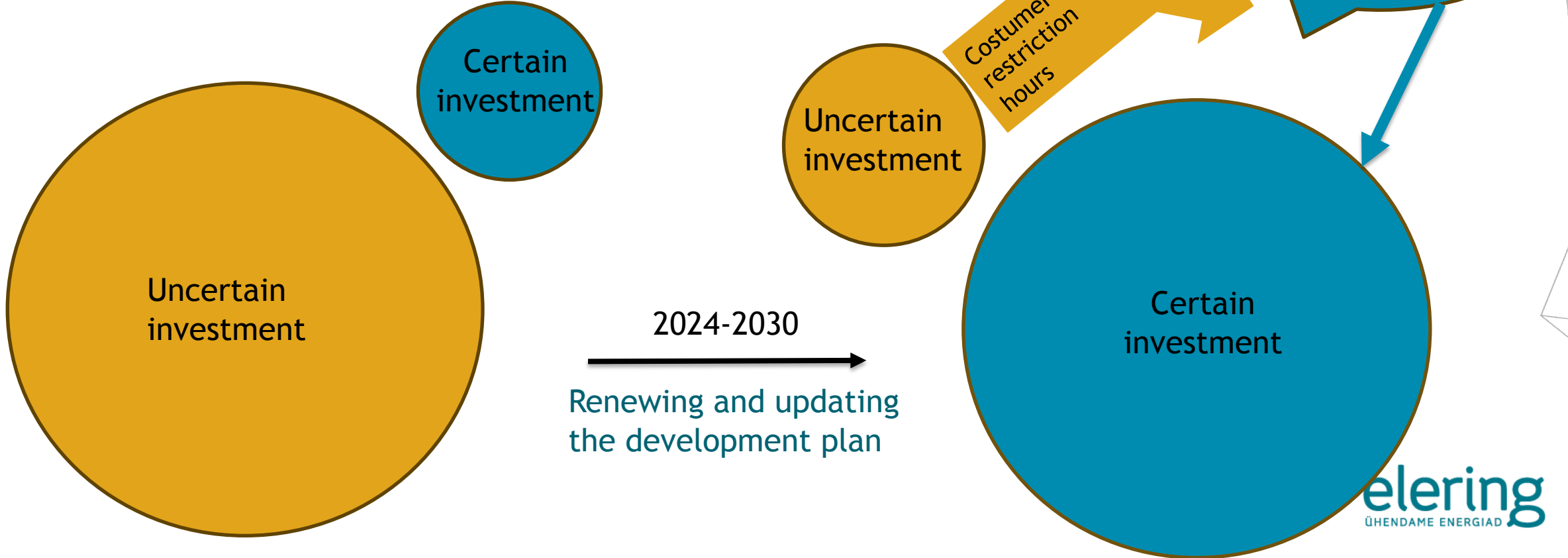
Conception  
today:

Conception in  
the futuure:



# Power grid development plan

In 2024: first draft of development plan

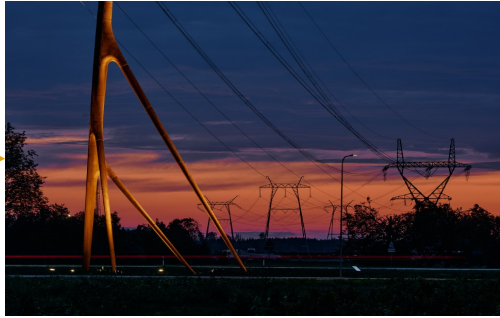


# Grid development in advance will be possible with regulation changes and fixed connection price

Connection price



Grid development cost  
88 000 EUR/ 1 MW



Connection point construction



ca 50%

Society



ca 50%

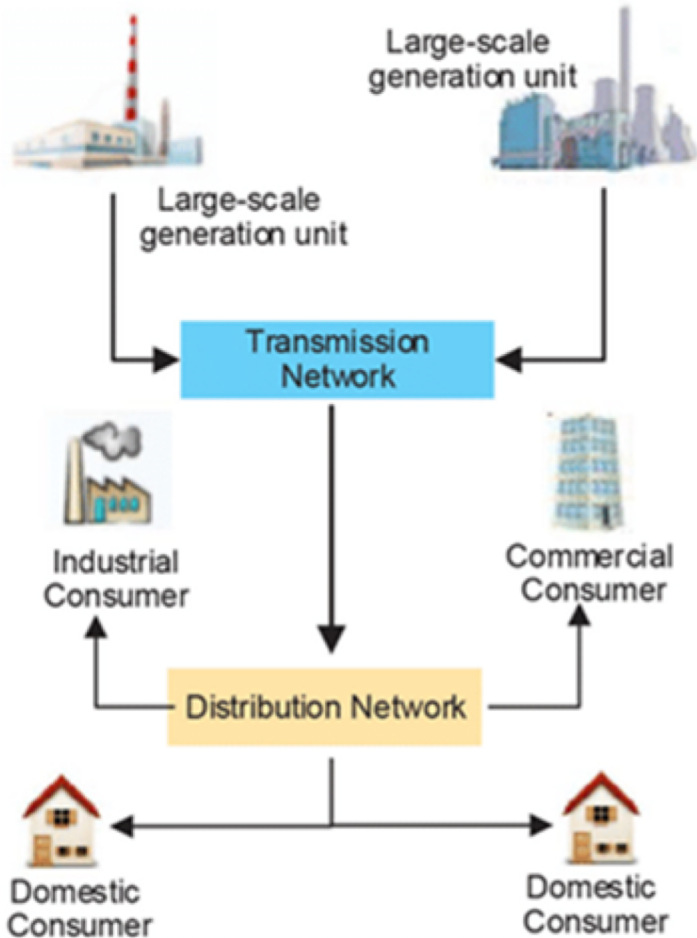
Client



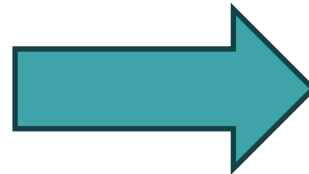
100%

# Renewable energy will change grid management

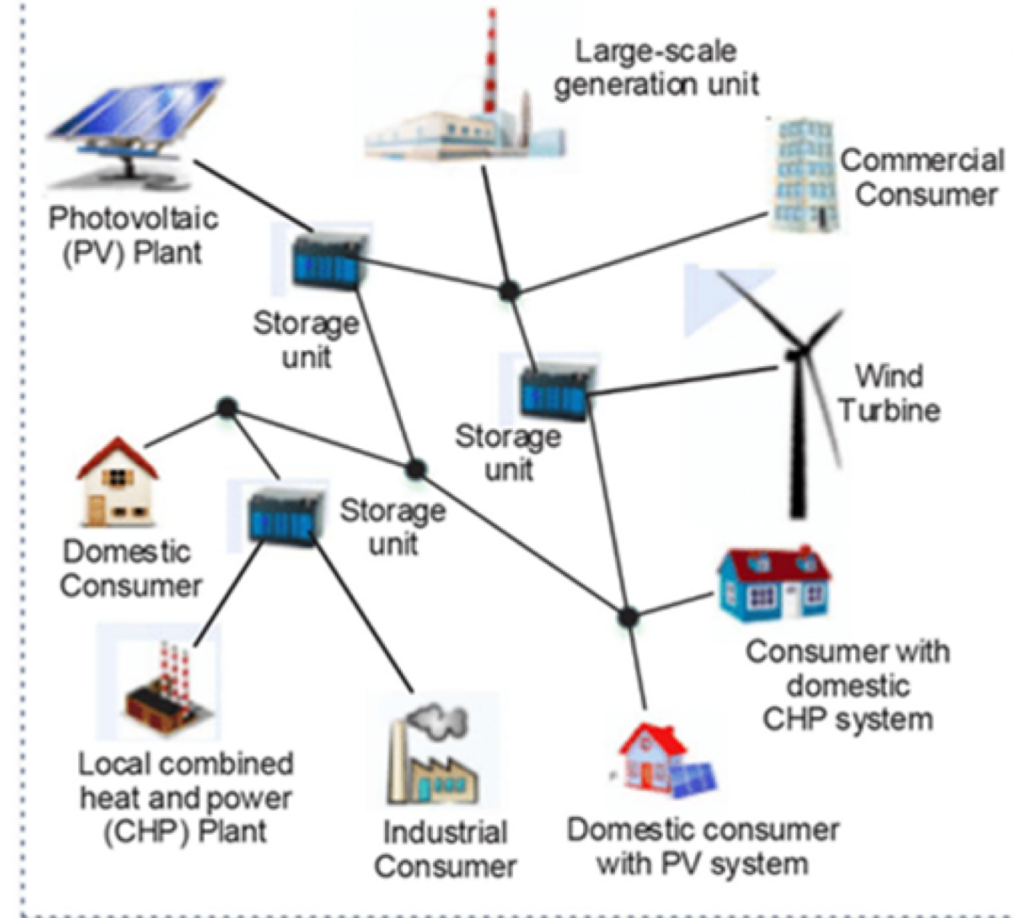
Centralized Generation System



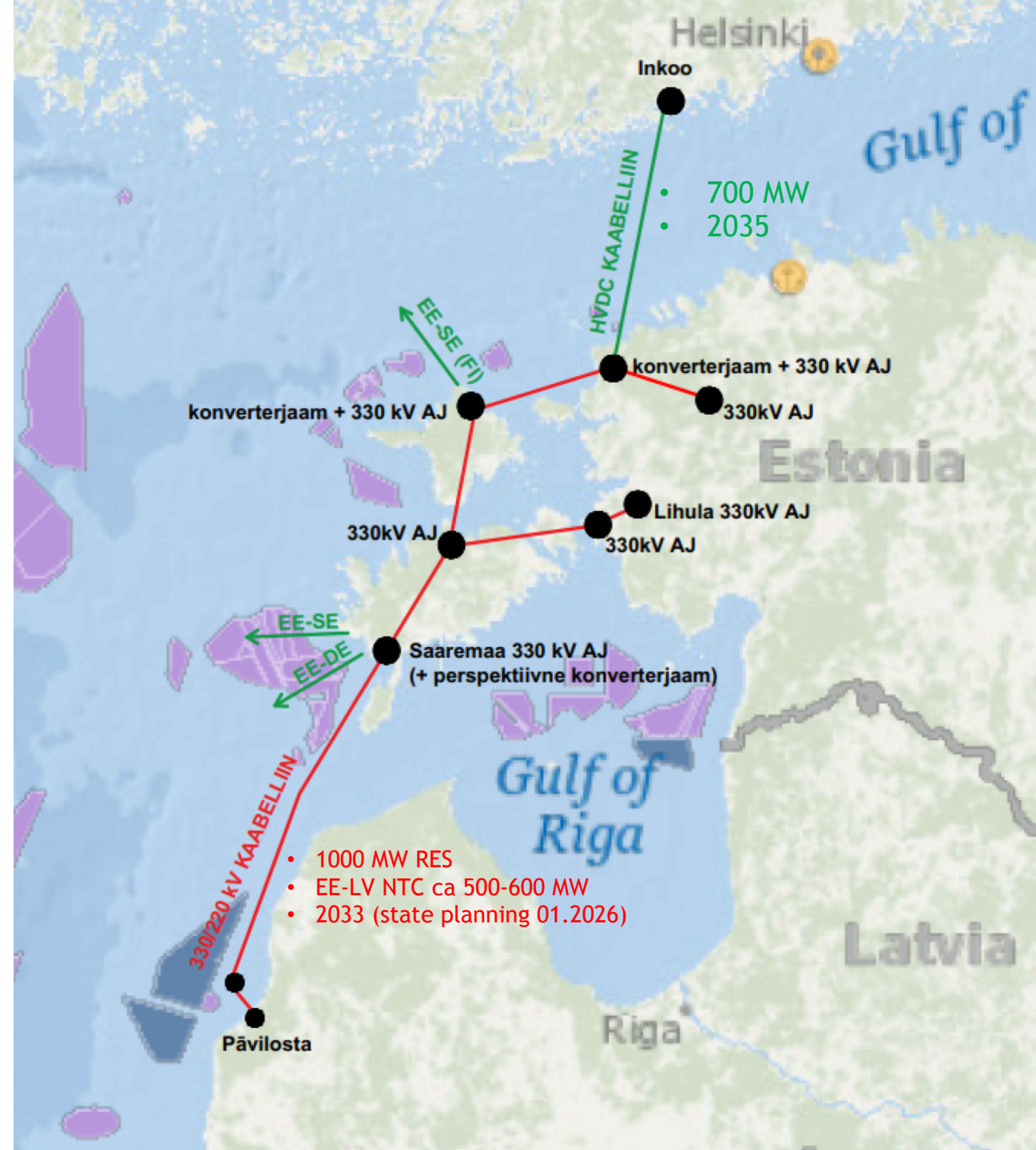
1. Frequency reserves sufficiency
2. Changes in operational grid planning and real time system control
3. Outages management + compensation measures



Distributed Generation System



# Vision of the grid beyond 2035+





# Thank you!