CHALLENGES FOR PROJECT DEVELOPER

Rene Tammist

UTILITAS AT A GLANCE

1300 MW
installed heat and power capacity

2.4 TWh
energy produced

19.3 mln m²
heated buildings

Utilitas is the largest renewable energy producer in Estonia and the largest wind energy producer in Latvia

ISO 9001
ISO 14001
ISO 45001
BUREAU VERITAS
Certification

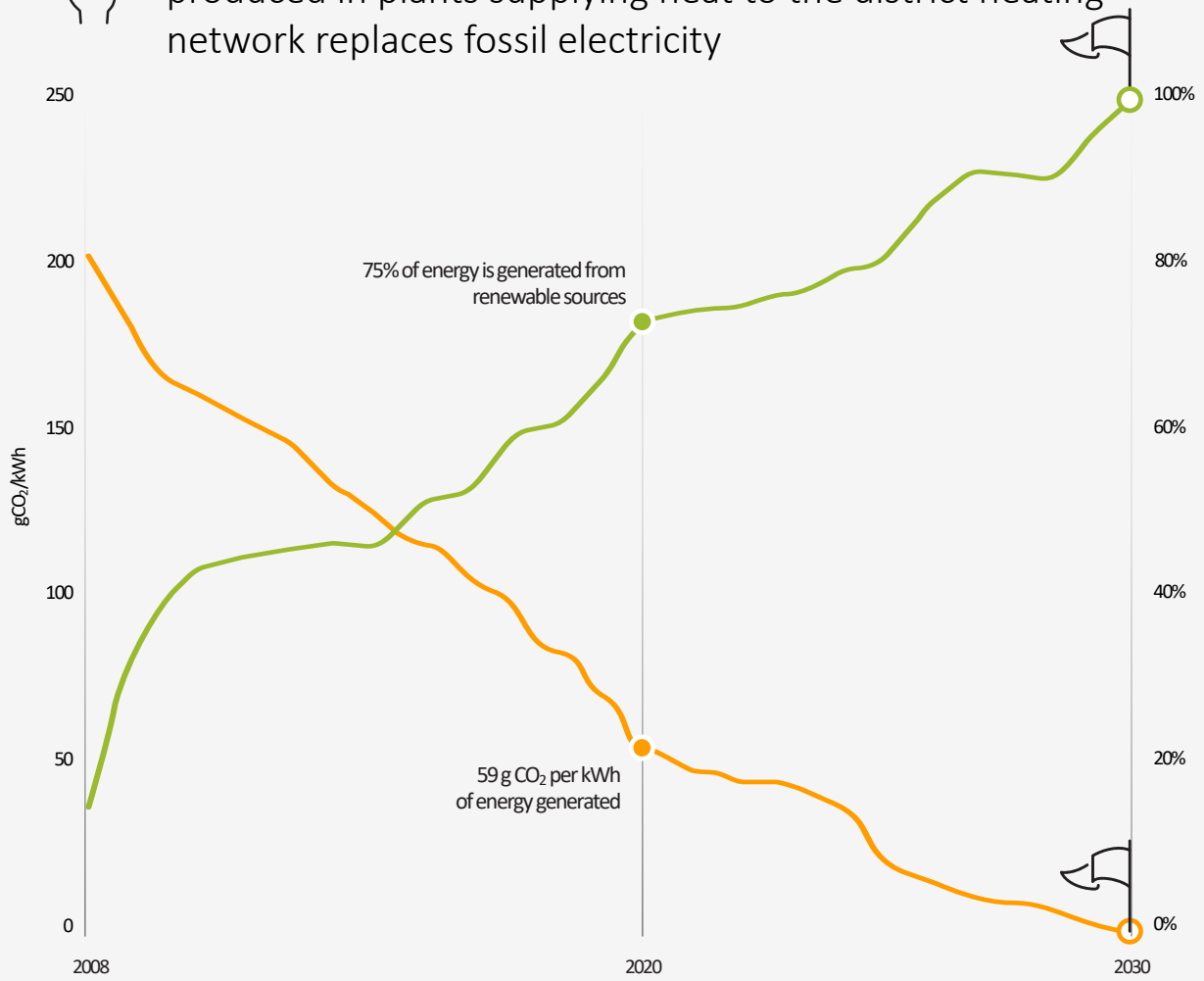
VASTUTUSTUNDLIKU ETTEVÕTLUSE INDEKS
KULDTASE 2022

All Utilitas district heating and cooling networks are efficient district heating systems within the meaning of Energy Efficiency Directive (2012/27/EU)

Sustainable energy solutions that enable to consume energy:
- at any time
- at reasonable price
- while preserving the environment

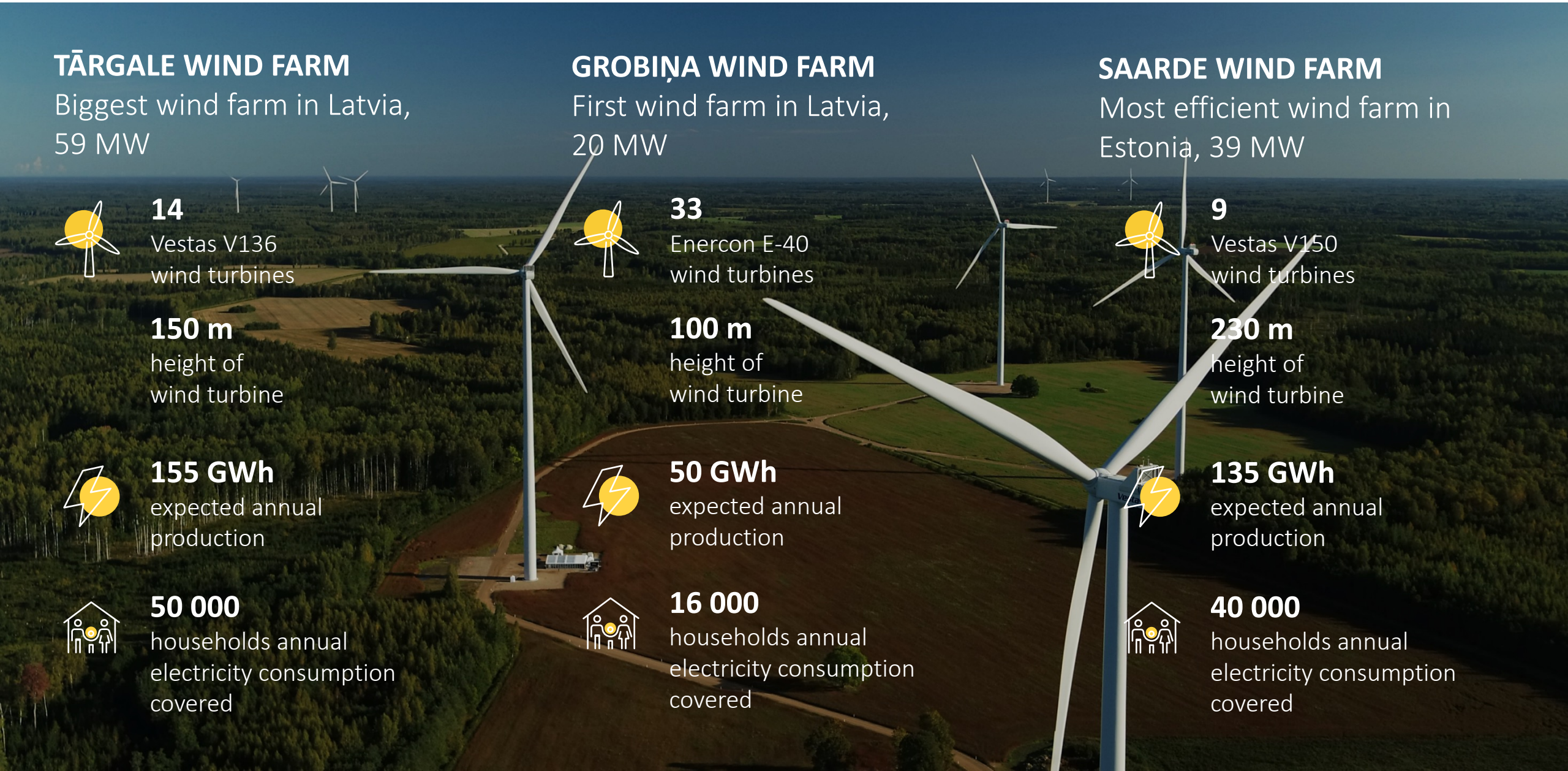
CARBON NEUTRALITY BY 2030

Today: Positive handprint – renewable electricity produced in plants supplying heat to the district heating network replaces fossil electricity



WIND ENERGY DEVELOPMENT

UTILITAS



TĀRGALE WIND FARM

Biggest wind farm in Latvia, 59 MW

14
Vestas V136 wind turbines

150 m
height of wind turbine

155 GWh
expected annual production

50 000
households annual electricity consumption covered

GROBIŅA WIND FARM

First wind farm in Latvia, 20 MW

33
Enercon E-40 wind turbines

100 m
height of wind turbine

50 GWh
expected annual production

16 000
households annual electricity consumption covered

SAARDE WIND FARM

Most efficient wind farm in Estonia, 39 MW

9
Vestas V150 wind turbines

230 m
height of wind turbine

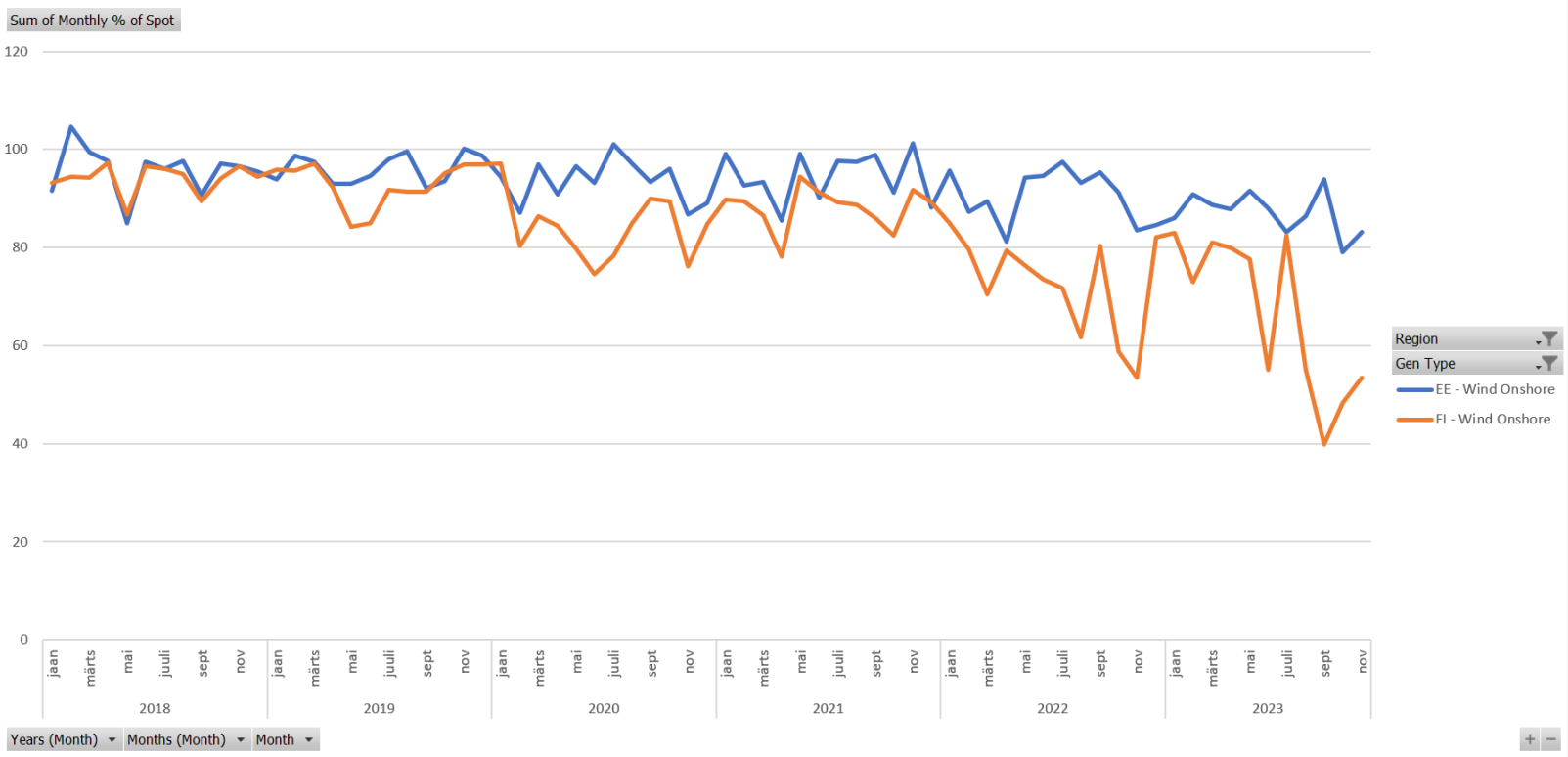
135 GWh
expected annual production

40 000
households annual electricity consumption covered

ELECTRICITY MARKET LIMITATIONS

- Electricity market design deficient to finance new CAPEX investments
- Changes to the design of the electricity market to stimulate new investments will not fundamentally change in the ongoing reform
- The focus remains on national measures

DIFFERENCE BETWEEN AVERAGE AND CAPTURE PRICE

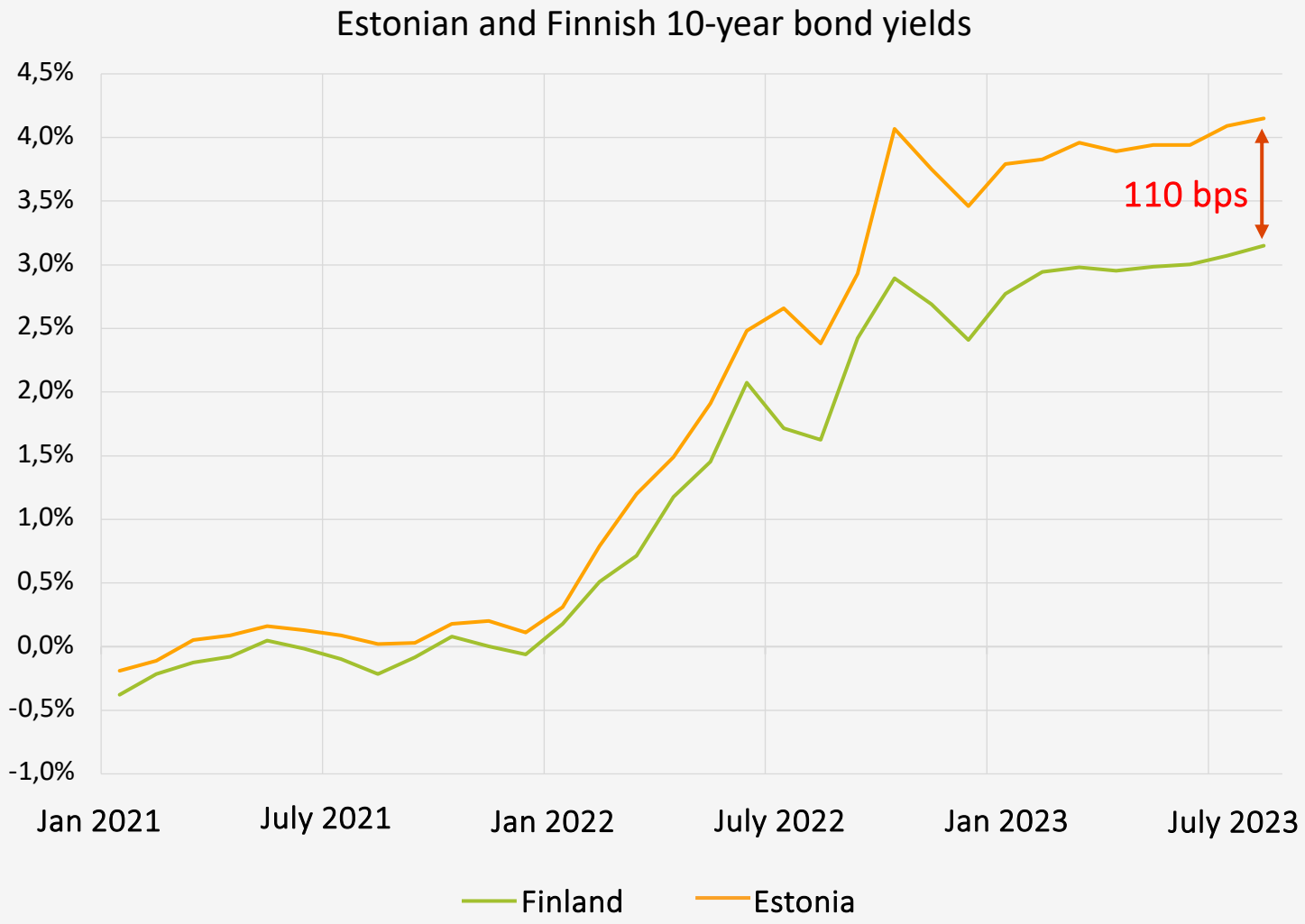


- The addition of new production capacities reduces the producer's capture price
- The balancing energy costs and OPEX cost must be subtracted from the capture price
- The financing of new capacity becomes increasingly difficult over time with today's market structure

Source: ENTSO-E Transparency platform
The graph shows the capture price of onshore wind farms in Estonia and Finland. 100 = baseload (or average) price

CAPITAL COST DIFFERENCES

- Higher capital cost due to perceived country risk profile
- Differencies in the cost of capital are reflected in the LCOE
- Various measures to even out differences



Source: Interest rates - Long-term interest rates - OECD Data, https://data.oecd.org/interest/long-term-interest-rates.htm

OFFTAKING LIMITATIONS DUE TO LACK OF INDUSTRIAL CONSUMPTION

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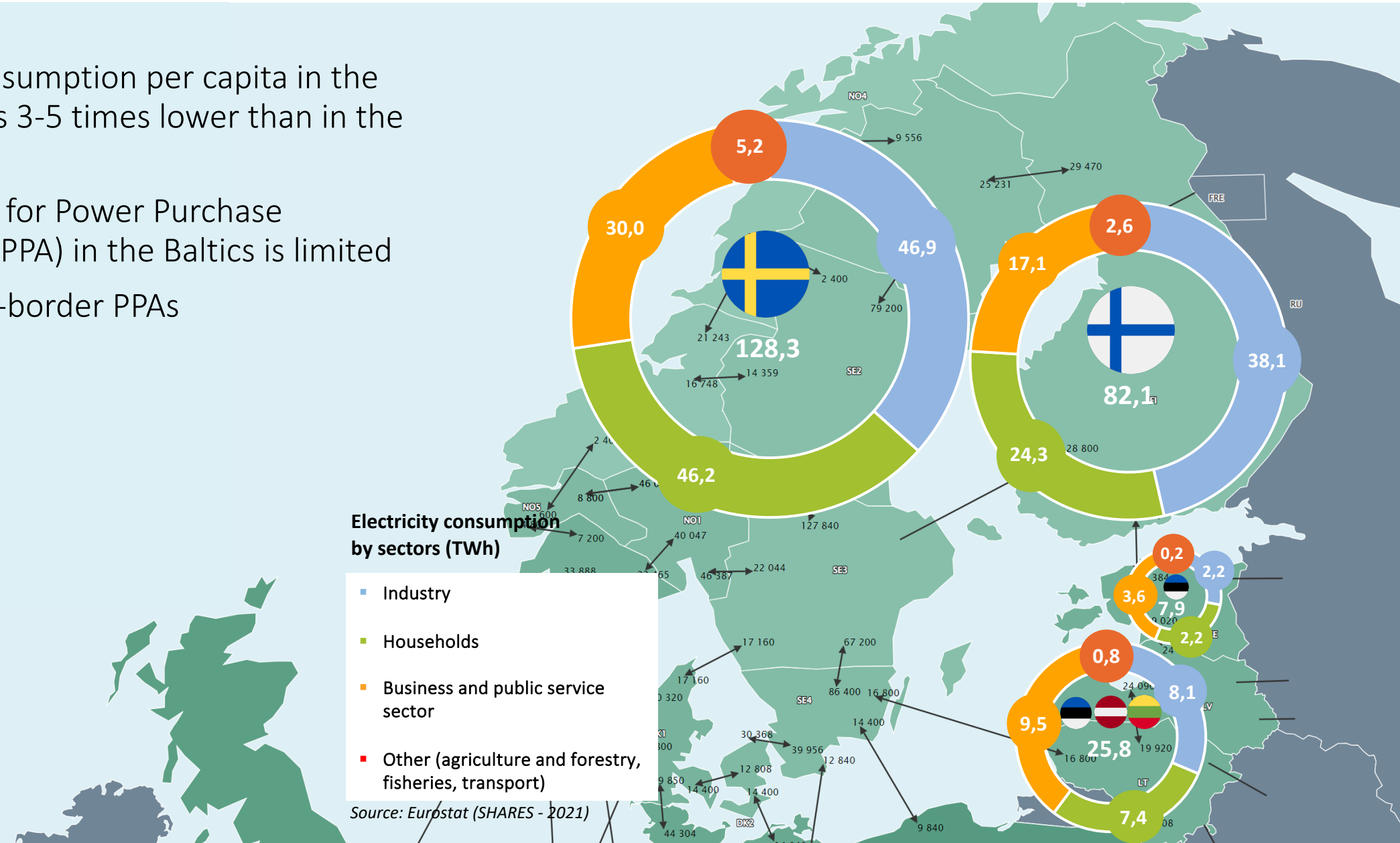
- Industrial consumption per capita in the Baltic states is 3-5 times lower than in the Nordics
- The potential for Power Purchase Agreements (PPA) in the Baltics is limited
- Risks of cross-border PPAs



Electricity consumption by sectors (TWh)

- Industry
- Households
- Business and public service sector
- Other (agriculture and forestry, fisheries, transport)

Source: Eurostat (SHARES - 2021)

RENEWABLE ELECTRICITY AS AN INPUT TO ECONOMIC DEVELOPMENT

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Forecasts of electricity consumption by TSOs

	Today		2030
	9,0 TWh		9,4 TWh
CO_2 footprint	656 gCO_2/kWh		

	Today		2035
	87 TWh	+ 72 %	150 TWh
CO_2 footprint	70 gCO_2/kWh		

	Today		2030
	142 TWh	+ 39 %	197 TWh
CO_2 footprint	9 gCO_2/kWh		

	Today		2030
	140 TWh	+ 27 %	178 TWh
CO_2 footprint	53 gCO_2/kWh		

Bloomberg **Google Invests $670 Million to Expand Its Data Center in Finland**

REUTERS® Plug Power plans $6 billion hydrogen projects in Finland

European backing for Northvolt's battery gigafactory in Sweden

REUTERS® Sweden's H2 Green Steel plans to raise $1.65 bln for Boden plant

Sources:
Estonia – https://www.elering.ee/sites/default/files/2022-10/Study%20-%20Electricity%20demand%20scenarios.pdf
Finland – https://www.fingrid.fi/globalassets/dokumentit/en/news/electricity-market/2023/fingrid_electricity_system_vision_2023.pdf
Sweden – https://energimyndigheten.a-w2m.se/Home.mvc?ResourceId=213739
Norway – https://www.statnett.no/globalassets/om-statnett/investor-relations/annual-reports/annual-and-sustainability-report-2022.pdf

CONCLUSION

- Market-based solutions are clearly preferable from the developer's point of view
- In the absence of a better solution, CfDs have proven to be an effective mean to bring the LCOE down
- more complex and risky projects such as offshore wind farms need regulatory certainty and risk mitigation
- In practice, offshore wind farms are and have been built in countries where the price risks of the projects have been addressed
- Where CfDs have not been used, alternative solutions to hedge price risks have been available (e.g. PPAs). A combination of the two would be one way forward.


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Thank you!