

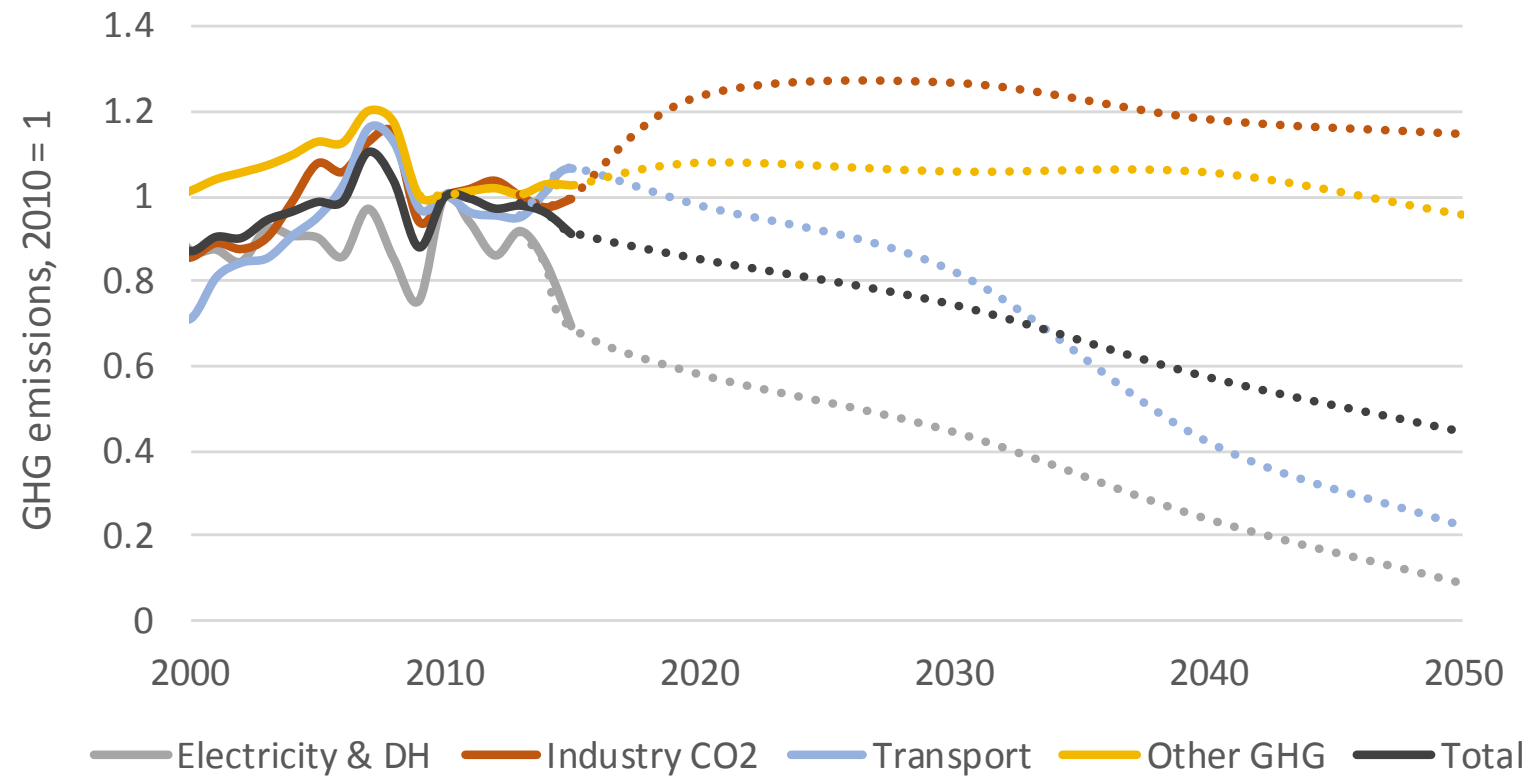
Baltic Energy Technology Scenarios 2018

Progressing towards low-carbon and renewable energy systems



Nordic Energy
Research

The electricity and district heating sector reduces emissions before other sectors in the scenarios (in the figure: all Baltic countries, BPO scenario)



Proposed national emission targets would require actions

All Baltic countries need additional emission reductions or flexibility mechanisms to reach proposed 2030 ESS targets*. Important especially for Latvia.

* Effort Sharing Sectors (ESS) include sectors that are not included in the EU emissions trading. The ESS sector has national targets.



The most cost-efficient ways to increase renewable energy share are

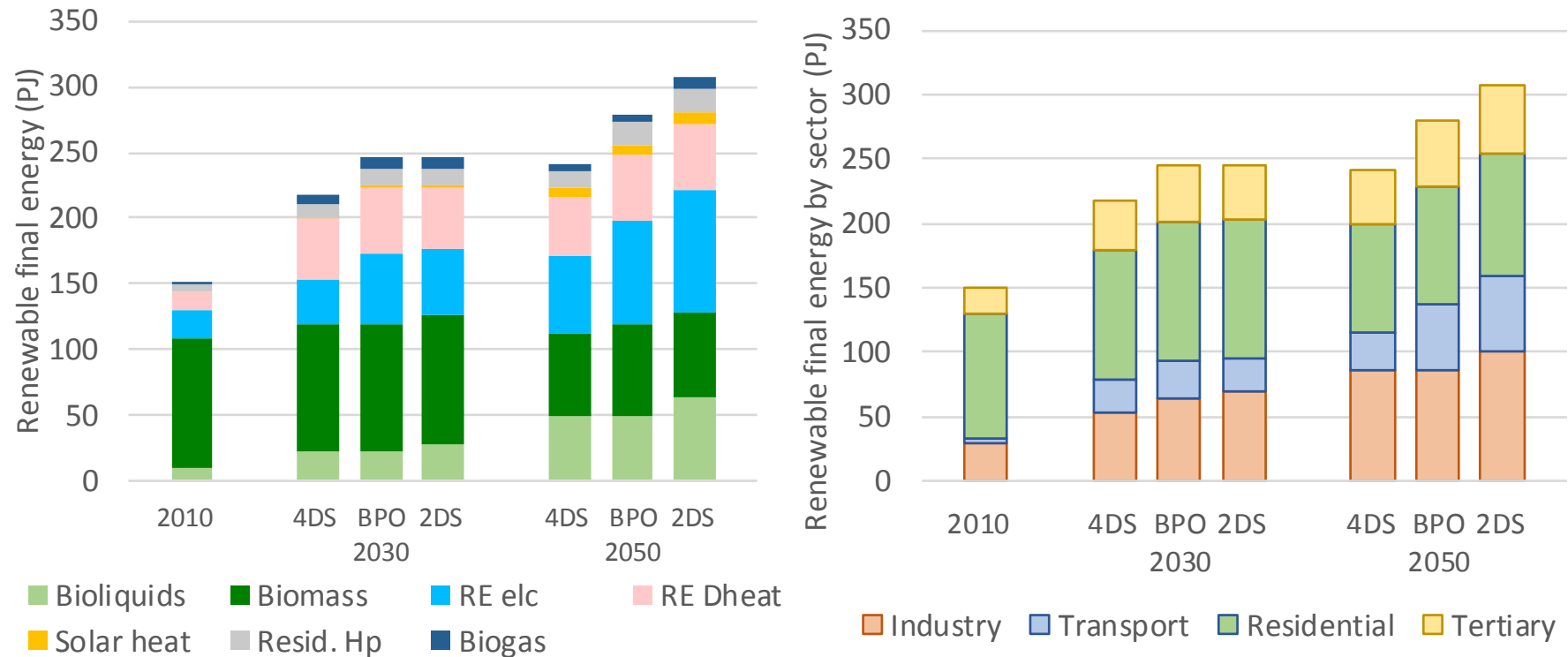
- Energy efficiency measures,
- Wind power,
- Biomass,
- Electrification of end-use sectors (heat pumps, electric vehicles, etc),
- Solar power and heating



End-use sectors can reduce GHG emissions and increase the renewable energy share through electrification only if the supplied electricity is CO₂-free and renewable.



Proposed renewable energy targets can be achieved with domestic resources

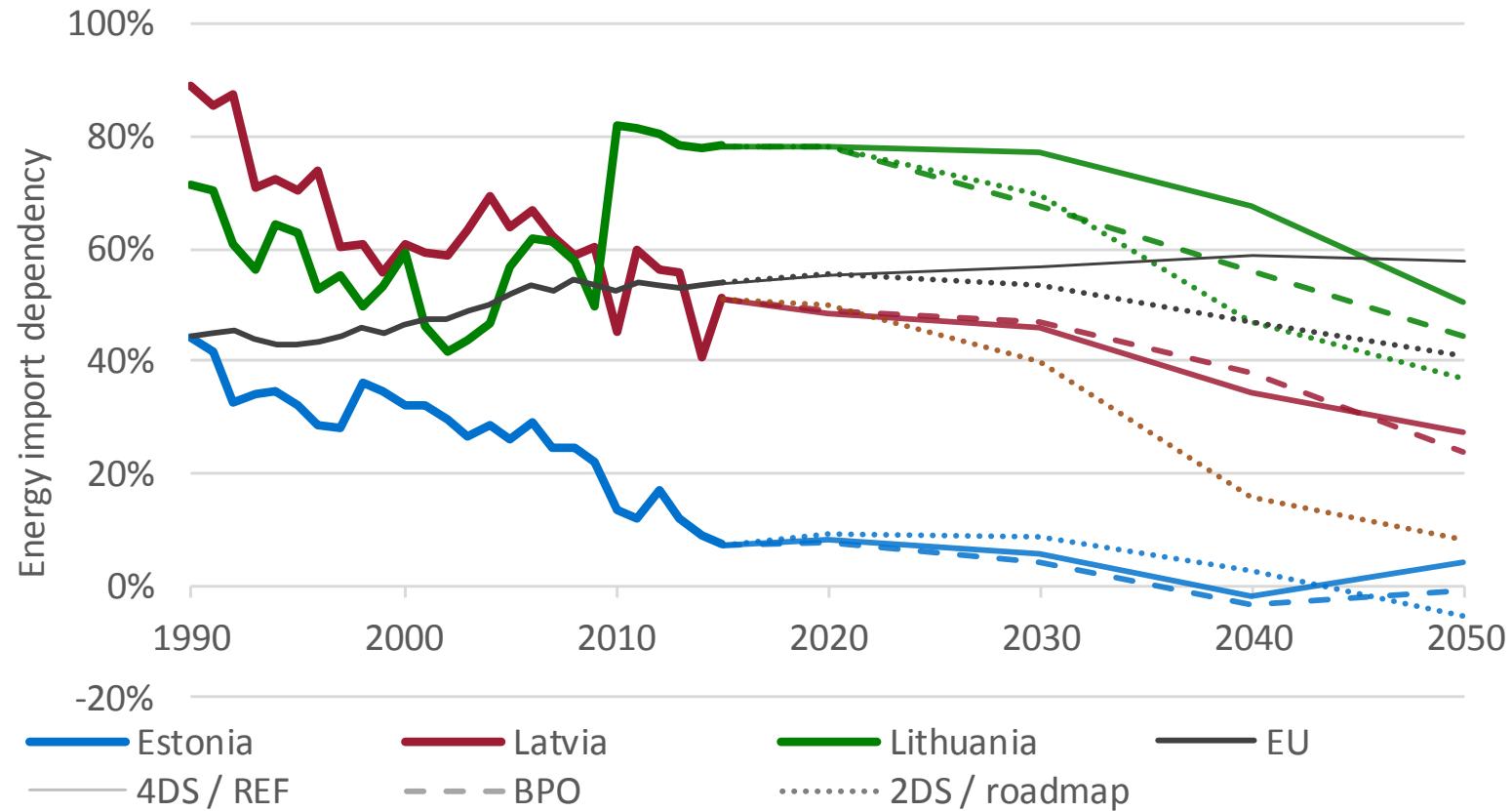


Improving energy independence

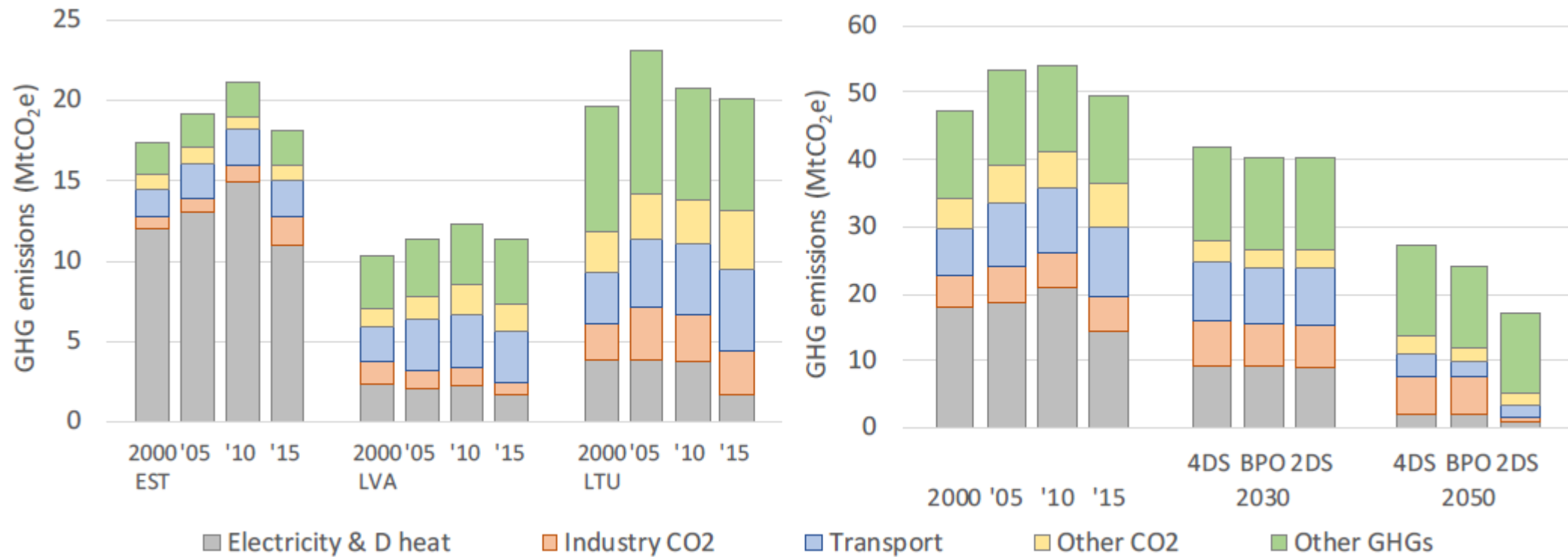
- The Baltic countries' energy independence improves in the scenarios
- In general, measures that reduce emissions, increase the RE share, or increase energy efficiency also improve energy independence.
 - The most notable exception is the use of shale oil, which is the only significant domestic fossil energy source.



Energy import dependency in scenarios



GHG emissions in the scenarios



Studied 2030 targets would be on 2 degree pathway, but more ambitious targets and measures are needed after 2030.



Relatively small additional costs

- The additional costs compared to the 4DS range from 0% to 0.3% of GDP by 2030 and from 0.1% to 0.5% by 2050.
- The annual additional costs* are estimated to be at the level of 50- 100 million €/year for each Baltic country at 2030.

* Note: Presented costs estimate the amount of additional money required to investments and O&M. Actual investments may cost more, because this is compared to the base level of 4DS scenario. In addition, costs do not include energy taxes, CO₂ prices, or secondary effects on employment or other economy.



Summary

- GHG reductions should be led by electricity and district heating sectors, followed by transport, buildings, and other sectors.
- The Baltic countries do not reach proposed Effort Sharing Sector (ESS) 2030 targets in the 4DS. Especially Latvia will need additional reductions or flexibility measures to reach the target.
- The Baltic countries could achieve the proposed renewable energy targets using domestic resources.
- The Baltic countries increase their energy independence in the analysed scenarios largely due to national renewable energy and domestic electricity generation targets.
- Download the report, presentations, national results, and national input data: <http://www.nordicenergy.org/project/bente/>

