Strategies for attracting private investment for the climate and energy transition in Latvia and other EU countries

By David Rusnok & Ingmar Juergens

Riga, March 5th 2020
Structure

1. General investment situation and needs in Latvia
2. Investment needs to reach 2030 NECP targets
3. Examples for financing NECP targets
4. Barriers to addressing investment gaps in Latvia
5. Policy examples for supporting renewable energy investments
6. Discussion
Investment rates: in absolute terms Latvia is slightly above EU average...

Source: Eurostat, own calculations; “private” consists of households and firms; investments defined as gross fixed capital formation relative to GDP
... however, private investments deteriorated despite historically conducive lending conditions.

- Very similar patterns in the Baltic states
- Latvia: low investment rates into machinery, equipment and intellectual property
- Graph: Investments (=gross fixed capital formation) relative to GDP; Index with 2005=0

Source: Eurostat, own calculations; “private” consists of households and firms
<table>
<thead>
<tr>
<th>NECP: Total investments needs</th>
<th>million EUR, 2020-2030</th>
<th>millions EUR p.a.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE building</td>
<td>1730</td>
<td>173</td>
<td>21</td>
</tr>
<tr>
<td>EE and RES in District heating and industry</td>
<td>1663</td>
<td>166</td>
<td>20</td>
</tr>
<tr>
<td>RES in electricity sector</td>
<td>1057</td>
<td>106</td>
<td>13</td>
</tr>
<tr>
<td>RES transport</td>
<td>989</td>
<td>99</td>
<td>12</td>
</tr>
<tr>
<td>Energy modernization of infrastructure</td>
<td>830</td>
<td>83</td>
<td>10</td>
</tr>
<tr>
<td>Waste &amp; waste water managment</td>
<td>595</td>
<td>60</td>
<td>7</td>
</tr>
<tr>
<td>Agriculture</td>
<td>718</td>
<td>72</td>
<td>9</td>
</tr>
<tr>
<td>Land use change and forestry</td>
<td>188</td>
<td>19</td>
<td>2</td>
</tr>
<tr>
<td>Prosumers</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Horizontal Measures</td>
<td>418</td>
<td>42</td>
<td>5</td>
</tr>
<tr>
<td>F-gases</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Greening of taxes</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Information</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>8192</td>
<td>819</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: National Energy and Climate Plan for Latvia 2021-2030
**Investment needs to reach 2030 targets**

<table>
<thead>
<tr>
<th>NECP: Total investments needs</th>
<th>million EUR, 2020-2030</th>
<th>millions EUR p.a.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE building</td>
<td>1730</td>
<td>173</td>
<td>21</td>
</tr>
<tr>
<td>EE and RES in District heating and industry</td>
<td>1663</td>
<td>166</td>
<td>20</td>
</tr>
<tr>
<td>RES in electricity sector</td>
<td>1057</td>
<td>106</td>
<td>13</td>
</tr>
<tr>
<td>RES transport</td>
<td>989</td>
<td>99</td>
<td>12</td>
</tr>
<tr>
<td>Energy modernization of infrastructure</td>
<td>830</td>
<td>83</td>
<td>10</td>
</tr>
<tr>
<td>Waste &amp; waste water management</td>
<td>595</td>
<td>60</td>
<td>7</td>
</tr>
<tr>
<td>Agriculture</td>
<td>718</td>
<td>72</td>
<td>9</td>
</tr>
<tr>
<td>Land use change and forestry</td>
<td>188</td>
<td>19</td>
<td>2</td>
</tr>
<tr>
<td>Prosumers</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Horizontal Measures</td>
<td>418</td>
<td>42</td>
<td>5</td>
</tr>
<tr>
<td>F-gases</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Greening of taxes</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Information</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>8192</td>
<td>819</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: National Energy and Climate Plan for Latvia 2021-2030
# Austria's final NECP Investment Needs Approach

<table>
<thead>
<tr>
<th>NECP: Total investments needs</th>
<th>million EUR, until 2030</th>
<th>millions EUR p.a.</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport</td>
<td>97183</td>
<td>9718</td>
<td>✔️ ✔️</td>
</tr>
<tr>
<td>… Freight traffic</td>
<td>2635</td>
<td>264</td>
<td>✔️ ✔️</td>
</tr>
<tr>
<td>… E-mobility</td>
<td>36,000</td>
<td>3,600</td>
<td>✔️ ✔️</td>
</tr>
<tr>
<td>Energy</td>
<td>38,547</td>
<td>3,855</td>
<td></td>
</tr>
<tr>
<td>Heating &amp; Cooling (Building &amp; Industry)</td>
<td>29,728</td>
<td>2,973</td>
<td></td>
</tr>
<tr>
<td>Other sectors</td>
<td>1,020</td>
<td>102</td>
<td>✔️ ✔️</td>
</tr>
<tr>
<td>… Agriculture</td>
<td>220</td>
<td>22</td>
<td>✔️ ✔️</td>
</tr>
<tr>
<td>… F-gases</td>
<td>800</td>
<td>80</td>
<td>✔️</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>6,971</td>
<td>697</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>173,449</strong></td>
<td><strong>17,345</strong></td>
<td></td>
</tr>
</tbody>
</table>

Source: National Energy and Climate Plan for Austria 2021-2030
Denmark’s final NECP approach

Denmark has investment needs of **1351 million EUR p.a.** and has flagged financing sources as follows:

- **National budget, Energy Agreement** (budget: 1.7 billion EUR) + **Green Future Fund** (budget: 3.3 billion EUR)
- **EU Budget**
- **Private Sector** (Industry, Pension Funds)

Source: National Energy and Climate Plan for Denmark 2021-2030
Barriers to addressing investment gaps in Latvia
Barriers to addressing investment gaps in Latvia
Good business climate in Latvia, but...

Source: World Bank Doing Business
however barriers for addressing investment gaps in Latvia

Factors impacting long-term investment decisions: availability of finance: EU countries, 2018

- Latvia: Availability of finance
  - Minor obstacle
  - Major obstacle
- EU Average: Availability of finance
  - Minor obstacle
  - Major obstacle

Source: Own calculations based on EIB Investment Survey - Tracking investment needs and constraints across Europe
Barriers to addressing investment gaps in Latvia

Barriers for renewable energy in Latvia

Uncertainty regarding RE energy policy in Latvia, especially future of feed-in tariff
A note on German wind and solar power production over time

In the Northern Hemisphere, wind and solar power are rather complementary.

Dr. Nils May
Own illustration, based on Open Power System Data (2019)
Renewable energy policies in 2014 in the EU
Financing costs of onshore wind energy across the EU

Weighted average cost of capital (in percent)
Cost decline of large scale photovoltaics

Market risks have gained importance relative to regulatory risks

In EUR per megawatt-hour

Cost and remuneration for the construction of a large photovoltaic system

2007

Revenue Financing Installation
Value of energy Additional risks under a fixed-premium or green-certificate system (counter-factual)

Cost and remuneration

Make use of renewables to stabilize energy costs

Similar cost level for serving demand with new wind and solar as with fossil fuel:
- Cost of learning investment in wind and solar dominates debate but is sunk.

Illustration excludes system costs

Annuitized Investment (at 5%) for wind and solar generation at scale to replace fossil fuels

Annual expenditure CO₂ at 30 Euro/t
- Domestic fossil fuel
- Imported fossil fuel

DIW Berlin Calculations based on BP Statistical Review of World Energy; Energy Statistics for the EU-28; Bundesverband Solarwirtschaft e.V.; IEA; European Wind Energy Association; Bundesamt für Wirtschaft und Ausfuhrkontrolle, first published in Energy Journal (2016)
Main messages

- Transition towards 2030 climate targets / 2050 neutrality requires large investments in EU
- Financing targets require strategy to link national + EU financing sources AND private capital
- Final NECPs are still very vague on financing sources, especially hardly any vision how to include private sector
- Identifying and addressing barriers for private investment in EE & RES is important

C&C jointly with TU Riga will run interviews, case-studies, desk-research in 2020 to identify barriers and provide policy recommendations.
Ingmar Juergens and David Rusnok
in co-operation with Stefanie Berendsen and Malte Hessenius

Thank you!

Visit: climateandcompany.de
Annex: Additional Material
Carbon intensity: Latvia below the EU average

Source: globarcarbonatlas.org, own calculations; *EU member states, plus Western Balkans & Turkey
Investment needs to reach 2030 targets

High priority investments to reach 2030 targets:

- Renewables (e.g. Latvia has a high potential for off-shore wind) and modernization of infrastructure
- Improving the building stock’s energy efficiency and district heating systems
- Public transit system and infrastructure for electric vehicles
- Investments in research and innovation

Source: European Semester Report 2020
Latvia – Financing sources according to final NECP

National Level (national and local governments)

- For EE improvement measures, deployment of RES, support of other GHG emission reduction measures auction around 16 million emission allowances between 2021 and 2030
- Auction of up-to 16 million emission allowances

EU Budget:

- EU Structural Fund, however, EU's multiannual financial budget has not yet been approved
- Modernization Fund, InvestEU, Connecting Europe Facility

Private Sector:

- Not mentioned as source in the final NECP
- 60% of NECP financing needs could come from the private sector – how to unlock?
General Investment Situation and Needs in Latvia

Outlook Private & Public Investment Rates

- Inflow of EU funds is expected to peak in 2020
- As a result, public investments are expected to decline in 2020
- Private investments will have to play a significant role in order to compensate decline in public investments
- The large-scale “Rail Baltica project” (expected start in 2021) is expected to boost investment growth rate in Latvia for coming years

Source: European Semester Report 2020
Barriers for addressing investment gaps in Latvia

General Barriers

- Slow and complex regulatory processes (e.g. housing)
- Reluctancy of banks to grant credit due to suspicion of tax fraud / shadow economy (Latvia’s shadow economy was estimated at 24% of GDP in 2018)
- Lack of investments in R&D (among lowest in the EU, barely any regulatory progress since 2012)
- R&D investments highly depended on EU funds (41.5% in 2018)

Barriers for addressing investment gaps in Latvia

**General Barriers**

R&D intensity 2000, 2007, 2015, and 2020 target

Source: EIB: Innovation investment in Central, Eastern and South-Eastern Europe
Barriers for addressing investment gaps in Latvia

General Barriers

Figure - Dealing with Construction Permits in Latvia - Score

- Procedures: 64.0
- Time: 52.2
- Cost: 97.9
- Building quality control index: 80.0

Figure - Dealing with Construction Permits in Latvia and comparator economies - Ranking and Score

Source: Latvia, World Bank Doing Business 2020
Barriers for addressing investment gaps in Latvia

Barriers for Private Sector in Latvia

Composition of external investment finance by source in 2018 vs. the type of external finance firms would like to use comparatively more of in the next three years: Latvia

Source: Own calculations based on EIB Investment Survey - Tracking investment needs and constraints across Europe
Barriers for addressing investment gaps in Latvia
Barriers for renewable energy & energy efficiency projects

- Energy efficiency investments currently mainly from EU funding (e.g. European Structural Support Fund), private investment opportunities largely underdeveloped
- Improving energy efficiency in the transportation sector has largest potential to reduce emissions in all sectors, but initiatives to reduce emissions are largely lacking
- Effective plans to develop an environmentally sustainable energy and transportation network have not yet been devised (European Semester Report 2020)
- Human capital imbalances are holding back transition to low-carbon economy: investments in re- and upskilling lacking
Barriers for addressing investment gaps in Latvia

Barriers for Private Sector in Latvia

Reason for not applying for external finance
What was your main reason for not applying for external finance for your investment activities?

- Was happy to use internal finance/didn't need the finance
- Did not know where to find the appropriate finance we needed
- The current economic conditions made it a bad time to access bank loans
- Preferred not to take on additional risk
- Thought it would be too expensive
- Thought we’d be turned down
- No need as we were not planning to undertake large investments
- We have a parent company which we get funding from
- It wasn't our decision
- Bureaucratic complexity
- Don't Know/Refused
- Happy to use only internal Finance - Share of all Firms

Source: Own calculations based on EIB Investment Survey - Tracking investment needs and constraints across Europe
Barriers for addressing investment gaps in Latvia

Barriers for energy efficiency projects in Latvia

Energy efficiency projects

Housing:
- Cheap energy prices and high renovation costs prevent interest in renovation from homeowners
- Bureaucratic burden + project realization in short time periods
- Private finance for public buildings lacking (regulatory problems and high dependency on EU funds)
- Municipalities: lack of skills, capacity and innovation for development of new projects

Industry:
- Lack of knowledge and skills
- Lack of technical assistance / uptake of existing support low
Germany: Renewable energy

Considering developments in recent years, target likely to be met.
<table>
<thead>
<tr>
<th></th>
<th>Base year</th>
<th>2017</th>
<th>2020 target</th>
<th>2050 target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary energy consumption</td>
<td>14.380 PJ</td>
<td>-5.5%</td>
<td>-20%</td>
<td>-50%</td>
</tr>
<tr>
<td>(compared to 2008)</td>
<td>13.594 PJ</td>
<td>11.504 PJ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Final energy productivity</td>
<td>287 €/GJ</td>
<td>314 €/GJ**</td>
<td>368 €/GJ</td>
<td>687 €/GJ</td>
</tr>
<tr>
<td>(GDP (2010) per GJ of energy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>consumption)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gross electricity consumption</td>
<td>619 TWh</td>
<td>-3.3%</td>
<td>-10%</td>
<td>-25%</td>
</tr>
<tr>
<td>(compared to 2011)</td>
<td>599 TWh</td>
<td>557 TWh</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy consumption transport</td>
<td>2.586 PJ</td>
<td>+6.5%</td>
<td>-10%</td>
<td>-40%</td>
</tr>
<tr>
<td>sector (compared to 2005)</td>
<td>2.755 PJ*</td>
<td>2.328 PJ</td>
<td></td>
<td>1.552 PJ</td>
</tr>
<tr>
<td>GHG emissions (compared to 1990)</td>
<td>1.251 Mio. t</td>
<td>-27.5%</td>
<td>-40%</td>
<td>-80%</td>
</tr>
<tr>
<td></td>
<td>907 Mio. t%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>751 Mio. t%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>250 Mio. t</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Germany: Renewable energy

Share of renewables in electricity generation in Germany & 2030 target

Considering developments in recent years, target likely to be met

Source: Eurostat, Energy Data (2019), 2020 European Semester Report for Germany
Germany: Energy efficiency

Primary energy consumption

Targets:
Reduction of primary energy consumption compared to 2008:
2020 by 20%,
2030 by 30%
2050 by 50%

2020 & 2030 targets (reduction of 20% & 30% compared to 2008) unlikely to be met
Barriers for addressing investment gaps in Latvia

Barriers for renewable energy in Latvia

- Example South Africa: Tariffs for wind, solar PV and all RE technologies across four bids
Barriers for addressing investment gaps in Latvia

Barriers for renewable energy in Latvia

- Example South Africa: Tariffs for wind, solar PV and all RE technologies across four bids