

Supported by:





based on a decision of the German Bundestag

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

- 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

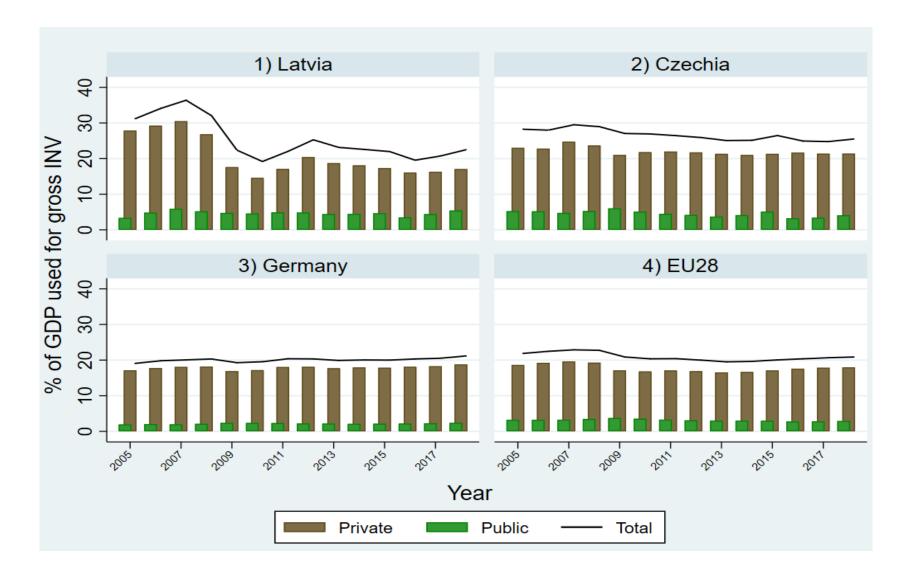






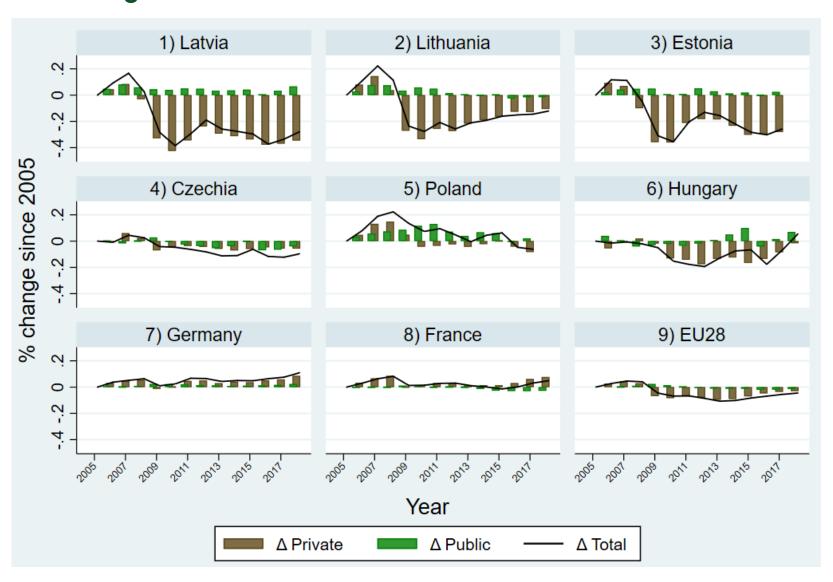


Investment rates: in absolute terms Latvia is slightly above EU average...



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

Priority Investment Needs in Latvia

Resource & energy efficiency

Human capital (skills & health)

Priority Investments Regional development (infra-structure & housing)

Research & Development

Source: European Semester Report 2020

Supported by:



Federal Ministry for the Environment, Nature Conservation and Nuclear Safety





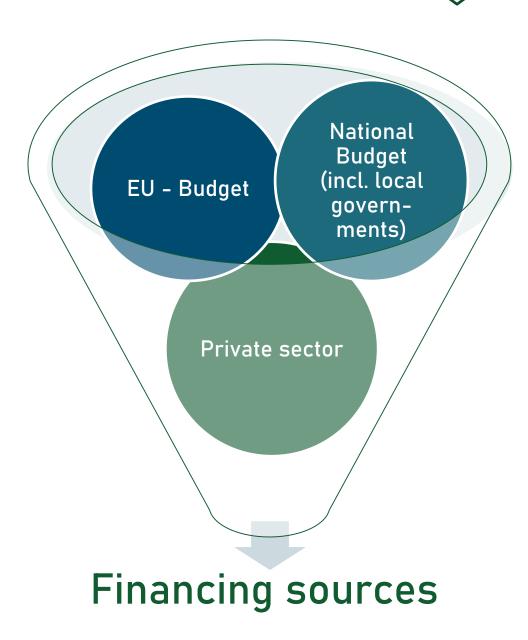
Investment needs to reach 2030 targets

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

Source: National Energy and Climate Plan for Latvia 2021-2030

Investment needs to reach 2030 targets

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



Source: National Energy and Climate Plan for Latvia 2021-2030

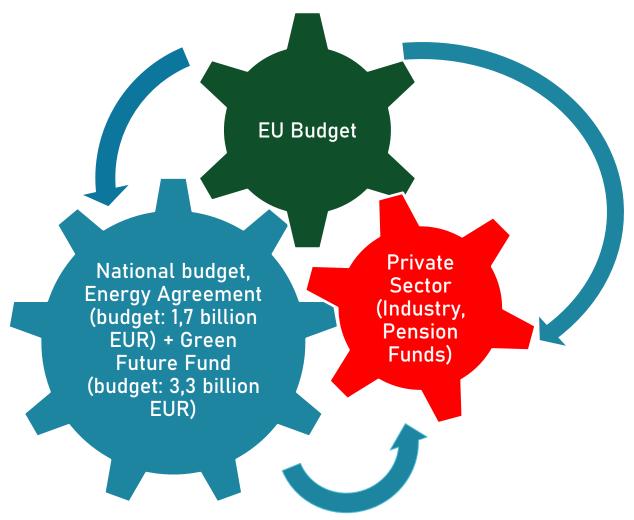
Austria's final NECP Investment Needs Approach

Source: National Energy and Climate Plan for Austria 2021-2030

			Sources			
NECP: Total investments needs	million EUR, until 2030	millions EUR p.a.	National (Federal/Local/Municipal)	EU	Private / "Green Financing"	
Transport	97183	9718		/		
Freight traffic	2635	264			✓	
E-mobility	36.000	3.600	✓		✓	
Energy	38547	3855				
Heating & Cooling (Building & Industry	29728	2973				
Other sectors	1020	102				
Agriculture	220	22		/		
F-gases	800	80	✓			
R&D	6971	697				
Total	173449	17345				

Denmark's final NECP approach

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



Barriers to addressing investment gaps in Latvia

Supported by:



Federal Ministry
for the Environment, Nature Conservation
and Nuclear Safety





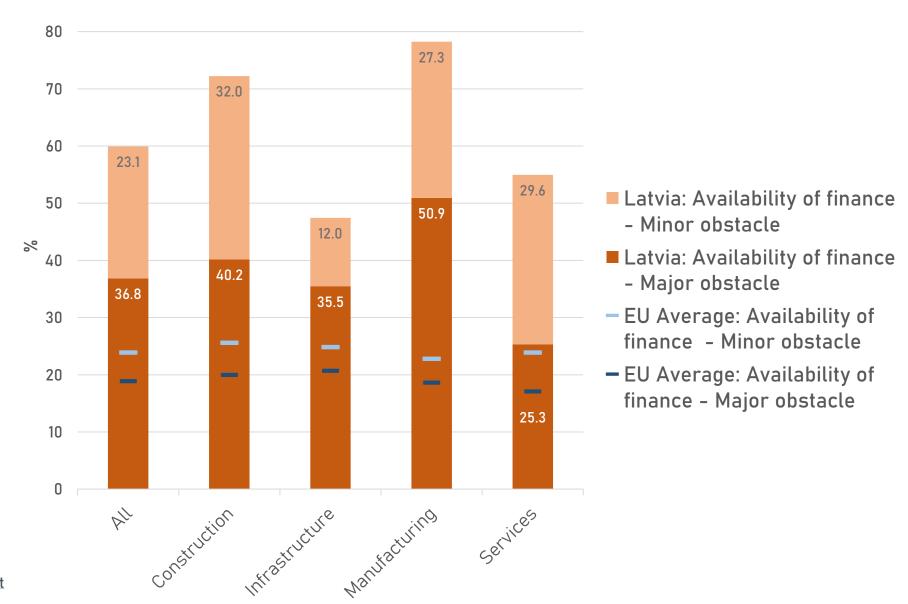
Barriers to addressing investment gaps in Latvia Good business climate in Latvia, but...





....however barriers for addressing investment gaps in Latvia

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

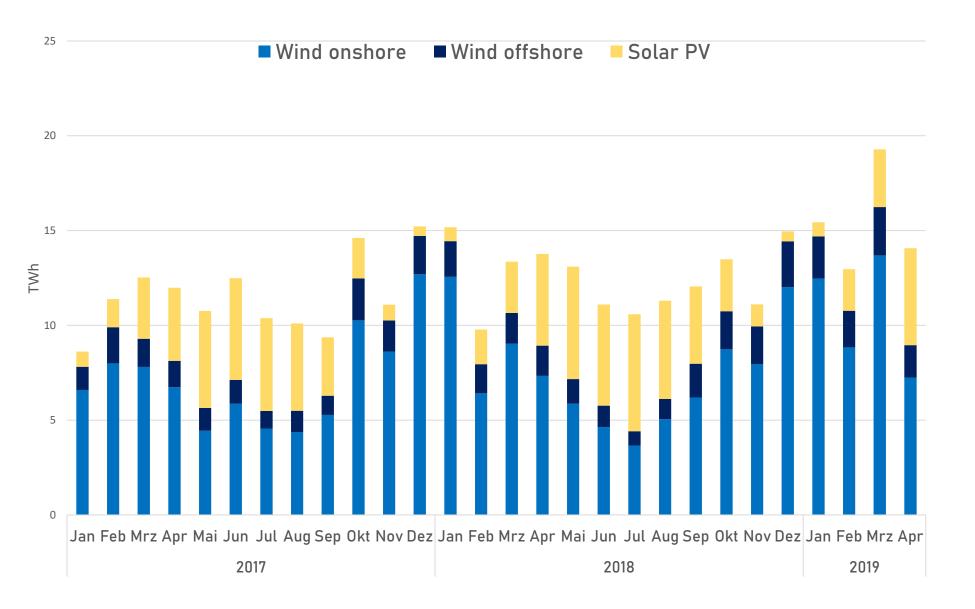


Source: Own calculations based on <u>EIB</u> Investment Survey - Tracking investment needs and constraints across Europe

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

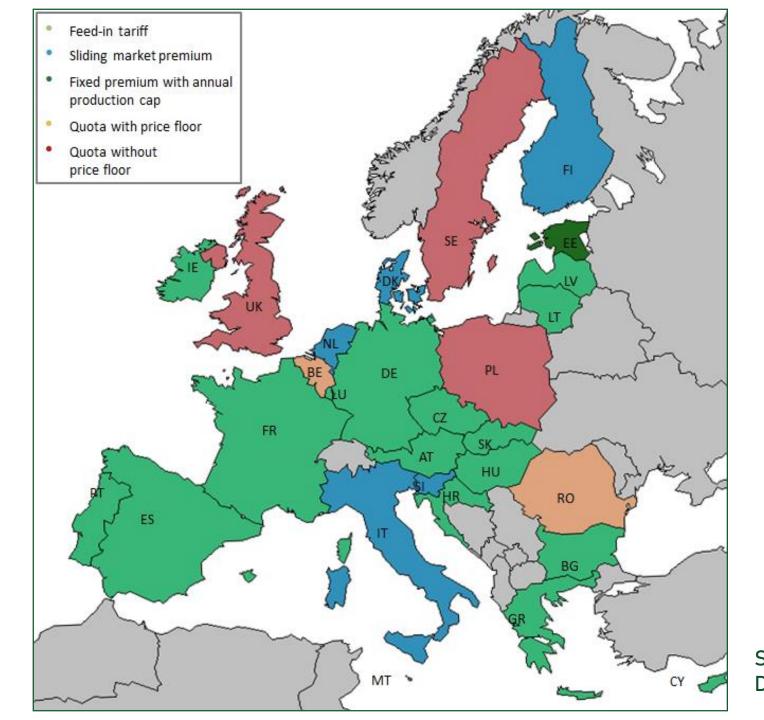


In the Northern
Hemisphere, wind
and solar power are
rather
complementary.

Dr. Nils May

Own illustration, based on Open Power System Data (2019)

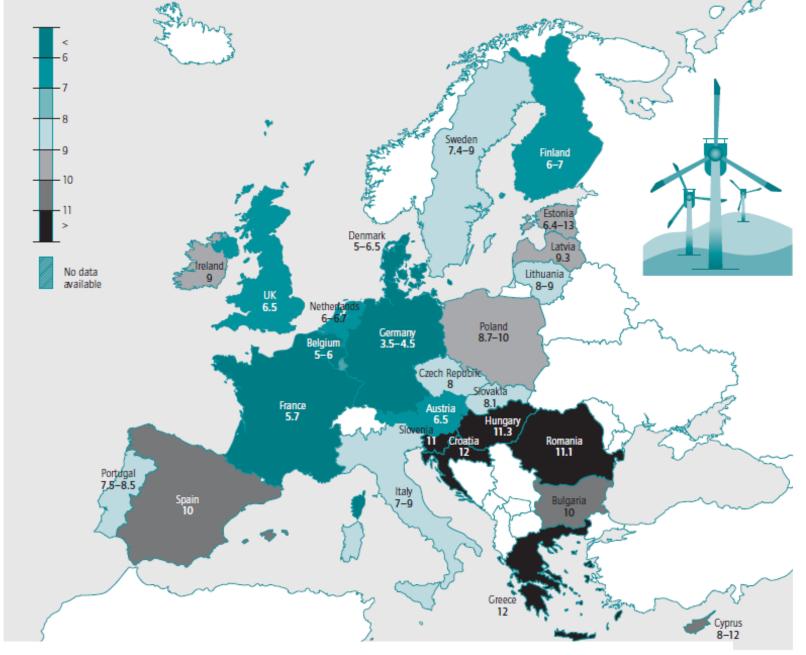
Renewable energy policies in 2014 in the EU



Source: Dr.Nils May

Financing costs of onshore wind energy across the EU

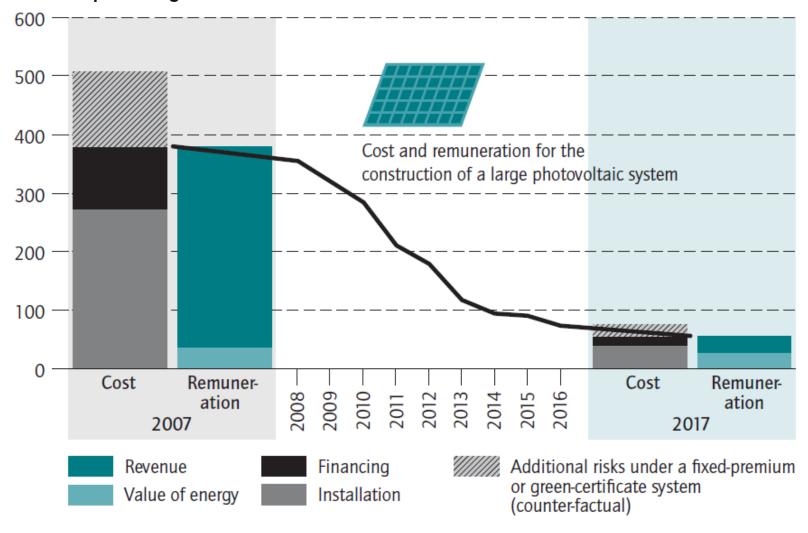
Weighted average cost of capital (in percent)



Source: Paul Noothout, David de Jager, Lucie Tesnière, Sascha van Rooijen, Nikolaos Karypidis (all Ecofys), Robert Brückmann, Filip Jirouš (both eclareon), Barbara Breitschopf (Fraunhofer ISI), Dimitrios Angelopoulos, Haris Doukas (beide EPU-NTUA), Inga Konstantinavičiūtė (LEI) und Gustav Resch (TU Vienna) DIACORE (2016): Final Report. (2016): The impact of risks in renewable investments and the role of smart policies.

Cost decline of large scale photovoltaics

Costs and funding of solar energy over time In EUR per megawatt-hour

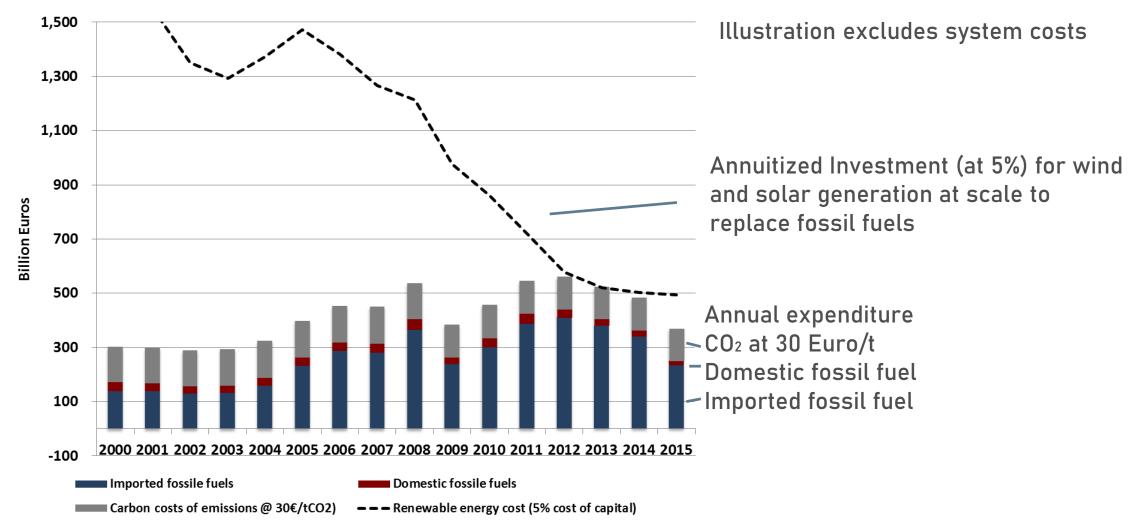


Market risks have gained importance relative to regulatory risks

Dr. Nils May

May, Jürgens and Neuhoff (2017): Renewable energy policy: risk-hedging is taking center-stage. DIW Weekly Report.

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.

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 requires strategy to link national + EU financing sources <u>AND</u>
 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.

Climate & Company









Ingmar Juergens and David Rusnok

in co-operation with Stefanie Berendsen and Malte Hessenius

Thank you!

Visit: climateandcompany.de



Annex: Additional Material

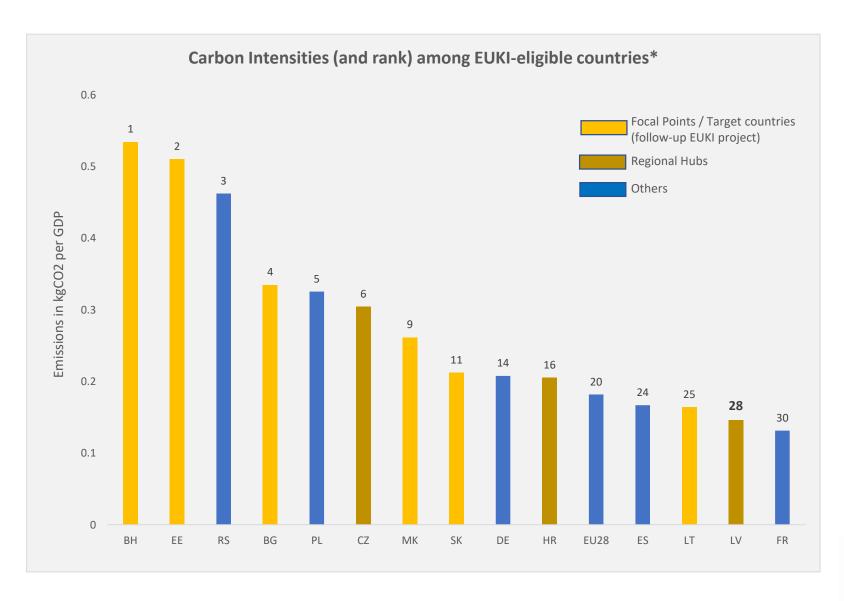
Supported by:





based on a decision of the German Bundestag

Carbon intensity: Latvia below the EU average



Source: globarcarbonatlas.org, own calculations; *EU member states, plus Western Balkans & Turkey



Supported by:



Federal Ministry for the Environment, Nature Conservation and Nuclear Safety



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

Supported by







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 jet 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 unlook?

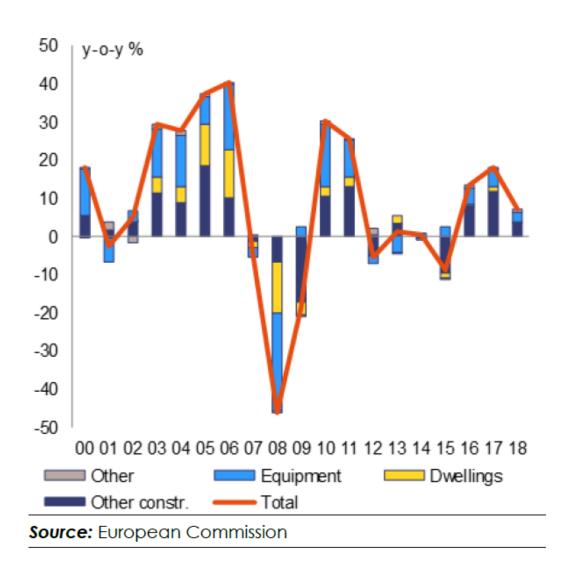
Supported by:







General Investment Situation and Needs in Latvia



Source: European Semester Report 2020

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

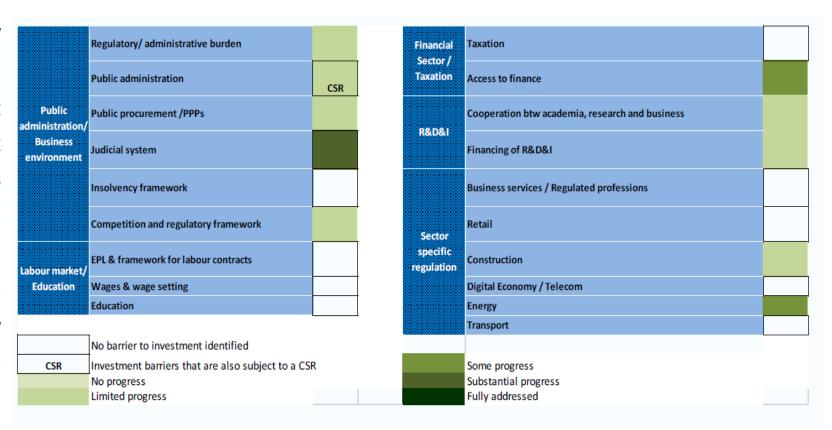
Supported by:





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)

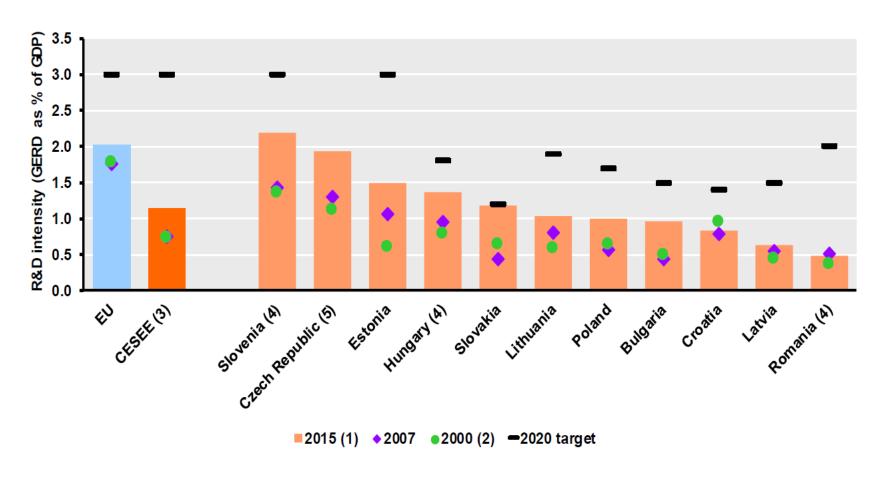


Source: European Semester Report 2020, Flash Eurobarometer 459 'Investment in the EU', 2019



Barriers for addressing investment gaps in Latvia General Barriers

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





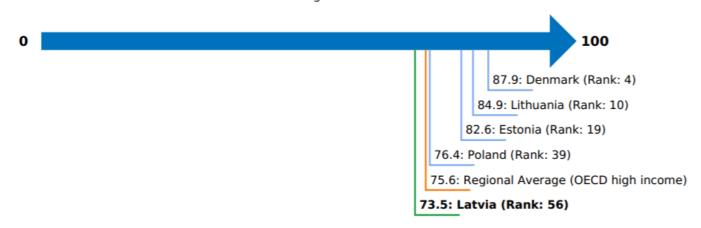


Barriers for addressing investment gaps in Latvia General Barriers



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

DB 2020 Dealing with Construction Permits Score



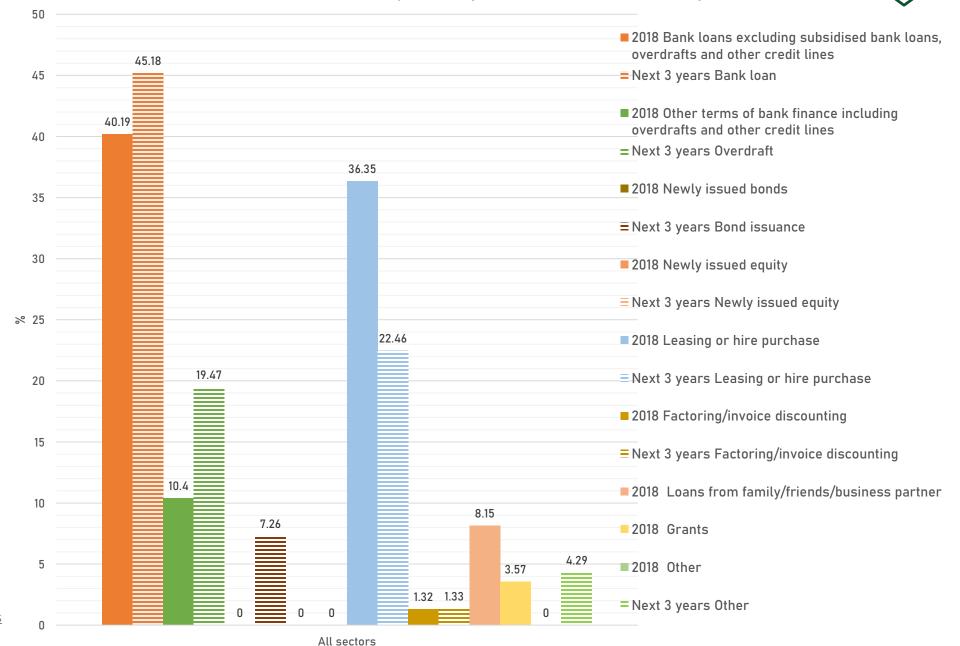
Source: Latvia, World Bank Doing

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

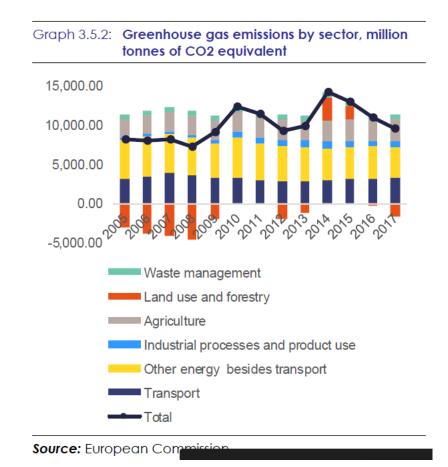


Source: Own calculations based on <u>EIB</u>
<u>Investment Survey - Tracking investment needs</u>
and constraints across Europe

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 lowcarbon economy: investments in re- and upskilling lacking



Supported by:





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?



Barriers for addressing investment gaps in Latvia

Barriers for energy efficiency projects in Latvia

Energy efficiency projects

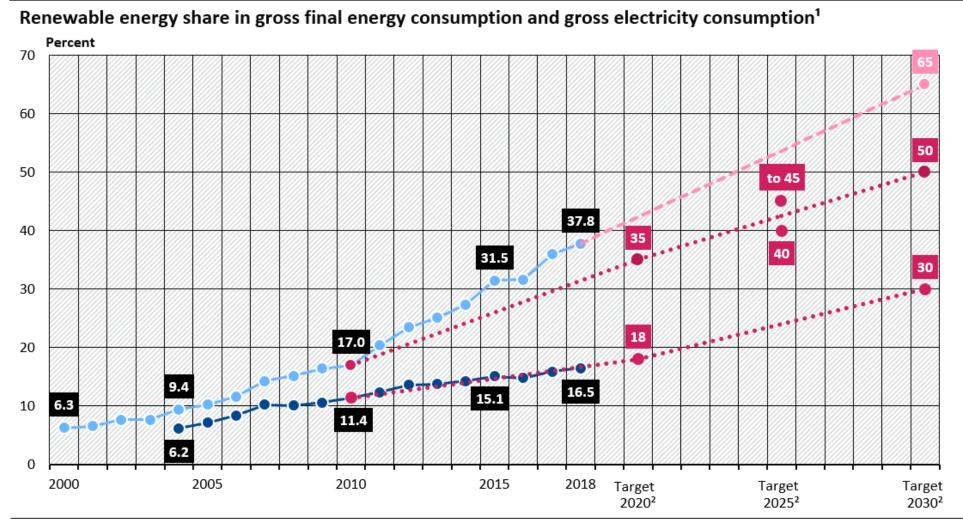
Housing:

- 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

--- Renewable energy share of gross electricity consumption

[\]

^{—●—} Renewable energy share of gross final energy consumption

¹ Gross final energy consumption calculated according to Energy Concept

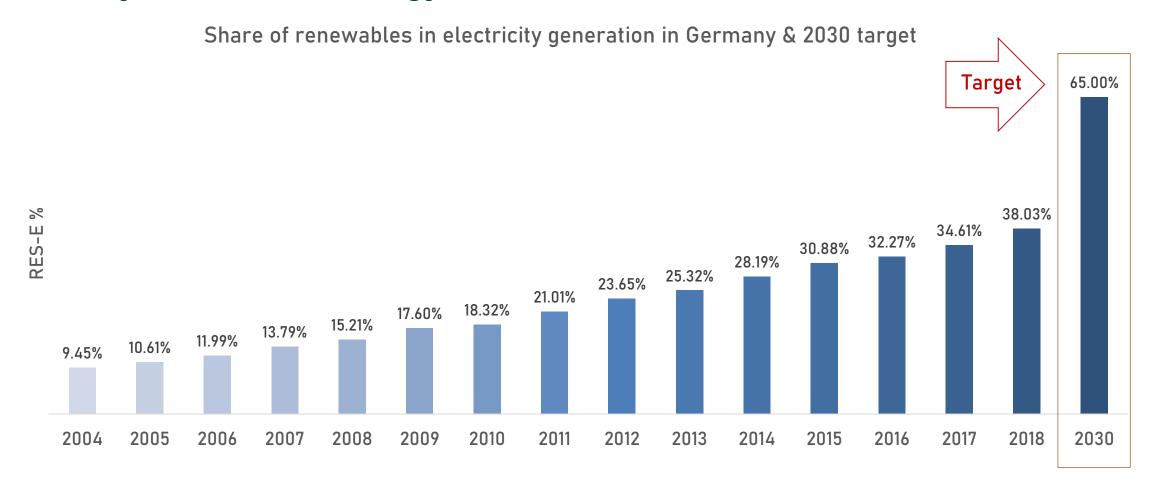
² Source target values: Energy Concept 2010 and EEG 2014; With the climate protection programme of the German government (2019), it was also decided to expand electricity production from renewable energies to 65 % of electricity consumption in 2030.

Germany: Energy efficiency

		Energy efficiency and climate targets in Germany			
	Base year	2017	2020 target	2050 target	
Primary energy consumption (compared to 2008)	14.380 PJ	-5,5 % 13.594 PJ	-20 % 11.504 PJ	-50 % 7.190 PJ	
Final energy productivity (compared to 2008) GDP (2010) per GJ of energy consumption	287 €/GJ	314 €/GJ**	368 €/GJ	687 €/GJ	
Gross electricity consumption (compared to 2011)	619 TWh	-3,3 % 599 TWh	-10 % 557 TWh	-25 % 464 TWh	
Energy consumption transport sector (compared to 2005)	2.586 PJ	+6,5 % 2.755 PJ*	-10 % 2.328 PJ	-40 % 1.552 PJ	
GHG emissions (compared to 1990)	1.251 Mio. t	-27,5 % 907 Mio. t%	-40 % 751 Mio. t %	-80 % 250 Mio. t	

Quelle: UBA-Berechnung auf Basis BReg, Energiekonzept, Stand 09/2010; AGEB, Auswertungstabellen, Stand 07/2018; AGEB, Strommix, Stand 12/2018; UBA, Nationale Trendtabellen für die deutsche Berichterstattung atmosphärischer Emissionen 1990-2017, Stand 12/2018

Germany: Renewable energy

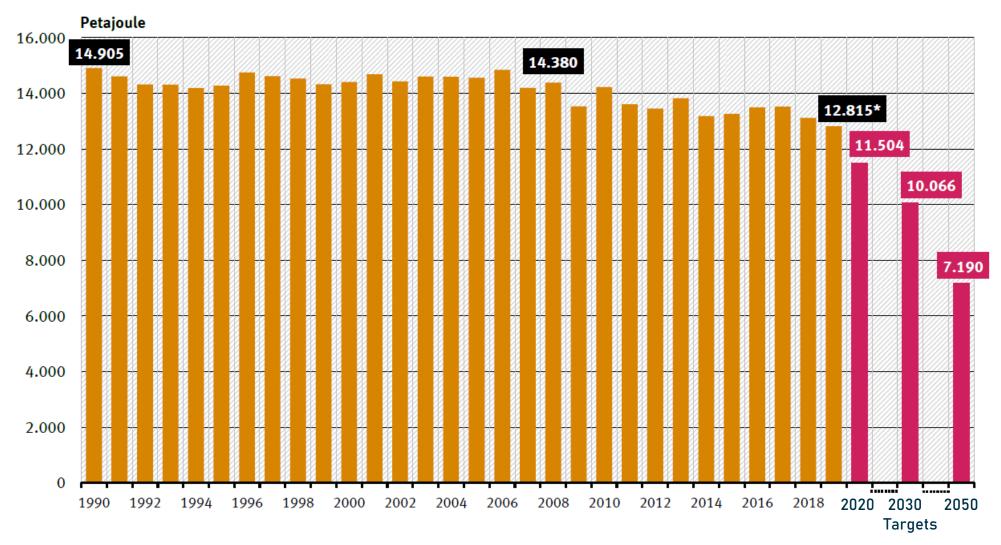


Considering developments in recent years, target likely to be met



Germany: Energy efficiency

Primary energy consumption



Targets:
Reduction of
primary energy
consumption
compared to
2008:

2020 by 20%, 2030 by 30% 2050 by 50%

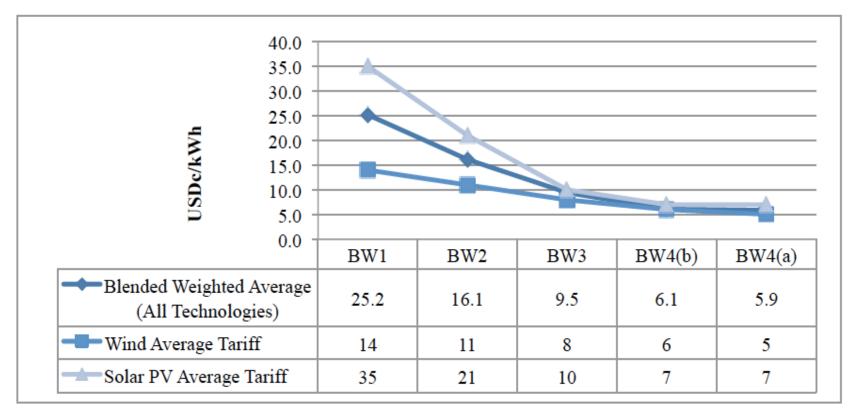


2020 & 2030 targets (reduction of 20% & 30% compared to 2008) unlikely to be met

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

