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

By David Rusnok & Ingmar Juergens

Riga, March 5<sup>th</sup> 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

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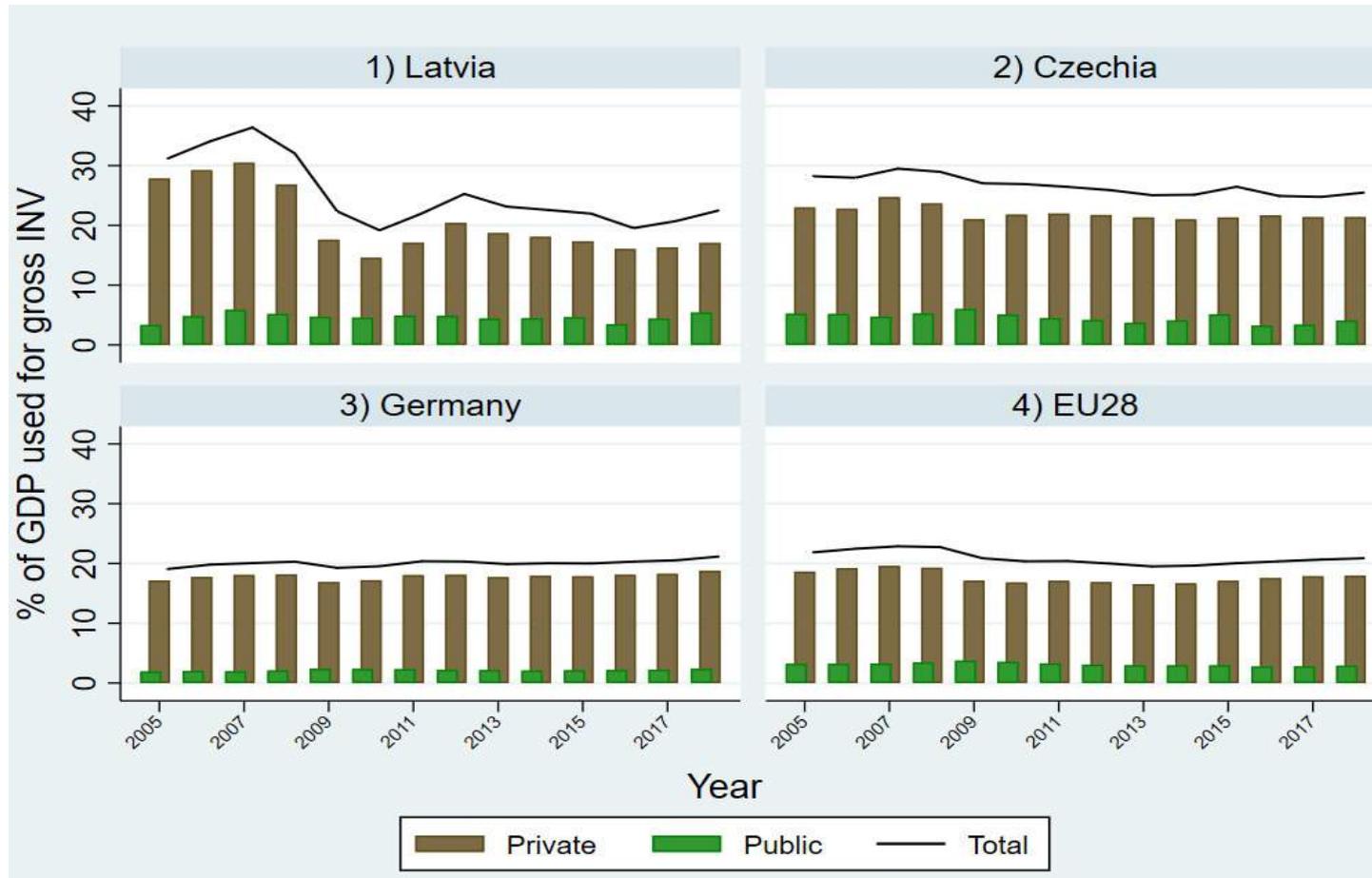
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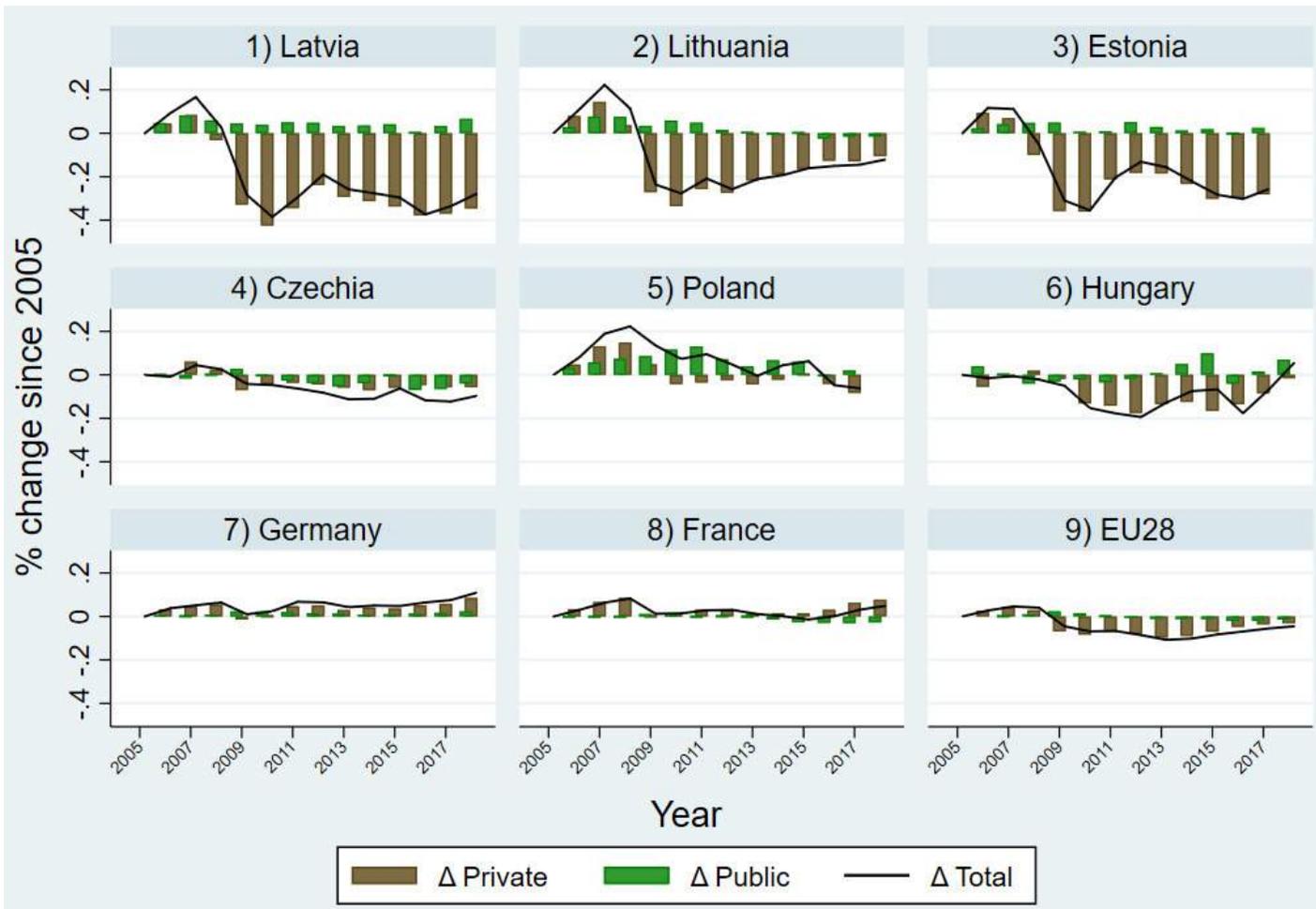
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# Investment rates: in absolute terms Latvia is slightly above EU average...



Source: Eurostat, own calculations; “private” consists of households and firms; investments defined as gross fixed capital formation relative to GDP

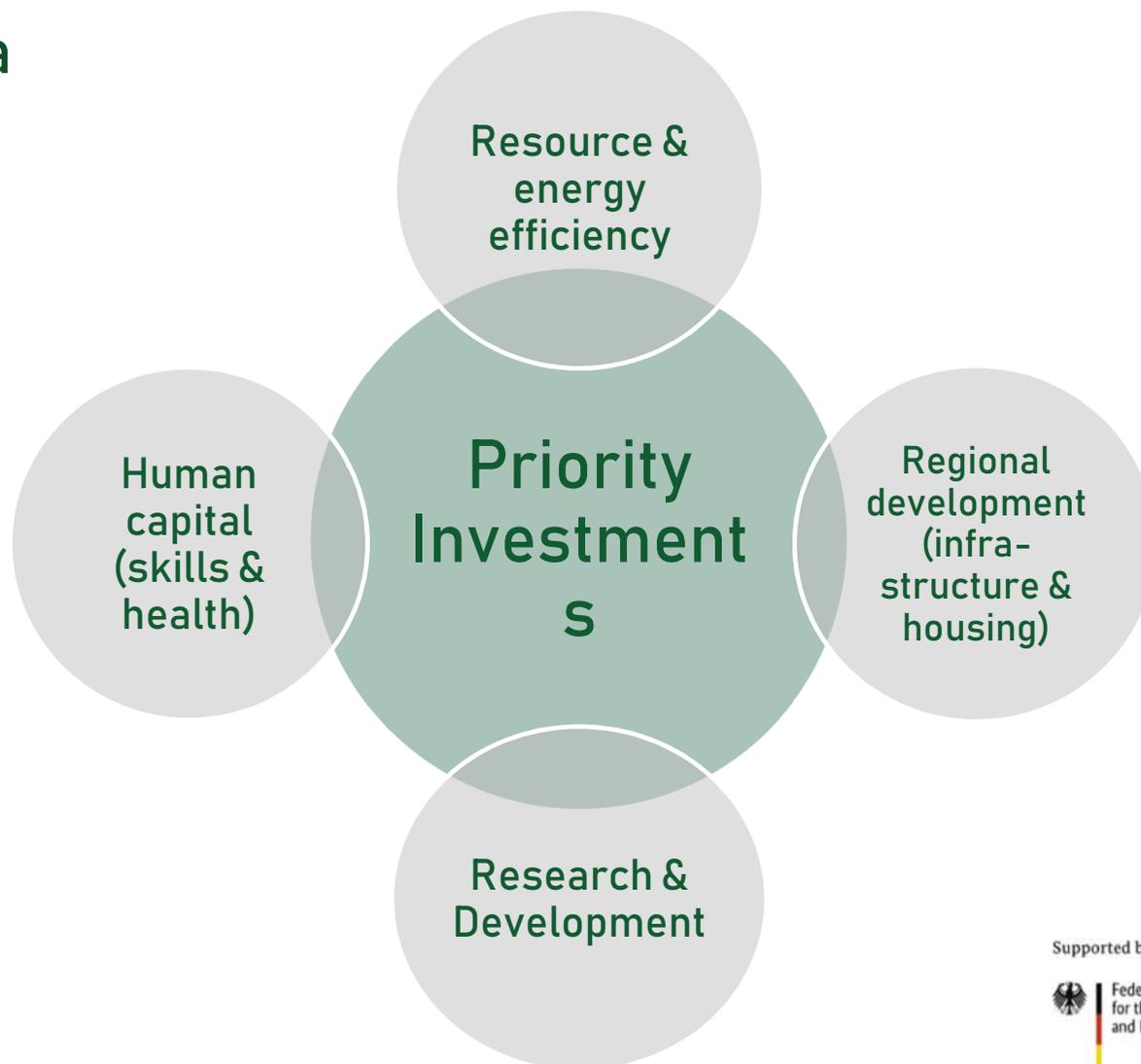
... however, private investments deteriorated despite historically conducive lending conditions



- 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



Source: European Semester Report 2020

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# Investment needs to reach 2030 targets



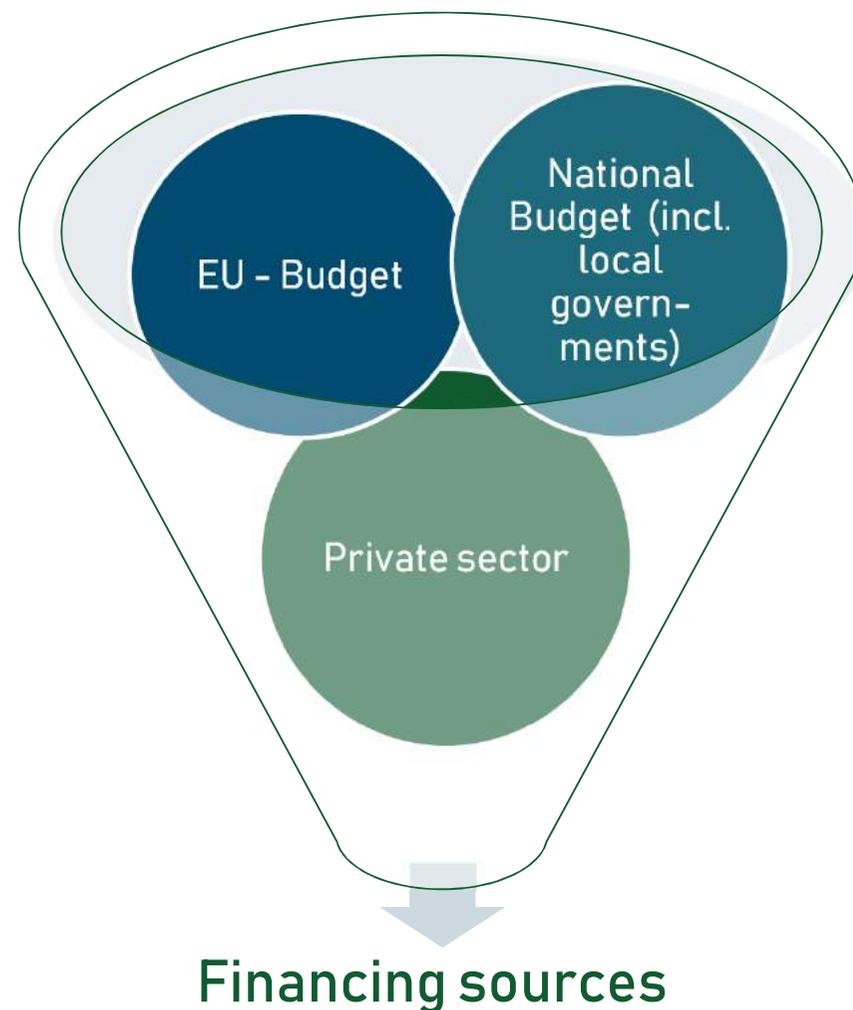
NECP: Total investments needs	million EUR, 2020-2030	millions EUR p.a.	%
EE building	1730	173	21
EE and RES in District heating and industry	1663	166	20
RES in electricity sector	1057	106	13
RES transport	989	99	12
Energy modernization of infrastructure	830	83	10
Waste & waste water managment	595	60	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
<b>Total</b>	<b>8192</b>	<b>819</b>	<b>100</b>

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

# Investment needs to reach 2030 targets

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



# Austria's final NECP Investment Needs Approach

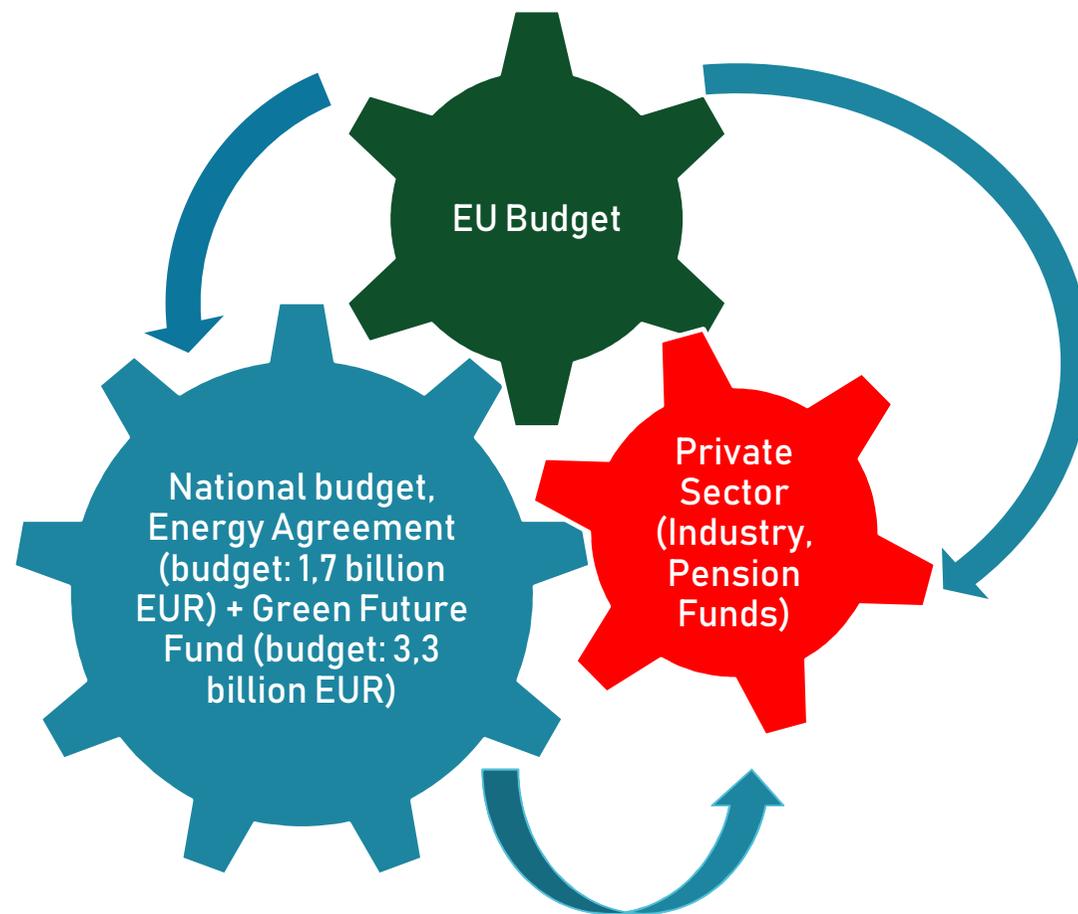
Source: National Energy and Climate Plan for Austria 2021-2030



NECP: Total investments needs	million EUR, until 2030	millions EUR p.a.	Sources		
			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			
<b>Total</b>	<b>173449</b>	<b>17345</b>			

## 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

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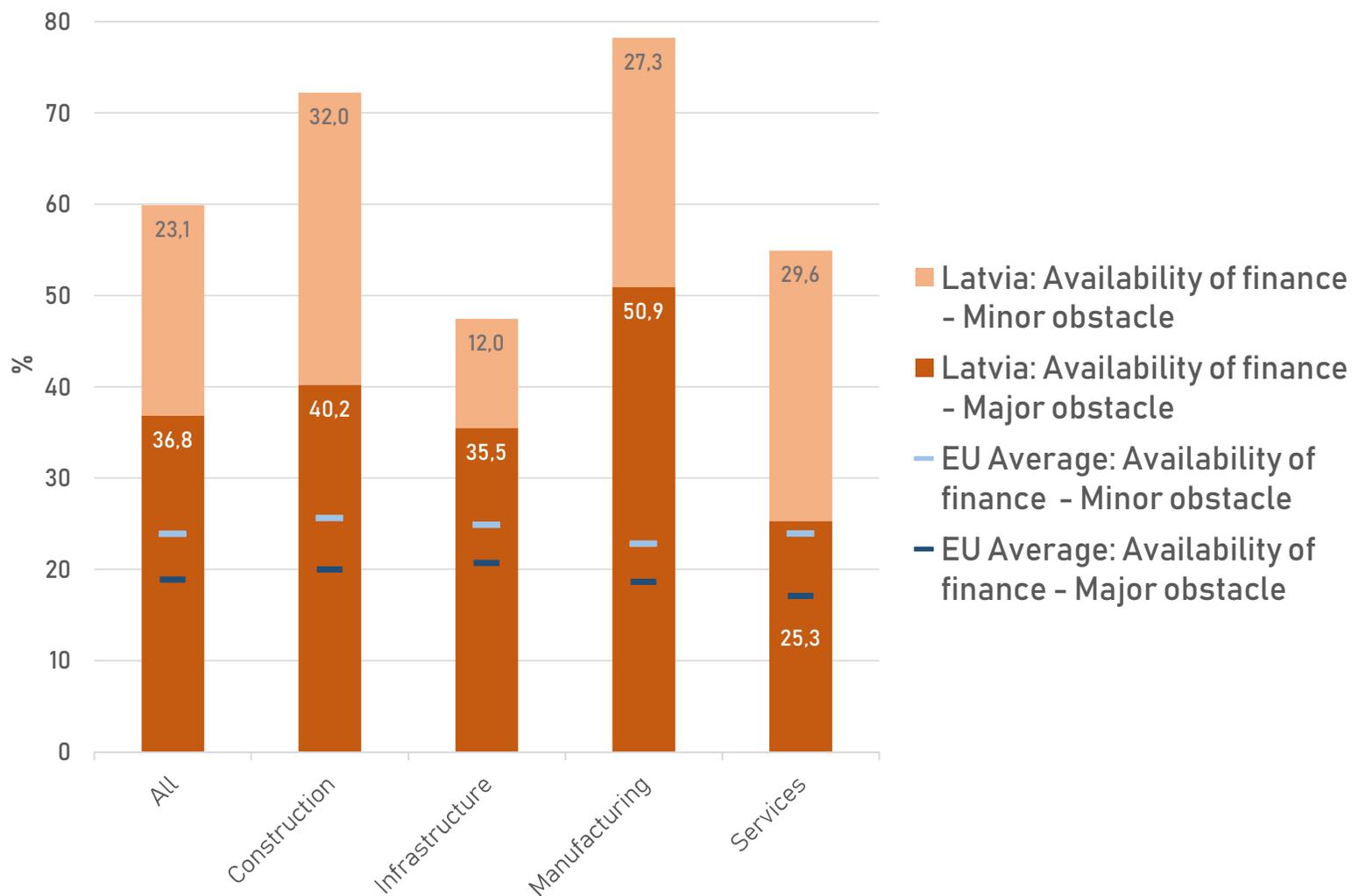
# Barriers to addressing investment gaps in Latvia

## 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 [EIB Investment Survey - Tracking investment needs and constraints across Europe](#)



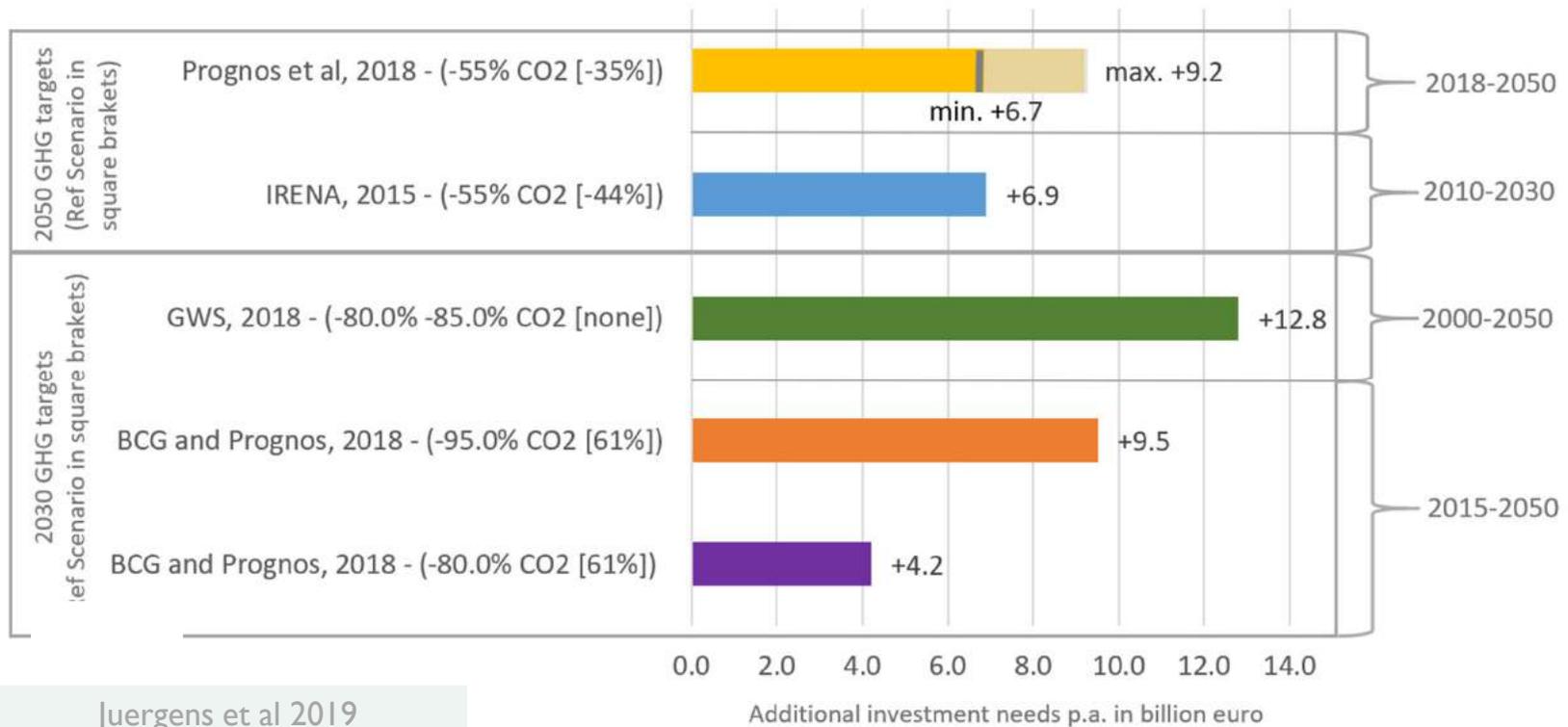
## Barriers to addressing investment gaps in Latvia

### Barriers for renewable energy in Latvia

- Uncertainty regarding RE energy policy in Latvia, especially future of feed-in tariff
- ...

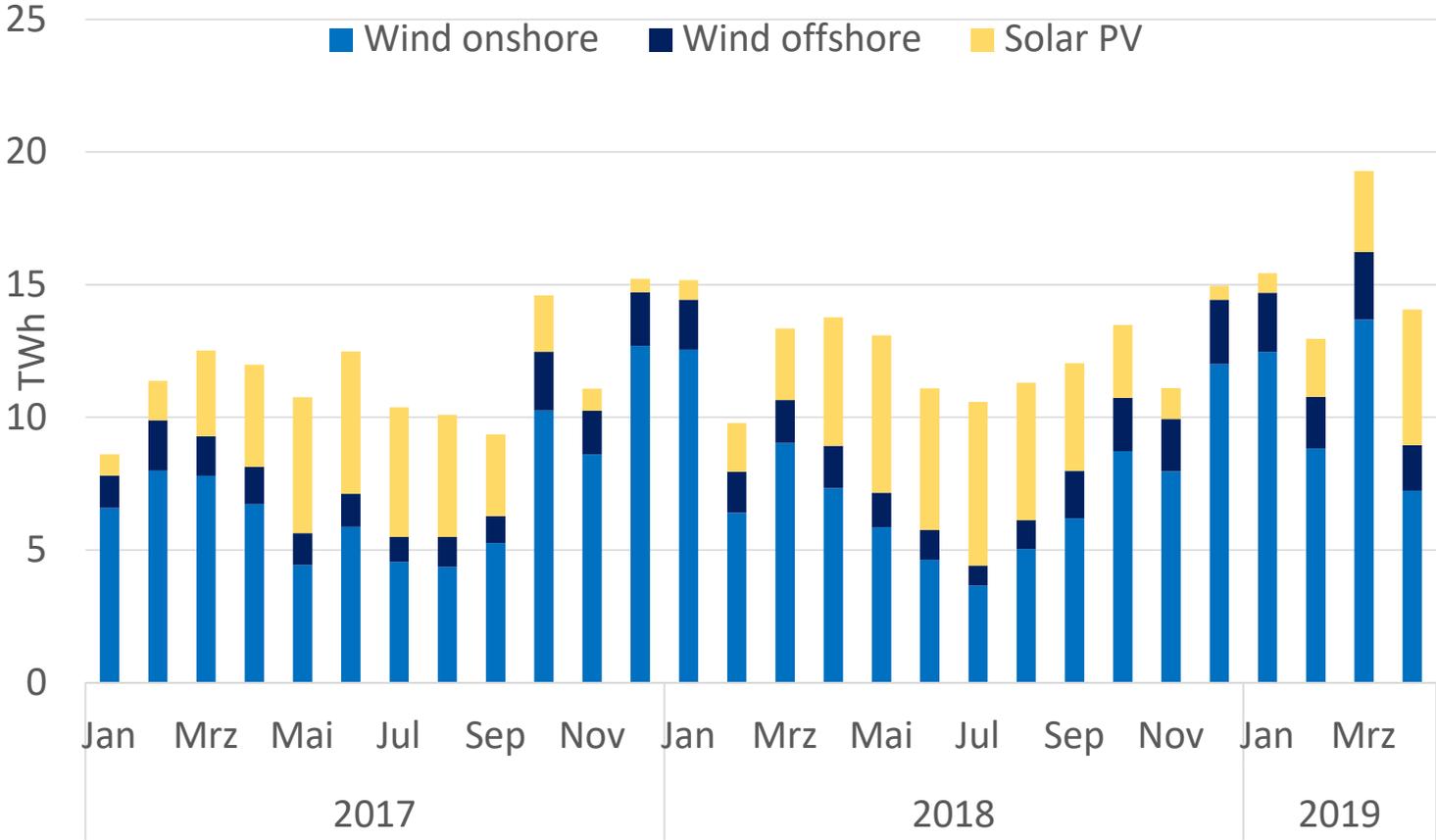
# Investment Needs for Renewable Energy in Germany

What do we know today? Selected studies in the renewable energy sector, Germany



Juergens et al 2019

# A note on the complementarity of wind and solar power production over time



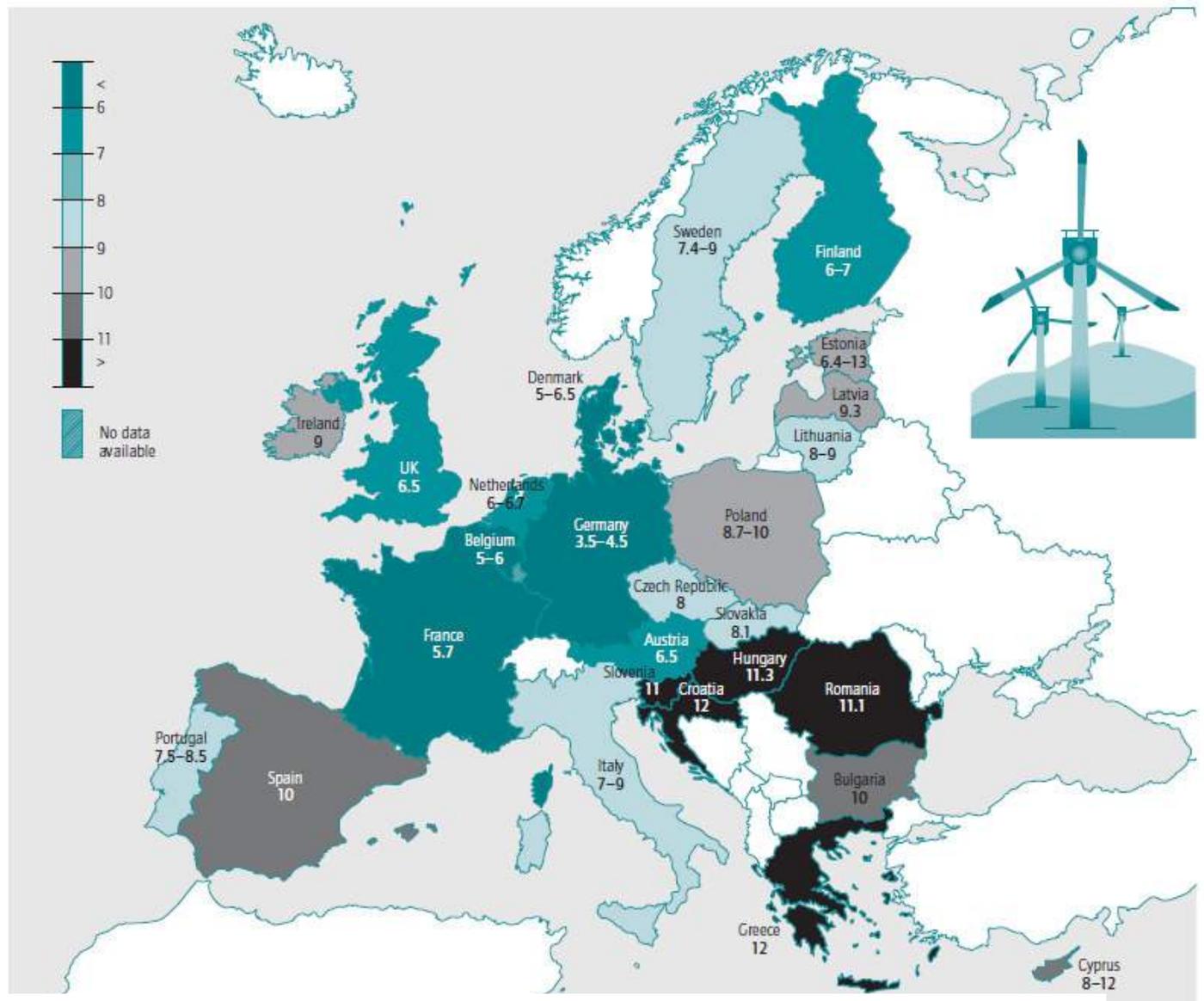
In the Northern Hemisphere, wind and solar power are rather complementary.

Source: Nils May, Own illustration, based on Open Power System Data (2019)



# Financing costs of onshore wind energy across the EU

Weighted average cost of capital (in percent)



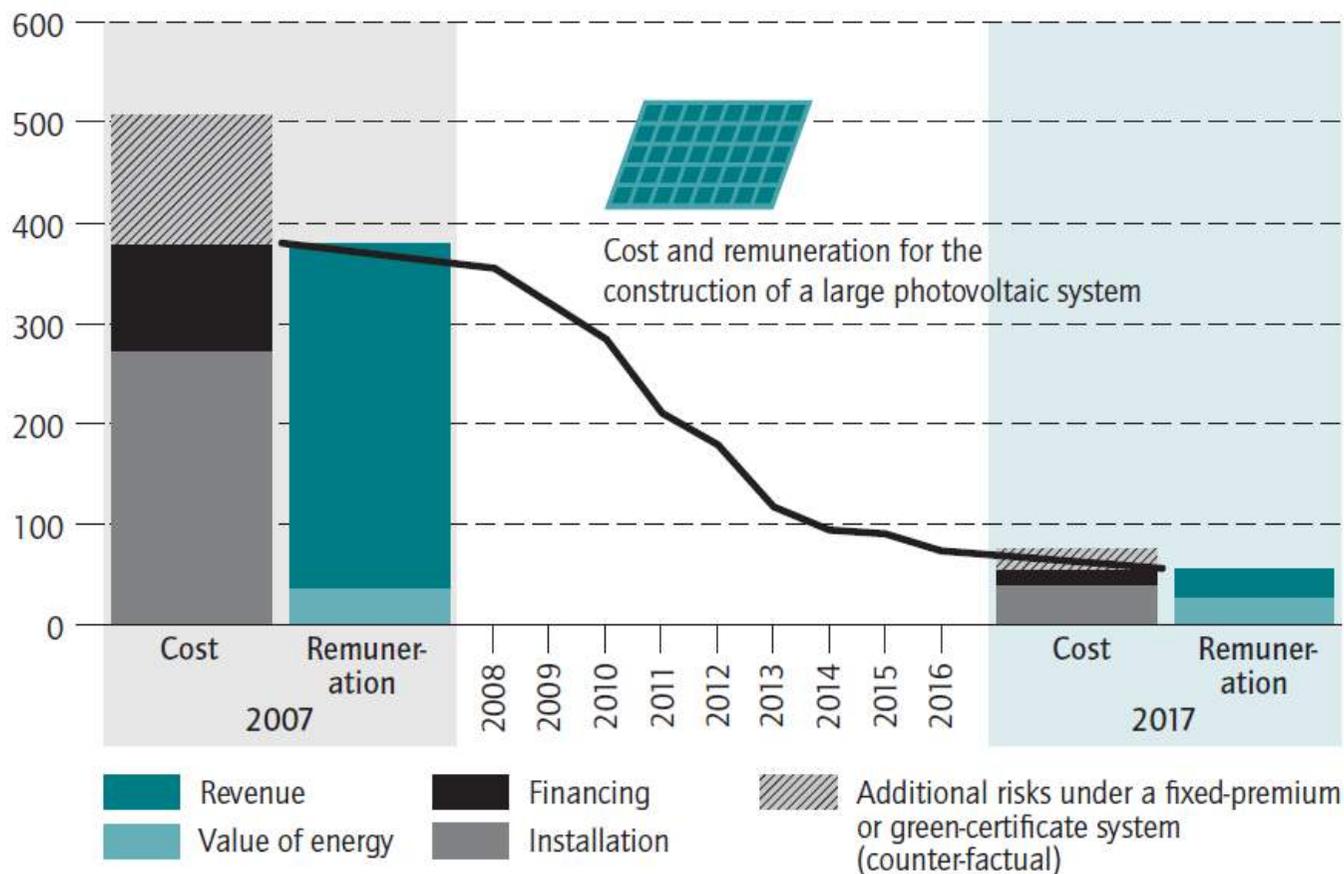
Source: Paul Noothout, David de Jager, Lucie Tesnière, Sascha van Rooijen, Nikolaos Karypidis (all Ecofys), Robert Brückmann, Filip Jirouš (both edareon), Barbara Breitschopf (Fraunhofer ISI), Dimitrios Angelopoulos, Haris Doukas (beide EPU-NTUA), Inga Konstantinavičiūtė (LEI) und Gustav Resch (TU Vienna) 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 euro per megawatt-hour

Market risks have gained importance relative to regulatory risks

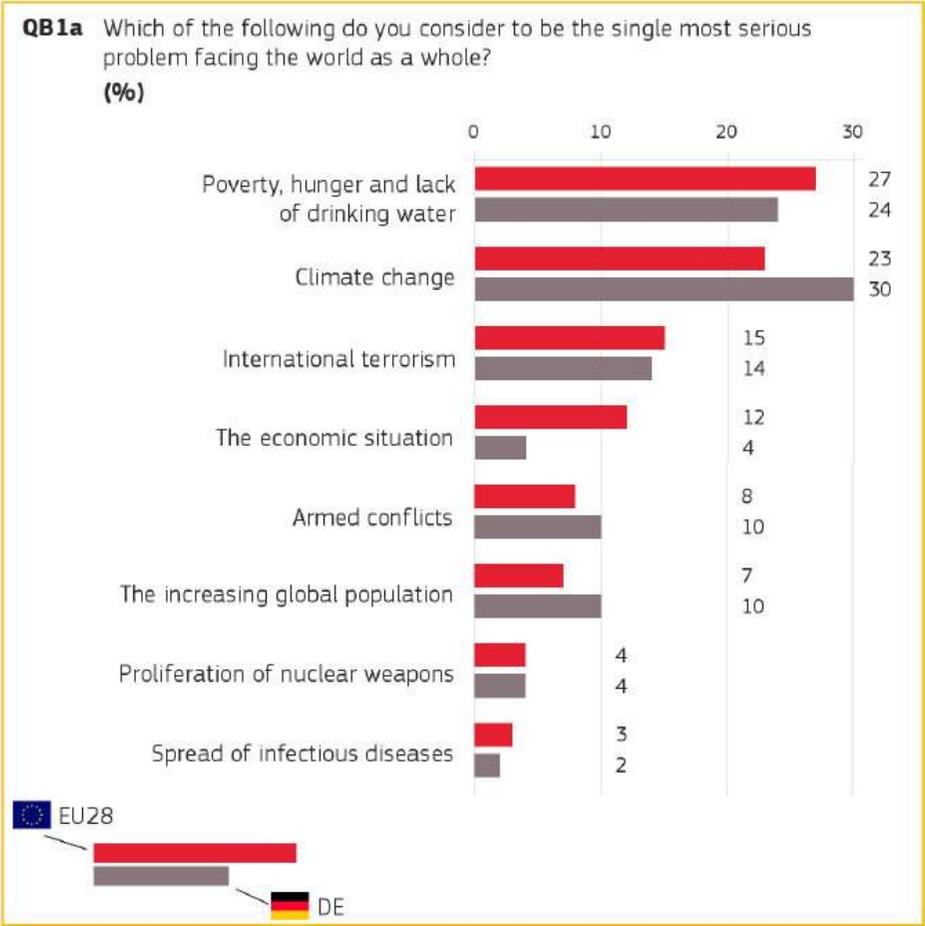


## Main messages



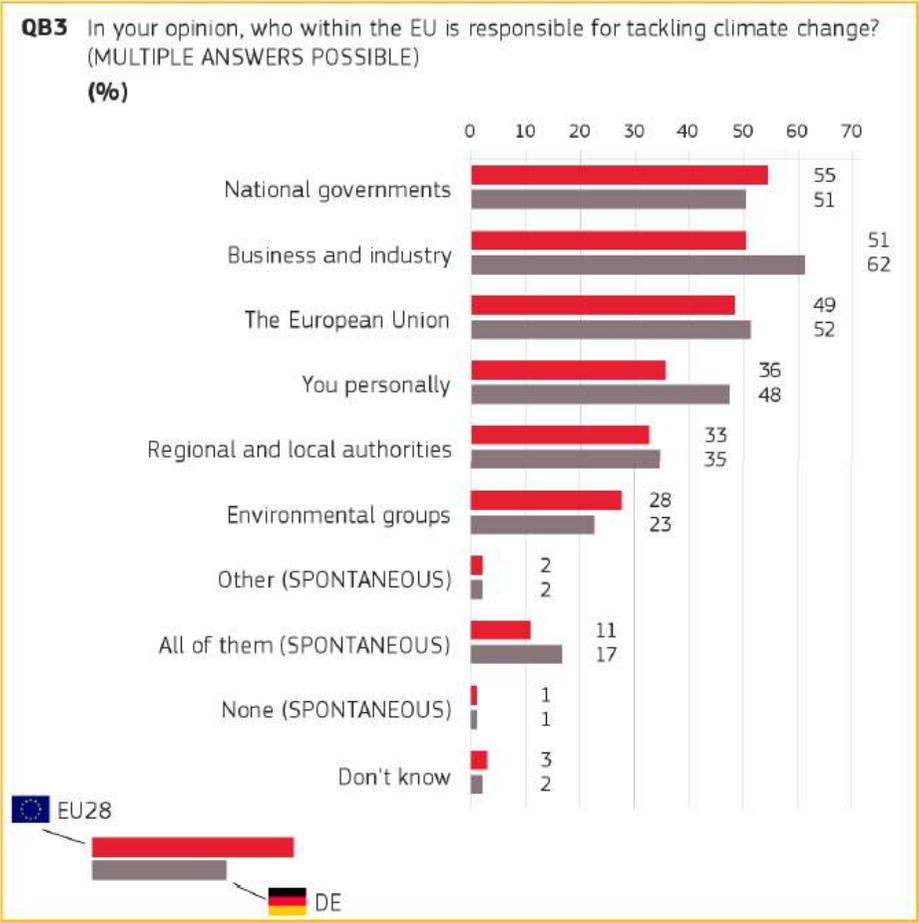
- Transition towards 2030 climate targets / 2050 neutrality requires large investments
- Financing targets requires strategy to link national + EU financing sources AND private capital
- Final NECPs are still very vague on financing sources, especially hardly any vision how to include private sector
- 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.

# Special Eurobarometer, April 2019: climate crisis perceived as biggest global problem!



Source: [https://ec.europa.eu/clima/sites/clima/files/support/docs/de\\_climate\\_2019\\_en.pdf](https://ec.europa.eu/clima/sites/clima/files/support/docs/de_climate_2019_en.pdf)

# Special Eurobarometer, April 2019: High expectations toward the corporate sector



Source: [https://ec.europa.eu/clima/sites/clima/files/support/docs/de\\_climate\\_2019\\_en.pdf](https://ec.europa.eu/clima/sites/clima/files/support/docs/de_climate_2019_en.pdf)



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in co-operation with Stefanie Berendsen and Malte Hessenius

Thank you!

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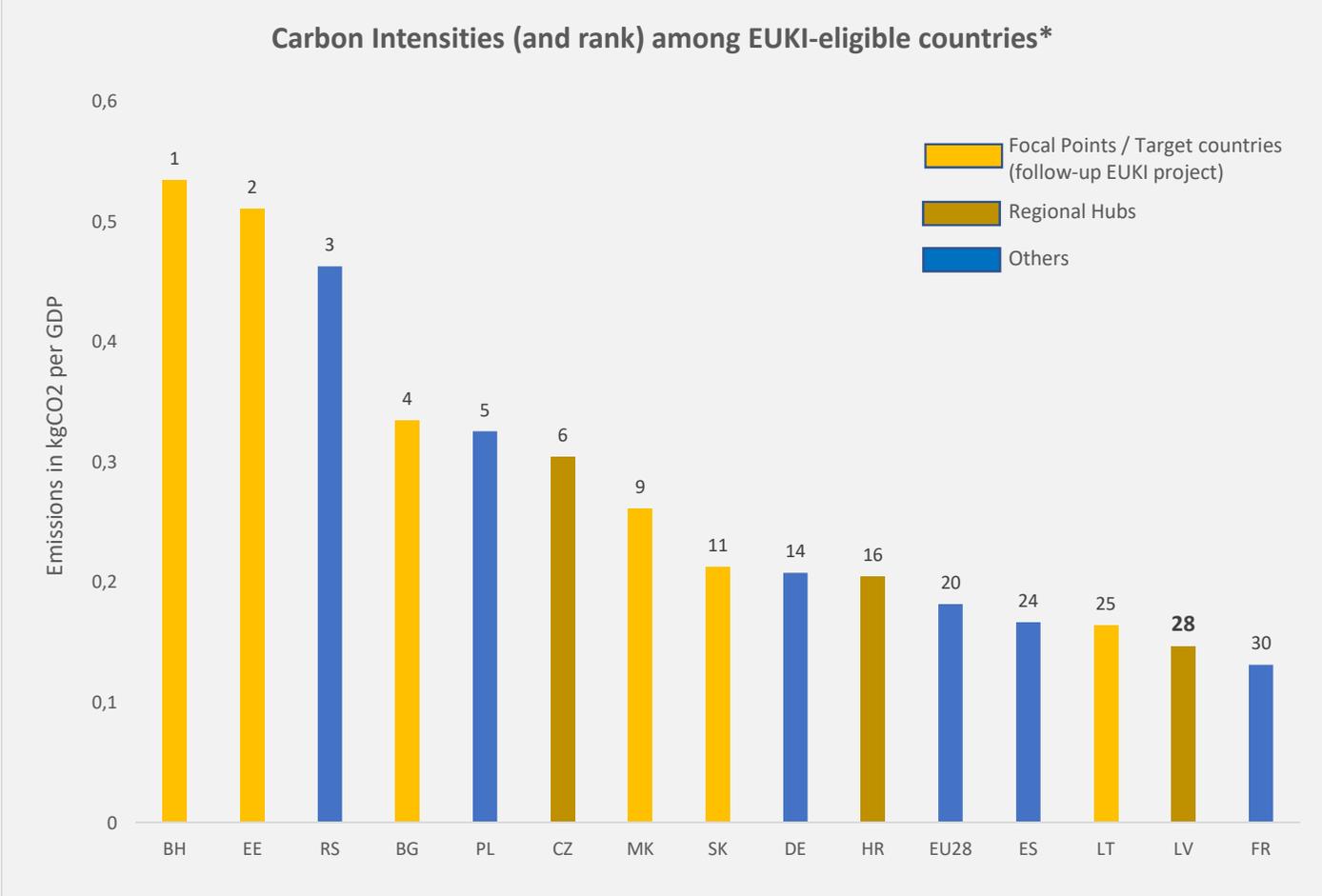
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## Annex: Additional Material

# Carbon intensity: Latvia below the EU average



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



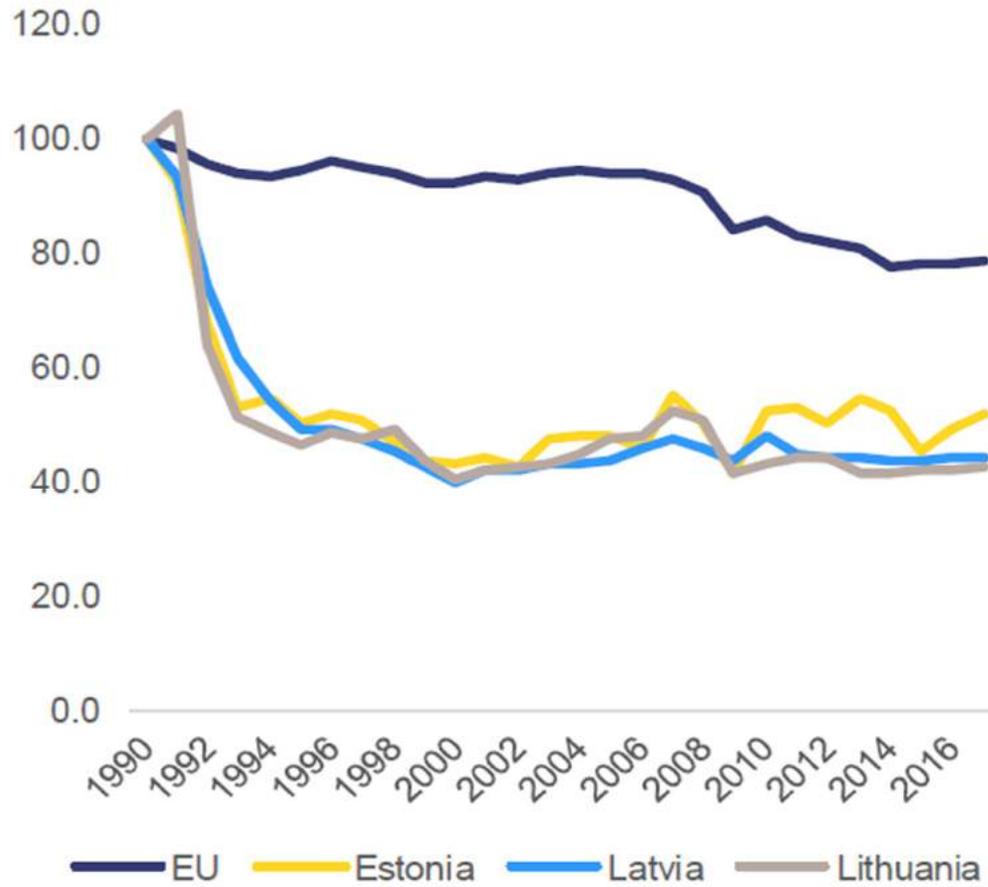
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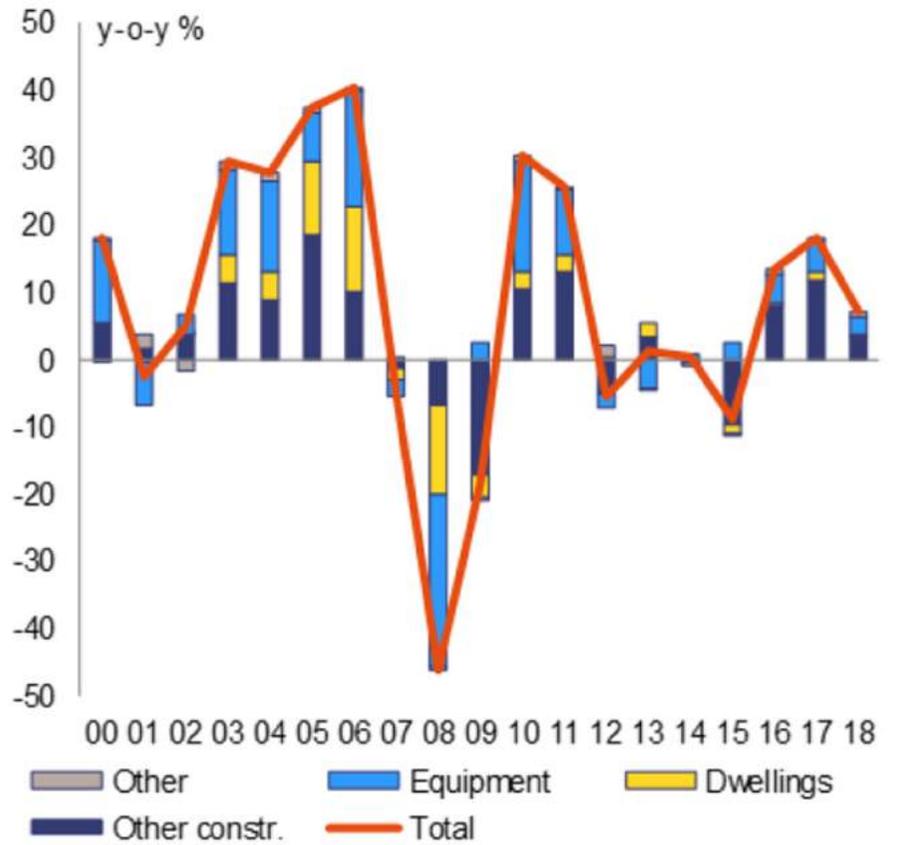
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Greenhouse gas emissions, index, 1990=100



Source: European Commission

# General Investment Situation and Needs in Latvia



Source: European Commission

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

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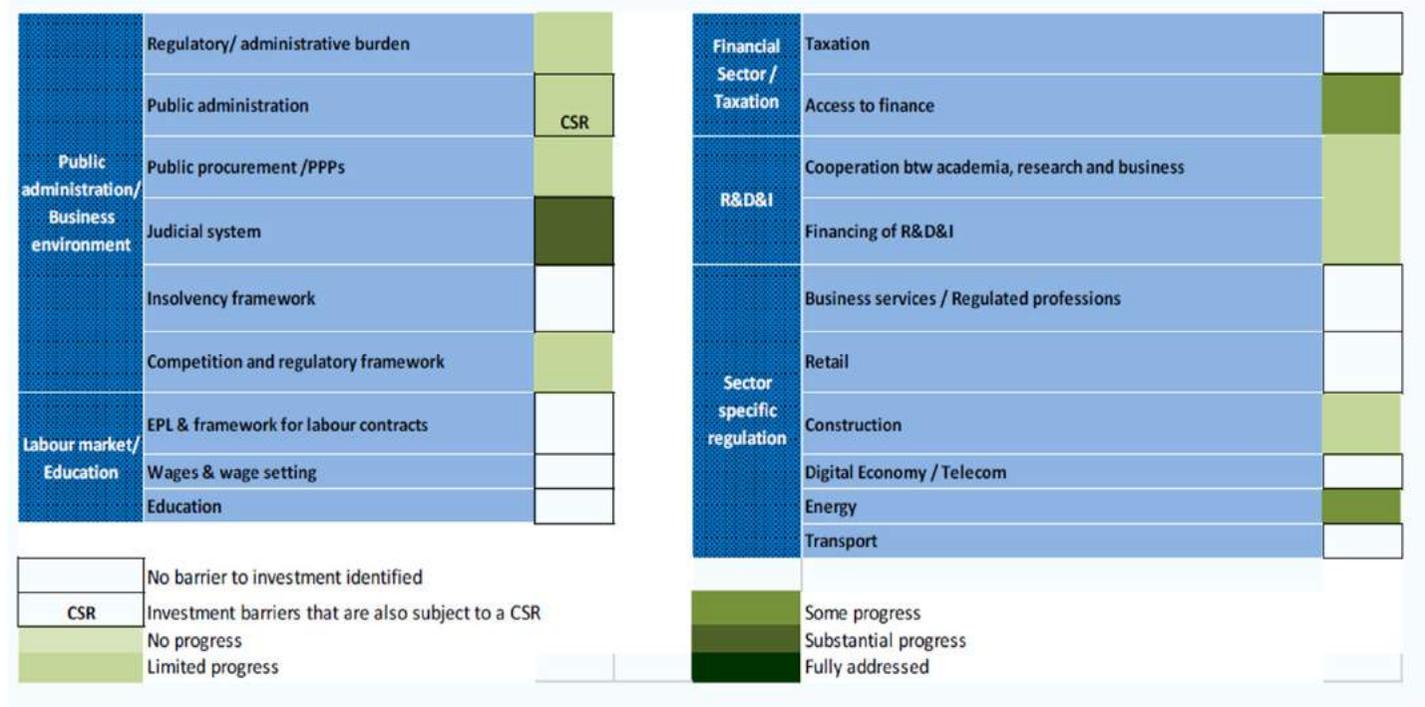


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# Barriers for addressing investment gaps in Latvia

## 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)



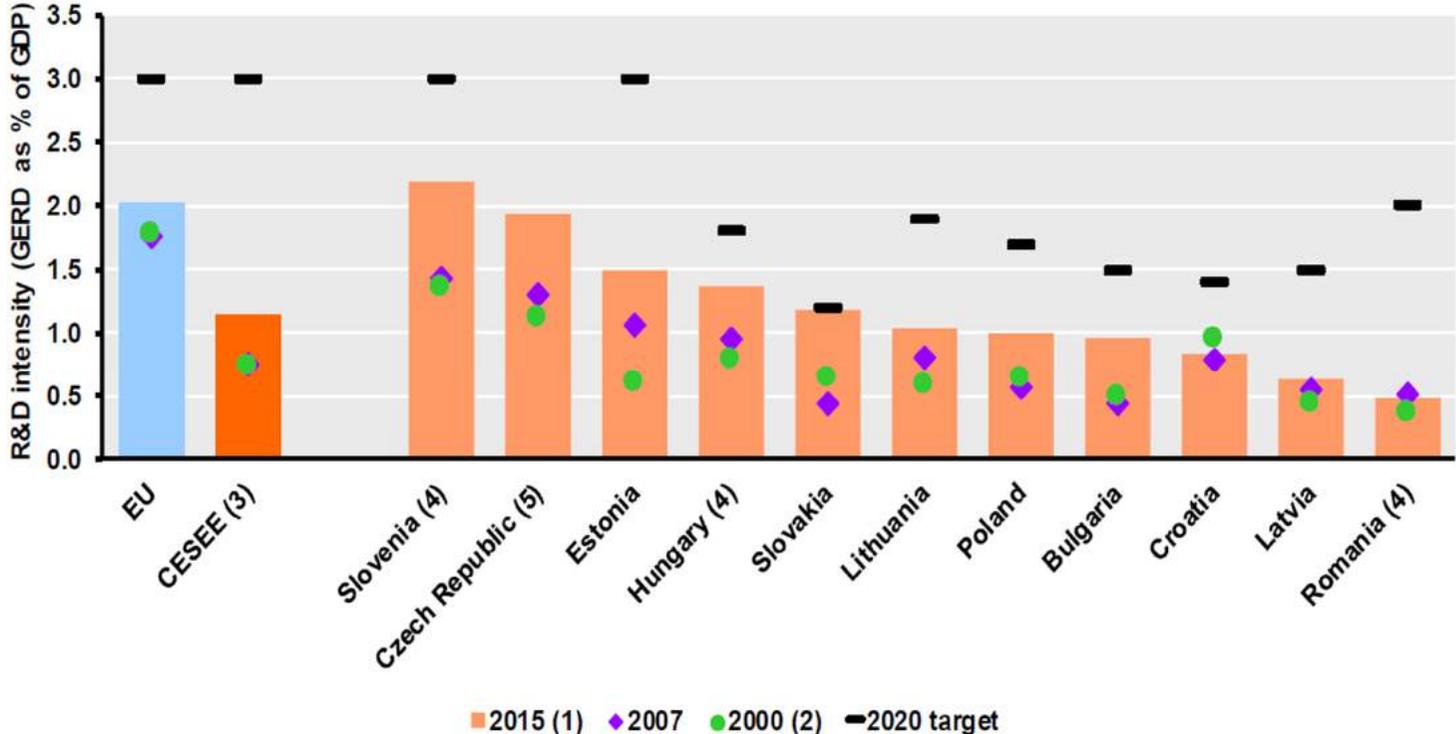
Source: European Semester Report 2020, Flash Eurobarometer 459 'Investment in the EU', 2019

# Barriers for addressing investment gaps in Latvia

## General Barriers



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



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



Time



Cost



Building quality control index

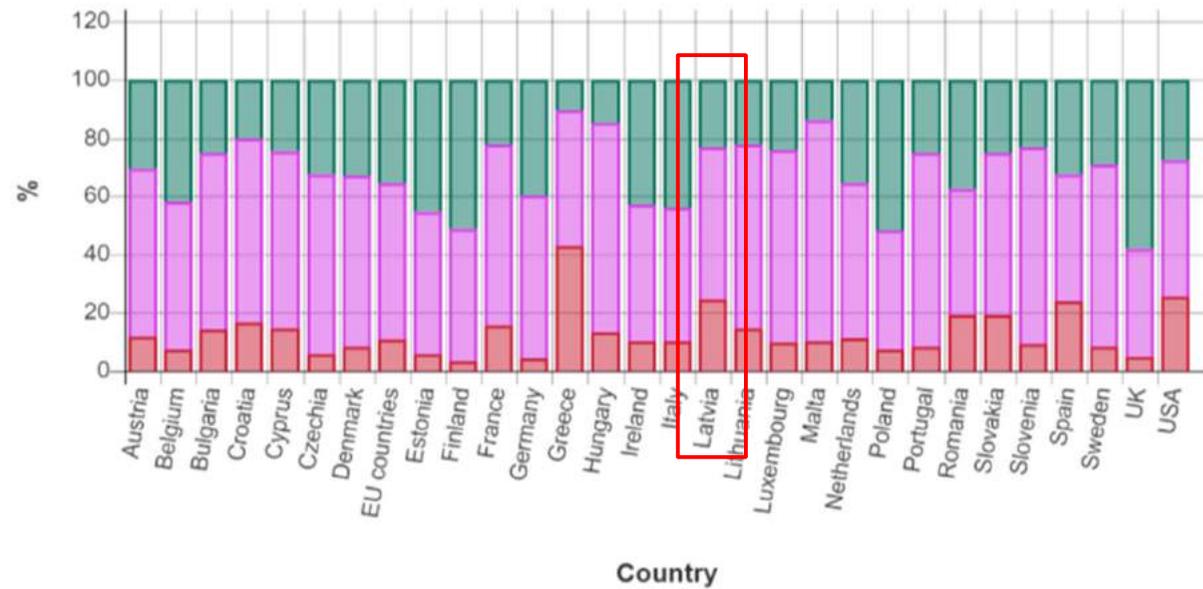
Figure - Dealing with Construction Permits in Latvia and comparator economies - Ranking and Score



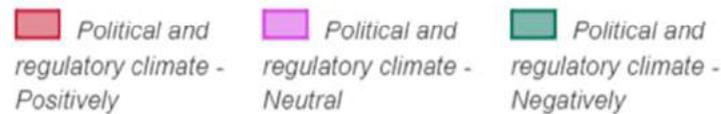
Source: Latvia, World Bank Doing Business 2020

# Barriers for addressing investment gaps in Latvia

Factors influencing firms' ability to carry out planned investment: political and regulatory climate: 2018 [Cross country: EU]



## Legend (Click to interact)



## Description

All firms that have invested or plan to invest in the current financial year (excluding don't know/refused responses)

Q23. How do each of the following affect your ability to carry out your planned investment. Does it affect it positively or negatively, or make no difference at all?

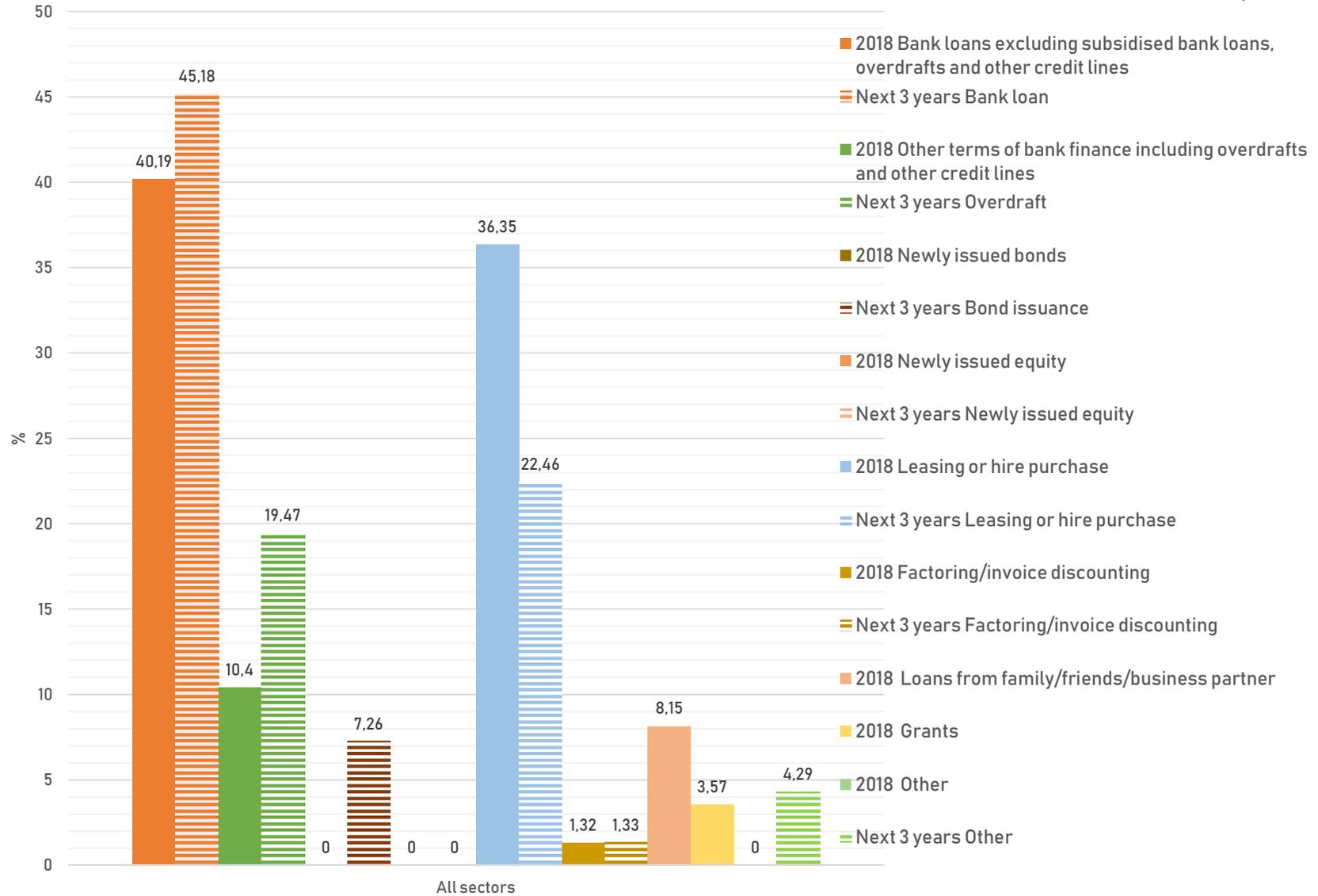
## Source

European Investment Bank - EIBIS

# 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](#)

# 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
- **Reform Support Programme ?**

## Private Sector:

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

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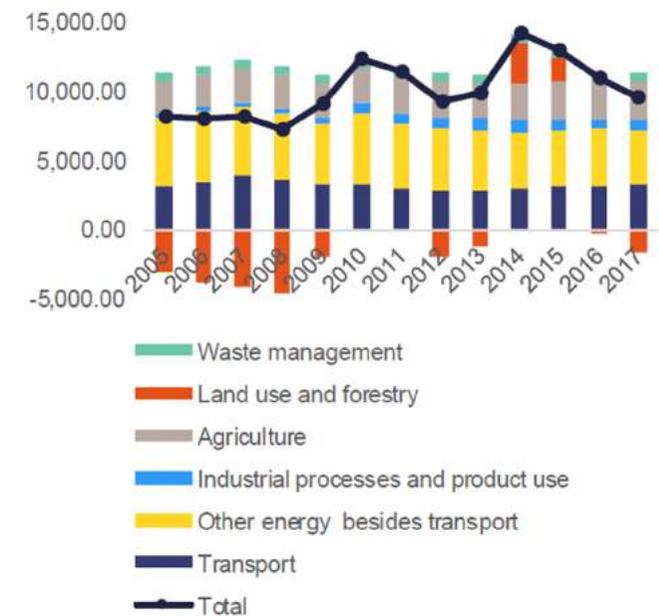
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# Barriers for addressing investment gaps in Latvia

## 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

Graph 3.5.2: Greenhouse gas emissions by sector, million tonnes of CO2 equivalent



Source: European Commission

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# Germany: Renewable energy

Renewable energy share in gross final energy consumption and gross electricity consumption<sup>1</sup>



↓  
Considering developments in recent years, target likely to be met

St



<sup>1</sup> Gross final energy consumption calculated according to Energy Concept

<sup>2</sup> 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.

Source: German Environment Agency on the basis of Working Group on Renewable Energy Statistics (AGEE-Stat), as of 12/2019

# 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) <i>GDP (2010) per GJ of energy consumption</i>	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

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# 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

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Source: European Semester Report 2020

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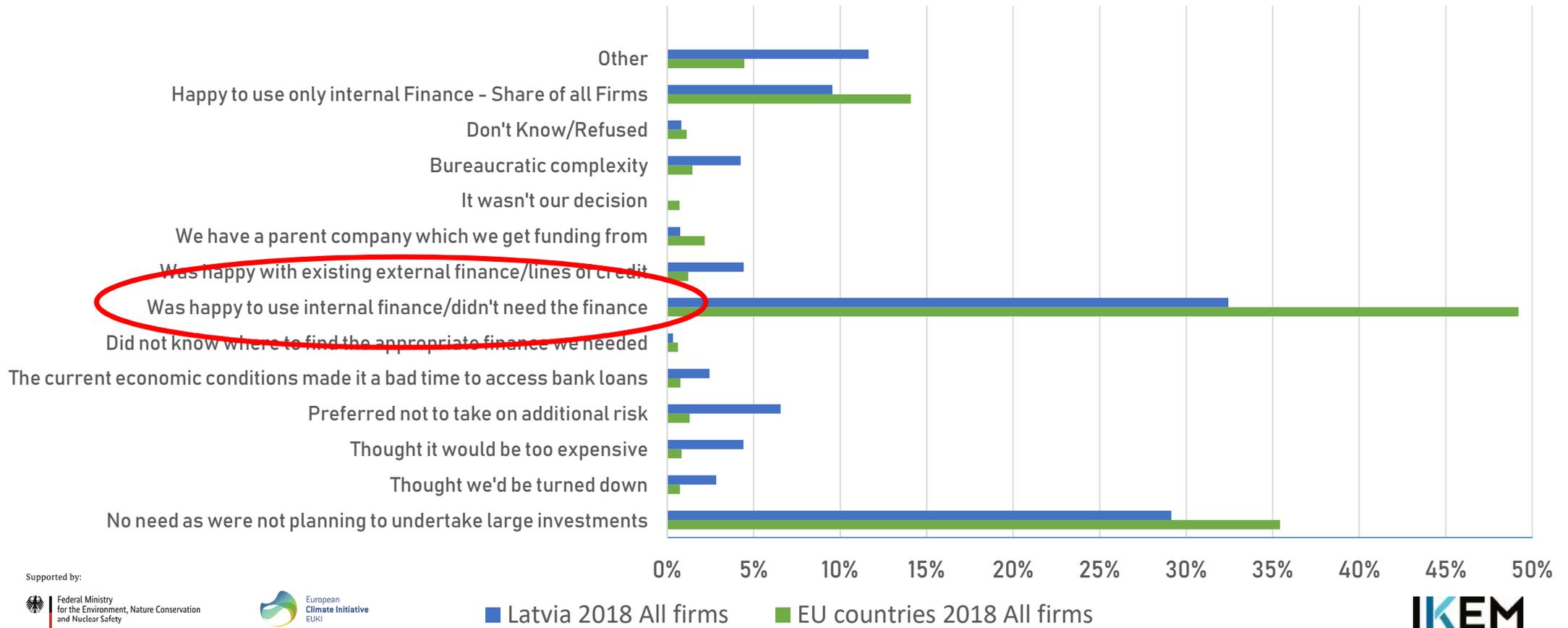


# Barriers for addressing investment gaps in Latvia

## 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?



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■ Latvia 2018 All firms ■ EU countries 2018 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

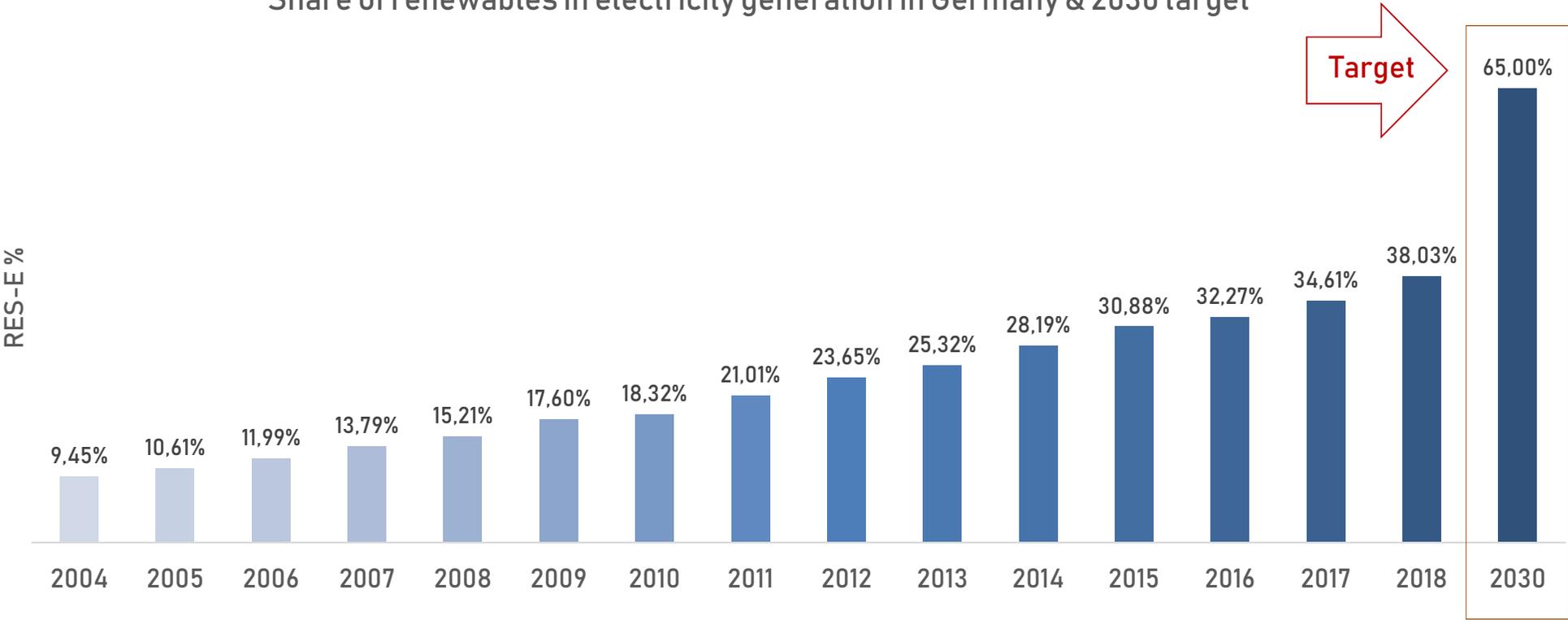
#### Industry:

- Lack of knowledge and skills
- Lack of technical assistance / uptake of existing support low

# Germany: Renewable energy



Share of renewables in electricity generation in Germany & 2030 target



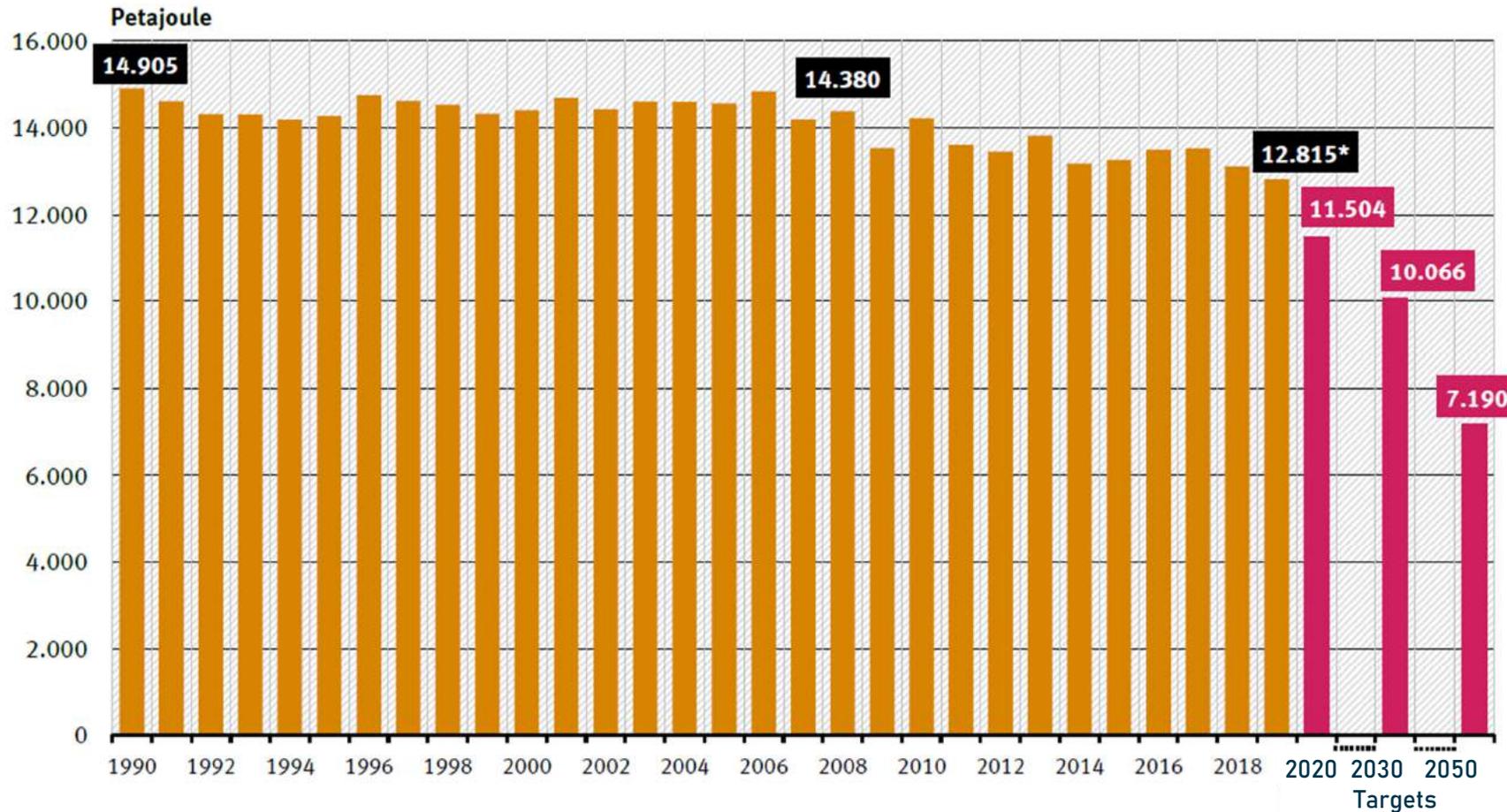
➔ Considering developments in recent years, target likely to be met

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

# Germany: Energy efficiency

## Primary energy consumption

Source: Umweltbundesamt auf Basis Arbeitsgemeinschaft Energiebilanzen (AGEB), Auswertungstabellen zur Energiebilanz für die Bundesrepublik Deutschland 1990 bis 2018, Stand 10/2019; für 2018/2019: AGEB, Primärenergieverbrauch, Stand 12/2019a



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



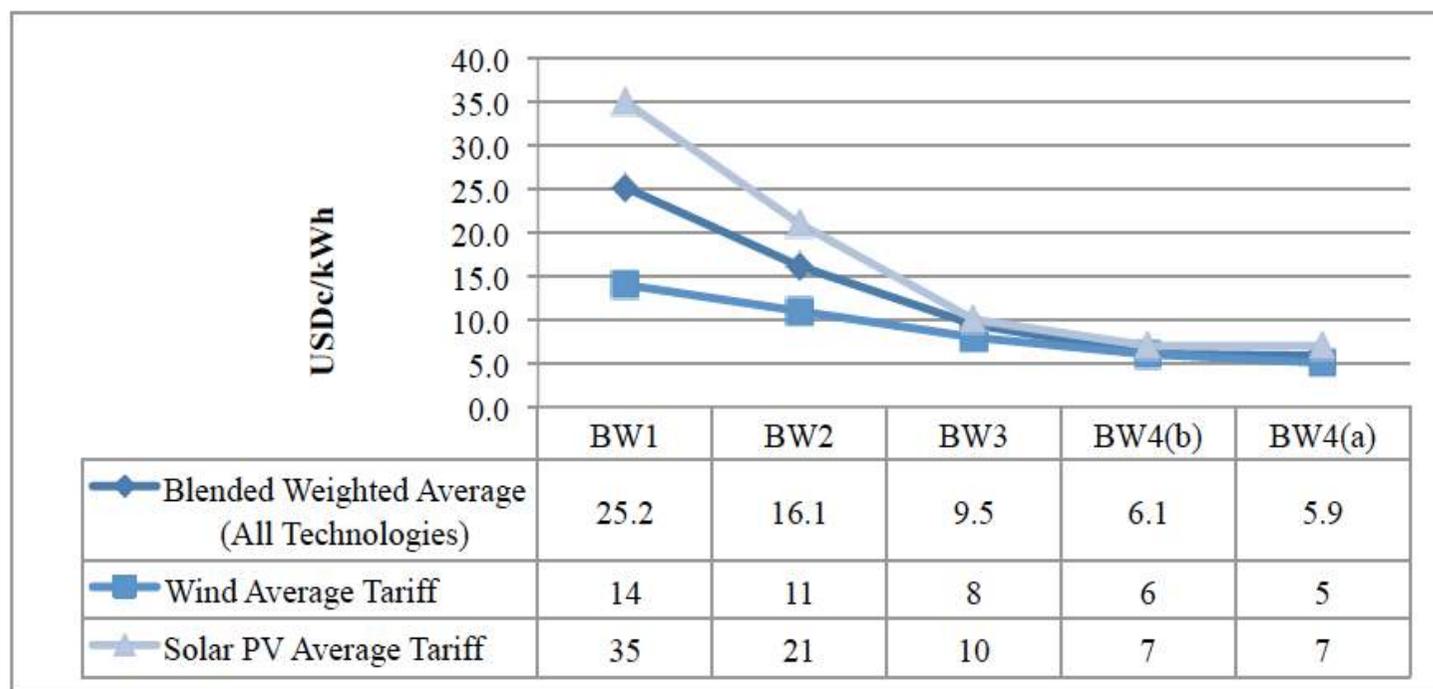
2020 & 2030 targets (reduction of 20% & 30% compared to 2008) unlikely to be met

# 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



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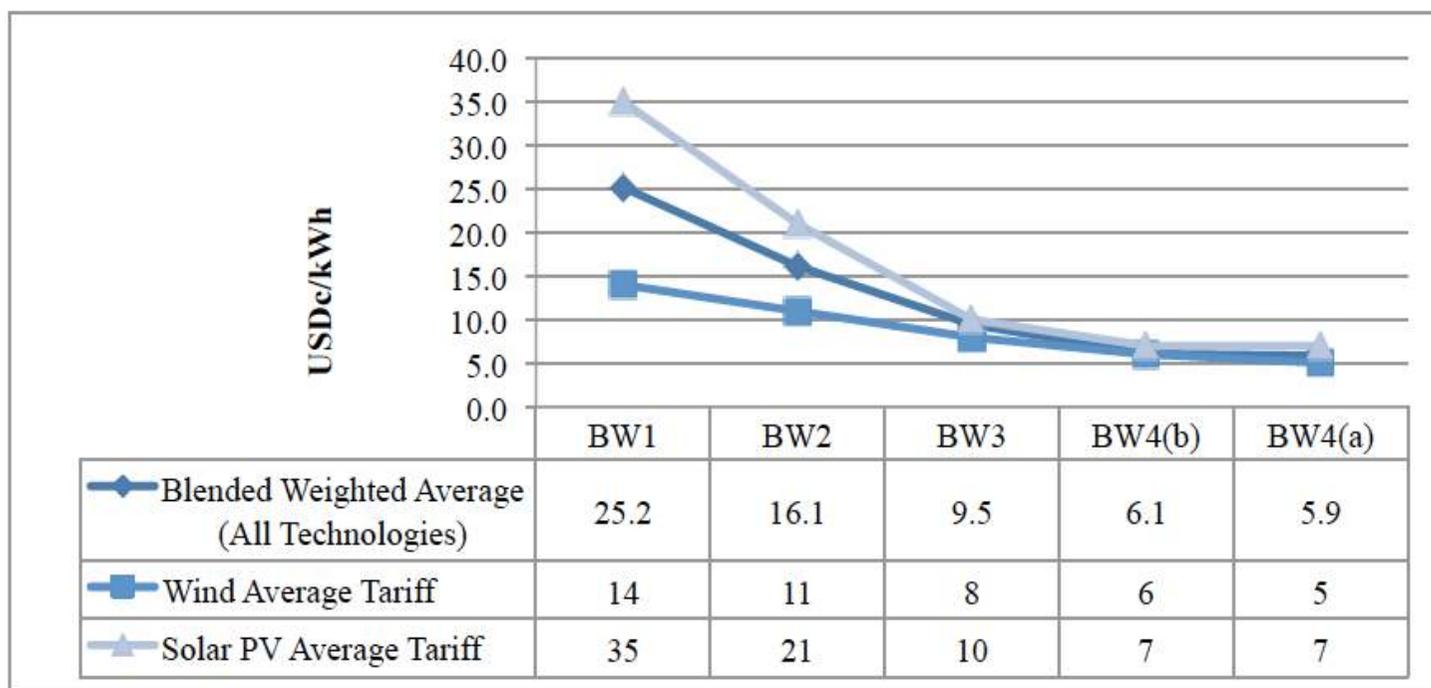


# Barriers for addressing investment gaps in Latvia

## Barriers for renewable energy in Latvia



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



## Investment needs for Renewable Energy

What do we know today? Selected studies in the renewable energy sector, Germany

ID	Study	Time	Investment needs p.a.		Reduction target
			Min. bn €	Max. bn €	
	Authors	Period			Ref Scenario in square brackets
	<b>2050 GHG targets</b>				
1	BCG and Prognos (2018)	2015-50	+4.2		-80.0% CO2 [61%]
2	BCG and Prognos (2018)	2015-50	+9.5		-95.0% CO2 [61%]
2	GWS (2018)	2000-50	+12.8		-80.0% -85.0% CO2 [none]
4	<b>2030 GHG targets</b>				
5	IRENA (2015)	2010-30	+6.9		-55% CO2 [-44%]
6	Prognos et al (2018)	2018-30	+6.7	+9.2	-55% CO2 [-35%]

Juergens et al 2019