EU CITY LAB ON ENERGY TRANSITION

Viladecans (ES)
23 - 24 November 2023

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The European context

by Jenny Koutsomarkou,
URBACT Secretariat

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How it all started…

URBACT & EUI studies (Oct2022 & 2023) on needs of cities in the field of:

Green & just transition: a shift to new affordable models that value the environment & prioritise resource-efficient & sustainable economies, people's wellbeing without leaving anyone behind.

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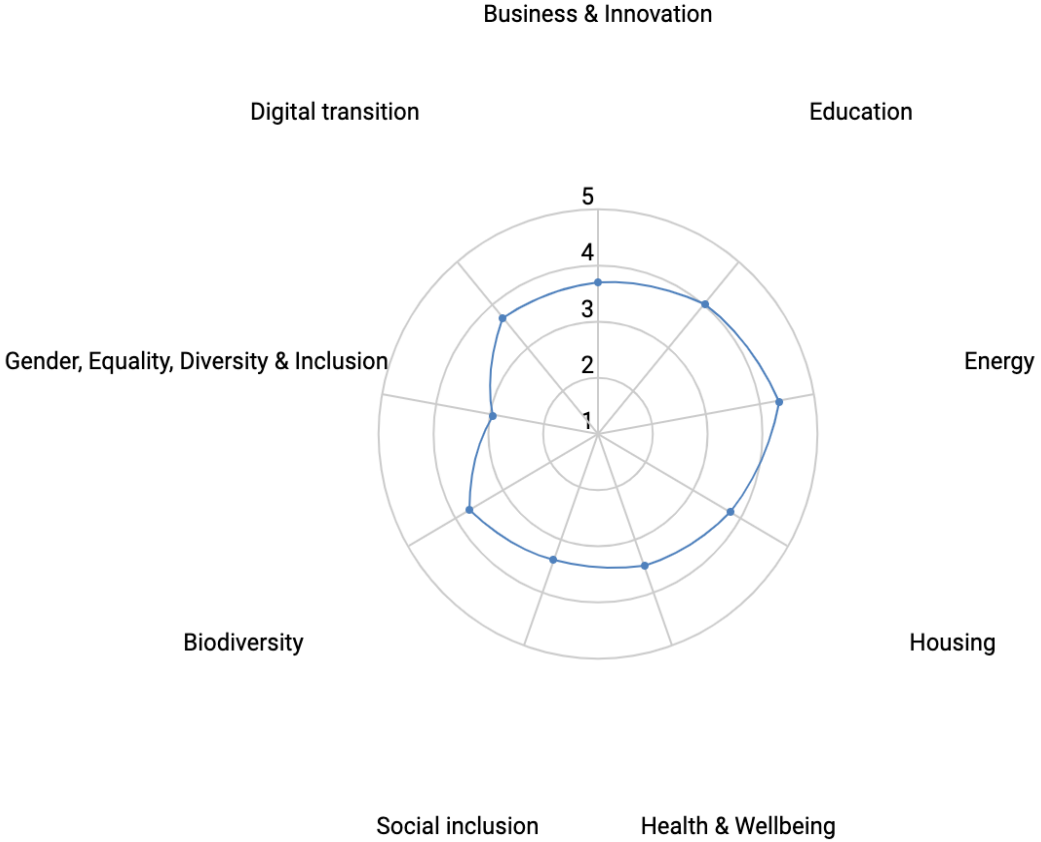
Urgent priorities



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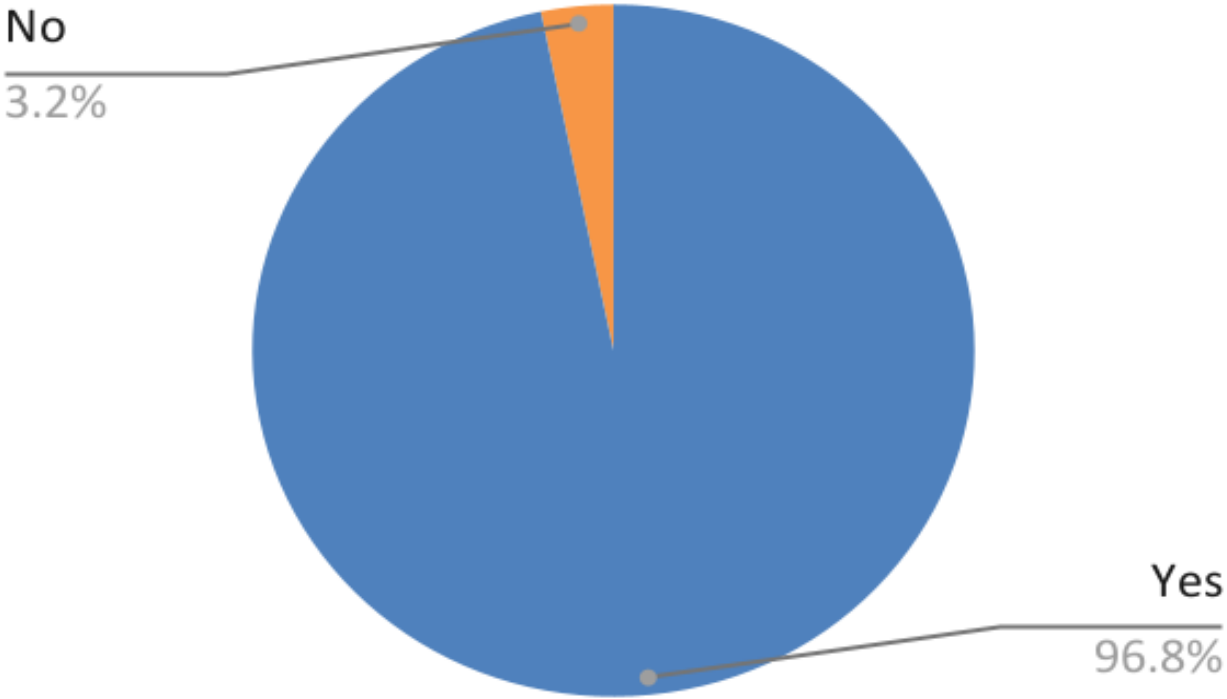
Strong interest on more capacity-building



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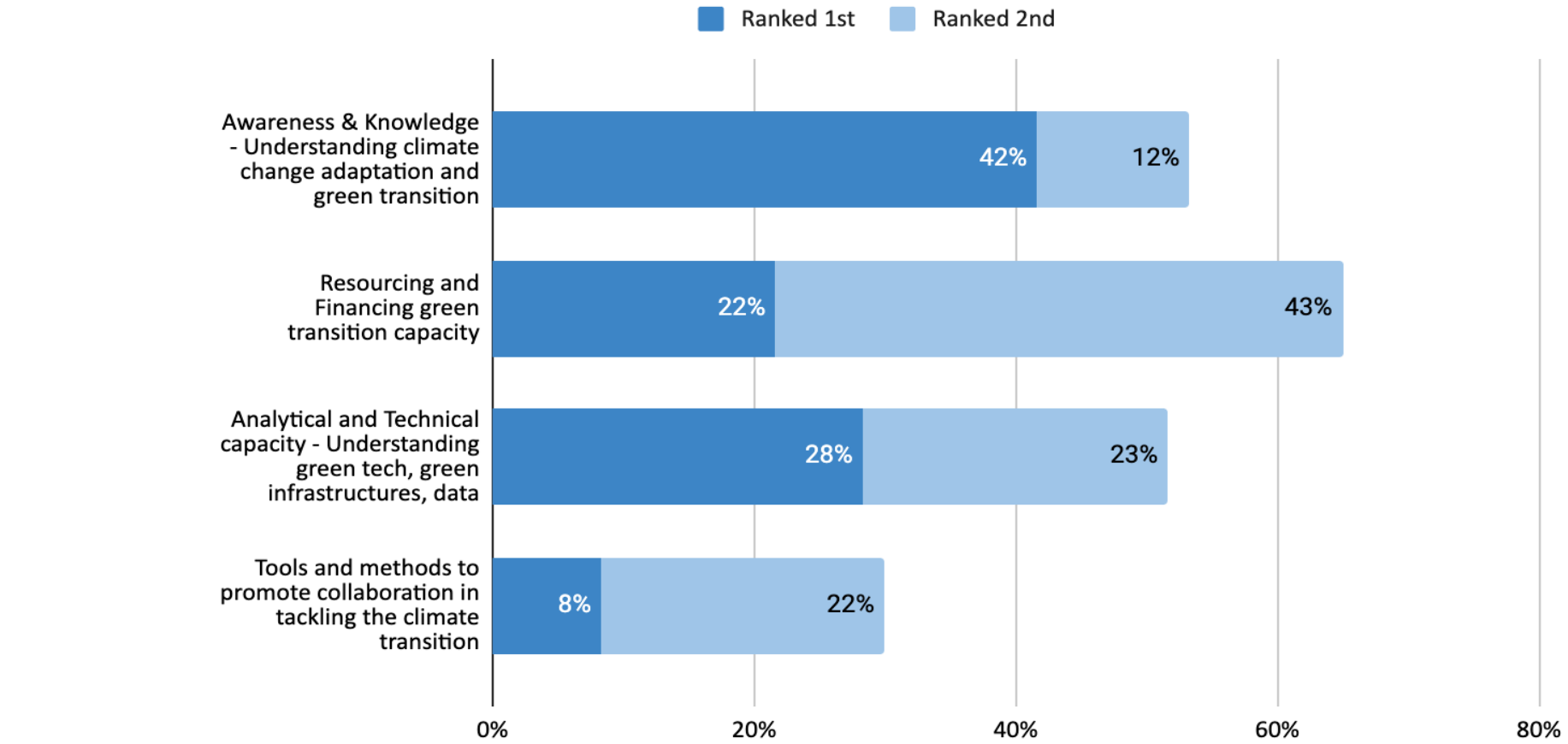
Capacities/skills to be further strenghtened



Recommendations - Capacity-building priorities

Demystifying the green transition

Engagement & Facilitation for green transition

Integrated approach to green transition

Funding & budgeting for green transition

Technical expertise

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European context

-Russian's invasion to Ukraine = increase of energy prices in EU countries (amongst others)

-REPowerEU plan: EU to become independant from Russian fossil fuels by 2030

-Green Deal: EU to become climate-neutral by 2050

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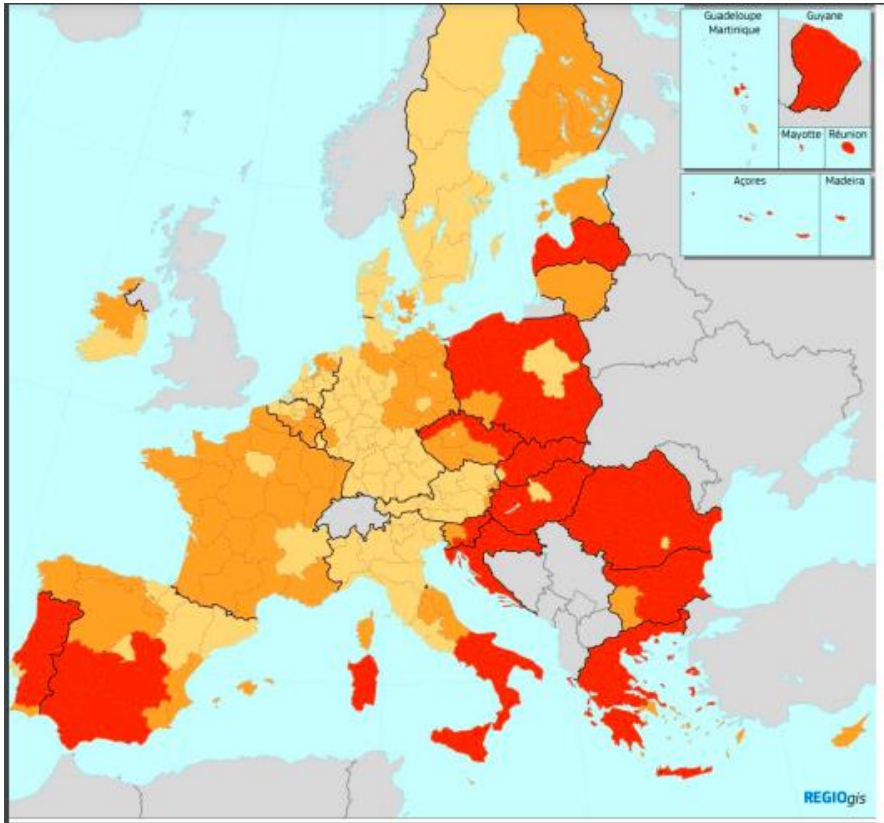
European context



GDP/head (PPS) by NUTS2 region, average 2014-2015-2016

Index, EU-27 = 100

- < 75% (less developed regions)
- 75% - 100% (transition regions)
- >= 100% (more developed regions)

Cohesion Policy 2021-2027

1/3 of the EU budget (ERDF, CF, ESF +, JTF) to:

- Reduce disparities between Europe's regions, strengthening economic, social and territorial cohesion
- Contribute to EU priorities, including the European Green Deal

5 Policy Objectives:

1. A more competitive and smarter Europe
2. **A greener, low-carbon transitioning towards a net zero carbon economy and resilient Europe**
3. A more connected Europe
4. A more social and inclusive Europe
5. **A Europe closer to citizens**

At least 30% of the ERDF and 37% of the CF dedicated to climate action.

European context

Policy objective 2: A greener, low-carbon Europe (including energy transition, the circular economy, climate adaptation and risk management)

1. promoting energy efficiency measures and reducing greenhouse gas emissions;
2. promoting renewable energy;
3. developing smart energy systems, grids and storage outside TEN-E;
4. promoting climate change adaptation, risk prevention and disaster resilience;
5. promoting sustainable water management;
6. promoting the transition to a circular economy;
7. enhancing biodiversity, green infrastructure in the urban environment, and reducing pollution.

nion

Programming 2021-27 - Energy

- Programmes to be aligned with EU medium (2030) and long term (2050) energy and climate objectives:
  - Implement 'Energy Efficiency first' principle – reducing demand before looking at supply!
  - Support to delivery of renovation wave = top priority (public buildings like hospitals, schools, universities… residential buildings)
  - Integrated approach (energy efficiency + RES) & energy system integration to be further supported
  - RD&I in renewables, renewable energy communities
  - Fossil fuel exclusion in 2021-27 cohesion policy with limited exemptions: support to gas not to become main funding envelope within ERDF/CF
- Concentrate funding on limited number of specific objectives to increase

EUI-URBACT joined forces to organise:

A series of 2 EU City Labs on Energy Transition,
first in 2023 in Viladecans, a second one in 2024

A series of 3 EU City Labs on food governance
in 2024

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Why in Viladecans?

2016-2019

EUR 4,269,862.80

(European Regional Development Fund)

2021-2023

Vilawatt UTM

Empowering people through energy transition

An Innovation Transfer Network funded under URBACT with the objective to transfer the experience of Viladecans to:

Trikala, EL

Nagykanizsa, HU

Seraing, BE

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Today & tomorrow

Consider this EU City Lab as:

A safe space for honest discussions and exchanges

A space to present not only good practices but also challenges and failures

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Today & tomorrow

Consider this and following EU City Labs as:

A way to learn, increase your knowledge, network and discover funding/capacity-building/networking opportunities

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Keynote speech

by Ganna Gladkykh,

European Energy Research Alliance

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Clean Energy Transition in the EU: Setting the scene

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Presentation structure

1. Current progress of the clean energy transition (CET) in the EU

2. Key policies and EU Directives

3. Main challenges of the CET in the EU and ways to address them

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1. Current progress of the clean energy transition in the EU

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SDG 7 progress in the EU

Table 7.1: Indicators measuring progress towards SDG 7, EU

Indicator		Period	Annual growth rate	Trend	Where to find out more
Energy consumption					
Energy consumption	Primary energy consumption	2006–2021	Observed: – 1.0 % Required: – 1.7 % (')	↘	page 141
		2016–2021	Observed: – 0.8 % Required: – 2.2 % (')	↘	
	Final energy consumption	2006–2021	Observed: – 0.5 % Required: – 1.3 % (')	↘	
		2016–2021	Observed: – 0.2 % Required: – 1.7 % (')	↘	
Final energy consumption in households per capita		2006–2021	– 0.2 %	↗	page 143
		2016–2021	0.8 %	↘	
Energy productivity		2006–2021	1.8 %	↑	page 144
		2016–2021	1.8 %	↑	
Energy supply					
Share of renewable energy in gross final energy consumption		2006–2021	Observed: 4.8 % Required: 5.9 % (')	↗	page 145
		2016–2021	Observed: 3.9 % Required: 6.3 % (')	↗	
Energy import dependency		2006–2021	– 0.3 %	↗	page 146
		2016–2021	– 0.2 %	↗	
Access to affordable energy					
Population unable to keep home adequately warm		2010–2021	– 3.2 %	↑	page 147
		2016–2021	– 5.2 %	↑	

SGD 13 progress in the EU

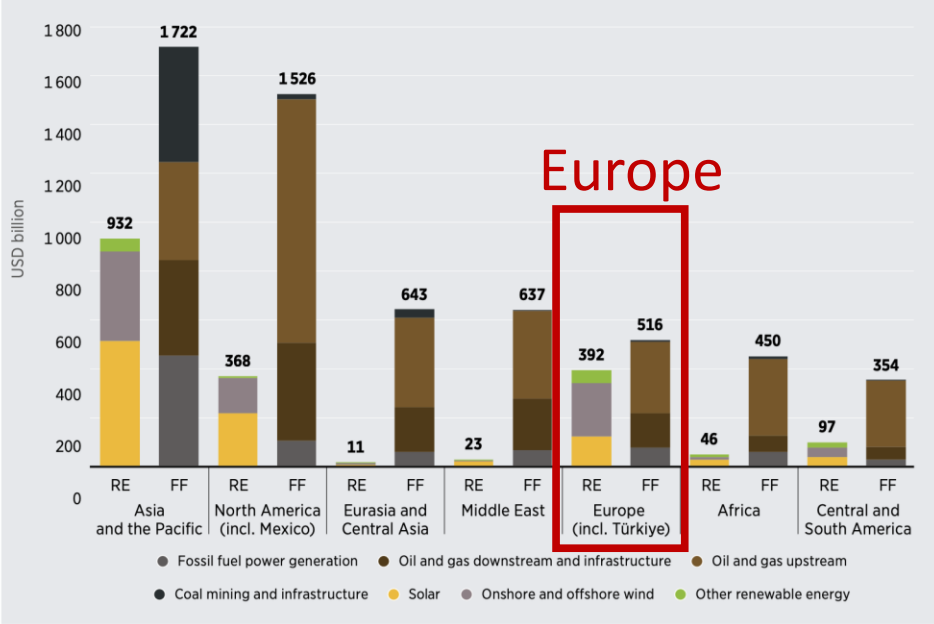
Table 13.1: Indicators measuring progress towards SDG 13, EU

Indicator	Period	Annual growth rate	Trend	Where to find out more
Climate mitigation				
Net greenhouse gas emissions	2006–2021	Observed: – 1.7 % Required: – 2.9 % (1)	↘	page 242
	2016–2021	Observed: – 1.8 % Required: – 3.8 % (1)	↘	
Net greenhouse gas emissions from land use, land use change and forestry	2006–2021	Observed: 3.0 % Allowed: 0.3 % (2)	↓	page 244
	2016–2021	Observed: 6.5 % Required: – 0.3 % (2)	↓	
Share of renewable energy in gross final energy consumption (*)	2006–2021	Observed: 4.8 % Required: 5.9 % (3)	↗	SDG 7, page 145
	2016–2021	Observed: 3.9 % Required: 6.3 % (3)	↗	
Average CO_2 emissions from new passenger cars (*)	Assessment not possible due to break in time series in 2021		:	SDG 12, page 228
Climate impacts and adaptation				
Climate-related economic losses	2009–2021	2.6 %	↓	page 245
	2016–2021	4.6 %	↓	
Population covered by the Covenant of Mayors for Climate and Energy signatories	2010–2022	6.7 %	↑	page 246
	2017–2022	1.8 %	↑	
Financing climate action				
Contribution to the international USD 100bn commitment on climate-related expenditure	Time series too short for long-term assessment		:	page 247
	2016–2021	3.9 %	↑	

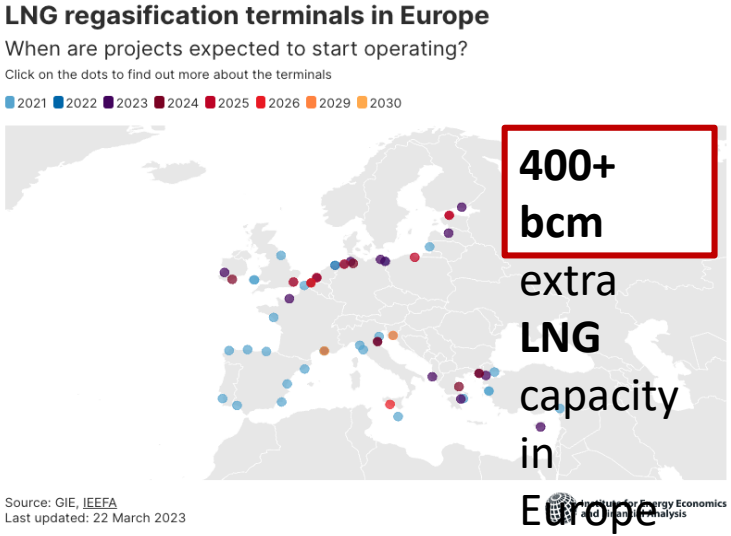
Union

Fossil fuel investment in Europe

Investment in **Renewable energy vs Fossil fuels** in 2015-2022 by region



Source: https://www.irena.org/Publications/2023/Feb/Global-landscape-of-renewable-energy-finance-2023



400+ bcm extra **LNG** capacity in Europe **by 2030**

To compare:

- Total natural gas imports from Russia to EU was **155 bcm** before Feb 2022;
- Total natural gas consumption in the EU in 2021 was **412 bcm**.

Source: https://ieefa.org/european-lng-tracker

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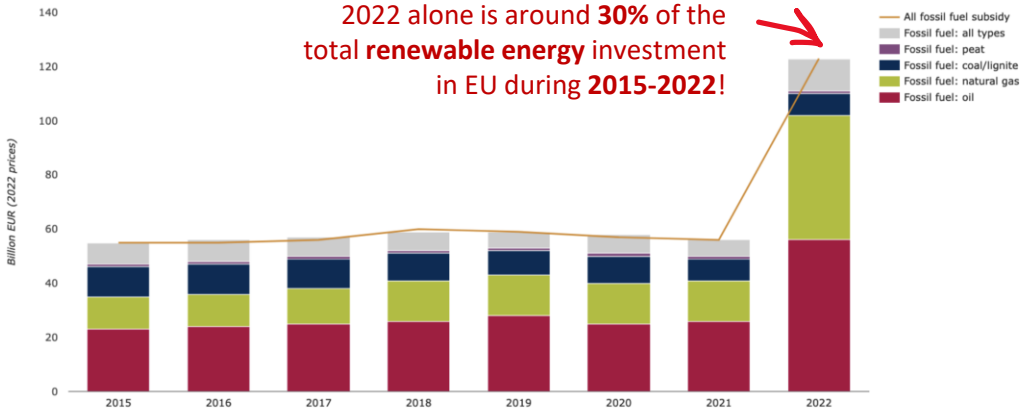
Fossil fuel subsidies in the EU

Figure 1. Fossil fuel subsidies in the 27 EU Member States, 2015-2022



"This can be interpreted as a result of **high energy prices** related to **post-COVID** recovery and **Russia's invasion of Ukraine**.

Most EU Member States have **no concrete plans on how and when they will phase out these subsidies**, therefore, it is unlikely that the EU will make much progress towards **phasing out fossil fuel subsidies by 2030**."

(+ don't forget billions of EUR spent on importing fossil fuels)

Source: https://www.eea.europa.eu/en/analysis/indicators/fossil-fuel-subsidies

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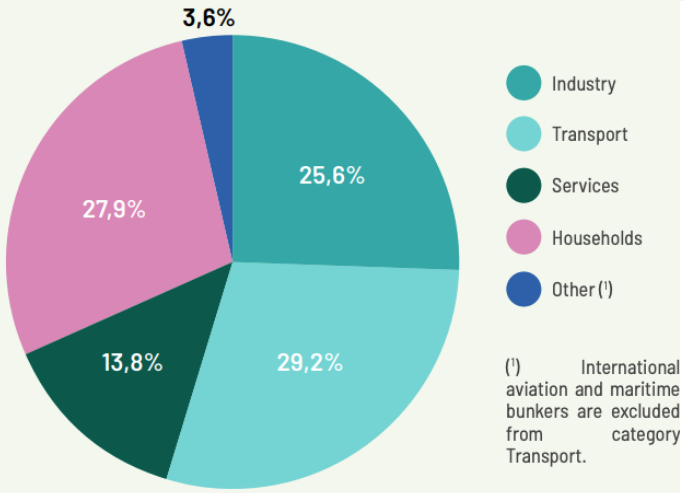
Who consumes energy in the EU? What kind of energy we consume?

Final energy consumption by sector, EU, 2021 [11]
(% of total, based on terajoules)
(Source: Eurostat (online data code: nrg_bal_c))



Half of the energy consumed in the EU is used for heating and cooling!

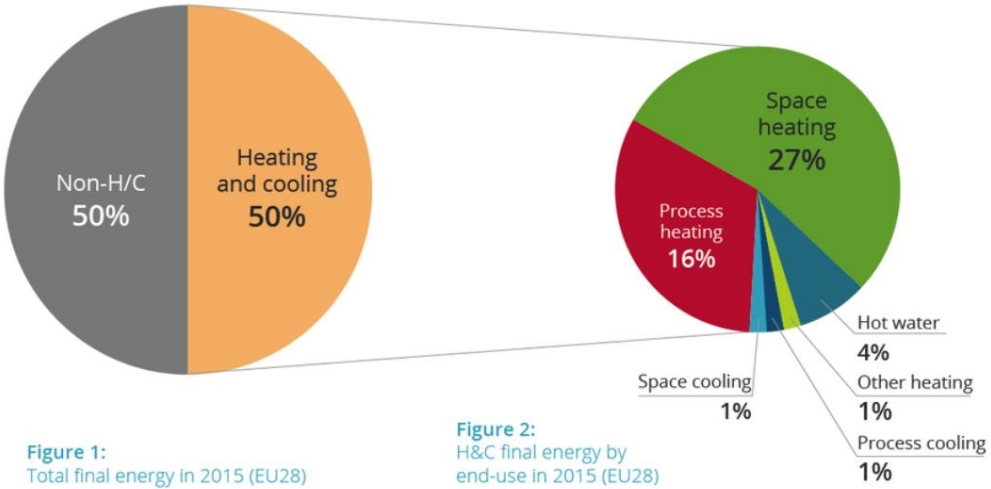


Figure 1:
Total final energy in 2015 (EU28)

Figure 2:
H&C final energy by end-use in 2015 (EU28)

Sources: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Energy_statistics_-_an_overview#Imports_and_exports; https://www.res-tmo.com/en/resources/default-title-1/default-title-4

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2. Key policies and EU Directives

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Energy Union – at the core of the EU energy policy

- Launched in **2015**
- Stated goals: **secure, sustainable, competitive and affordable energy** for the EU consumers
- Aim to **fundamentally transform** Europe's energy system.

Source: https://energy.ec.europa.eu/topics/energy-strategy/energy-union_en

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Energy Union – at the core of the EU energy policy

- Just Transition Instrument
- Climate Social Fund
- Renewable Energy Directive II (RED II)
- EU Emission Trading System (ETS)
- Carbon Border Adjustment Mechanism
- Energy Taxation Directive
- Energy Efficiency Directive
- Energy Performance for Buildings
- Internal Electricity Market Directive
- SET Plan (Strategic Energy Technology Plan)
- Horizon Europe Cluster 5
- REPowerEU Plan
- Net Zero Industry Act
- Critical Raw Materials Act

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3. Main challenges of the clean energy transition in the EU and ways to address them

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Challenge 1: Multi-level governance

National Energy and Climate Plans **(NECPs)**

Under the [Energy Union Governance Regulation], Member States are required to adopt integrated NECPs for the period 2021-2030.

NECPs outline how the EU countries **intend to address the 5 dimensions** of the Energy Union

Source: https://commission.europa.eu/energy-climate-change-environment/implementation-eu-countries/energy-and-climate-governance-and-reporting/national-energy-and-climate-plans_en

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Challenge 1: Multi-level governance

National Energy and Climate Plans **(NECPs)**

Regional level? City level?

Source: https://commission.europa.eu/energy-climate-change-environment/implementation-eu-countries/energy-and-climate-governance-and-reporting/national-energy-and-climate-plans_en

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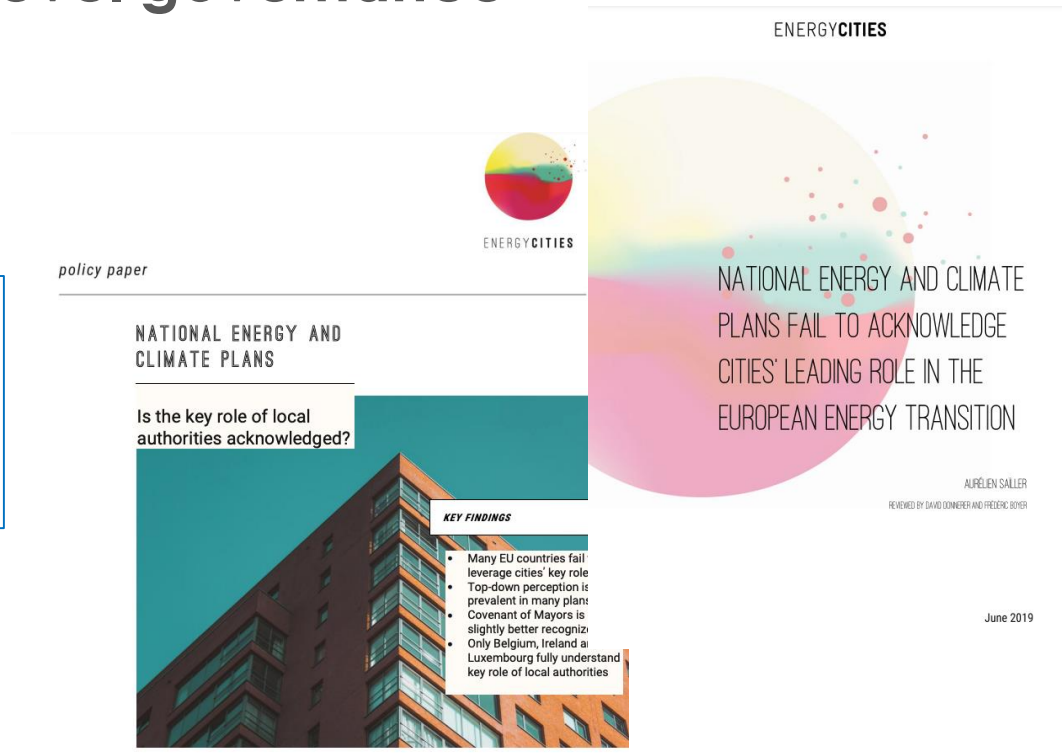
Challenge 1: Multi-level governance

National Energy and Climate Plans **(NECPs)**

Regional level? City level?



Sources: https://energy-cities.eu/publication/the-final-national-energy-and-climate-plans/; https://energy-cities.eu/do-the-final-national-energy-and-climate-plans-finally-acknowledge-cities-key-role/

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Challenge 1: Multi-level governance

Quantitative assessment of NECPs from local authorities' perspective

	Covenant of Mayors	EU Energy Award	Local-related words						
			city/ cities	local	local authority/ -ies	municipality/ -ies	local scale / level	local govern.	local initiatives
Austria	0		51	53	8	60	1	0	1
Belgium	7		55	140	24	0	3	0	1
Bulgaria	0		8	63	9	37	2	1	0
Croatia	8		55	33	2	11	4	1	0
Cyprus	1		10	71	21	0	2	1	0
Czechia	1		32	44	3	28	1	0	1
Denmark	0		4	26	3	18	2	3	0
Estonia	1		20	76	0	3	3	8	0
Finland	0		10	17	1	12	0	2	0
France	0		7	55	15	0	1	0	1
Germany	0		45	98	29	69	0	31	0
Greece	1		39	84	3	11	7	0	0
Hungary	0		3	53	6	9	0	0	0
Ireland	0		34	79	37	0	5	10	0
Italy	1		21	113	18	59	6	2	0
Latvia	1		4	44	0	49	0	2	0
Lithuania	1		24	45	2	68	1	0	0
Luxemb.	0	1	40	7	2	0	0	0	0
Malta	0		1	87	1	0	0	4	0
Netherl.	0		5	28	2	33	0	0	0
Poland	0		45	78	0	14	3	14	0
Portugal	0		32	52	0	22	3	2	0
Romania	1		19	33	4	11	0	0	0
Slovakia	0		20	40	2	14	3	1	1
Slovenia	0		13	38	1	15	1	0	0
Spain	0		47	25	0	13	1	0	0
Sweden	0		21	40	3	40	1	0	1

Sources: https://energy-cities.eu/publication/the-final-national-energy-and-climate-plans/; https://energy-cities.eu/do-the-final-national-energy-and-climate-plans-finally-acknowledge-cities-key-role/

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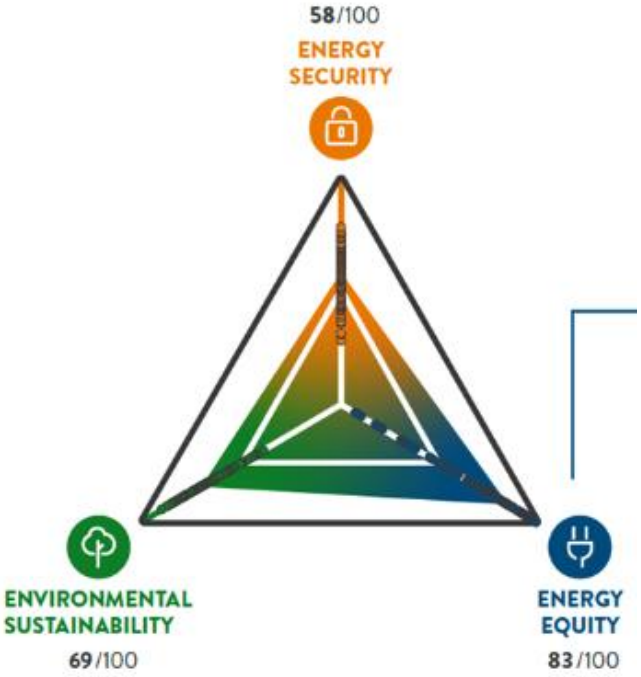
Challenge 2: Absence of justice energy transition framework

Energy Trilemma:



Source: https://www.worldenergy.org/transition-toolkit/world-energy-trilemma-index

Clean Energy Transition (CET) is more than switching from fossil fuels to low-carbon ones.

We need to **ensure that the CET is designed in a way that minimizes existing injustices** of the energy system and **does not bring the new ones**.

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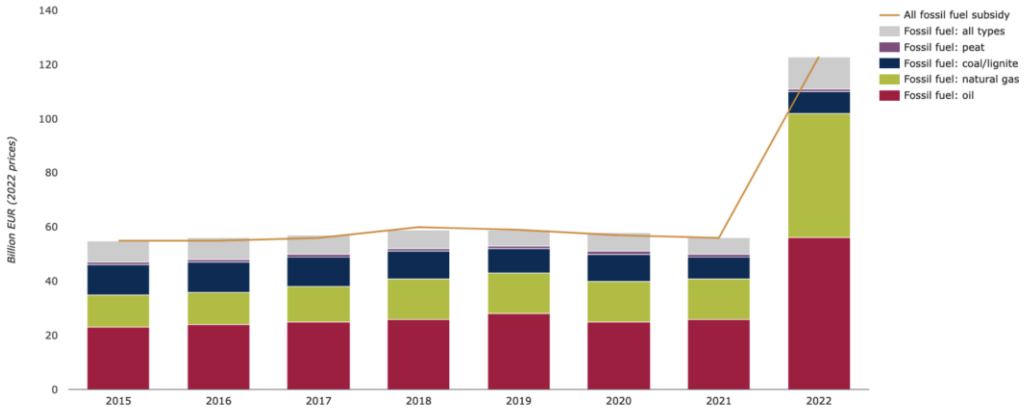
Challenge 2: Absence of just energy transition framework

Figure 1. Fossil fuel subsidies in the 27 EU Member States, 2015-2022



What happens when there is no Justice Framework for the Clean Energy Transition?

→ **Fossil fuel subsidies** are justified by **'fighting energy poverty'** and **'ensuring energy security'**

Source: https://www.eea.europa.eu/en/analysis/indicators/fossil-fuel-subsidies

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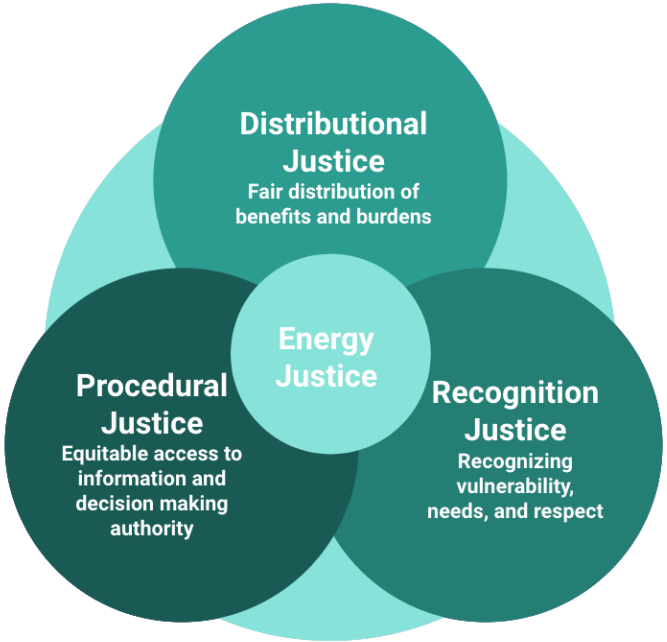
Challenge 2: Absence of just energy transition framework



- There is a great potential for **bridging Energy Justice research with the policy**.
- Energy Justice could be an 'umbrella framework' for **connecting multiple justice-related topics**: from job loss, to energy poverty, to citizen engagement.

Source: https://www.sciencedirect.com/science/article/abs/pii/S2214629615300669

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Example: Energy justice framework for EU policy analysis

Objective/scheme	IEM directives (until 2019)	EU Green Deal - JTM (2021)	SCF (parts 1 and 2)	REPowerEU (2022)	RED - Art.22 Energy Communities (2022)	EED - 2012 amended (2018)
2. Procedural justice pillar						
2.1. Consider mechanisms to include citizens and other key stakeholders in the design and implementation of policies	Insufficiently considered	Well addressed	Well addressed	Insufficiently considered	Well addressed	nsufficiently considered
2.2. Consider stakeholder participation in the social acceptance of technology stage	Insufficiently considered	Adequately considered	Indirect mention	Indirect mention	Well addressed	nsufficiently considered
2.3. Consider stakeholder participation beyond social acceptance of technology	Insufficiently considered	Indirect mentioned	Indirect mention	Indirect mention	Well addressed	Indirect mention
2.4. Address participation obstacles that vulnerable groups of stakeholders face	Insufficiently considered	Insufficiently considered	Adequately considered	Indirect mention	Well addressed	nsufficiently considered

Out of the analysed policy packages, Renewable Energy Directive (especially the **Energy Communities** part) has the **highest potential to address multiple justice issues**.

Source: EERA analysis

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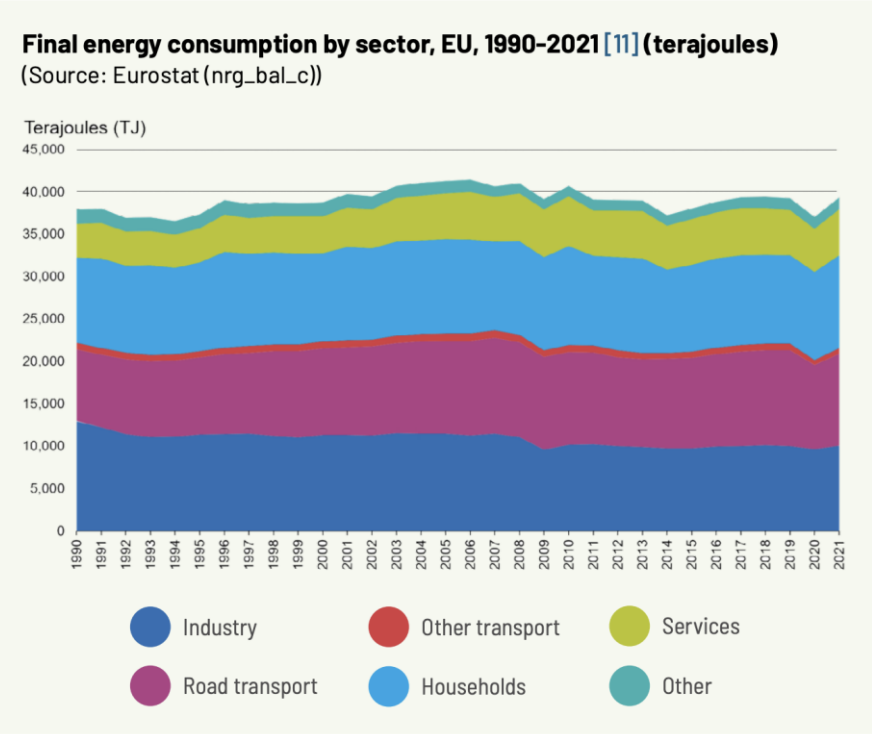
Challenge 3: Lack of policy attention to the energy demand side



- Research, policy, industry focus is mostly on of the **energy supply** side
- **Energy efficiency** alone does not guarantee reduction of energy use
- So far, EU has focused only on reducing short-term demand on fossil fuels. We need **long-term structural energy demand reduction** ambition

Source: https://www.eera-set.eu/component/attachments/attachments.html?task=view&id=1234

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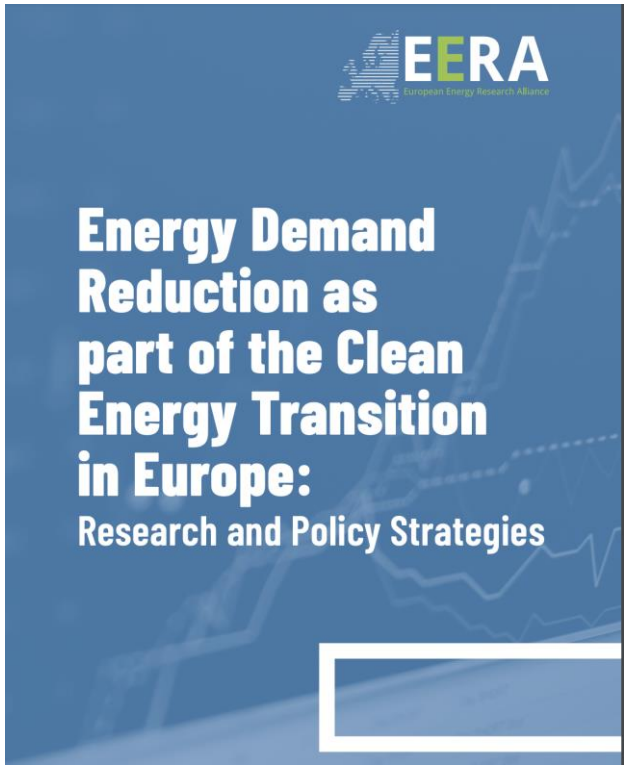
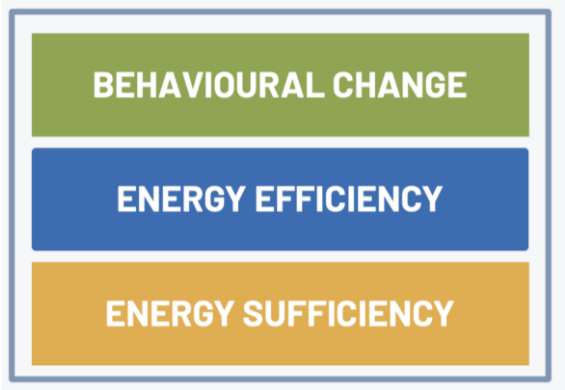
Challenge 3: Lack of policy attention to the energy demand side



MAIN MESSAGE: Energy demand reduction should be an integral part of the Clean Energy Transition strategy. **The EU will not achieve climate, clean energy goals, and Strategic autonomy goals** without energy demand reduction strategy.



Source: https://www.eera-set.eu/component/attachments/attachments.html?task=view&id=1234

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Conclusion

Clean Energy Transition in the EU 'must-haves':

+ Good policy and practice related to the **multi-level governance**
+ Clear and coherent **just transition framework** which could guide clean energy policy design and implementation
+ **Energy demand targets** alongside the existing energy supply ones
+ As much **attention to heating and cooling** as to electricity and transport in all energy-consuming sectors
+ Transparency on how much investment is directed **to clean energy technologies** vs **investment in fossil fuels**.

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Thank you!

g.gladkykh@eera-set.eu

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