



# MEASURING PROGRESS TOWARDS CLIMATE NEUTRALITY

**Erica Hope** (Moderation)

**Matthias Duwe**

**Eike Karola Velten**

**Nicolas Berghmans**

Report launch and expert discussion – 24 June 2021

# Agenda

**15:00**      **Welcome and framing**

**15:10**      **Presentation of the report and key insights**

**15:30**      **Panel discussion with**

*Cécile Hanou*, Head of Unit C2 at DG CLIMA, EU Commission

*Jytte Guteland*, Member of the EP, rapporteur on the EU Climate Law

*Eduardo Santos*, Head of the Climate Department at the Portuguese Environment Agency, representing the EU Presidency

**16:00**      **Q&A session with the audience**

**16:25**      **Wrap-up**

# Ground rules



**Your microphones are muted during this event.**



**For questions to the speakers and panel please use the Q&A function.  
You can upvote questions you find relevant.**



**Please use the chat if you experiences any technical problems.**



**This event is being recorded and will be made available online afterwards.**







# MEASURING PROGRESS TOWARDS CLIMATE NEUTRALITY

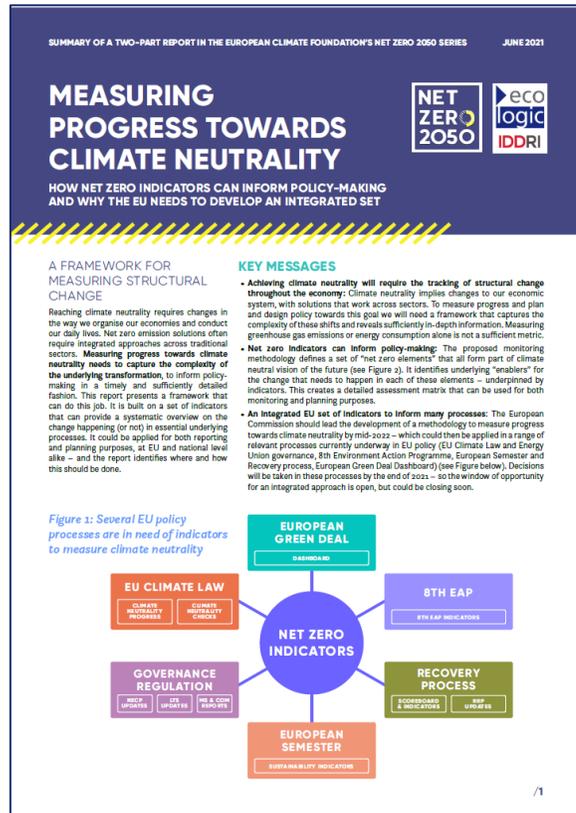
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Any errors or mistakes are the sole responsibility of the authors.

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**Noble Studio**

www.noble.studio

# MEASURING PROGRESS TOWARDS CLIMATE NEUTRALITY NEEDS IN-DEPTH ANALYSIS



## INDICATORS AND THE LONG-TERM OBJECTIVE

The long-term objectives and pathways in the Paris Agreement have helped generate a much stronger focus on the transformational nature of the changes required to tackle the climate crisis – and on what it means to reach net zero and net negative emissions. This new focus has been aided by the drafting of 2050 strategies at national and EU level, the adoption of climate neutrality as a new long-term goal for the European Union. This has been made the core objective of the European Green Deal (EGD) and it has been enshrined in the EU Climate Law. The 2030 climate target for the EU has been strengthened as a result, one can argue.

**The EU now needs to keep track of whether it is triggering the changes needed to achieve the long-term goal of climate neutrality – and it does not (yet) have an adequate monitoring framework to do this.**

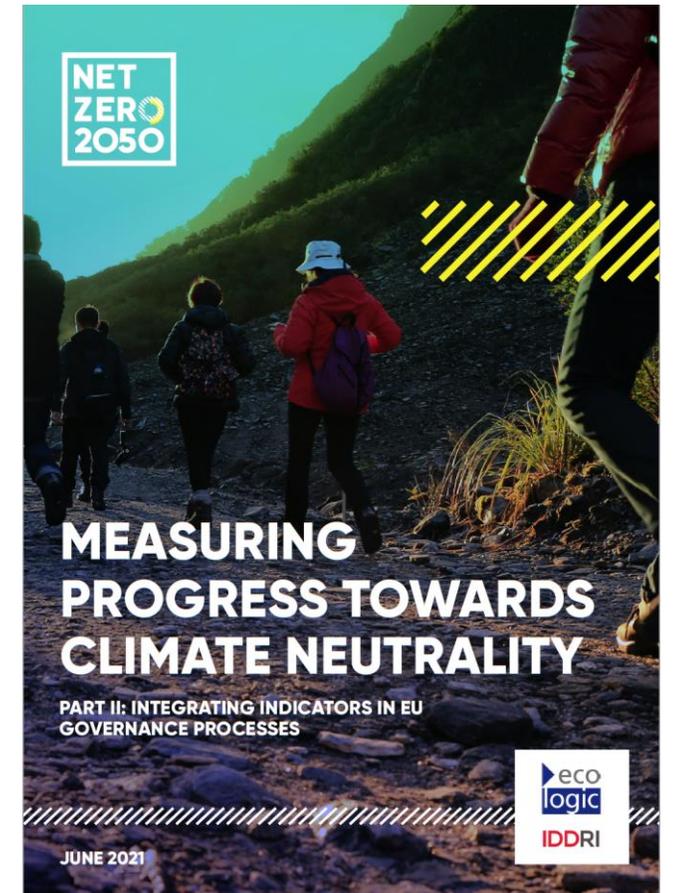
# Measuring progress towards climate neutrality



A net zero indicator framework for planning and reporting

&

Integrating net zero indicators into existing policy processes

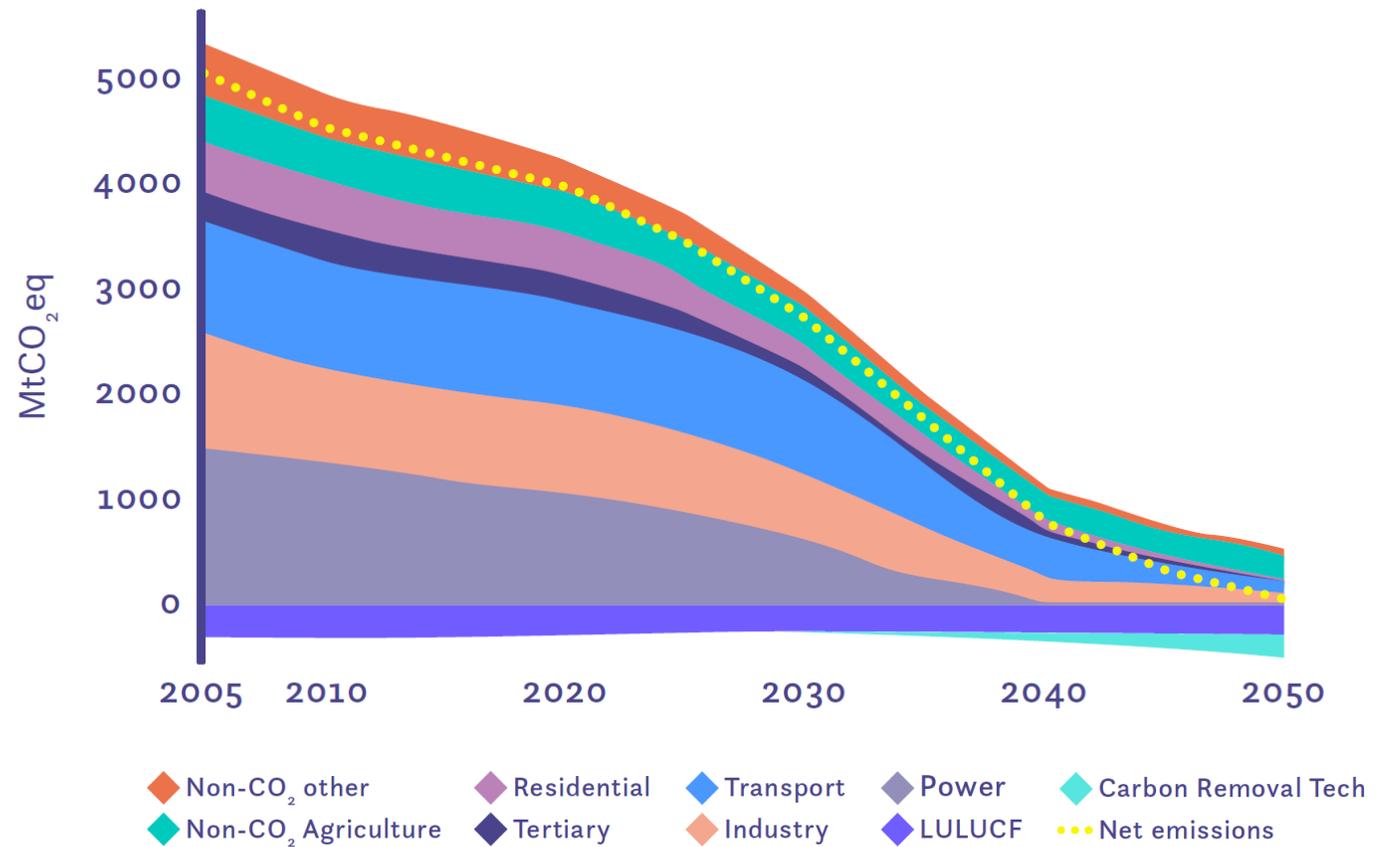




**PART I:  
ASSESSING STRUCTURAL CHANGE  
THROUGH NET ZERO INDICATORS**

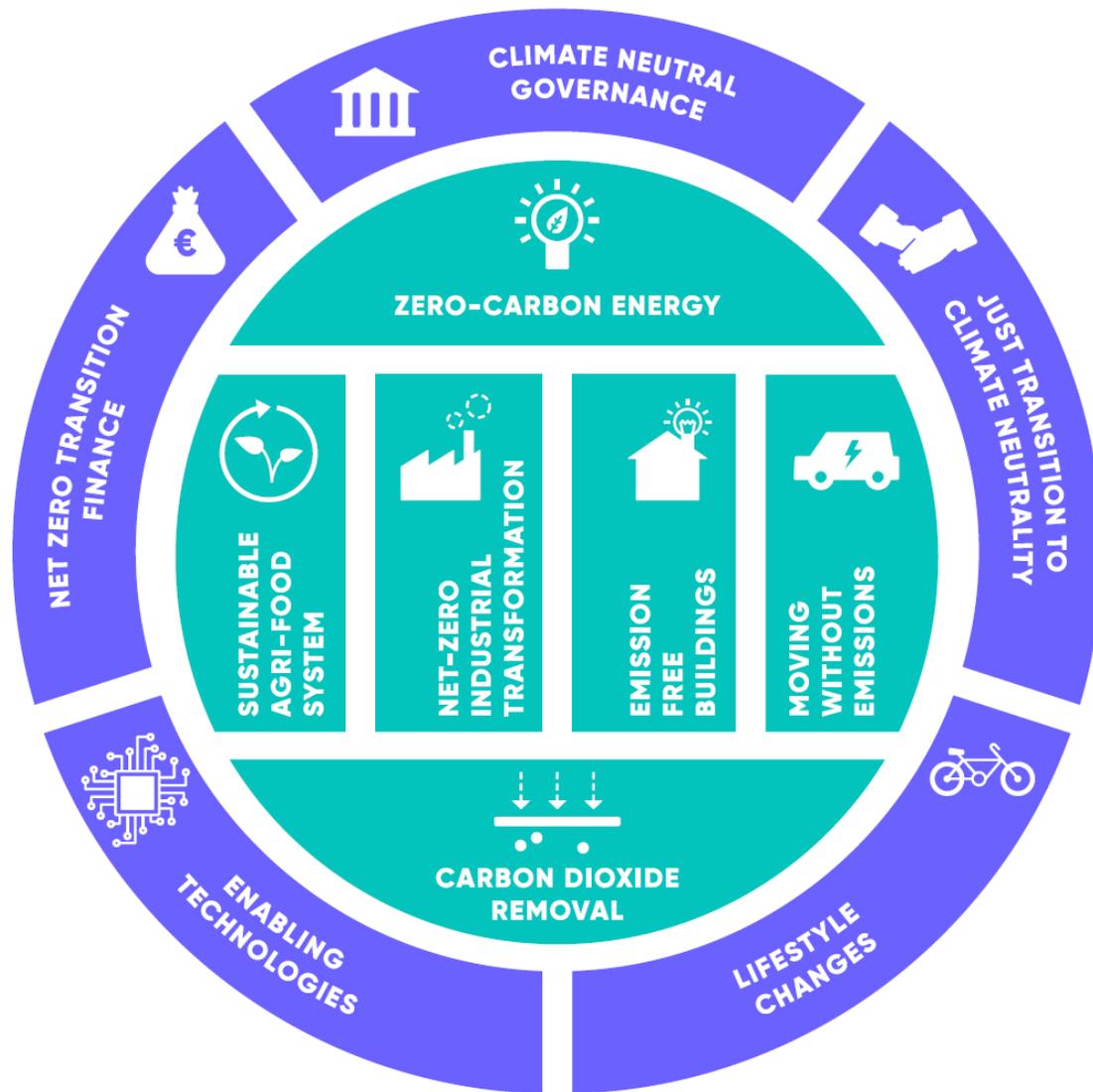
# What constitutes a climate neutral future?

EU pathways to climate neutrality in 2050



Source: COM (2018): A clean planet for all

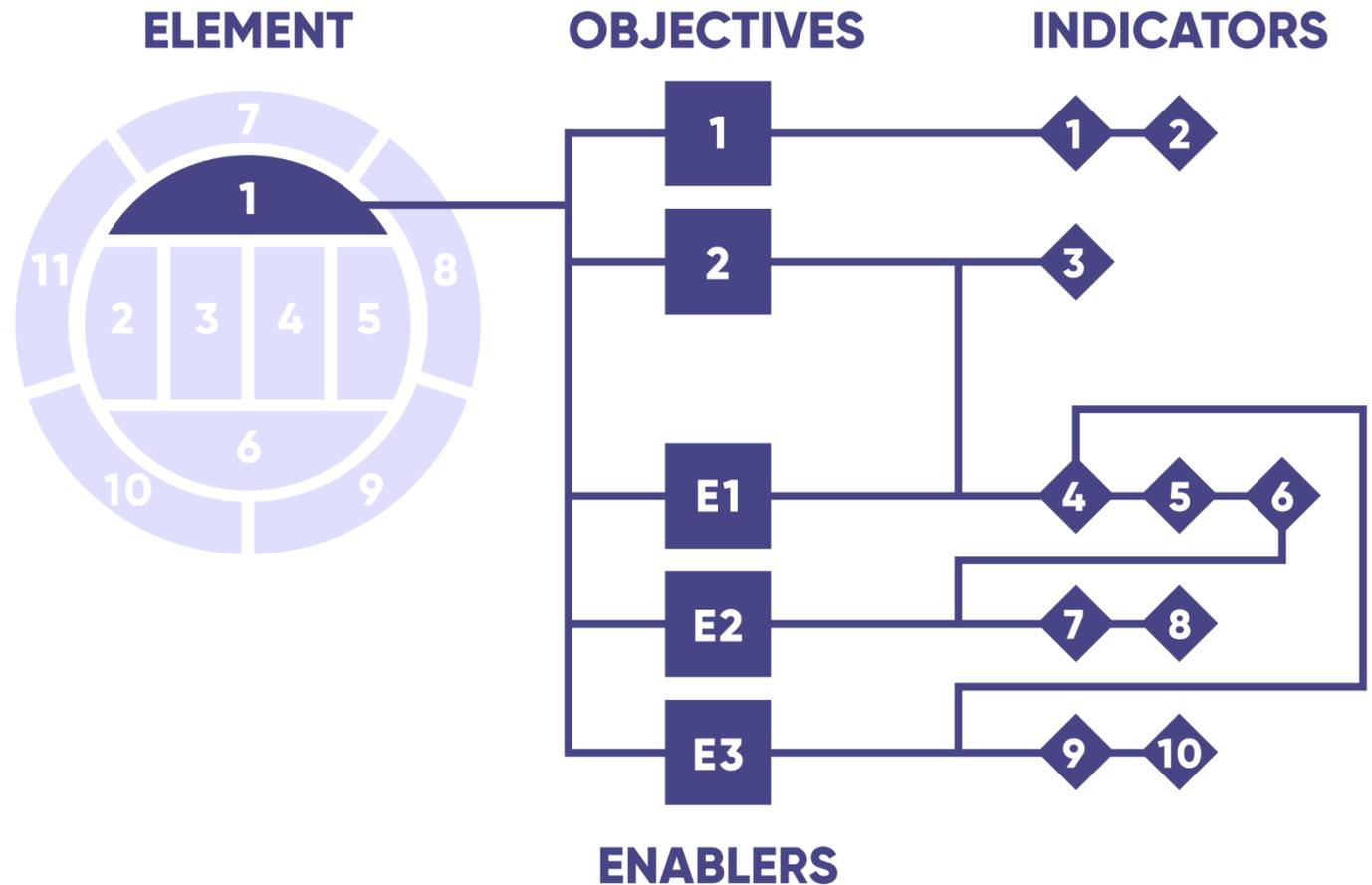
# Sectoral and horizontal elements



Source: own presentation; visuals by Nobel Studio

# Our concept to derive indicators

Progress measurement in elements uses indicators for objectives and enablers



Source: own presentation; visuals by Nobel Studio

# Zero Carbon Energy



**Describes progress towards switching to a net zero emissions energy system by 2050**

## **Objectives:**

32 % RES in 2030

No unabated fossil fuel in 2050

## **Enablers:**

E1: Supporting regulatory frameworks

E2: Infrastructure to enable a secure transition

E3: Reducing total energy consumption

# Zero Carbon Energy



REFERS TO	NAME OF INDICATOR [UNIT]	DATA SOURCE	SOURCE FOR TARGET VALUES
Objectives	<b>Share of renewable energies</b> in gross final energy consumption (incl. sub-indicators for electricity, transport and heating & cooling) [%]	Eurostat <sup>[26]</sup>	2030: RED; 2050: EU LTS
	<b>CO<sub>2</sub> emissions from energy generation captured and used or stored</b> [t CO <sub>2</sub> ]	No data yet. GHG inventory (crf. 1.C) <sup>[27]</sup>	EU LTS
	<b>Carbon intensity of electricity generation</b> [g CO <sub>2</sub> e/kWh]	EEA <sup>[28]</sup>	2030: EEA <sup>[29]</sup>
	<b>Electrification of the economy</b> (incl. sub-indicators for sectors) [%]	Eurostat <sup>[30]</sup>	EU LTS
Enabler 1 on supporting regulatory frameworks	<b>Support mechanisms for renewables</b> (incl. sub-indicators for electricity generation, transport, heating & cooling) [N° of MS; scale]	RES legal (database on policies; no scoring) <sup>[31]</sup>	Not available
	<b>Additional energy related investment</b> (with sub-indicators for power grid, power plants and boilers, new fuels) [EUR]	NECP (some years/MS) <sup>[32]</sup> , Bloomberg <sup>[33]</sup> (some MS)	EU LTS
	<b>Share of EU financial support for zero carbon energy</b> (EU budget and other programmes) [%]	EU budget <sup>[34]</sup>	Climate mainstreaming target but not available for 2050
	<b>Public money going to fossil-fuels</b> (fossil fuel subsidies) [EUR]	OECD <sup>[35]</sup>	E.g. G20 commitment <sup>[36]</sup>
	<b>Price on carbon</b> (with sub-indicators for different sectors/sources) [EUR/tCO <sub>2</sub> eq]	EU ETS price <sup>[37]</sup> ; Carbon taxes <sup>[38]</sup> , Effective carbon rates for some countries <sup>[39]</sup>	Not available

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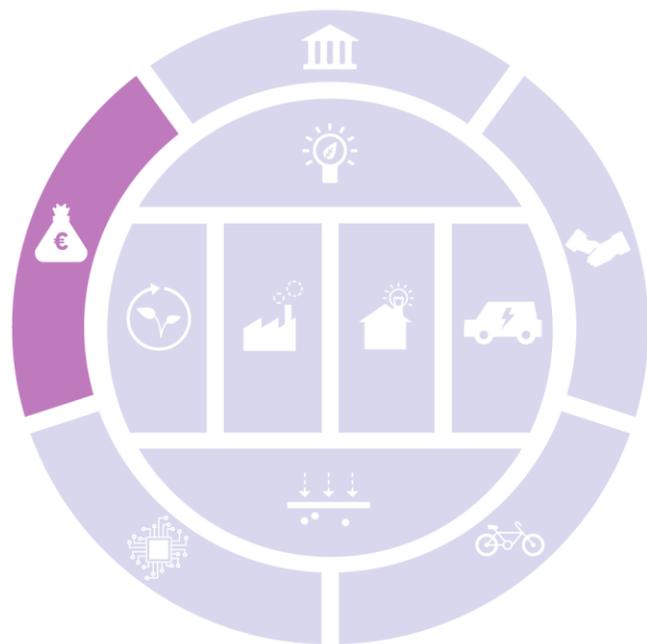
# Zero Carbon Energy



REFERS TO	NAME OF INDICATOR [UNIT]	DATA SOURCE	SOURCE FOR TARGET VALUES
Enabler 1 on supporting regulatory frameworks	Share of <b>households' expenditure on housing fuels</b> for average and poor households [%]	Eurostat <sup>[40]</sup>	Not available
	Differences in <b>electricity prices for industry</b> in the EU and globally [EUR/MWh]	Eurostat <sup>[41]</sup>	Not available
	<i>Continued</i>	<b>Levelised costs for emerging technologies</b> (incl. e.g. battery storage, carbon capture [EUR/tCO <sub>2</sub> ] and hydrogen [EUR/kgH])	Individual studies <sup>[42]</sup> , IEA (single study) <sup>[43]</sup>
Enabler 2 on infrastructure to enable a secure transition	<b>Curtailement</b> of electricity generation capacities [hours]	ENSOE <sup>[44]</sup> ; available for some countries	Not available
	<b>Infrastructure additions</b> (incl. cross-border capacities) for electricity and gas networks [km; MW]	Possibly ENSO-E <sup>[45]</sup> ; ENSO-G <sup>[46]</sup>	Electricity: 2040 in TYNDP <sup>[47]</sup>
	<b>Storage capacities</b> for energy (for electricity, heat, gas) [T] or m <sup>3</sup>	Single studies	EU LTS
	<b>Average outage duration</b> for each customer (SAIDI) for electricity and gas [min]	CEER <sup>[48]</sup> ENSOE <sup>[49]</sup> ;	Not available
Enabler 3 on reduced energy consumption	<b>Primary and final energy consumption</b> (incl. sub-indicators for final energy per fuel type, per sector) [% change to 2005 and/or PJ]	Eurostat <sup>[50]</sup>	EU LTS

Source: own presentation

## Net zero transition finance



**Describes progress towards net zero compatible financial system and investments flows**

### **Objectives:**

Additional investments (vs baseline) in the EU energy sector

EUR 63 and 114 billion per year from 2021 to 2030

EUR 176 to 290 billion per year from 2031 to 2050.

### **Enablers:**

E1: Orient public funds towards the transition

E2: Enabling regulatory framework

E3: Align the financial system with climate

# Net zero transition finance



REFERS TO...	NAME OF INDICATOR [UNIT]	DATA SOURCE	SOURCE FOR 2050 TARGET VALUES
Objectives and targets	Total amount of <b>sustainable and unsustainable investments</b> in all economic sectors [EUR]	Not available might be built on the EU taxonomy <sup>[231]</sup>	LTS
	<b>Investment gap</b> [EUR]	Not available	LTS
	Share of <b>sustainable and unsustainable investments in EU/MS GDP</b> [%]	Not available might be built on the EU taxonomy <sup>[232]</sup>	LTS
Enabler 1 on orienting public funds towards the transition	Share of <b>public funds dedicated to climate action</b> in EU and MS budget [% of overall funding]	European Commission <sup>[233]</sup>	2021-2027: 25 % 2050: not available
	<b>Share of public funds detrimental to climate action in EU and MS budget</b> [% of overall funding]	Not available	Not available
Enabler 2 on enabling regulatory framework	Average <b>cost of capital for sustainable investments</b>	Not available	Not available
	Share of <b>environmental tax revenue of public revenue</b> (i.e. total tax and social contributions revenue) [%]	Eurostat <sup>[234]</sup>	COM analysis for the Roadmap Resource Efficient Europe Part II <sup>[235]</sup>
Enabler 3 on aligning the financial system with climate	Share of <b>financial market assets labelled as Green / consistent with EU taxonomy</b> (loans, primary market transactions, secondary market portfolios) [%]	Not available	Not available
	Coverage of <b>banking stress tests considering climate risks</b> [% of overall bank assets]	Not available	Not available

## Progress measurement – an illustration

### Approach derived from the EU SDG-Monitoring:

- Based on the compound annual growth rate
- Comparison of actual trend and required development over a given period

RANGE FOR QUANTIFIED TARGET VALUE	RANGE FOR DESCRIPTIVE TARGET VALUE	CLASSIFICATION		
Trend is at least 95 % of the required change	Trend is > 1 % in the right direction	In line with net zero emissions objective	4	
Trend is 60 % - < 95 % of the required change	Trend is 0 % - 1 % in the right direction	Progressive but insufficient for net zero emissions objective	3	
Trend is 0 % - < 60 % of the required change	Trend is 0 % - 1 % in the wrong direction	Not supporting the net zero emissions objective	2	
Trend is below 0 % of the required change	Trend is > 1 % in the wrong direction	Opposing the net zero emissions objective	1	

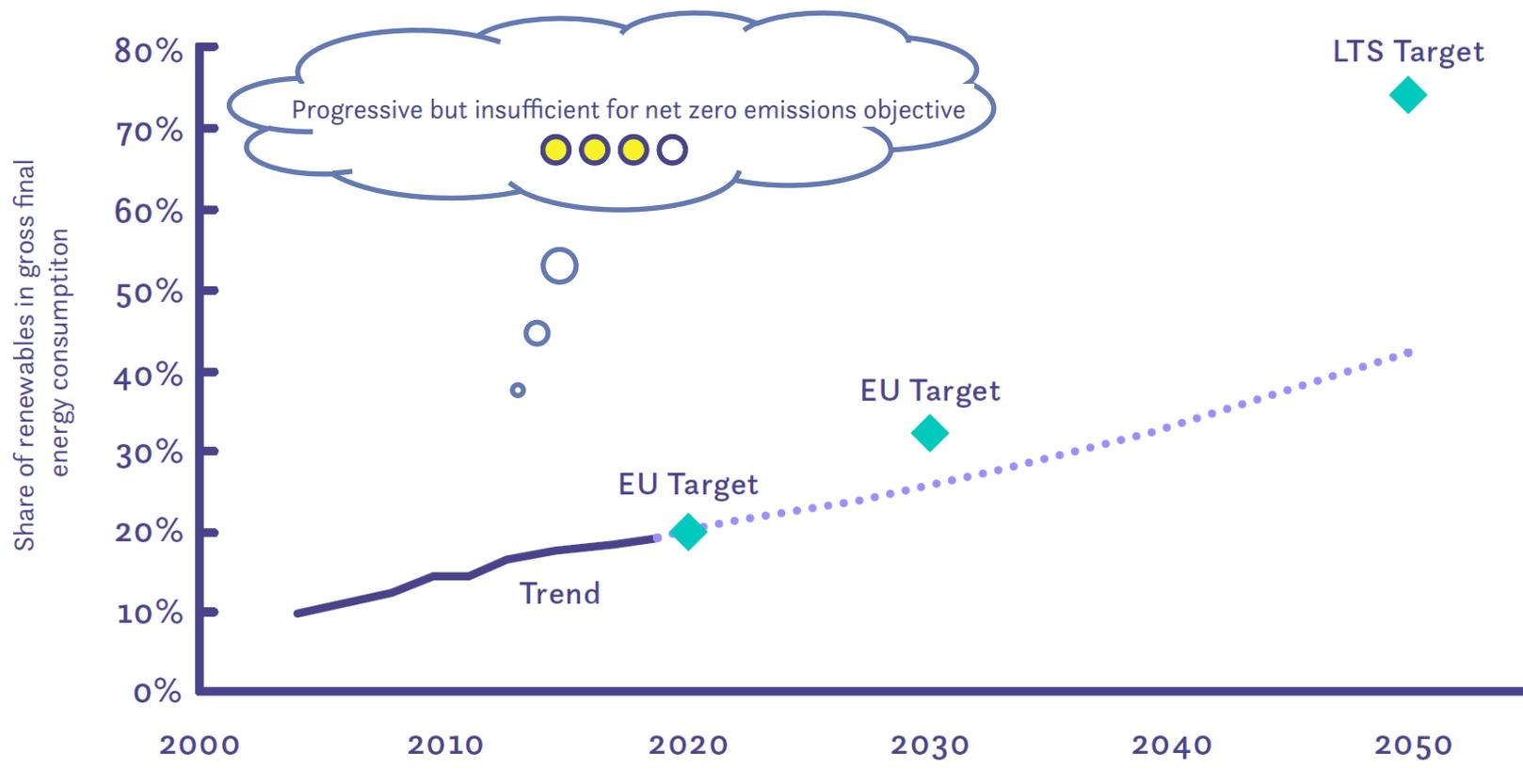
- Also allows for composite values of single indicators and for an element as a whole

# Zero Carbon Energy



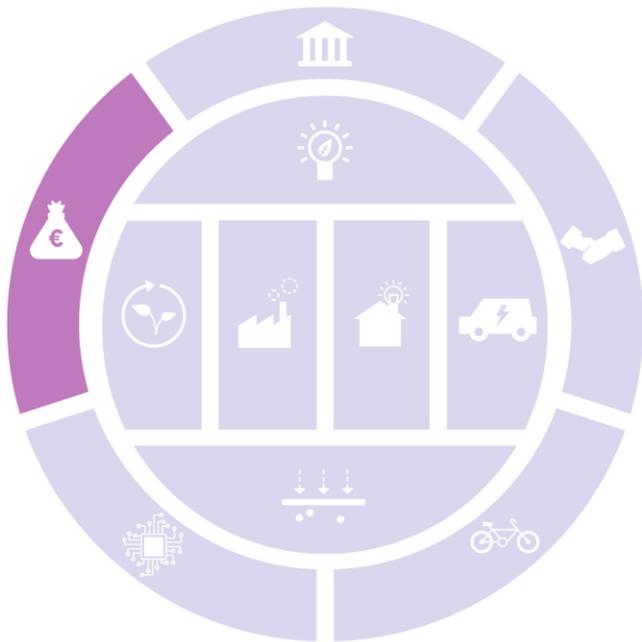
## Illustrative progress measurement:

*Progress towards the deployment of renewables*



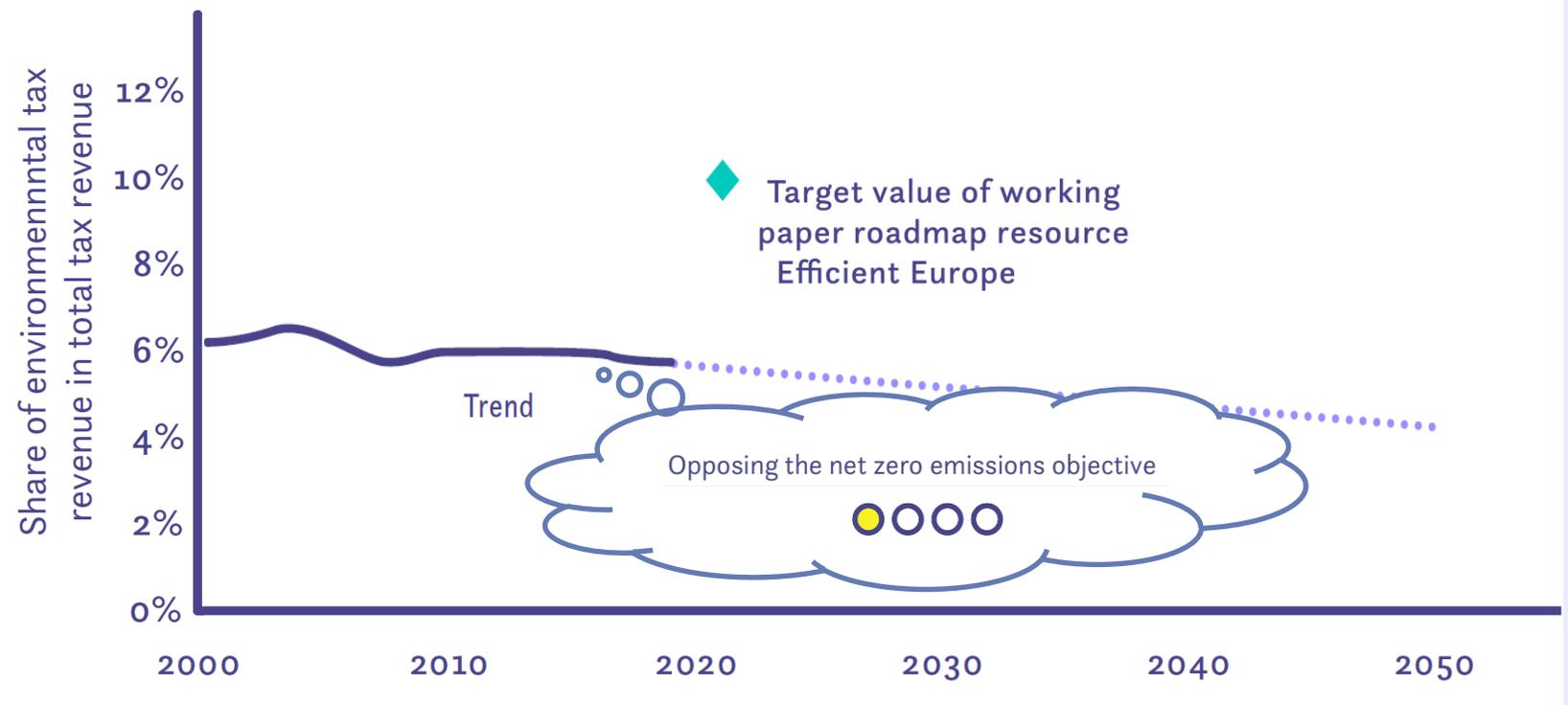
Source: own presentation based on data from Eurostat and target values from RED and LTS. The trend is 64% of the required change to meet the 2030 and 60% to reach the 2050 target value.

# Net zero transition finance



## Illustrative progress measurement:

Progress on an increased share of environmental tax revenue



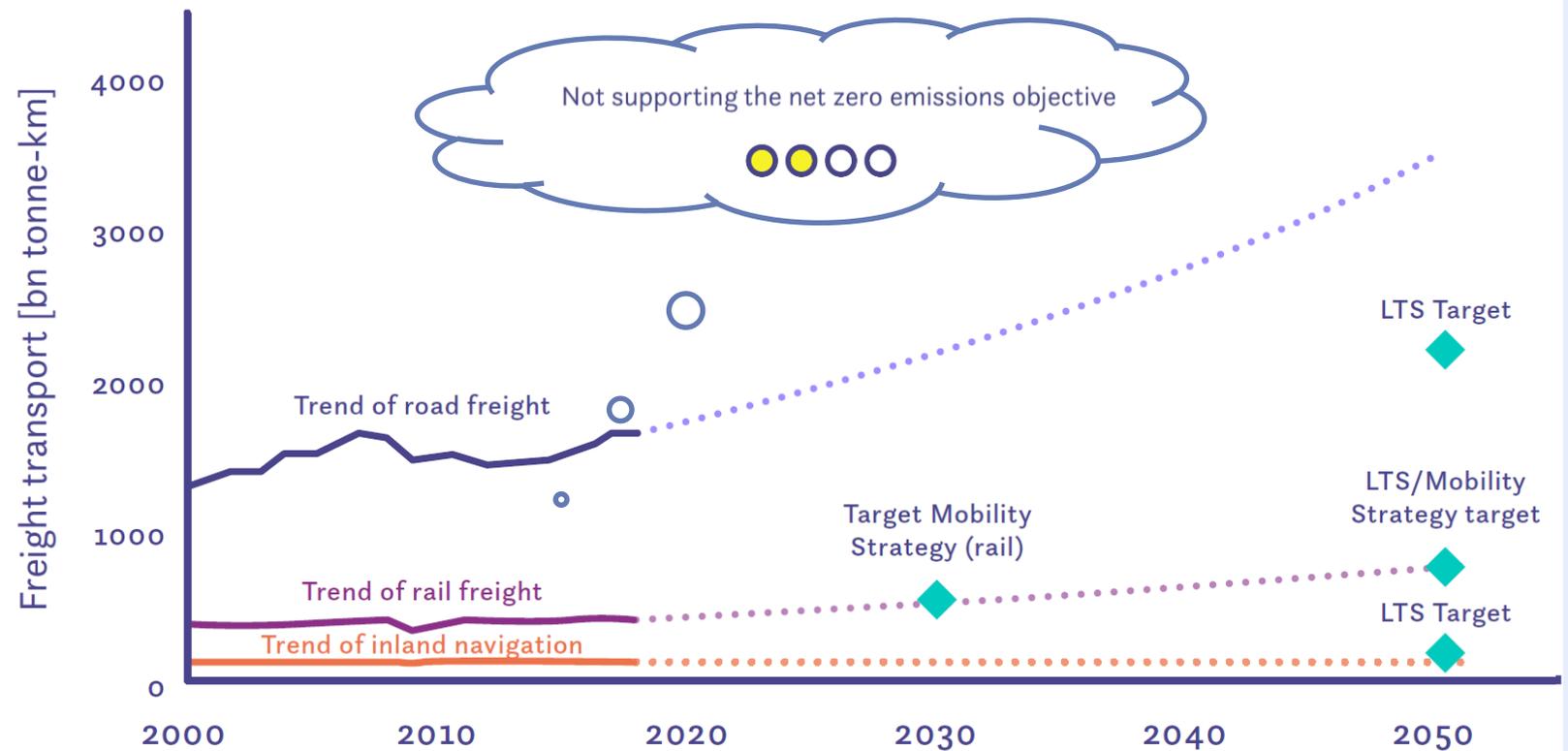
Source: own presentation based on Eurostat data and target value from COM working paper: Analysis associated with the Resource Efficiency Roadmap. The trend is -10 % of the required change to reach the 2020 target value and 0.8% in the wrong direction.

# Moving w/o emissions



## Illustrative progress measurement:

Progress on the modal shift in freight transport



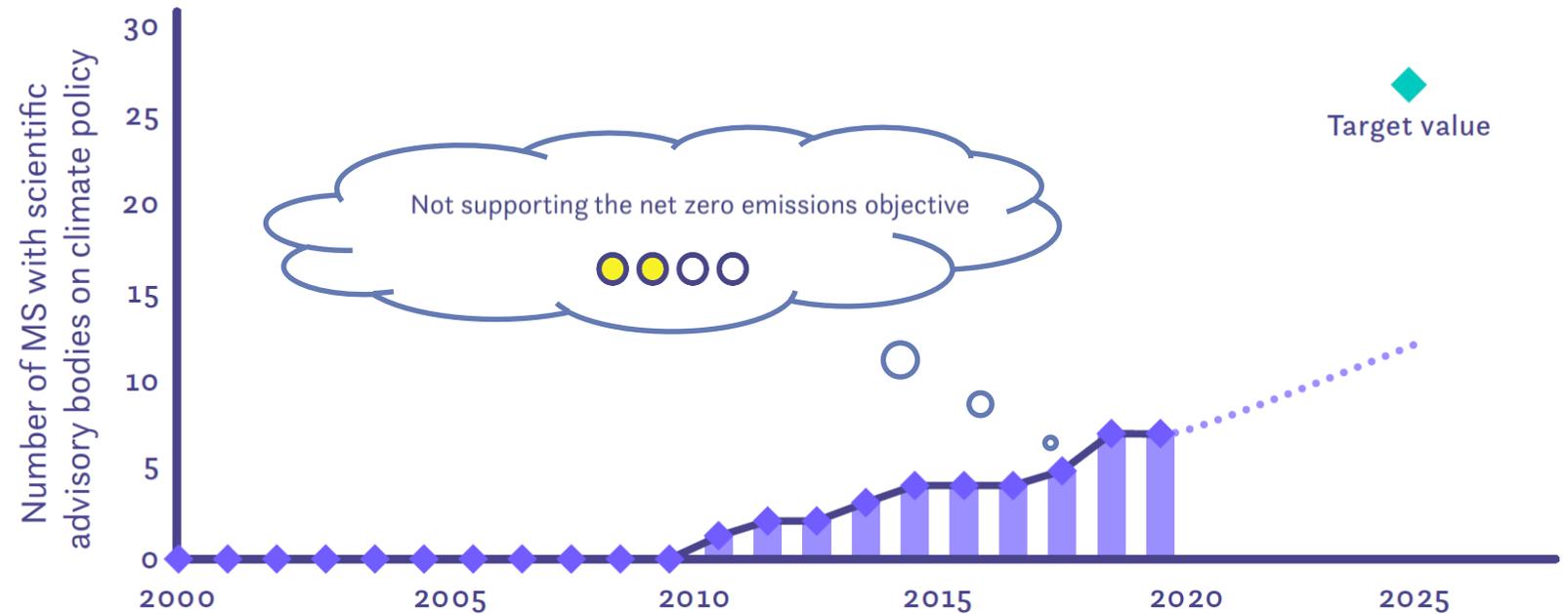
Source: own presentation based on data from Eurostat (EU 28) using data on inland waterways for domestic navigation and 2050 target values from the LTS. The trend is -18 % (road), 100 % (rail), -339 % (inland waterways) of the required change to reach the 2050 target.

# Climate neutral Governance



## Illustrative progress measurement:

*Progress in MS in establishing a scientific advisory body for climate policy*

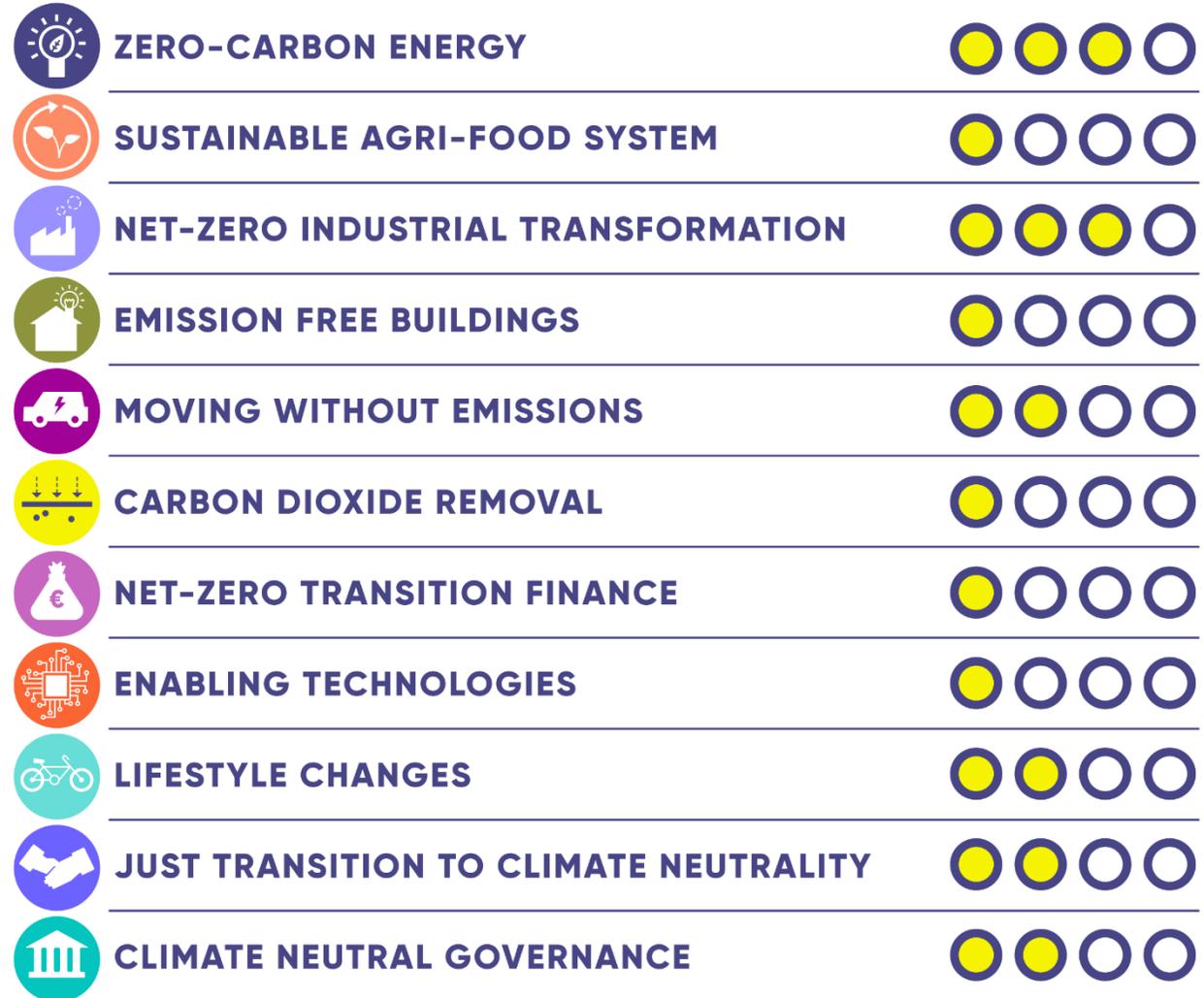


Source: own presentation based on an evaluation of national governance systems, only counting advisory bodies still in use. Target value is based on expert judgement. The trend is 56 % of the required change to reach the 2025 target.

# A scoreboard – an example

based on single indicators for each element

## Progress towards net zero emissions in the elements



### CLASSIFICATION

- ● ● ● In line with net zero emissions objective
- ● ○ Progressive but insufficient for net zero emissions objective
- ○ ○ ○ Not supporting the net zero emissions objective
- ○ ○ ○ Opposing the net zero emissions objective

Source: own presentation based on single indicators for each element.

# Conclusions

**The EU needs to keep track of whether it is on the path to net zero.**

**This indicator framework can help to:**

- **Improve planning and reporting while avoiding blind spots**
- **Inform about overall progress as well as on specific enablers**

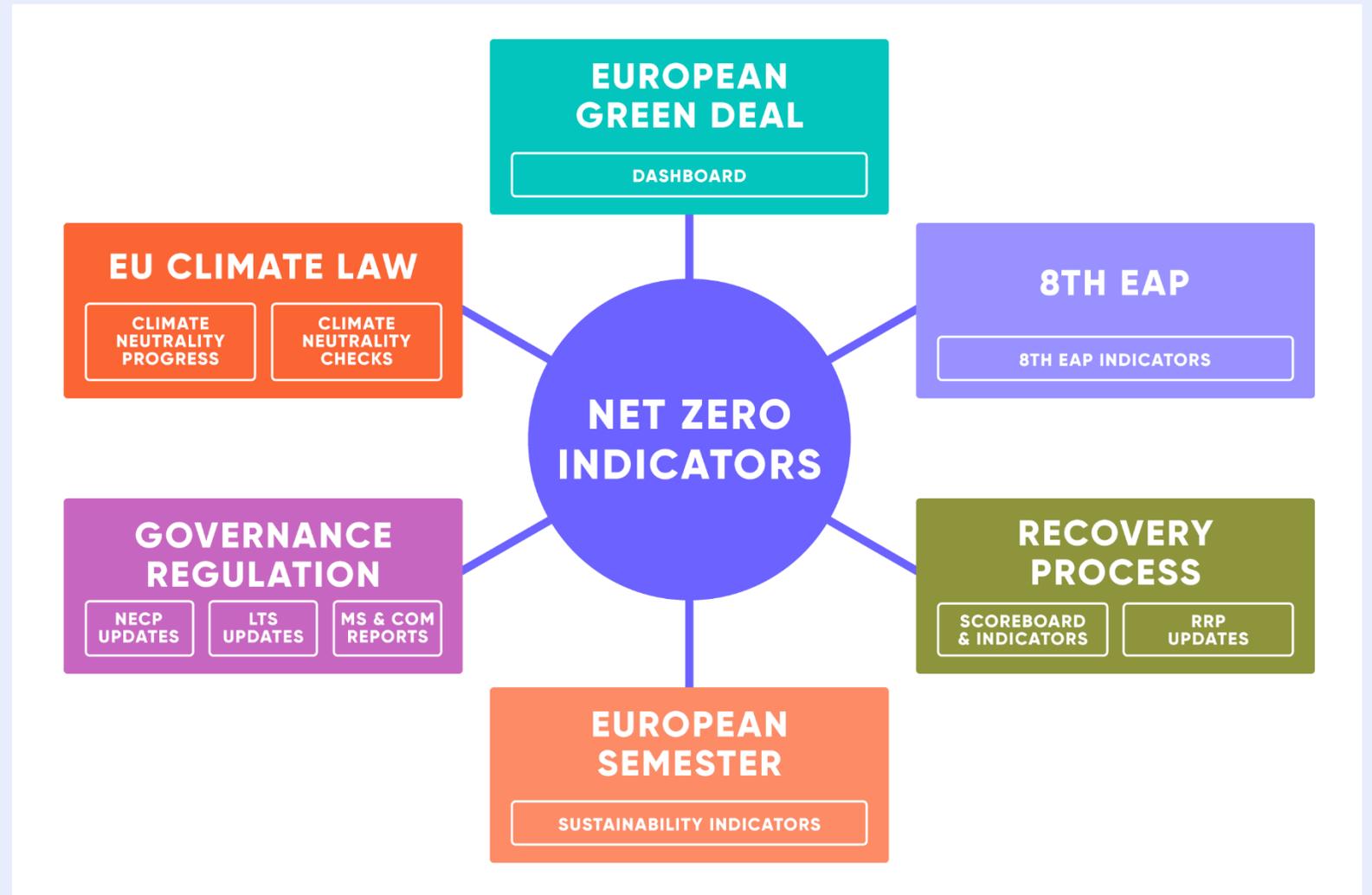
**What it needs:**

- **Harmonisation and centralisation of existing data**
- **New data in specific elements**
- **Target setting in specific elements**



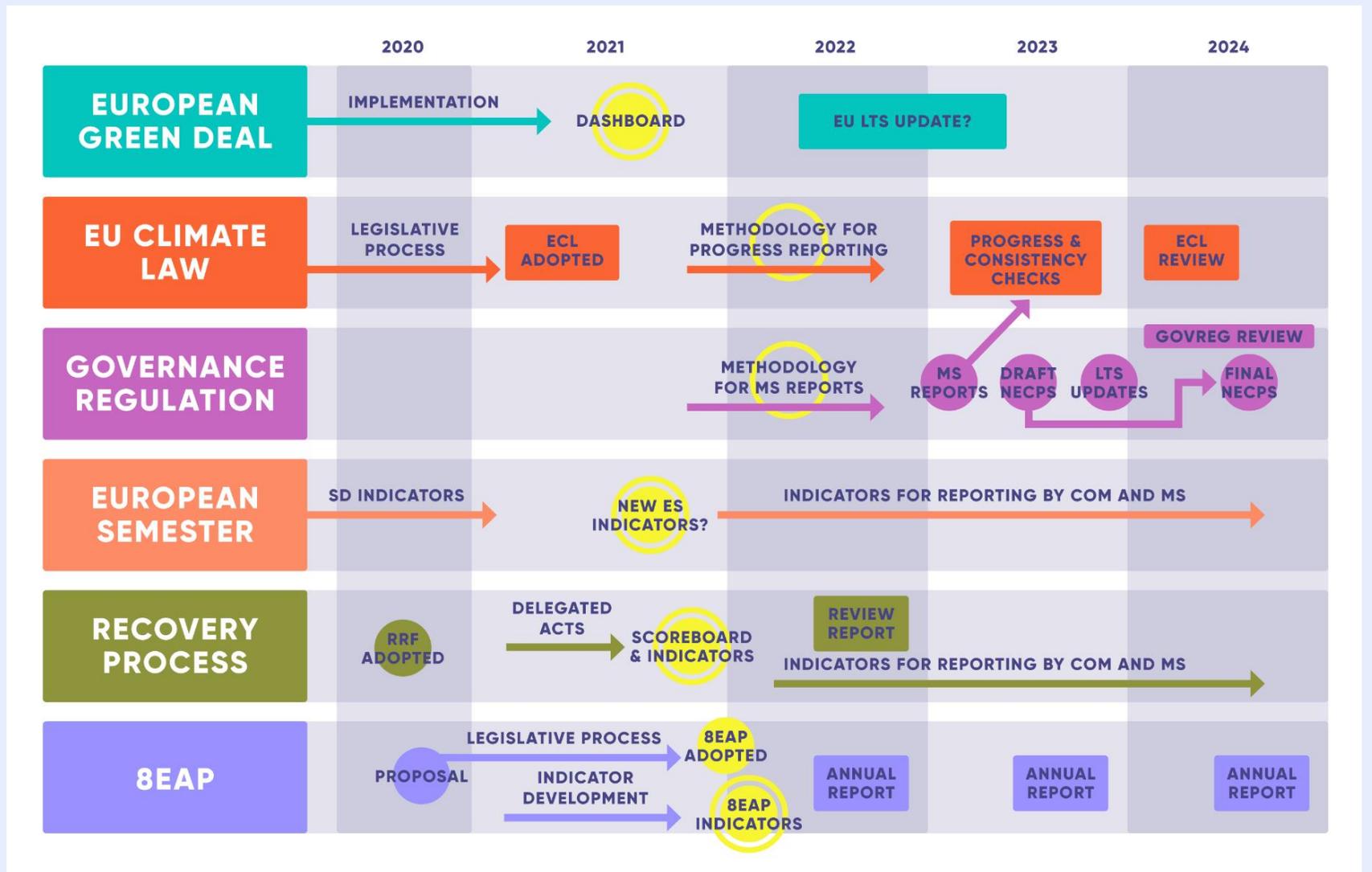
**PART II:  
INTEGRATING INDICATORS IN EU  
GOVERNANCE PROCESSES**

# Policy processes in need of indicators for climate neutrality



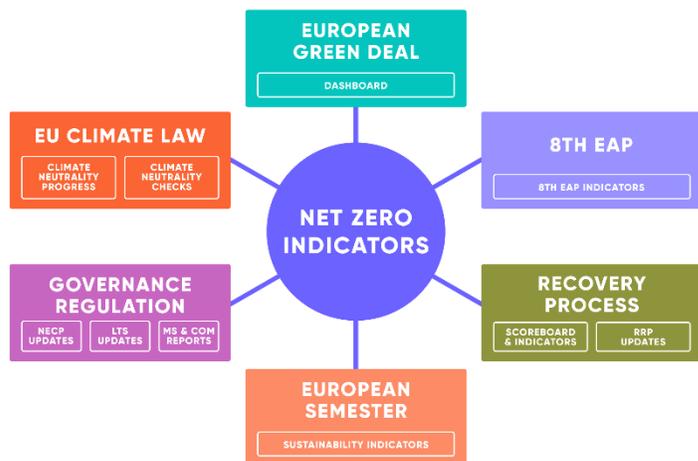
Source: own presentation; visuals by Nobel Studio

# Timeline of relevant processes



Source: own presentation; visuals by Nobel Studio

# Conclusions



- **EU needs ability to measure progress towards climate neutrality** = implies tracking structural change, below surface
- **Several processes need / are developing indicators**
- **The parallel processes present an opportunity for a common indicator set** – more efficient, more transparent
- **COM should start transparent development of methodology**
- **Integration needs to start straight away – processes must be connected in 2021**
- **Plus: EU LTS updating and Governance Regulation revision**







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**Thank you for your participation and  
see you soon!**