



# Strategy of EU Energy (and climate) poli - and its wider implications

LUT H2 research forum

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# About myself

- > 20 years of climate & energy policy experience, from the Finnish CDM/JI under Kyoto protocol
- DG Clima > 10 years, Commission diplomat in overseas embassies 10 years:
- EU ETS III phase, implementation rules, original 2030-package Impact assessment etc
- Commission lead negotiator for Climate finance under the UNFCCC-process. Team EU speaker
- Member and chair of the UNFCCC Standing Committee on Finance 2016-22
- DG Clima Lat Am and Caribbean desk incl trade negotiations (Mexico, Mercosur, Chile)
- Currently head of media/spokesperson at EC Rep in Helsinki



# Some Issues:

- Playground widening + new inter-linkages: climate + energy + competitiveness + geopolitics + strategic autonomy...
- Current Commission and the Green Deal (incl energy, RePowerEU, market...)
- Direction of travel: 2030=>2040=>2050
- Particularities: H2, EU ETS, CBAM...
- Single market and IndustryNetZero etc – where will it land ?
- Next Commission 2024-29 ? Implementation AND policy deepening (?!)
- UNFCCC – when shall we have article 2.1.c) operational with private sector and the global picture !?

A new norm for the global liberal economy ?!



CLIMATE LAW

CLEAN AND  
SUSTAINABLE  
ENERGY

SUSTAINABLE AND  
SMART MOBILITY

NATURE PROTECTION

ENVIRONMENTALLY  
FRIENDLY  
INDUSTRY

# European Green Deal

FARM TO FORK

COMBATTING  
POLLUTION

EU AT THE GLOBAL  
FOREFRONT OF  
GREEN TRANSITION

JUST TRANSITION  
FOR ALL

ENERGY EFFICIENCY  
IN BUILDINGS

INVESTING GREEN  
PROGRAMMES

# Commission political priorities 2019-24

=> European Parliament elections at summer 2019 =>

- A European Green Deal
- An economy that works for people
- A Europe fit for the digital age
- Protecting our European way of life
- A stronger Europe in the world
- A new push for European democracy
- \*\*\*\*\*
- COVID-19
- Russia's brutal attack on Ukraine
- Economy
- => EP elections in June 2024 => what new mandate from the EP ?!



Europe matters, because together we can protect our way of life.

Ursula Von Der Leyen

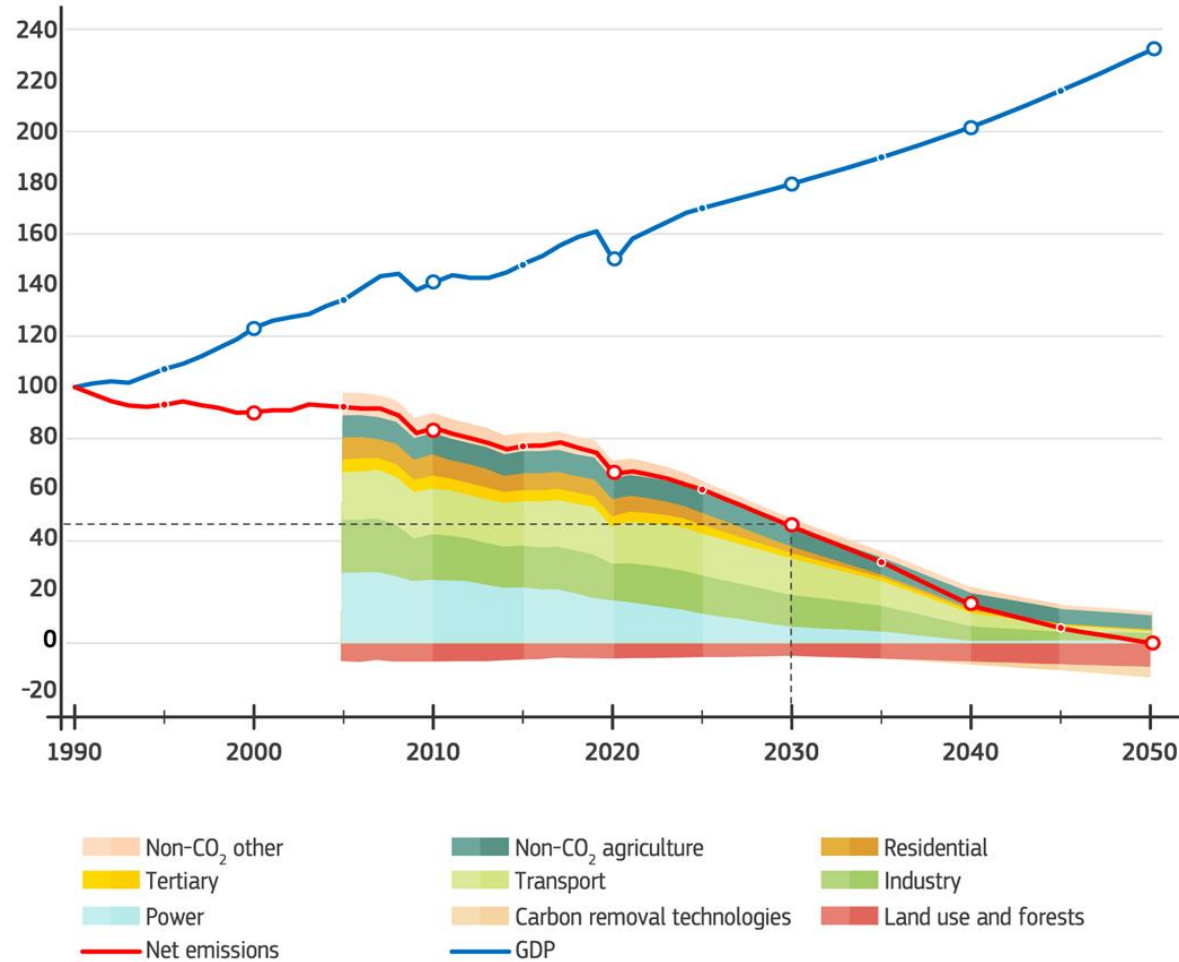
together.eu





# The (current ?) EU climate law defines ambition

Achieving at least 55% net greenhouse gas reductions by 2030 compared to 1990 and climate neutrality by 2050



## Ff55: 13 inter-connected proposals that strike a careful balance between pricing, targets, standards and support measures.

Pricing	Targets	Rules
<ul style="list-style-type: none"> <li>• Stronger ETS including in aviation</li> <li>• Extending the ETS to maritime, road transport, and buildings</li> <li>• Updated Energy Taxation Directive</li> <li>• Carbon Border Adjustment Mechanism</li> </ul>	<ul style="list-style-type: none"> <li>• Updated Effort Sharing Regulation</li> <li>• Updated LULUCF Regulation</li> <li>• Updated Renewable Energy Directive</li> <li>• Updated Energy Efficiency Directive</li> </ul>	<ul style="list-style-type: none"> <li>• Stricter CO<sub>2</sub> performance for cars &amp; vans</li> <li>• New infrastructure for alternative fuels</li> <li>• ReFuelEU: More sustainable aviation fuels</li> <li>• FuelEU: Cleaner maritime fuels</li> </ul>

### Support measures

Using revenues and regulations to promote innovation, build solidarity and mitigate impacts for the vulnerable, notably through the new Social Climate Fund and enhanced Modernisation and Innovation Funds





# State of play spring/summer 2023

EP/Council votes: LULUCF (2026-30), ICE prohibition 2035, ESR, deforestation, ETS, CBAM, ESF, buildings energy efficiency, maritime transport, RED, corporate responsibility, EED...

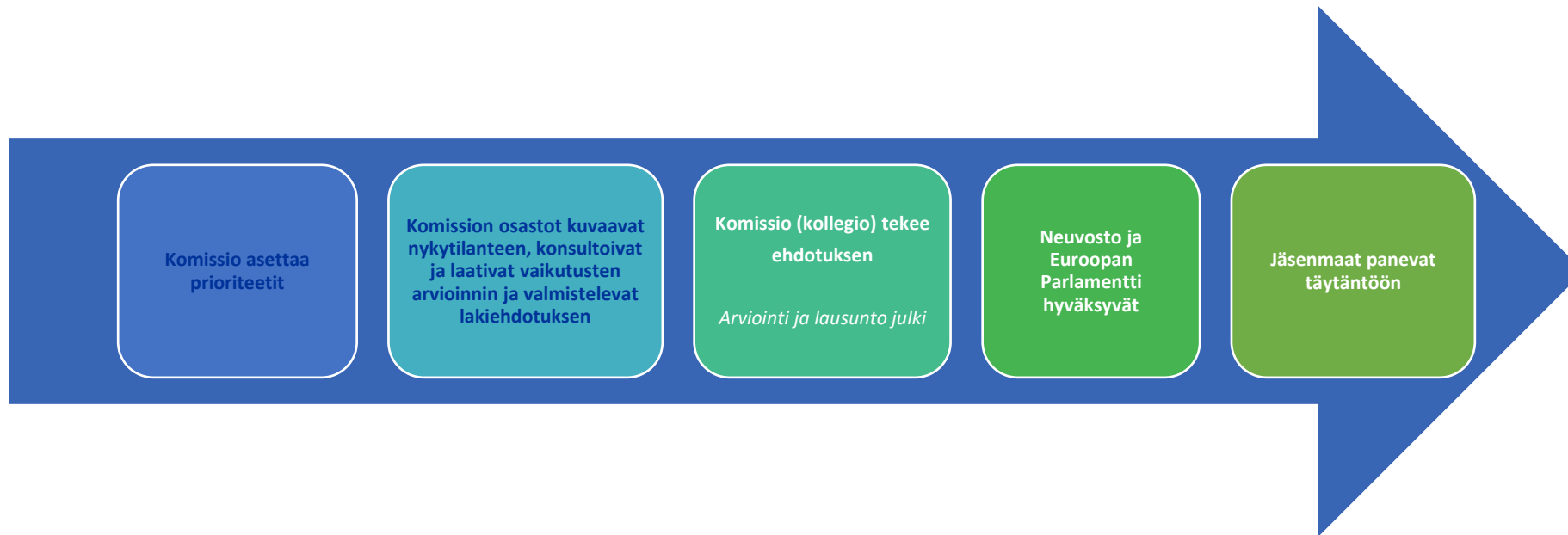
Spring proposals (Raw materials, Netzero industry) => request to speed up

Restoration, textiles => trilogues

EP from summer 2023: Delivery => Democracy (EP elections summer 2024)

In parallel: RepowerEU being implemented, EU electricity market reform !

# Lainvalmisteluprosessi





# Vaikuttaminen Euroopan komissioon

Tärkeintä on ennakkovaikuttaa Euroopan komissioon → aloiteoikeus komissiolla

Hyvä tuntee komission sisäisen päätöksenteon vaiheet::

→ aloite → julkinen kuuleminen → vaikutusten arviointi

→ komission sisäinen lausuntokierros (Inter-Service Consultation)

Hyvä verkostoitua mahdollisimman laajasti ja identifioida oikeat toimijat komissiossa

Säännöllinen yhteydenpito

Monitasoinen ja epämuodollinen yhteydenpito tehokkainta

Yhteistyö muiden jäsenmaiden kanssa



# Known unknowns from the current Commission

EU Climate law (Paris art 14 GST) => 2040-consultations =>  
Communication

Carbon certification expert groups – delegated acts next Commission  
(?!)

Which instrument for the voluntary market and how to resolve the  
"double-counting"

Own resources part II – foreseen to autumn



# March major legislative initiatives – where will it land

- Net Zero Industrial Act + Hydrogen bank,
- Critical Raw Materials Act,
- Electricity Design Market Reform,
- Long-term competitiveness strategy,
- Single Market 30 years,
- State aid separately decided.

=> EUCO discussed the proposals BXL 23-24/3 => **fast track**

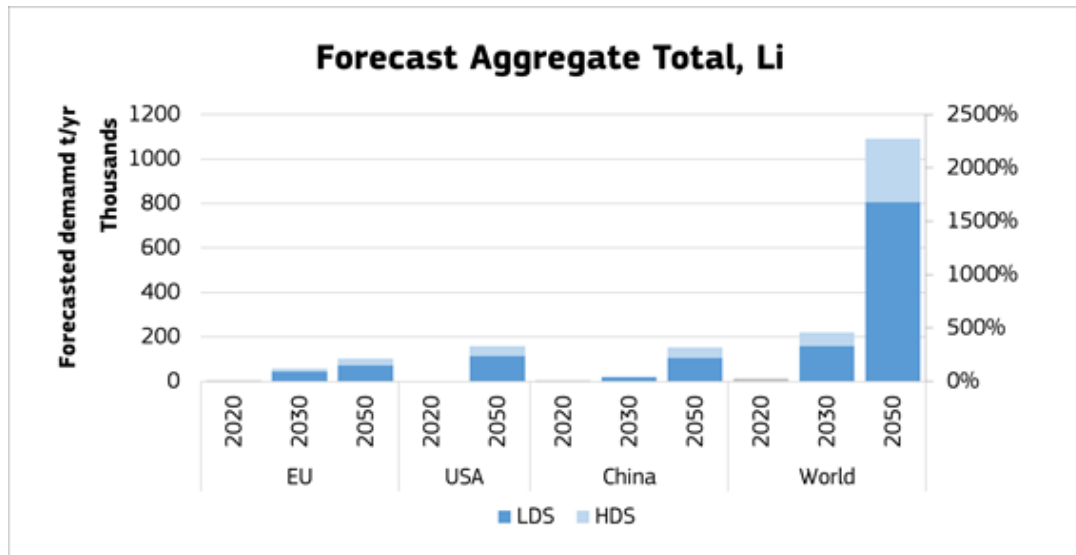


## Some reflections (1)

- **State aid**: temporary loosening till the end of 2025...
- **Netzero Industry Act**: provide a regulatory framework for a quick deployment, fast-track permitting (2 years), EU strategic projects, scaling up...
- **Critical raw materials act**: complementing, but of strategic and economic value (+notably for the Nordics: all the EU's Green deal raw materials would be in our rock-bed, but: **permitting** and proper EIAs, warming fragile arctic, logistics notably railway gauge, EU/NATO complementarity etc). => next 2 slides in more detail
- **Electricity market reform**: evolution, not revolution. Merit order stays.

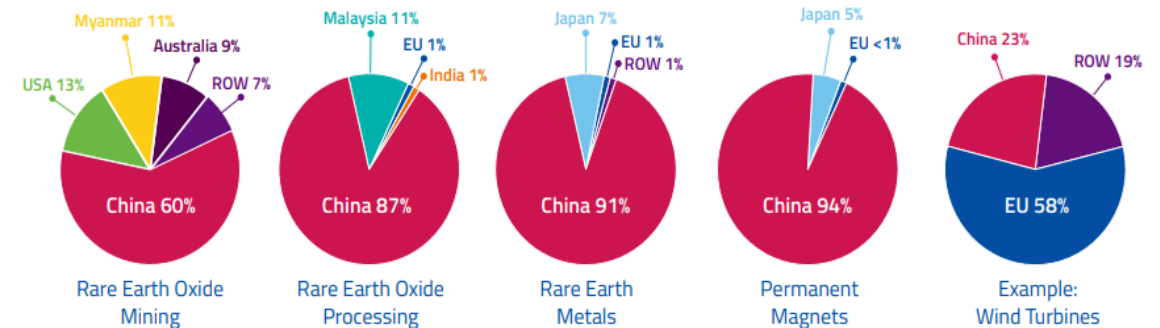
# Critical raw materials (CRMs) and the EU economy

- Driven by the **twin transition** and defence needs, significant **growth in CRM demand**, with risk of global supply/demand imbalance
- EU is heavily dependent on third country supply for CRMs that are key for strategic technologies
- Strategic dependencies and risk of supply chain disruption



*Demand forecasts aggregated for lithium (2023 Foresight Report)*

Lithium demand for batteries in the EU is expected to **grow by 12 times by 2030 and by 21 times by 2050.**



*Fig. 3: From rare earths mining to wind turbine manufacturing: estimated market shares in 2019. Sources: Team analysis and Roskill 2018; Adamas Intelligence 2019; Peteves 2017; Carrara et al. 2020; IEA 2021; USGS 2021.*

*Source: European Raw Materials Alliance (ERMA)*



# Strengthening the value chain

## Strategic Projects

Across the whole SRM value chain: extraction – processing - recycling

Selected by the Commission with advice from the Board based on :

- Contribution to security of supply Sustainability
- Technical feasibility
- Cross-border benefits in EU/ Economic and social benefits in third countries

## Benefits

- **Priority Status** in national and EU law: for administrative and judicial procedures
- **One-stop-shop approach**
- **Permitting - Legal time-frames**
  - Extraction: 24 months
  - Processing & Recycling: 12 months
- Provisions to facilitate and timely deliver **environmental assessments and authorisations without weakening environmental and social protection**
- **Enabling conditions to implement Strategic Projects**
  - The Critical Raw Materials Board provides coordination and advice to secure remaining financing
  - Provisions to facilitate the conclusion of off-take agreements



## Some reflections (2)

- Multilateralism in defensive, no WTO arbitration etc
- Biggest move on the Single market ever since the Delors Commissions – where will it land ? Have we seen it all ?
- Whose "strategic autonomy for the EU" ? See eg the Elysee 60 years joint FR/DE declaration.
- Dependencies: political commitment to FAST reduce => impact en energy
- Moving away from the silos: Will there be an EU industry and/or energy policy to be linked to climate/environment policies ? Development since the Juncker Commission => Competitiveness
- How many of the current College members continue 2024-29 and which portfolios ?
- China and USA: dialogue but no compromise on our values



# EU's binding Climate law art 4

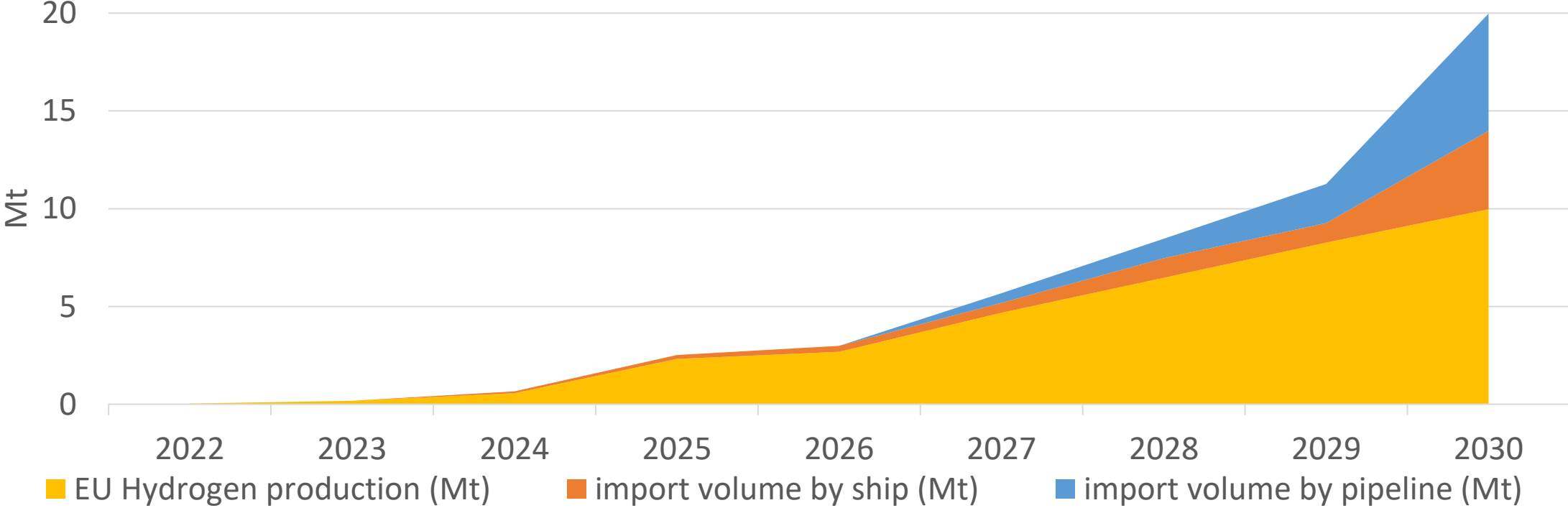
3. With a view to achieving the climate-neutrality objective set out in Article 2(1) of this Regulation, a Union-wide climate target for 2040 shall be set. To that end, at the latest within six months of the first global stocktake referred to in Article 14 of the Paris Agreement, the Commission shall make a legislative proposal, as appropriate, based on a detailed impact assessment, to amend this Regulation to include the Union 2040 climate target, taking into account the conclusions of the assessments referred to in Articles 6 and 7 of this Regulation and the outcomes of the global stocktake.
4. When making its legislative proposal for the Union 2040 climate target as referred to in paragraph 3, the Commission shall, at the same time, publish in a separate report the projected indicative Union greenhouse gas budget for the 2030-2050 period, ... The projected indicative Union greenhouse gas budget shall be based on the best available science...
5. When proposing the Union 2040 climate target in accordance with paragraph 3, the Commission shall consider the following:
  - (a) the best available and most recent scientific evidence, including the latest reports of the IPCC and the Advisory Board;
  - (b) the social, economic and environmental impacts, including the costs of inaction;
  - (c) the need to ensure a just and socially fair transition for all;
  - (d) cost-effectiveness and economic efficiency;
  - (e) competitiveness of the Union's economy, in particular small and medium-sized enterprises and sectors most exposed to carbon leakage;
6. Within six months of the second global stocktake referred to in Article 14 of the Paris Agreement, the Commission may propose to revise the Union 2040 climate target in accordance with Article 11 of this Regulation.



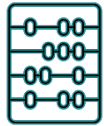
# Specific technical issues

- EU ETS: doubling of the **LRF** (i.e. how the cap of the EU ETS annually decreases)
  - **End of Free allocation by 2034 => CBAM**
  - There will be no global **carbon price**, but likely in all trading countries some price on carbon by 2030
  - H2: EVP Timmermans: all Hydrogen that available should be used for industrial processes; Economics: €4 subsidy per kg of hydrogen translates to a carbon price of €833/TCO<sub>2</sub>
  - Green hydrogen cost drivers: 1) cost of renewable energy; 2) electrolysers - rapid reductions ?; 3) capacity factor; 4) transport costs.
- => "Liebreich ladders" => a detailed slide

# EU hydrogen supply outlook



# Scale up and financing needs



20 mt of H<sub>2</sub> corresponds to 160 to 200 GW of electrolyser output capacity and 300GW to 400GW of renewable capacity.



Today less than 400MW of electrolyser capacity is installed worldwide and only 160 MW capacity in the EU.



Annual electrolyser manufacturing capacity was 7GW in 2022.



Scaling up electrolyser installation



Scaling up electrolyser manufacturing



Scaling up infrastructure



Opening up new demand centres

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## 335-471 bn euros

Total investment needs to produce transport and consume 10mt of renewable hydrogen produced in the EU

An additional **500 bn euros** will be needed in international value chain investments

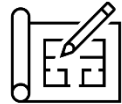
# State of play and kick-start challenge



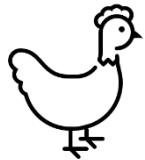
16 Member States have national hydrogen strategies



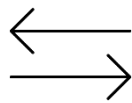
In 2022 some 680 large-scale hydrogen project proposals, equivalent to USD 240 billion in direct investment through 2030, have been put forward. However, only about 10% (USD 22 billion) have reached final investment decision.



European Clean Hydrogen Alliance identified 840 hydrogen projects across all parts of the value chain.



Hydrogen off-takers



Hydrogen producers



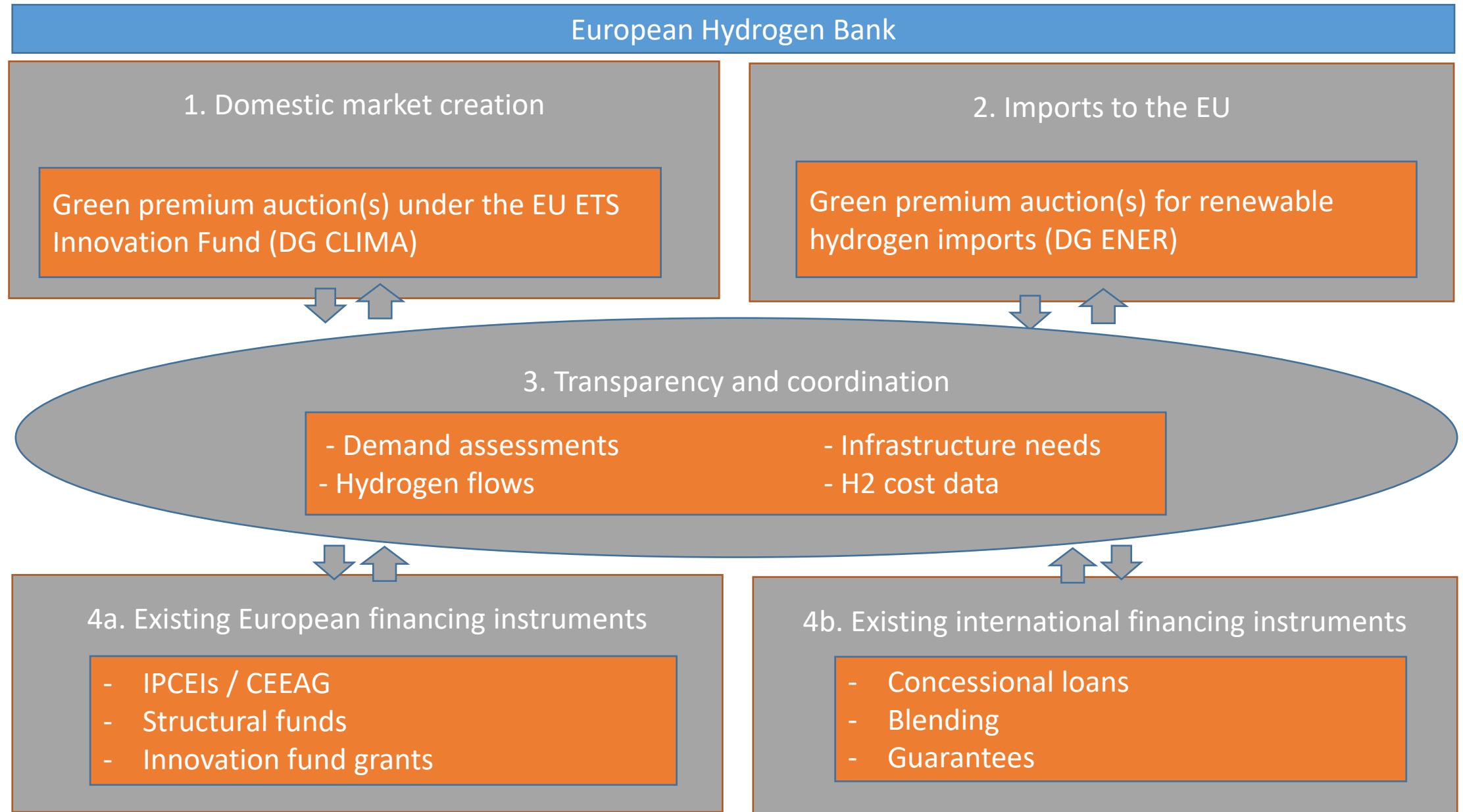
Green premium approach

Estimated size of the green premium: **90 – 115 billion euros** for the 20mt of renewable hydrogen

By bridging the cost gap and increasing revenue stability, this will increase bankability of projects and bring overall costs down



# European Hydrogen Bank: possible activities



# H2: Existing project financing

## IPCEI

- €10.6 bln, unlocking add. €15.8 bln

## RRF

- €10 bln, of which €4.9 bln through IPCEI

## Innovation Fund

- €800 mln hydrogen-related projects already awarded,
- €1bln topic call closing on 16 March
- 2.6 GW electrolyser pipeline in previous call

## Cohesion Fund

- ERDF/JTF & InvestEU

## CEF

## NDICI- Global Europe

- European Fund for Sustainable Development Plus (EFSD+)
- EIB - loans and EFSD+ guarantees
- Regional investment platforms

## Team Europe

- E.g. Green Hydrogen development in Chile

## Horizon Europe

- Europe-Africa Partnership for Renewable Energy (LEAP-RE)



European Commission

# “Liebreich ladders”

## Clean Hydrogen Ladder: why blending is dumb

Liebreich Associates

Unavoidable

Key: No real alternative Electricity/batteries Biomass/biogas Other



\* Most likely via ammonia or e-fuel rather than H2 gas or liquid

Source: Michael Liebreich/Liebreich Associates, *Clean Hydrogen Ladder*, Version 4.1b, 2021. Concept credit: Adrian Hiel, Energy Cities. CC-BY 3.0



# Some issues to be considered for the travel 2030-40-50

- 2040 consultations now over
  - Summer 2024: Commission 2040-Communication, indicative Carbon budget and possible fourchette for the 2040 targets => next Commission
- => Direct impact on EU's energy policy (+ obviously the MS competences respected)
- => (EU Climate law ! Art 4/para 3-6, links to UNFCCC Paris Agreement and its art 14 GST).
- Sinks after 2030 – what kind new targets ?
  - How to proceed from Ff55-package ? (if netzero or neg emissions by 2050) ?
  - Electrification across all value chains => 35% less total energy, H2 for industry
  - EU ETS reform passed (suprisingly ambitious) + "ETS bis" => C price signal very strong



# Next Commission 2024-29, some issues

Work-programme being considered already now in think-tanks

EP-elections at summer 2024 => already gives some idea of what the Commission programme can look like (eg 2019 "climate elections").

3/2023 Commission major initiatives follow-up ?

EU-citizen opinion: Ukraine, inflation, resilience, EGD ...

Investment signal 2040-50-... ?!

2030-objective "overshoot"

RePowerEU implementation: MS **permitting**, EIB new mandate ...

Competitiveness I



# Climate investment signal possible drivers 2024-29

”Reverse engineering” - from 2050/2040 backwards. Just 1 inv. Cycle away!

2040-proposals during the next Commission (EU climate law art 11)

Will the same direction of travel continue? I.e. electrify all that can ?

Future of burning ?

Will there be (any elements to) ”Common Energy Policy” that is MS competence ?

More breaking the silos ? Eg in sustainable finance

Support for big risky innovations ? Will happen in EU or elsewhere !

UNFCCC ambition ? Paris agreement arts 2.1.c) and Art 14 (GST)

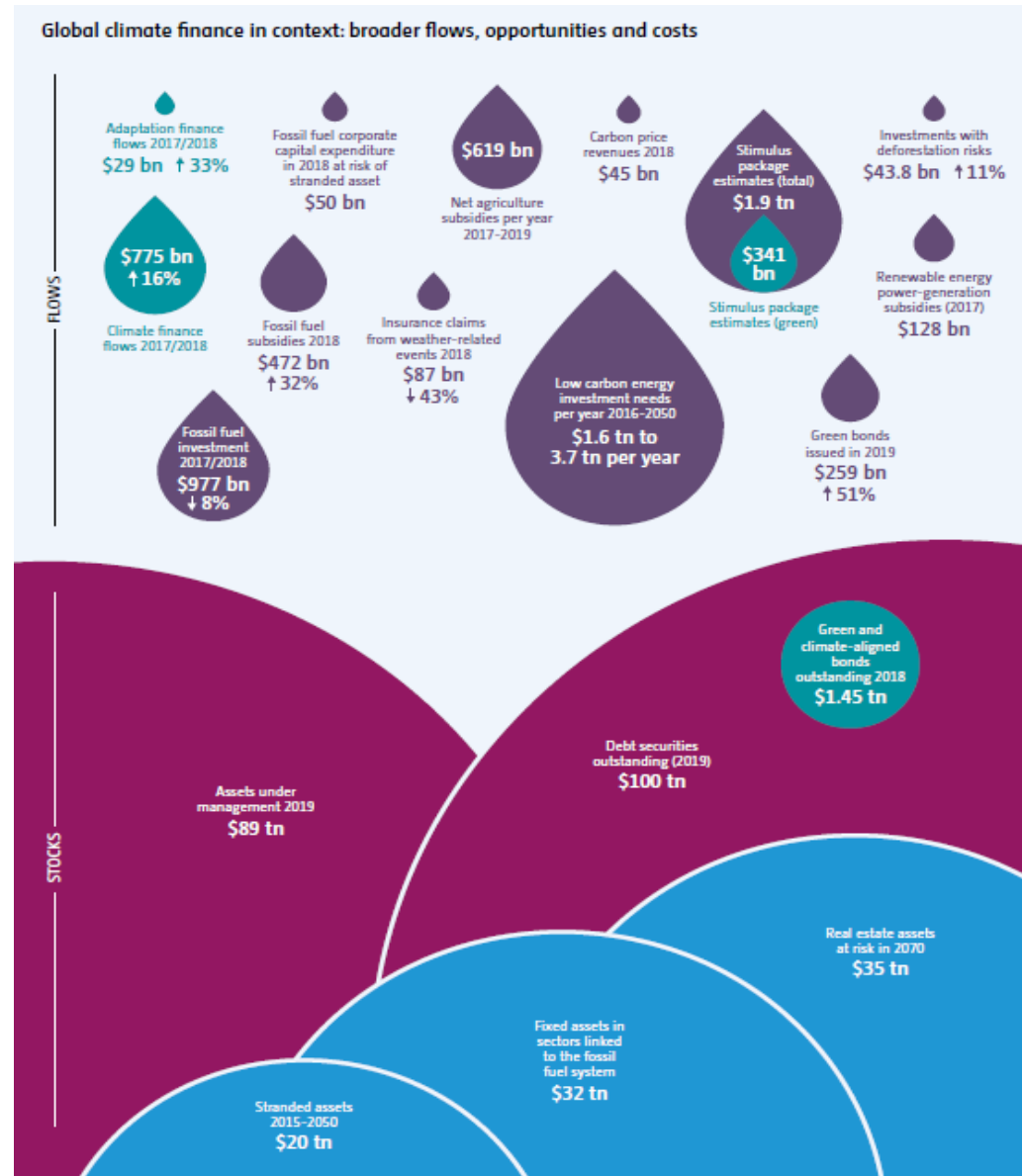


## Thoughts by a citizen

- Europe only succeeds in competing with high-tech => R&D to stay at the very top
- Make sure the innovation + demos stay in the EU => use of the EU instruments, right policy
- 5th industrial revolution => clean energy, sust value chains => driven by C price by +- 2030
- => benefits of the first movers
- What will the EU's strategic autonomy entail ? Surely more production in EU, no cutting off China
- EU's next Trade policy cycle => more binding climate contents ? (eg EU-Mercosur case)
- Imagine how our economy and societies will look like in 2050 after the ambition implemented – what what needs to be done and invested to get there ?
- We're just at the beginning of the massive investment cycle and opportuniites => active continued follow-up + bringing proposals + EU/national level interaction + ALL stakeholders



# SCF: Some scale of the global finance flows (=> PA Art 2.1.c)





# Contacts

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[The European Commission's priorities | European Commission \(europa.eu\)](https://ec.europa.eu/eu-press/en/the-european-commission-s-priorities)