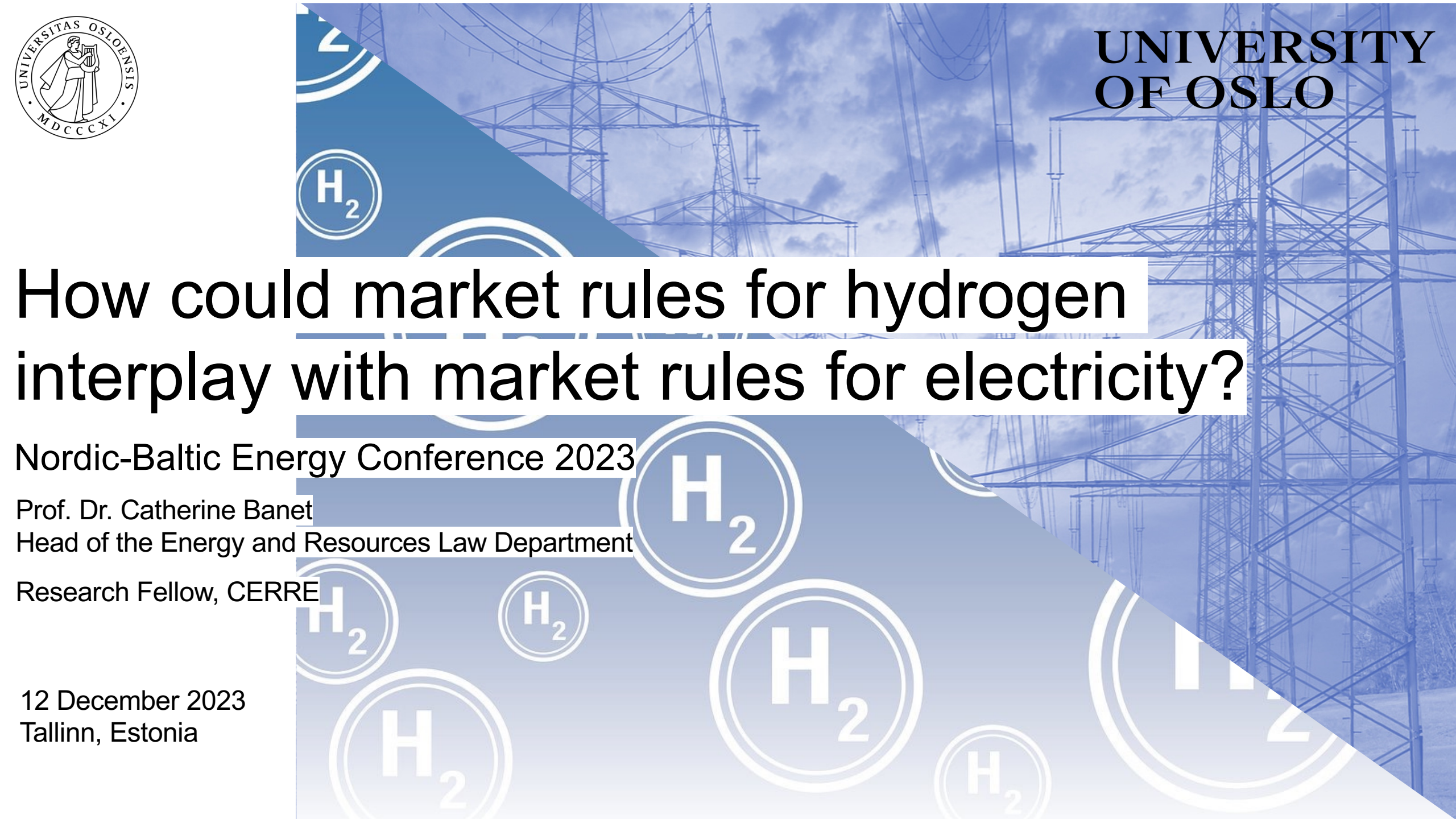

UNIVERSITY OF OSLO

How could market rules for hydrogen interplay with market rules for electricity?

Nordic-Baltic Energy Conference 2023

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12 December 2023
Tallinn, Estonia

European Council
Council of the European Union

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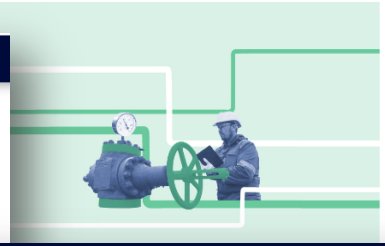
Council of the EU Press release 8 December 2023 16:30

Gas package: Council and Parliament reach deal on future hydrogen and gas market

The Council and the Parliament today reached a provisional political agreement on a regulation that establishes common internal market rules for renewable and natural gases and hydrogen. The purpose of the legislation is to facilitate the penetration of renewable and low-carbon gases into the energy system, in particular hydrogen and biomethane.

Infographic - Fit for 55: shifting from fossil gas to renewable and low-carbon gases



EU23 News Events Programme Presidency

Press release | 8 December 2023

Council and Parliament reach deal on future hydrogen and gas market

Plant to extract biomethane from waste in Barcelona. | © EFE/Iñaki Martínez

The EU Council and the European Parliament reached a provisional political agreement on a regulation that

EU23 News Events Programme Presidency

Press release | 28 November 2023

Council and Parliament reach agreement in internal markets for hydrogen and renewable gases

Gas burner. | © Dilayr Sultan/Pexels

The Council of the EU and Parliament have reached a provisional political agreement on the directive to establish

EU23 News Events Programme Presidency

Press release | 17 October 2023

Council agrees on a common position to reform the electricity market

Electrical towers and windmills in the province of Zaragoza (Spain). | © EFE/Javier Cebollada

The Council reached an agreement (general approach) on a proposal to amend the EU's electricity market design (EMD).

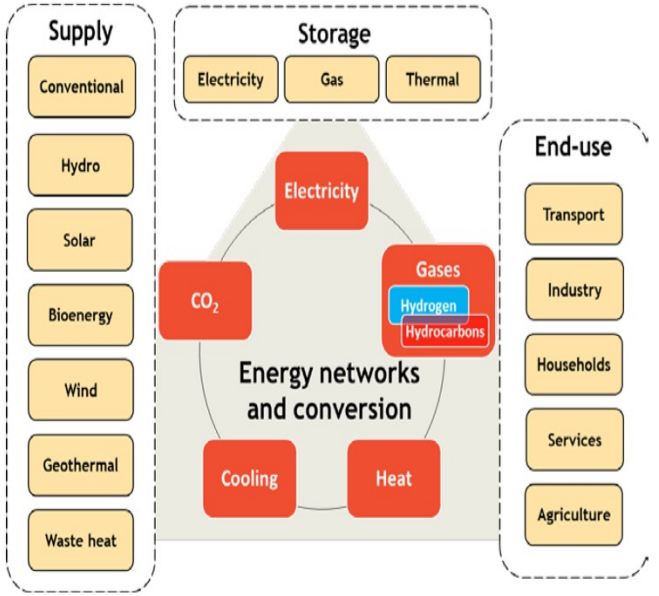
Is there a need for alignment between electricity market legislation and hydrogen market legislation?

And if yes, how?

Rationale for regulatory alignment

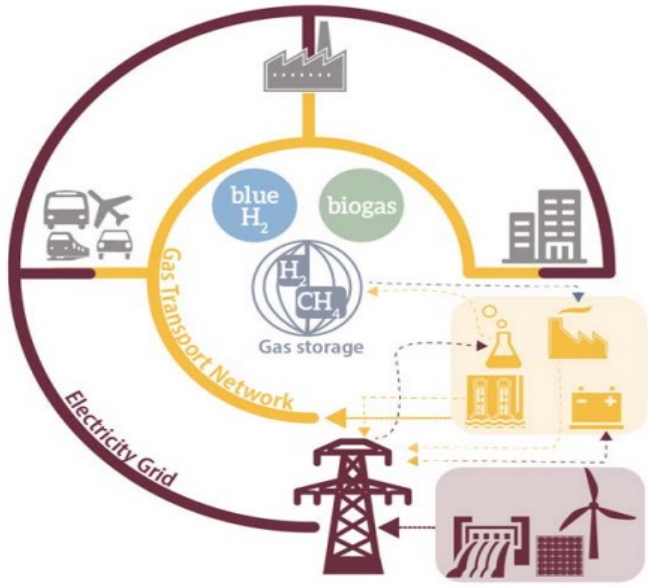
- Energy system integration and sector coupling, towards a holistic view of the energy system ("one energy system" approach): hydrogen as a provider of flexibility to the energy system and a factor of decarbonisation in hard to abate sectors;
- Choice of decarbonisation options by project (topic of increasing importance);
- Level playing field;
- Geopolitical wake-up call: EU strategic autonomy (the more we can do domestically the better), global strategic partnership (cf. Net Zero Industry Act).

Figure 1: Coupling of the energy system sectors



Source: Based on Imperial College London (2018)[4].

Figure 1 – Sector coupling



Sector coupling involves:

- the electrification of transport, industry and households through the electricity grid,
- production of gases such as hydrogen (H_2) and methane (CH_4) from renewable electricity,
- storage of energy in pumped hydro, batteries and as gases (H_2 and CH_4),
- supply of end-use sectors with renewable gases, and
- electricity production from hydrogen through fuel cells and from gas with thermal power plants.

Source: European Parliament, EPRS.

2 alignment processes

1. Alignment of EU gas markets legislation on Clean Energy Package to All Europeans.
2. Alignment between EU gas markets legislation and electricity market design reform.

Among gases, primary focus on hydrogen, but all gaseous fuels ultimately also relevant.

Topics for regulatory alignment

1. Grid planning
2. Application of guiding principles
3. Unbundling models, cross-subsidisation
4. Pricing, and transparency of wholesale markets
5. Grid connection and tariffs
6. Consumer protection and consumer rights
7. Incentives: PPAs, CfDs
8. Institutional rules

1. GRID PLANNING

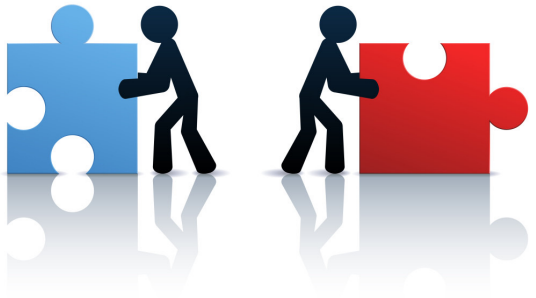
- A more integrated energy system requires an integrated approach to infrastructure network planning, both in relation to the different levels of the supply chain, and in relation to the various energy carriers.
- Different levels: alignment of National Development Plans (NDPs) process with TYNDP
- Alignment of planning across energy carriers: to depict a coherent evolution of the European energy system.
  - Cf. TEN-E Regulation
  - Ex: latest TYNDP, system integration to be considered.
- Further coordination between electricity and gas operators, based on consistent CBA methodology.
- a separate new entity in the hydrogen sector: an EU entity for Hydrogen Network Operators (ENNOH), independent from ENTSO-E and ENSTO-G.

2. APPLICATION OF GUIDING PRINCIPLES

- Driven by similar objectives, but through different energy carriers: facilitate the penetration of renewable sources into the energy system (decarbonisation), security of supply, affordability.
- Energy efficiency first principle:
  - voluntary reduction of non-essential consumption by protected customers
  - Applied in the “infrastructure gap identification” and selection of PCI (TEN-E- Regulation)
- Innovation principle and technology neutrality
- Solidarity principle and solidarity mechanisms:
  - default provisions to operationalise the solidarity principle in case of a crisis, where bilateral agreements are not in place

3. UNBUNDLING MODEL

- Ownership of pipeline and storage infrastructure.
- Horizontal unbundling, and risks for cross-subsidization.



4. PRICING AND TRANSPARENCY OF WHOLESALE MARKETS

5. GRID CONNECTION AND TARIFFS

- NRAs competence in setting tariffs and methodologies, consult the neighbouring national regulatory authorities on the draft tariff methodology, submission to ACER.
- cross-border tariffs at interconnection points for hydrogen transport networks

6. CONSUMER PROTECTION AND CONSUMER RIGHTS

- Consumer protection, consumer rights and consumer empowerment (incl. prosumers, regulated prices, suppliers' duties)

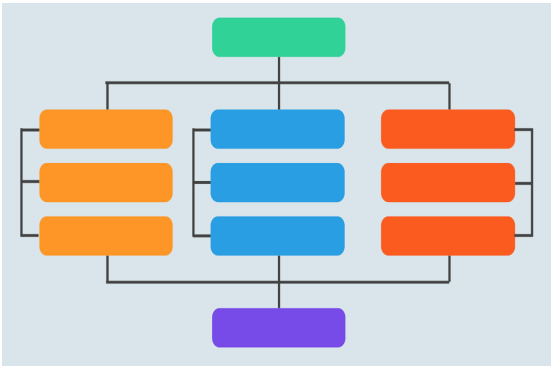
ELECTRICITY CONSUMER

7. FINANCIAL SUPPORT

- Contracts for difference
- Power Purchase Agreements (PPAs):
  - Hydrogen access to PPAs in competition with electricity
- Capacity mechanisms, rewarding flexibility and storage (hydrogen providing balancing services).

8. INSTITUTIONAL RULES

- NRAs competences, ACER powers, alignment between ENTSO-E and ENTSO-G, enforcement of the compliance of ENTSO-G with its obligations.



Thank you for your attention !