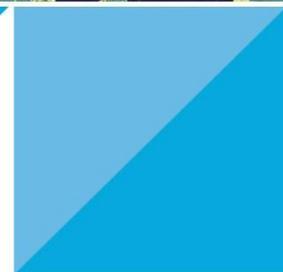




European
Commission



PLANNING AND INTEGRATION OF RE: EU EXPERIENCE



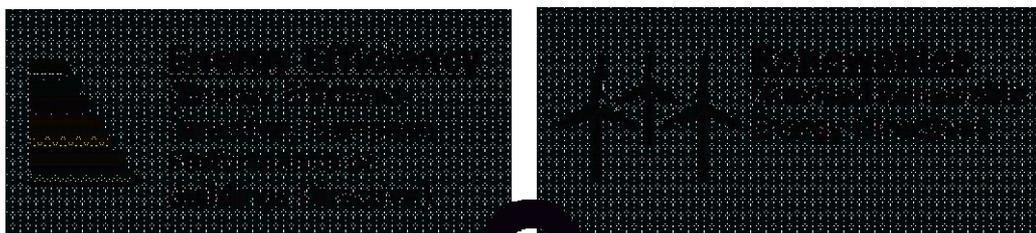
IRENA CENTRAL ASIA REGIONAL WORKSHOP
Astana, 14-15 March 2019
Matteo Governatori,
European Commission – DG ENERGY, international
relations



THE RIGHT REGULATORY FRAMEWORK FOR POST – 2020: THE NEW EU CLEAN ENERGY PACKAGE



Energy Union Governance

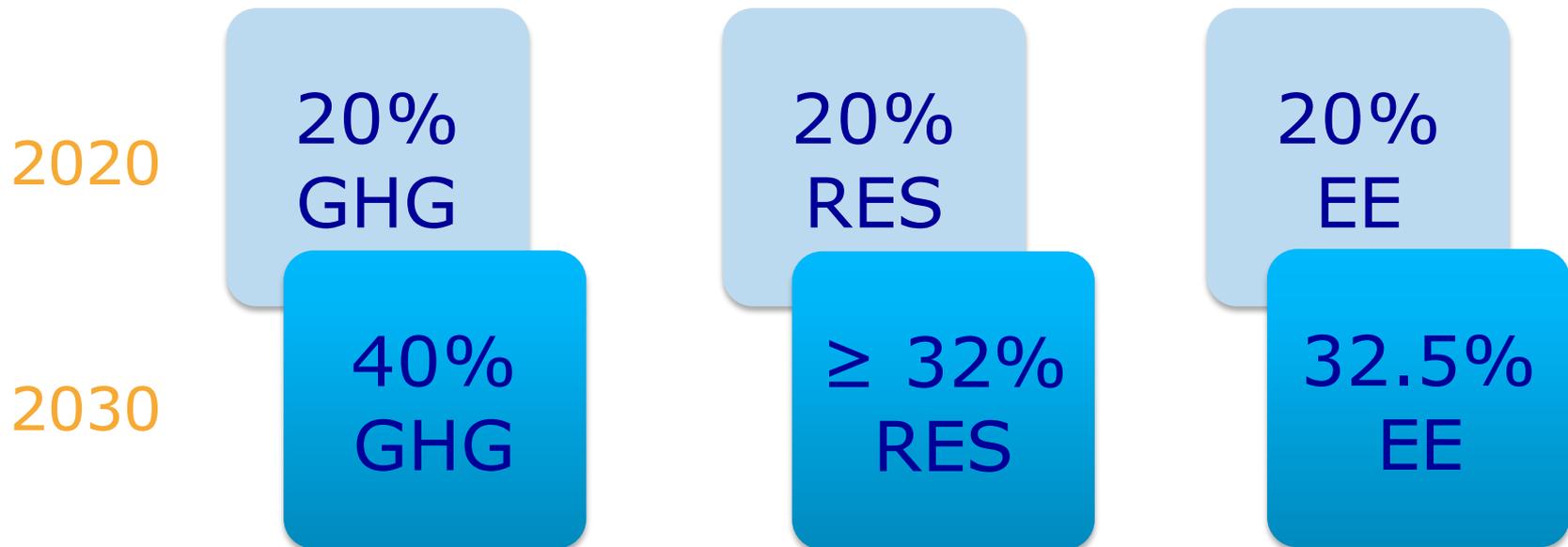


New Electricity Market Design
(including Risk Preparedness)



WHAT ARE OUR GOALS?

TARGETS FOR GHG REDUCTION, RENEWABLES AND ENERGY EFFICIENCY

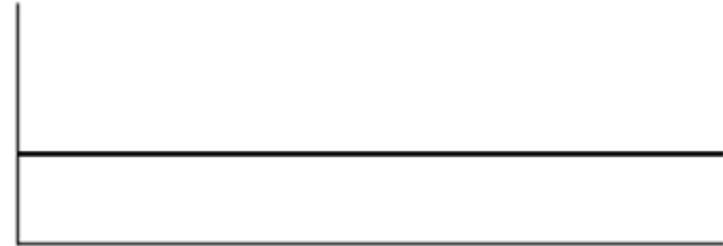


THE NEW ELECTRICITY MARKET DESIGN (KEY TO INTEGRATE RES)

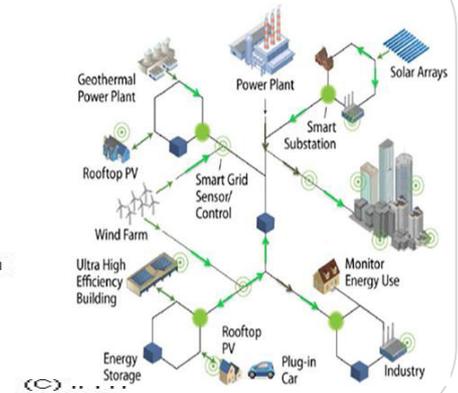
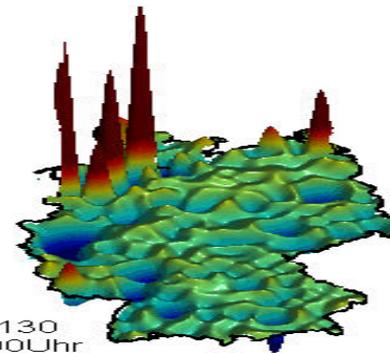
1. **Why** we need a new **electricity market design?** - General objectives
2. **What** is the regulatory framework? – The Clean Energy Package (CEP)
3. **How** will we reach the objectives?
 - Making the markets fit for renewables
 - Making renewables fit for the market
 - Framing bidding zones and cross-border capacity allocation
 - Securing the needed flexibility and adequacy
 - Fostering regional cooperation
 - Other measures

1. GENERAL OBJECTIVES: SECURITY OF SUPPLY

Old Electricity World



New Electricity World



From central/ dispatchable...
...to decentralised/ volatile

1. GENERAL OBJECTIVES: COST-EFFECTIVE / INCITING INVESTMENT



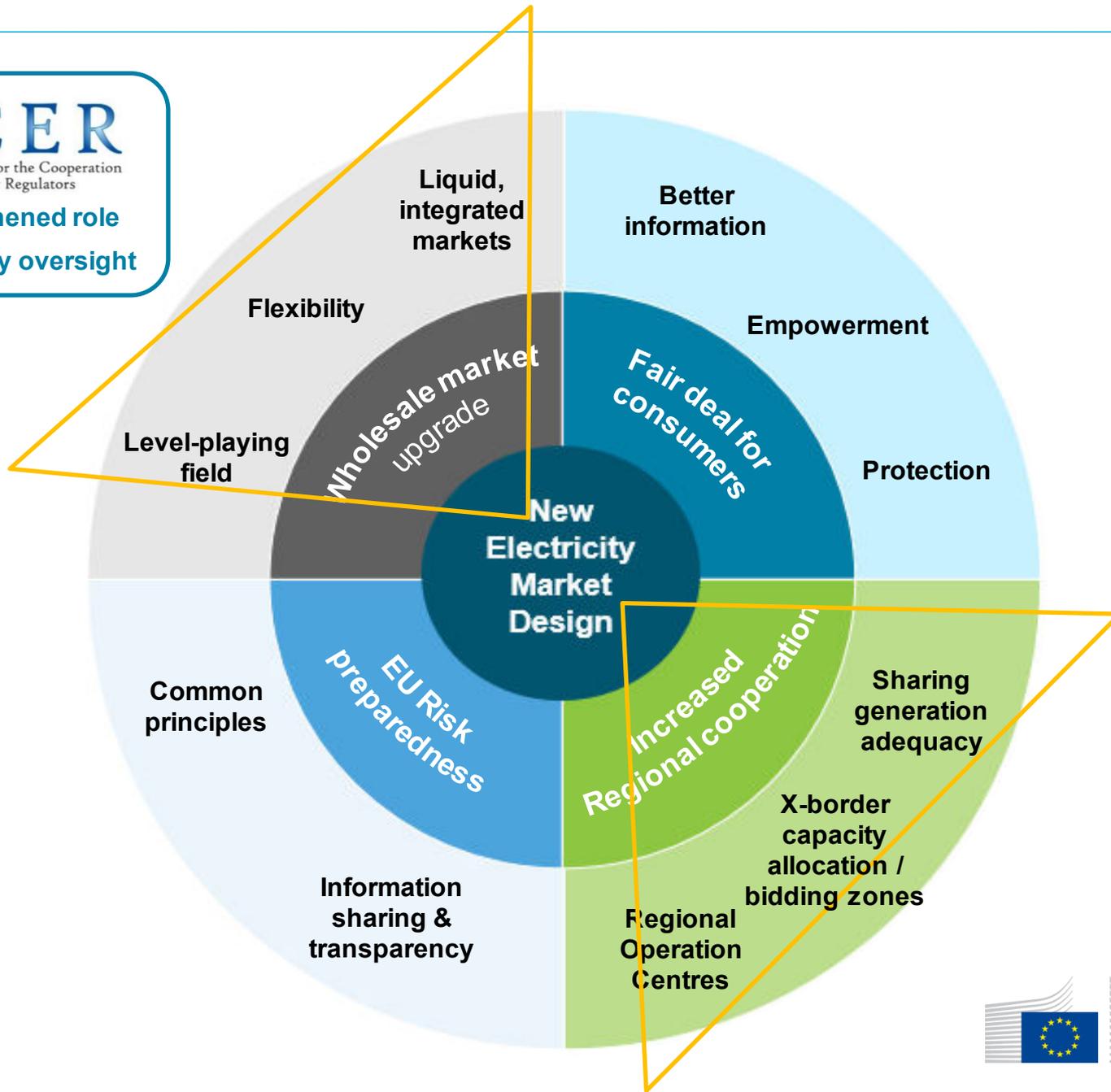
expensive



cheap

- Level playing field + strong short-term markets + demand response = €9.5 billion/year of cost savings by 2030;
- Coordinated approach to resource adequacy = capacity savings of ~80 GW (4.8 b€/year of investments!)

2. THE REGULATORY FRAMEWORK - CEP



3.1 HOW? MAKING THE MARKET FIT FOR RENEWABLES



New in the regulation

- Full market access for Renewables and Demand Response
- Shorter term markets:
 - Gate Closure Time \leq 1 hour before real time
 - Imbalance settlement period of 15 min

Benefits

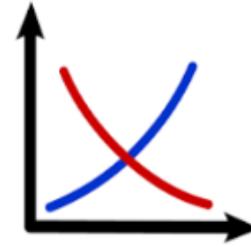
- Increased market flexibility and access, enabling renewables to become the backbone of our electricity system

3.2 HOW? MAKING RENEWABLES FIT FOR THE MARKET

Old: "produce and forget"



New: Market orientation



New in the regulation

- Phase out priority dispatch
- Phase in balancing responsibility

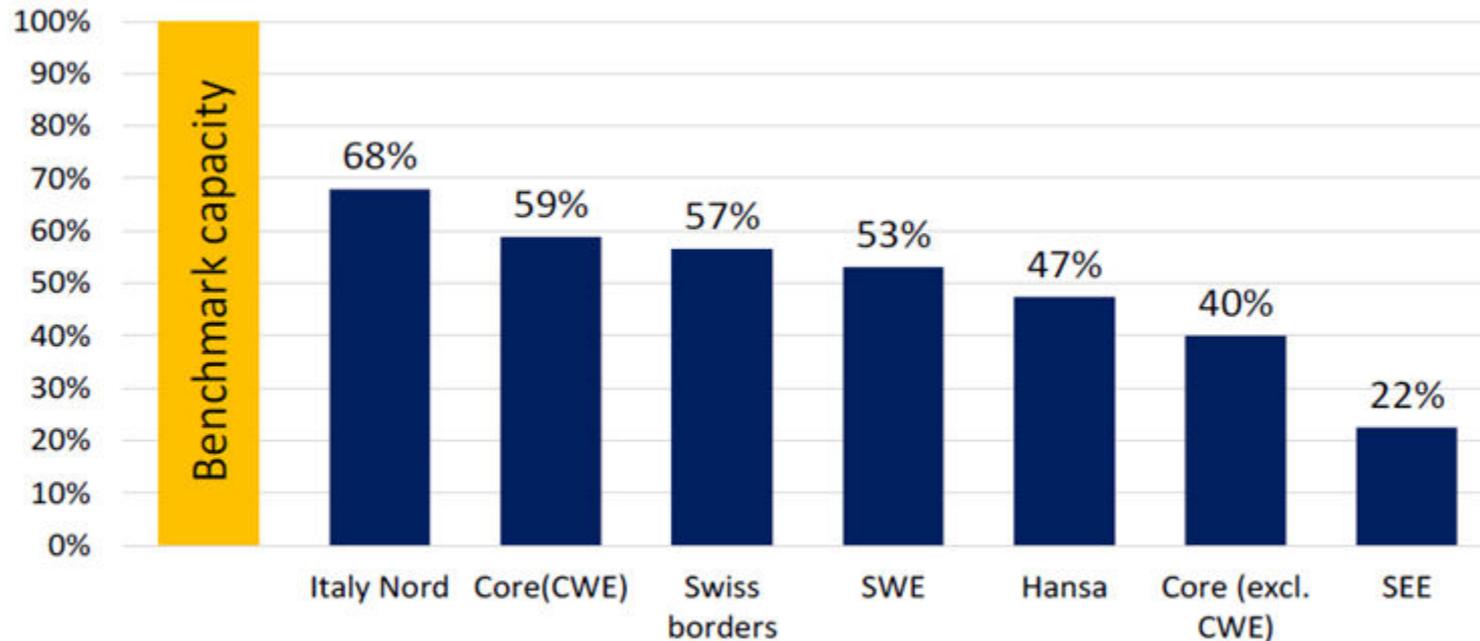
**Derogations for existing installations and new small RES*

Benefits

- Eliminating market distortions for mature technologies...
- ...whilst ensuring feasibility of smaller RES installations

3.3 HOW? FRAMING BIDDING ZONES AND CROSS BORDER CAPACITY ALLOCATION

Ratio between available cross-border capacity and the benchmark capacity* of HVAC interconnectors per region – 2016 (%)



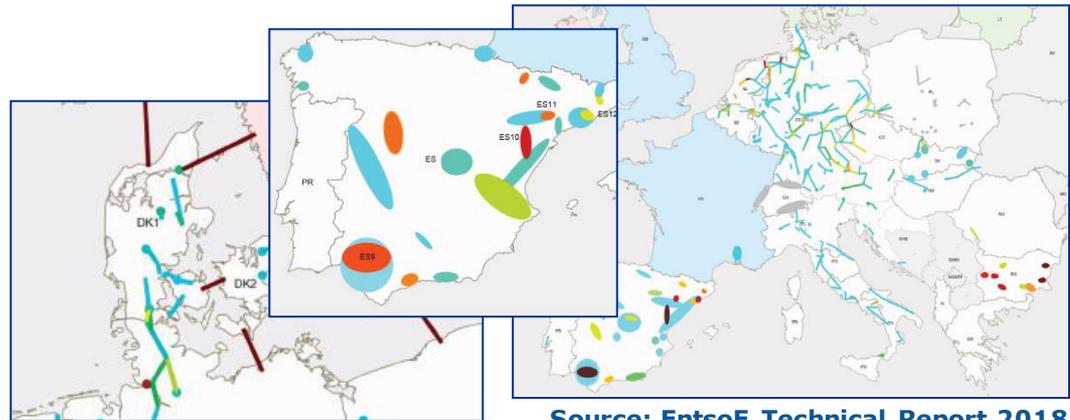
Borders with the lowest ratio between tradable capacity (NTC) and benchmark capacity (ranked) – 2016 (% , MW)

Border-Direction	ratio NTC/benchmark
DE/LU->PL	0%
CZ->PL	1%
SK->PL	2%
DE/LU->CZ	10%
RO->BG	10%
DK1->DE/LU	12%
PL->SE-4	16%
AT->CZ	28%
AT->CH	29%
DE->CH	29%
PL->LT	30%

Source: ACER calculations based on ENTSO-E and NRAs (2017)

*Less than 50% of interconnection capacity is made available (!)
 ⇒ Objective: Limit undue restrictions of imports and exports*

3.3 HOW? BIDDING ZONES AND STRUCTURAL CONGESTION



Source: EntsoE Technical Report 2018

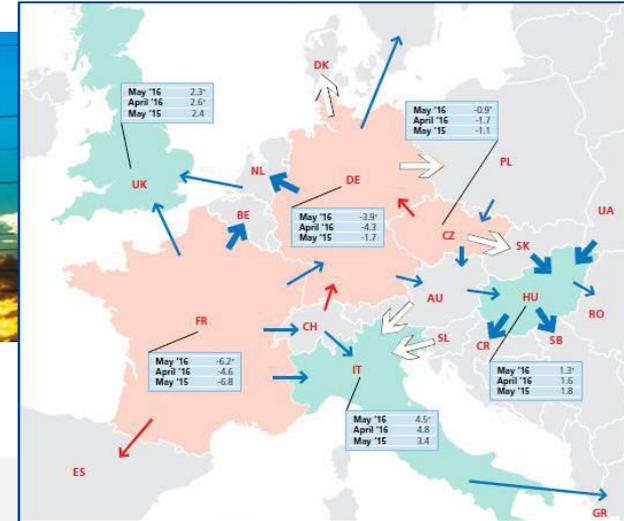
New in the regulation

- Addressing structural congestion a key priority. MS can choose:
 - an Action Plan with network investments until 2025, or
 - a bidding zone reconfiguration
- Bidding zone review: no agreement by MS → EC decides

Benefits

- A market better aligned to the physical grid which increases trade
- reduces the need for costly after-market remedial actions
- decreases the impact of congestion in one zone on the neighbours
- enhances security of supply by ensuring that electricity can be traded to where it is most needed.

3.3 HOW? CROSS BORDER ELECTRICITY TRADING (CAPACITY ALLOCATION)



New in the regulation

- Key principles:
 - Maximisation of trade across borders
 - No discrimination of cross-zonal vs internal trades
- Deductions by TSOs for loop flows and reliability margins capped
- New min. threshold of 70% of cross-zonal capacity for trade

Benefits

- Increased trade provides reliable access to electricity imports for:
 - Increased security of supply
 - Reduced need for new investments, thereby making sure energy transition (higher RES share) is achieved at least cost

3.4 HOW? COORDINATING STATE INTERVENTIONS IN SUPPORT OF RESOURCE ADEQUACY ('CAPACITY MECHANISMS')

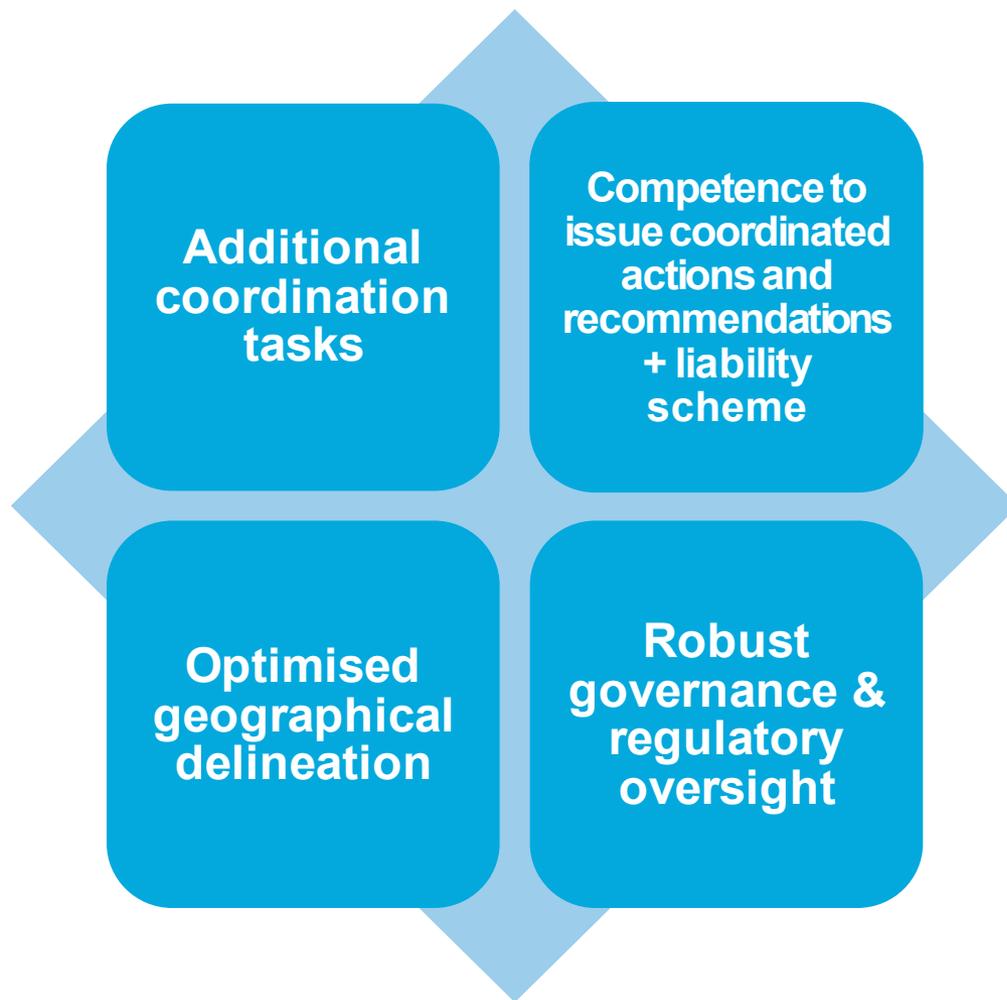
New in the regulation

- State-of-the-art EU resource adequacy assessment
- Adequacy concerns to be addressed by market reforms
- Design principles for CMs
- Rules for cross-border participation in CMs
- **Emission limit** for resources committed in CMs

Benefits

- Necessity of CMs to be based on real needs → reduction of costs
- Make sure CMs (if introduced) are least distortive
- Exclude polluting technologies from CMs → **facilitate clean transition**

3.5 HOW? FOSTERING REGIONAL COOPERATION – REGIONAL COORDINATION CENTRES (RCCS)



Benefits

- Improve the operation of the system across EU.
- Decrease the risk of blackouts

3.6 HOW? OTHER MEASURES

New in the regulation

Mandatory daily procurement for 30%-40% balancing products

New ACER best practice report on transmission and distribution tariffs



Benefits

Facilitate incorporation of RES and demand response in balancing markets

Align approaches to new issues in tariff design such as dist. gen, smart meters, EV charging etc.

ON CO-GENERATION: ALSO A MATTER OF COST-EFFECTIVENESS

No specific measure to encourage switch from traditional generation to Combined Heat and Power (CHP) stations

- Within broader energy efficiency policy (EE Directive, H&C Strategy)
 - Annex 2 of EE Directive: set 10% energy savings compared to separate H and P production for 'high-efficiency cogeneration'
1. Cost-effective: Less investment to produce 2 in 1
 2. best timing to switch: (i) new installations needed; (ii) old installations need refurbishment.

Challenge: build infrastructure when moving from individual boilers to district heating via CHP, CHP location close to large heating consumers (e.g. industry)

In the EU, Nordic/Baltic countries successfully switched from gas/coal/oil-fired plants to CHP for heating

SPECIAL FOCUS: SECTOR COUPLING

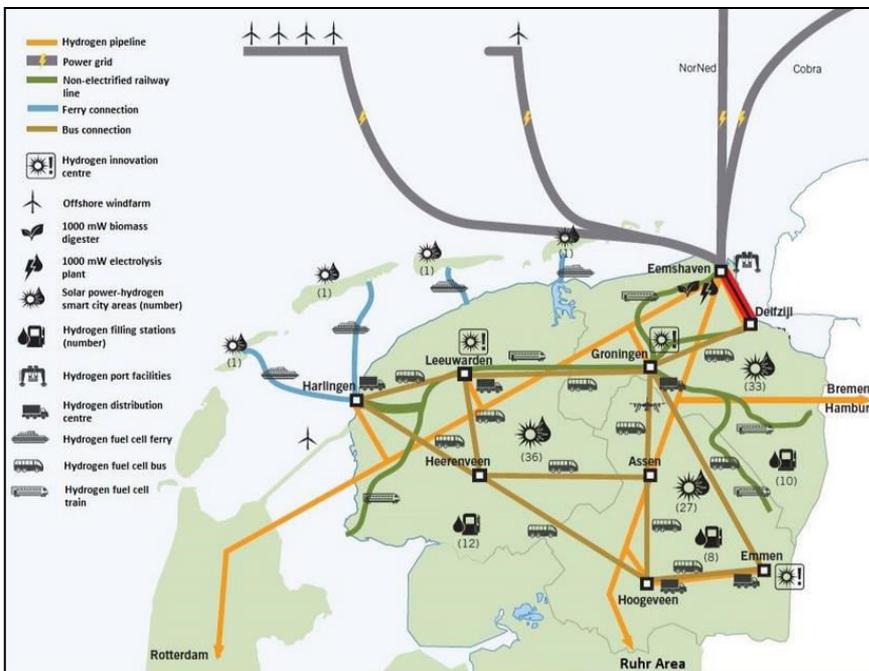
Potential role of hydrogen in the energy transition

Sector coupling:

Hydrogen is the link between the electricity and gas sectors

Infrastructure:

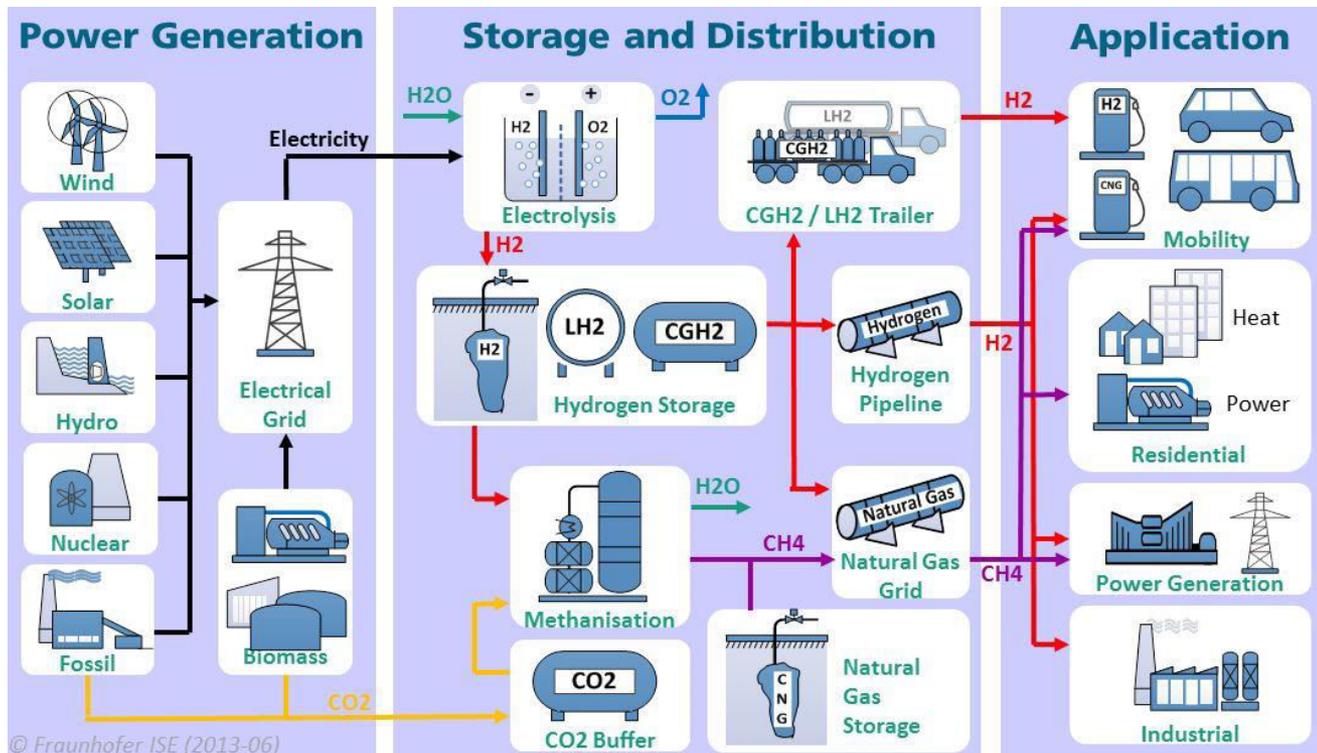
- Production located to make best use of renewables and gas infrastructure
- Blending of hydrogen to use existing gas infrastructure
- Dedicated infrastructure for hydrogen
- Energy storage for surplus renewable electricity



Future Green Hydrogen Economy in the Northern Netherlands, Northern Innovation Board, 2017

SPECIAL FOCUS: SECTOR COUPLING

Hydrogen can enable the integration of the energy and other sectors (transport, heat, industry production) contributing to their decarbonisation.



Infrastructure:

- Production ideally located close to demand (e.g. industry)
- Infrastructure for short distances
- Potential need for dedicated new infrastructure

SPECIAL FOCUS: SECTOR COUPLING

Developing an enabling regulatory framework in the EU

1. Gas Infrastructure 2050 study (*finalised*)

forward-looking exercise to assess the role of gas infrastructure in light of EU's decarbonisation commitments (risk of stranded assets?)

2. Sector coupling study (*ongoing*)

Identify barriers/gaps limiting sector coupling and deployment of renewable and low-carbon gases

3. Biomethane/hydrogen infrastructure study (*ongoing*)

assess the impact/potential of increasing use of biomethane and hydrogen on the gas infrastructure

SPECIAL FOCUS 2: EU CONFERENCE ON SUSTAINABLE ENERGY IN CENTRAL ASIA

- When? **12 April 2019** – Where? **Brussels** (Commission premises)
- **Second** such conference after **November 2014**
- Who (1)? EU (ENER Director General, DEVCO Director to open), other IO (IRENA, IEA, EBRD, Charter...) and **EU energy industry**.
- Who (2)? ***Speakers from all 5 Central Asian countries invited***
 - Contacts ongoing via *CA Embassies in Brussels*.
- What? **Policy** challenges, **investment**, technology transfer
- More info/registration: contact SustEnergyCA@iservice-europa.eu
https://ec.europa.eu/info/events/sustainable-energy-central-asia-2019-apr-12_en



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Thank you for your attention

