

Energy Market Design for the Future – What Changes Are Needed?

*European Parliament, ITRE Committee
Hearing „Clean Energy for All Europeans“*

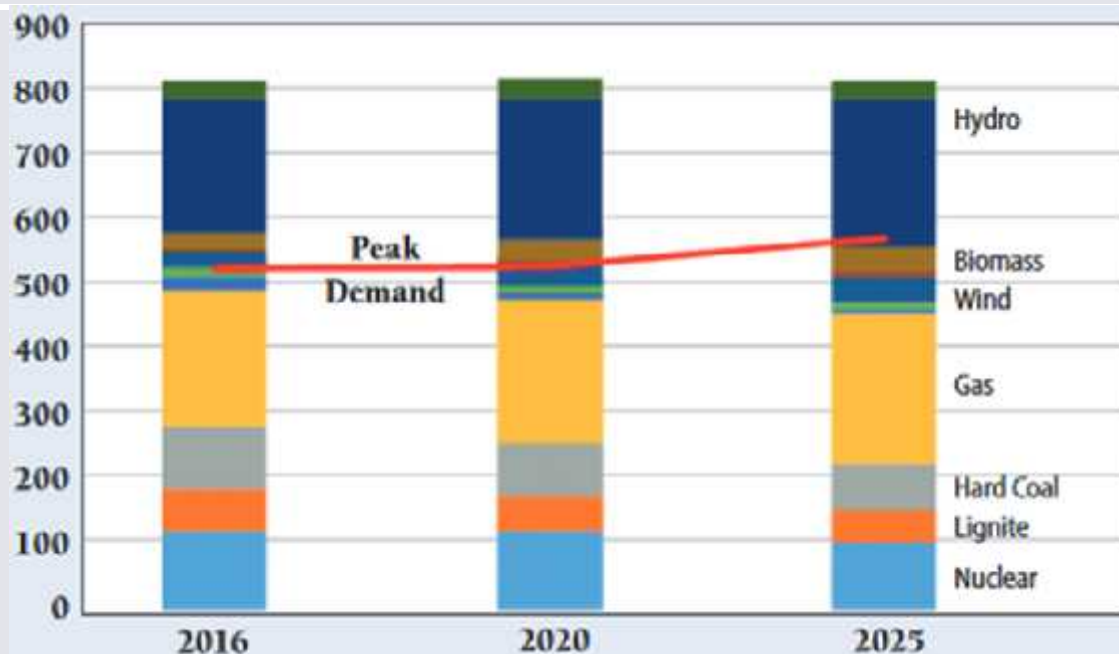
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BRUSSELS, 22 MARCH 2017



Europe has made impressive progress towards an IEM. Further market design reforms are a no-regret, but would be more effective if old, high carbon, inflexible capacity is retired

Generating capacity (GW) in the EU (0% credit for solar; 20% credit for wind)

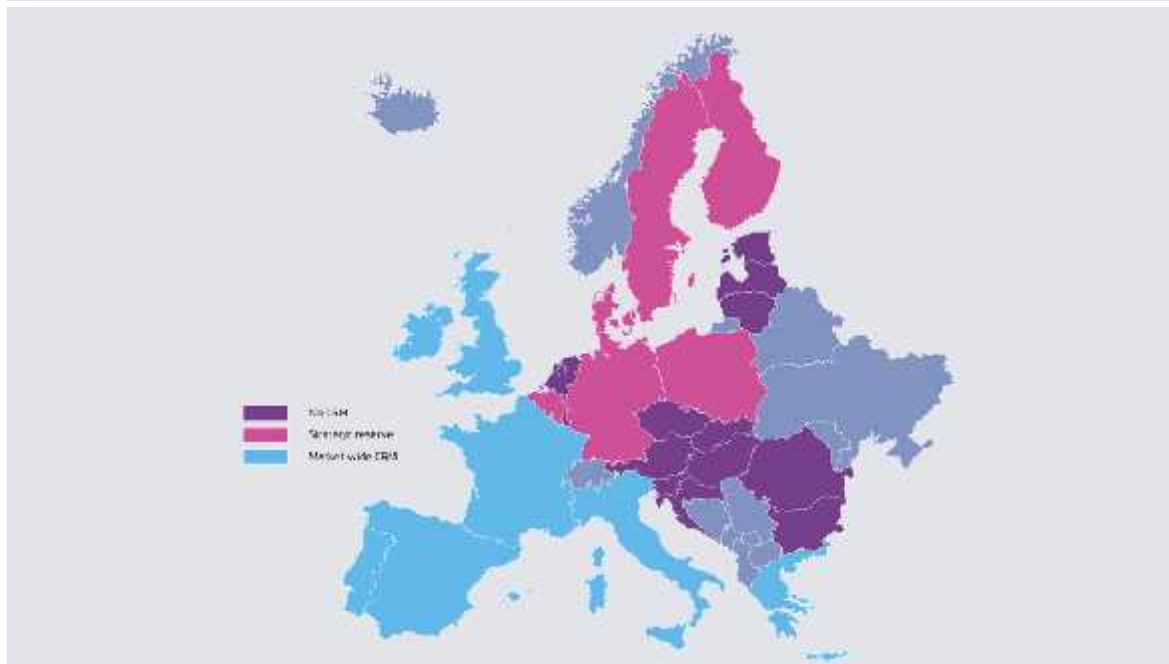


Source: RAP 2016 based on ENTSO-e SOAF 2016

- Europe as a whole is in a situation of over-capacity (DG COMP). Reserve margins over peak-load are 2-3 times what is necessary to meet traditional reliability of supply standards
- Most urgent challenge of EU power markets are implications of legacy investments in high-carbon, inflexible generation. Market design reform alone reaches limit
- EU-level action to support smart & managed retirement of old, high-carbon, inflexible capacity would make market design reform more effective:
 - Closing gaps in Industrial Emissions Directive
 - Appropriate emission performance standards
 - Assisting socially fair transition in coal and carbon-intensive industrial regions
 - Acknowledging limited role of the EU ETS

Capacity interventions should be consistent with decarbonisation and flexibility needs. Interconnection, energy efficiency and demand-side resources should be integral to strategies to address resource adequacy concerns

Capacity mechanisms in the EU 2015



Agora Energiewende (2016) based on ACER/CEER (2015)

Capacity interventions proliferate. High risk that interventions reflect incumbent interests and run against objectives of decarbonizing power-system and enhancing system flexibility

COM proposals pushing into right direction

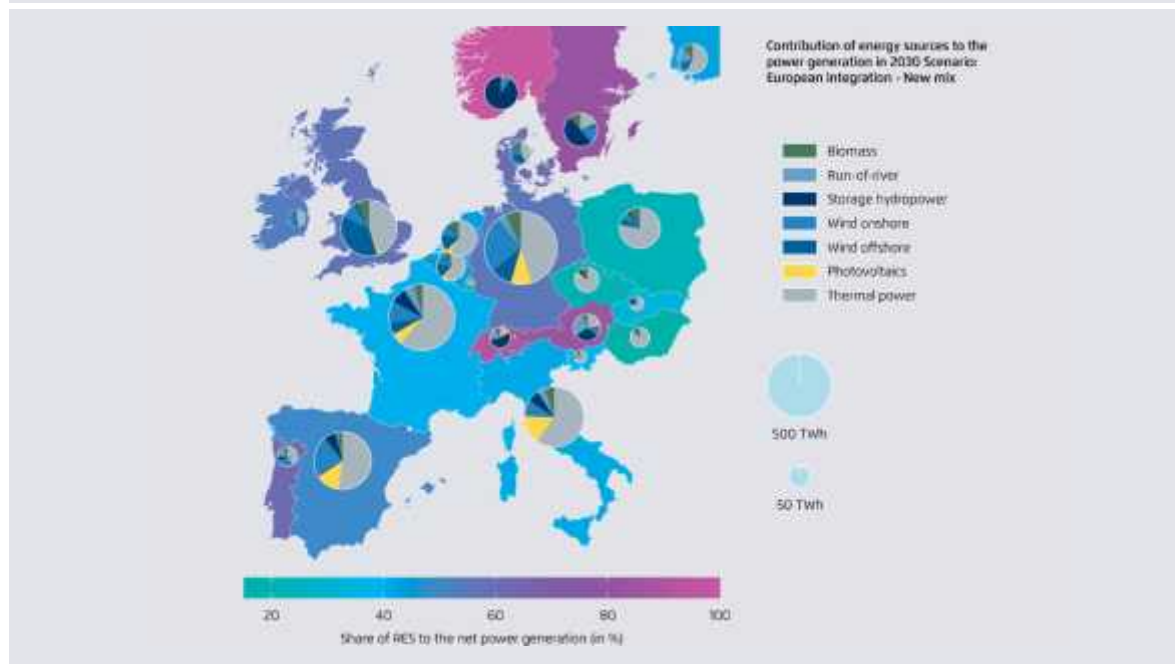
- Price-formation based on demand and supply
- Regional resource adequacy assessment using harmonized European methodology
- Preference for IEM and enhancing system flexibility over capacity intervention

Critical elements to keep and strengthen:

- Addressing obstacles to market functioning as precondition for capacity intervention
- Out-of-market reserves should be preferred
- Capacity mechanism as last resort & temporary
- CO₂-emission performance standard for capacity contracted in capacity mechanism
- Cross-border participation

Market integration of mature RES will continue. But unless ETS price is >60 Euros, RES investments will not be market-driven. Robust RES-frameworks with targets and technology-specific pathways will achieve EU RES-target at least cost

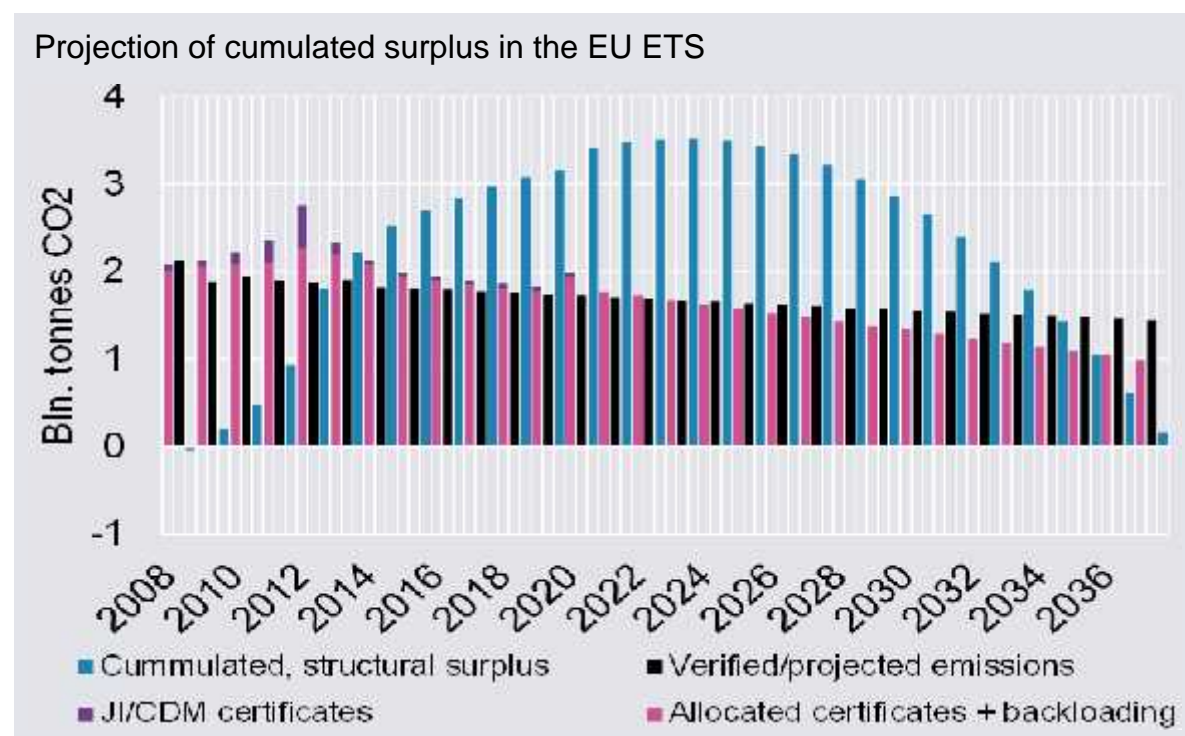
Significant RES-E share in the EU generation mix 2030



Fraunhofer IWES (2015): Assumptions based on national energy strategies and ENTSO-E scenarios in line with EU 2030 targets

- Technology costs for solar PV, onshore and offshore wind have come down dramatically
- RES investments are capital-intensive & more sensitive to (political, regulatory, administrative) risk than conventional technologies
- Uncertainty about power price development increases risk premiums and thus costs for new RES-investments
- Market-driven RES investments require an ETS-price >60 Euros. Robust RES frameworks with targets and technology-specific pathways remain most cost-effective alternative
- Revenue stabilisation for Wind/ PV investments likely needed during 2020-2030
- Competitive tendering of new RES-e capacity will show where and when market conditions allow RES-e to flourish without revenue stabilisation

Unless fundamentally reformed, the EU-ETS will not provide relevant investment signal throughout 2020-2030 and will achieve coal-gas-switch only late



Agora Energiewende (2016). Own Calculations based on EEA/ EU ETS Data Viewer and EEA (2015)

The EU ETS is structurally oversupplied. Except 2008, the supply of new allowances has exceeded demand

With conservative assumptions (MSR decision; LRF of 2.2% p.a. from 2021; emission reductions due to RES /Efficiency at 1% p.a.) cumulated surplus will increase until mid 2020s

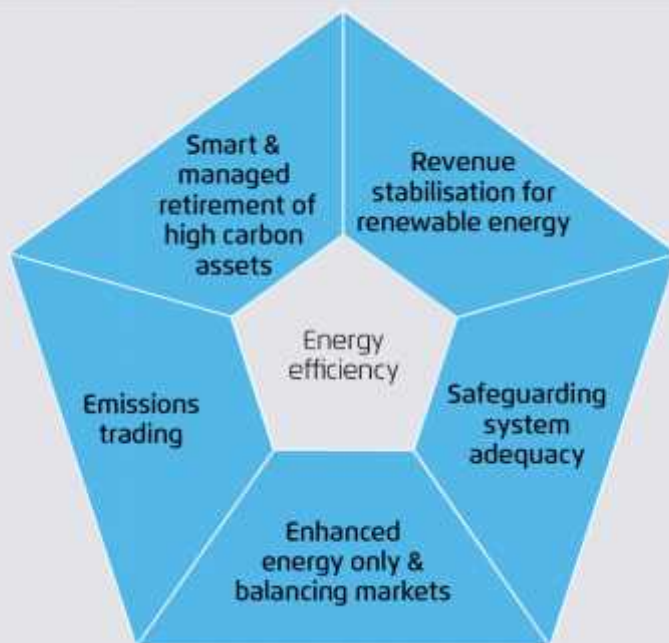
Robust national and EU-level instruments for efficiency and RES remain important after 2020

Unless fundamentally reformed, EU ETS will only play a niche role throughout 2020-2030

Europe has made impressive progress towards an IEM. Further developing the IEM is a no-regret under all scenarios but should include holistic consideration of factors shaping power market-choices



The Power Market Pentagon



Agora Energiewende (2016)

- Europe has made impressive progress towards an IEM. Further developing the IEM is a no-regret under all scenarios
- Europe is in a situation of over-capacity. Smart retirement of old, high carbon inflexible capacity would make market design reform more effective.
- Capacity mechanisms should be last resort and not grant money to high-carbon & inflexible assets
- Market-driven RES investments require an ETS-price >60 Euros.
- Robust RES frameworks with targets and technology-specific pathways remain most cost-effective alternative

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Thank you for your attention!

Questions or Comments? Feel free to contact me:
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