

Paris Session 2022 - Key Takeaways

C5 – Markets and Regulations



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For power system expertise

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Preferential subjects and report topics 2022

PS 1 – *Dealing with market and operational challenges in market design*

Market design developments to facilitate the integration of new participants and renewable resources

Role of retail electricity markets in the promotion of behind the meter technologies

Innovative contracts/ services between market participants and with customers/ distributed energy resource owners

PS 2 – Evolution of market design and regulation to integrate DER

Lessons for markets and regulation from major disturbances and social disruptions

Market design for reliability and resilience in systems with high penetration of asynchronous and low inertia connected facilities

Markets to co-ordinate resources that are not responsive to demand or price

PS 3 – Working with innovation and disruption – Preparing for the future

Innovative approaches to markets and regulation to achieve energy policy target and to include edge-of-grid activities

The design and structure of retail and wholesale electricity markets to support capital-intensive investments

Sector regulation and tariff design in the face of technological disruption, e.g. vehicle to grid, hydrogen and new forms of storage

Paris Session 2022 – C5 Dutch contribution

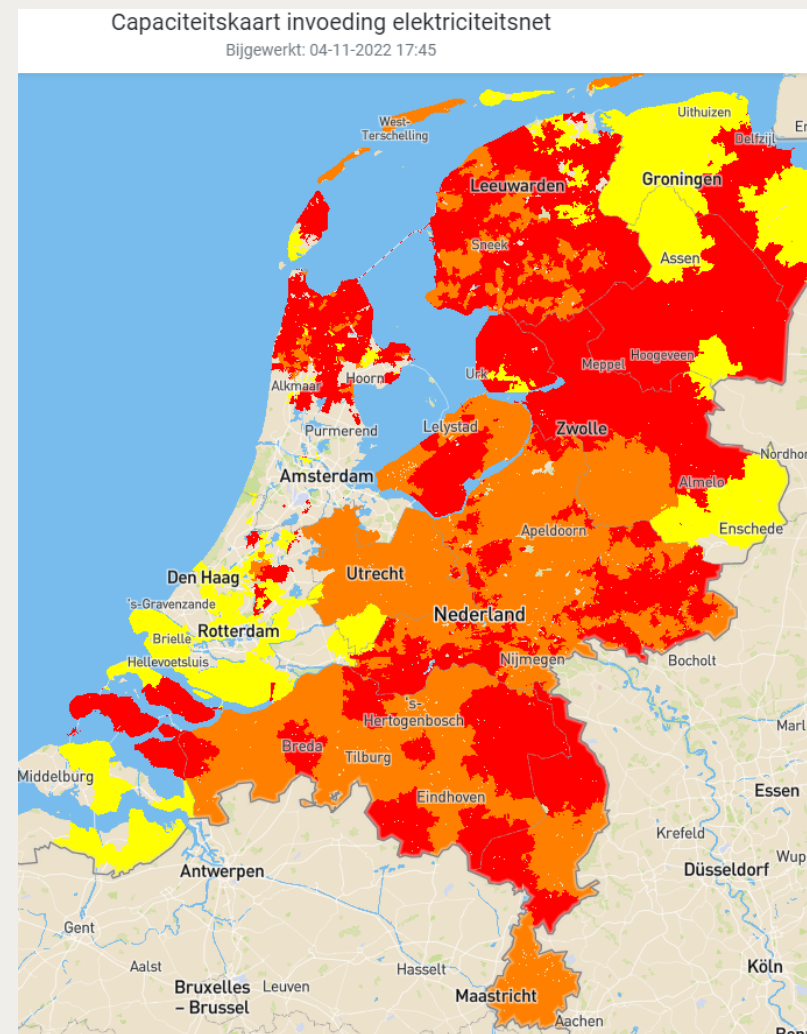
- PS2 – Market design for reliability and resilience in systems with high penetration of asynchronous and low inertia connected facilities
 - Contribution from F. Nobel/ M. Franssen/ D. Klaar about *“The impact of increasing volumes of energy from variable renewable sources in three European countries”*
 - Showing that use of (strengthened) imbalance price methodologies helps to decrease the overall balancing energy demand from TSOs
 - Dutch ‘passive balancing’ may be at its limits, as balancing energy needs no longer appear to reduce with increased RE penetration

Paris Session 2022 – Personal take aways

- Market design (optimization) heavily impacted by local system conditions
 - Distributed systems in Australia face challenge of securing sufficient local generation
 - Long transport distances (>500 km) between generation and load centres lead to new requirements for system strength support from generators; they can purchase this from the SO or invest to provide their own system strength support
- Similarities:
 - Brazilian DNOs facing more and more challenges and feeling more and more responsibility in successful integration of RE/ storage; similar transition to more system operational responsibilities as in DNOs in Europe
 - Renewables (wind) and storage providing frequency regulation services (AU)
 - Dealing with ‘reduced firmness’ of generation in adequacy assessments and set-up of capacity market (IE)

Paris Session 2022 – Personal take aways

- Few presentations/ discussions around current challenges in the Dutch system:
 - Congestion Management not discussed as such, rather focussing more on discussions around storage/ additional interconnections
 - Very few discussions on system integration; conversion of power to heat/ hydrogen/ products
 - WG around green power certification for H2 has been set up;
 - Impacts of more flexible demand; DNV recently calculated multiple tens of billions (EUR) in annual wholesale savings potential in EU-27



Key Takeaways – Preferential subjects and report topics

PS 1 - Characteristics of a resilient market and its regulatory regime

Responds to dynamic changes in the market environment and able to withstand external shocks

What markets and/or regulations have proven resilient so far and are still efficient and successful?

Governance and institutional arrangements that assist resilience: who makes the decisions and takes the risks?

PS 2 - Preparing for the future with moving targets

Innovative approaches to markets and regulation to achieve climate and energy policy targets

The design and structure of electricity markets to support capital-intensive, climate neutral investments

Market and regulatory arrangements for supply, demand and storage that function across transmission, distribution and behind the meter resources

PS 3 - Emerging markets and forms of markets

Markets and regulations addressing the attributes of electricity that customers are seeking from the industry

Market based approaches to integrate community and distributed resources

New market approaches to overcome the barriers and limitations on current market designs

Thank you for your attention!



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