



# Market arrangements for offshore hybrid projects

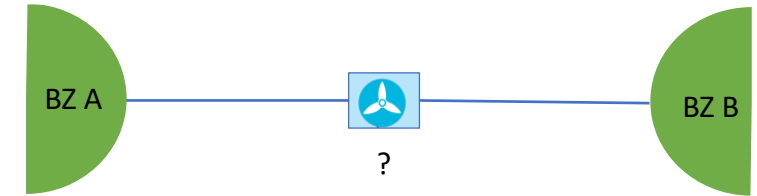
Eurelectric's discussion paper under progress

March 2021

# Eurelectric's work on offshore hybrid projects

- Eurelectric acknowledges the clear EC ambitions regarding offshore renewable energy and the volumes that are at stake.
- Complementary to traditional offshore ones, **hybrid projects can be a key enabler for unlocking offshore renewable energy potentials** where they are economically making sense and are able to lift synergies between both offshore generation and transmission assets (e.g. via CAPEX savings).
- Regardless of the market design chosen it will require changes to existing regulation, so a **clear and robust regulatory framework** is needed to foster investments in both transmission and generation capacity. And this, well in advance, before investments are triggered.
- The implementation of offshore hybrid projects **generates a lot of uncertainties**, and not only regarding the choice of bidding zone delineation.
- Eurelectric is drafting a **discussion paper on the impact of market arrangements** on the different market timeframes but **also identifies other issues that are hardly touched upon yet** (e.g. governance, tasks, costs, and risk sharing amongst hybrid project stakeholders).
- **Impact assessment is done on three market arrangements:** Home Market compliant with the current rules (HM-A), Home Market with a derogation to the 70% (HM-B) and Offshore Bidding Zone (OBZ); notably considering the following Eurelectric principles: level playing field amongst market participants, efficient dispatch and accurate price signals (incl. connection charges) for efficient investments.
- Preliminary analysis shows that **there is probably no one-size-fits-all arrangement** given the diversity of possible hybrid project's structure but also the impact of physical capacities (in terms of transmission and generation) on the profitability of the different components of the project. Therefore, Eurelectric assesses the feasibility and workability of HM-A, HM-B and OBZ.
- Eurelectric is insisting on **the importance to include the offshore producers and market participants into the discussions** related to market arrangements for offshore hybrid projects but also to broaden the scope of the discussions to topics that can be considered independent from the choice of market arrangement (slide 4).

# Key challenges related to a proper integration of the new assets into electricity markets

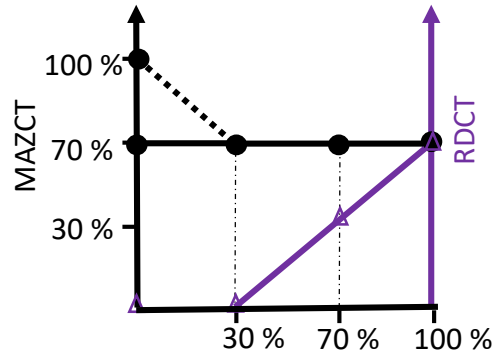


- Forward:
  - No issue for HM as an unconstrained access to Home Market is ensured, also in the forward market.
  - The liquidity in OBZ will be limited putting at risk any hedging strategy. The interplay between FTR and redistribution schemes must be duly considered.
- DA Capacity Calculation & Allocation (cfr. next slide): In HM, offshore generation forecast are used for CC. Incentives for TSOs to under/over-estimate?
- **Distributive** effect and potential need for redistribution (based on mechanisms yet to design):
  - No need for HM-A/B as no difference with onshore generation.
  - Transfer of income from offshore generator to IC owner in OBZ setup. Several options provide different level of hedging for both the exposure to price and volume risks. Most of them require regulatory changes.
- ID Capacity C&A: in HM, more recent forecasts are used to release XB commercial capacity, or further restrain it (implying activation of remedial action).
- **Remedial Actions:**
  - Especially needed for HM-B as the unconstrained access to the HM is not compensated by a reduction of XB commercial capacity in DA. XB Remedial Actions and related Cost Sharing between TSOs must be implemented according to the methodologies of the CCR.
  - Moderately needed for HM-A to cover forecast errors in DA/ID or unconstrained access in ID (70% applied to DA only).
  - Marginally needed for OBZ as congestion management is mostly embedded in the implicit allocation of XB capacity.
- Balancing:
  - Any imbalance in the offshore hub must be “transported” and cared for onshore (as BAL energy bids offshore might lack).
  - EU BAL platforms to be able to cope with hybrid project.
  - Some challenges arise when it comes to the determination of the Imbalance Settlement Price in OBZ.

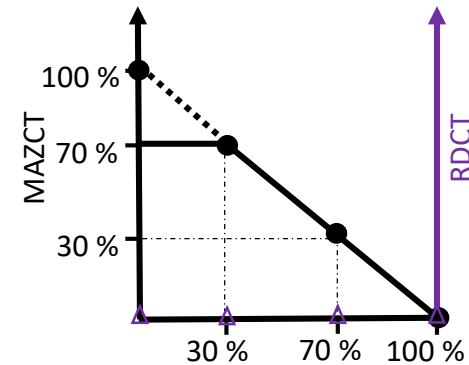
Market timeframe

# Focus on efficiency of market dispatch & accuracy of energy price signals

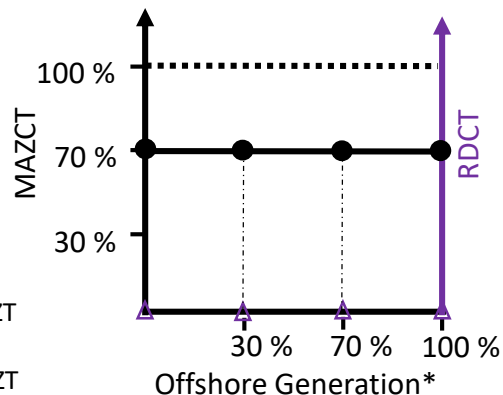
Home Market-A in compliance with current rules



Home Market-B with a derogation to 70%



Offshore Bidding Zone(s)



- Over allocation of the scarce IC capacity because the 70% rule leads to high RDCT volume:
  - **Potential distortion of the price signal** at the DA stage (might be reduced by perfect MP foresight).
  - **Potential loss of efficiency** if the high RDCT volume **does not lead to the same dispatch at the end**
- **Negative price** in only one onshore BZ may lead to an inefficient dispatch (e.g. OWF in the BZ with higher price is dispatched instead of generation at negative marginal cost in the other BZ) => occurrence of negative prices expected to decrease due to e.g. policy framework updates (e.g. EEAG), hence, occurrence of inefficient dispatch is decreasing
- **Negative price** in only one onshore BZ may lead to an inefficient dispatch (e.g. OWF in the BZ with higher price is dispatched instead of generation at negative marginal cost in the other BZ) => occurrence of negative prices expected to decrease due to e.g. policy framework updates (e.g. EEAG), hence, occurrence of inefficient dispatch is decreasing
- Generators are dispatched based on marginal price in each bidding zone
- With no after-market actions, the energy price signal is accurate however price indeterminacy situation can occur for which clear rules should be developed ex-ante
- Uncertainty remains in terms of XB capacity available between the 70% and 100% (depending on TSOs)
- OBZ has redistributive effect in comparison with HM that will discourage investments if not resolved.

Potential inefficiencies/inaccuracies

\*Assumption: transmission capacity = offshore generation capacity

# Broadening the discussion

## High need for cooperation between Member States, TSOs and market actors

- Governance of the hybrid project set-up, notably in terms of:
  - Development of hybrid project (transmission and generation), including the sizing of the network infrastructure.
  - Governance of new Bidding Zone (which can be national or multinational)
- Coordination of the development of offshore grid and generation
  - Role of TEN-E and TYNDP regarding offshore network development planning
  - Possibility of anticipatory grid investments – who should bear the costs?
- Development & planning, ownership and operation of the transmission/feed-in assets, in both OBZ or HM setup
  - Merchant/exempted line owned by private investors
  - Regulated line owned by TSOs
  - Both on the same offshore hybrid project
- Evolution of offshore grid and offshore generation – impact on revenue streams for stakeholders in changing situations:
  - Offshore Hybrid Project built on existing Offshore Generation (that planned it or not)
  - Offshore Hybrid Project build on existing interconnector (that planned it or not)
- Future role of RCC, notably when considering offshore meshed grid where #TSOs are active.
- In terms of System Operation, consideration of an ISO model, one onshore TSO or rotating onshore TSOs taking the lead.

## Challenges related to EU harmonization vs national specificities

- Impact of national tariffs including connection charges to foster investment at the right place. Specific network tariff for the OBZ?
- Impact & design of a new mechanism to redistribute congestion rents (how does it apply onshore? To be considered in a SA?)
- Impact national/European subsidy schemes: type and impact of support schemes
- Impact on bidding zone review process: EU-wide or Regional review (OBZ<=>HM)
- Cooperation with 3rd countries