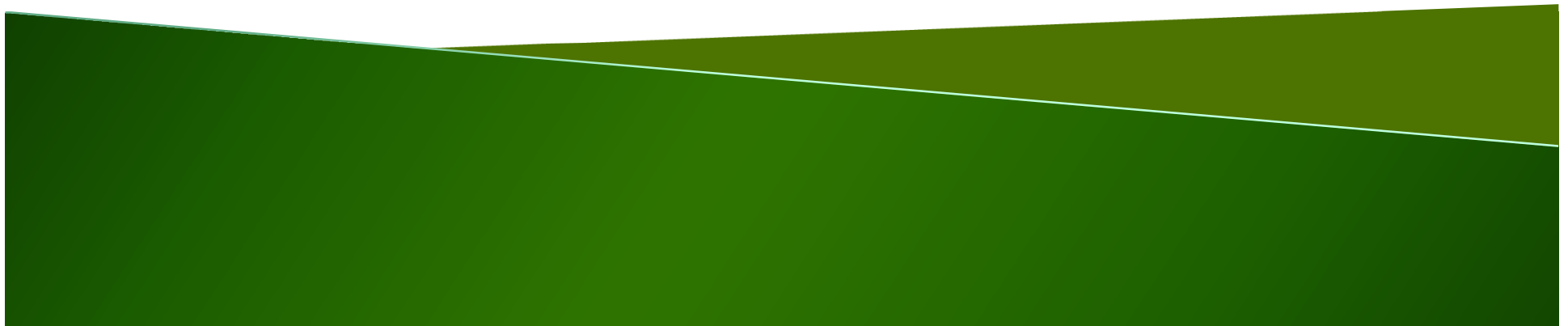


# **Integrated Single Electricity Market (I-SEM)**

**Laura Brien, Director of Electricity Markets, CER**

## **Ibec Energy Conference**

**Portlaoise Heritage Hotel  
12 June 2014**



# Agenda

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- The I-SEM Energy Trading Arrangements
- The I-SEM Capacity Remuneration Mechanism
- Impact on energy users

## Energy Trading Arrangements (ETA)

## Respondent Positions – Energy Trading

Option	1	2	3	4
Respondent	Power NI, PPB, Energia	None	ESB, IWEA, BNM, BGE, SWS, Electron Energy, Activation Energy, Indaver, EirGrid, Moyle, HG Capital, Climote, Smartpower, ESRI, Prepay Power Other	AES, Aughinish, Dalkia IRBEA, IWFA, Mainstream, SSE, Vayu

\* Most suggested some changes to the options as put forward

## Other issues raised in the responses

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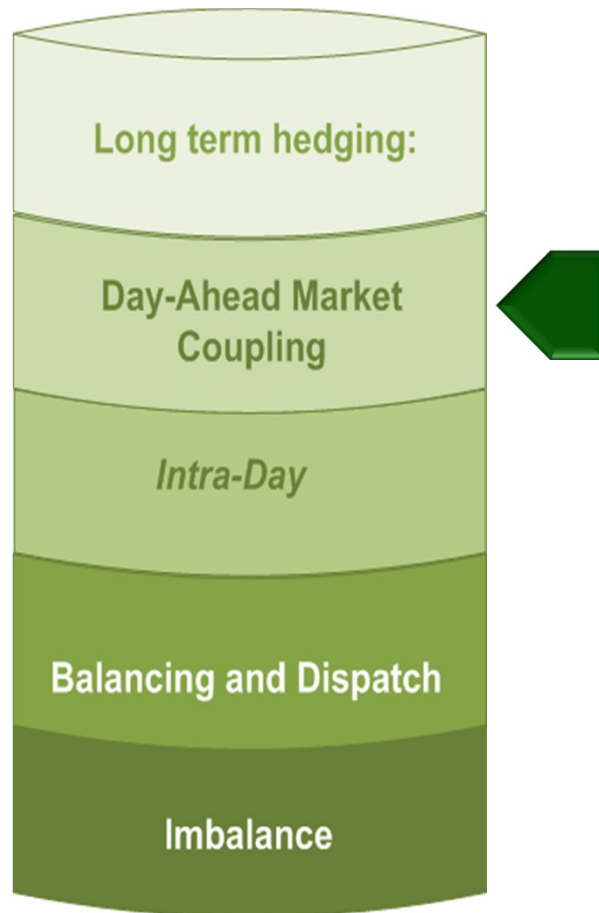
- Market power
- Liquidity (particularly on forward timeframes)
- Transparency
- CRM – Key for Generation Adequacy
- Feed in Tariff reference price
- Efficiency of Interconnector's flows
- Impact of the I-SEM on Curtailment of wind

# Forward Contracting



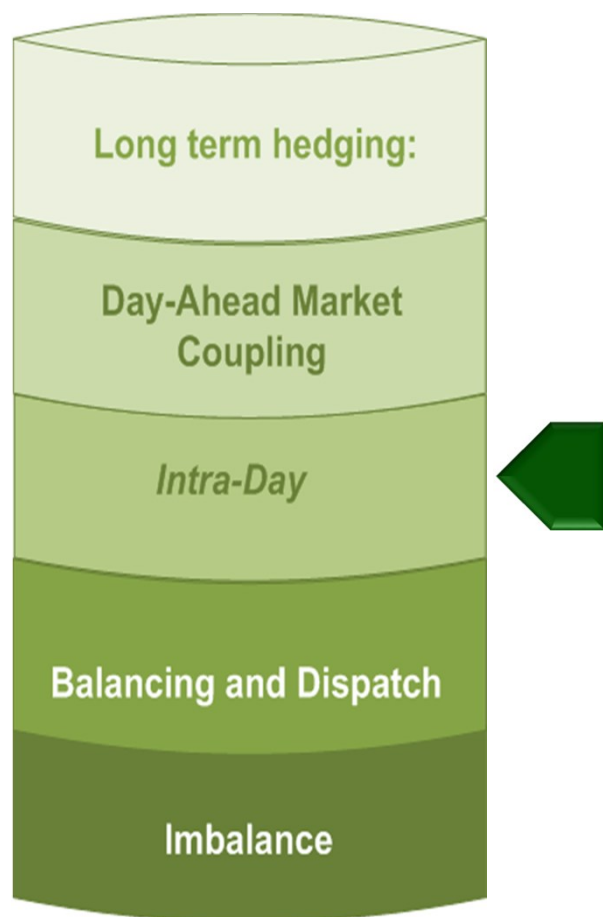
- Financial trading within zone (market)
- Financial trading between zones (Financial Transmission Rights, FTRs), subject to Ofgem agreement
- Possible Complimentary additions
  - Encouragement of forward financial market liquidity;
  - Facilitation of centralised forward trading platform

## Short Term Markets - Day Ahead



- DAM should be 'exclusive' route to DA physical nominations.
- EU wide Market Coupling
- Unit-based participation for generation in general, with aggregation arrangements for DSU, demand and (some) wind
- May only need simple and block bids

## Short Term Markets – Intra Day



- Continuous (with scope to also introduce periodic auctions)
- EU wide continuous trading
- Simple price-quantity bids and simple block bids (with continuous)
- ‘Exclusive’ route to ID physical nominations
- Unit-based participation for generation in general, with aggregation arrangements for DSU, demand and (some) wind



# Balancing and Dispatch



- DA schedule starting point for dispatch
- Mandatory' participation in Balancing Mechanism (BM) from DA stage onwards
- INCs and DEC's prices
- Unit-based participation in BM for generation in general
- Marginal pricing for unconstrained energy balancing actions
- Pay as Bid for non-energy actions (possibly combined with local market power mitigation measure)

# Imbalance/Pool settlement



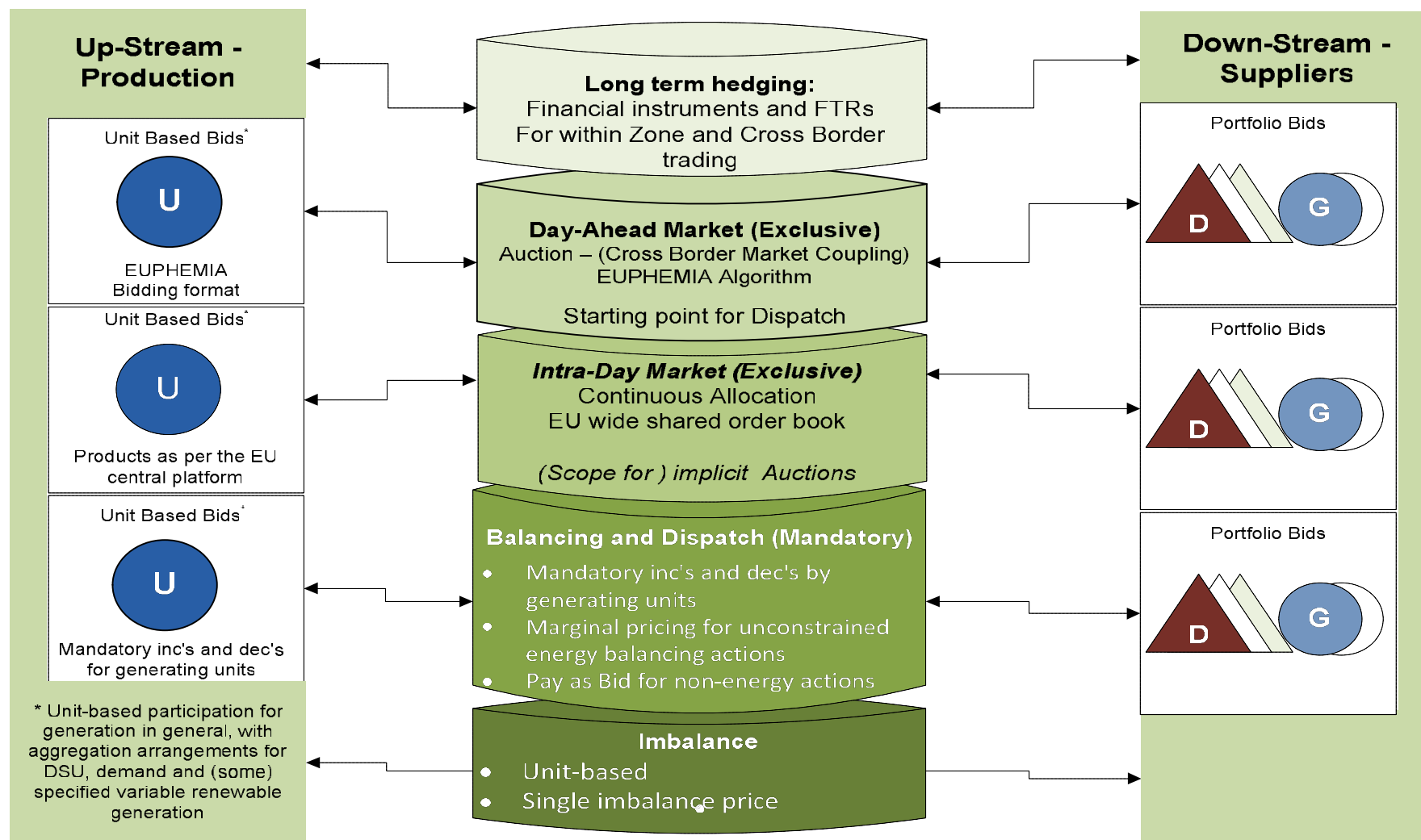
## Emerging Thinking

- Unit-based
- Balance Responsibility
- Single marginal pricing (preferred)

## **Transitional measure: route to market of last resort**

- Entity to act as route to market of last resort on a transitional basis for small players
- Will charge a fee which would not undermine the organic development of aggregators
- Would provide a back stop level of certainty during the transition between markets

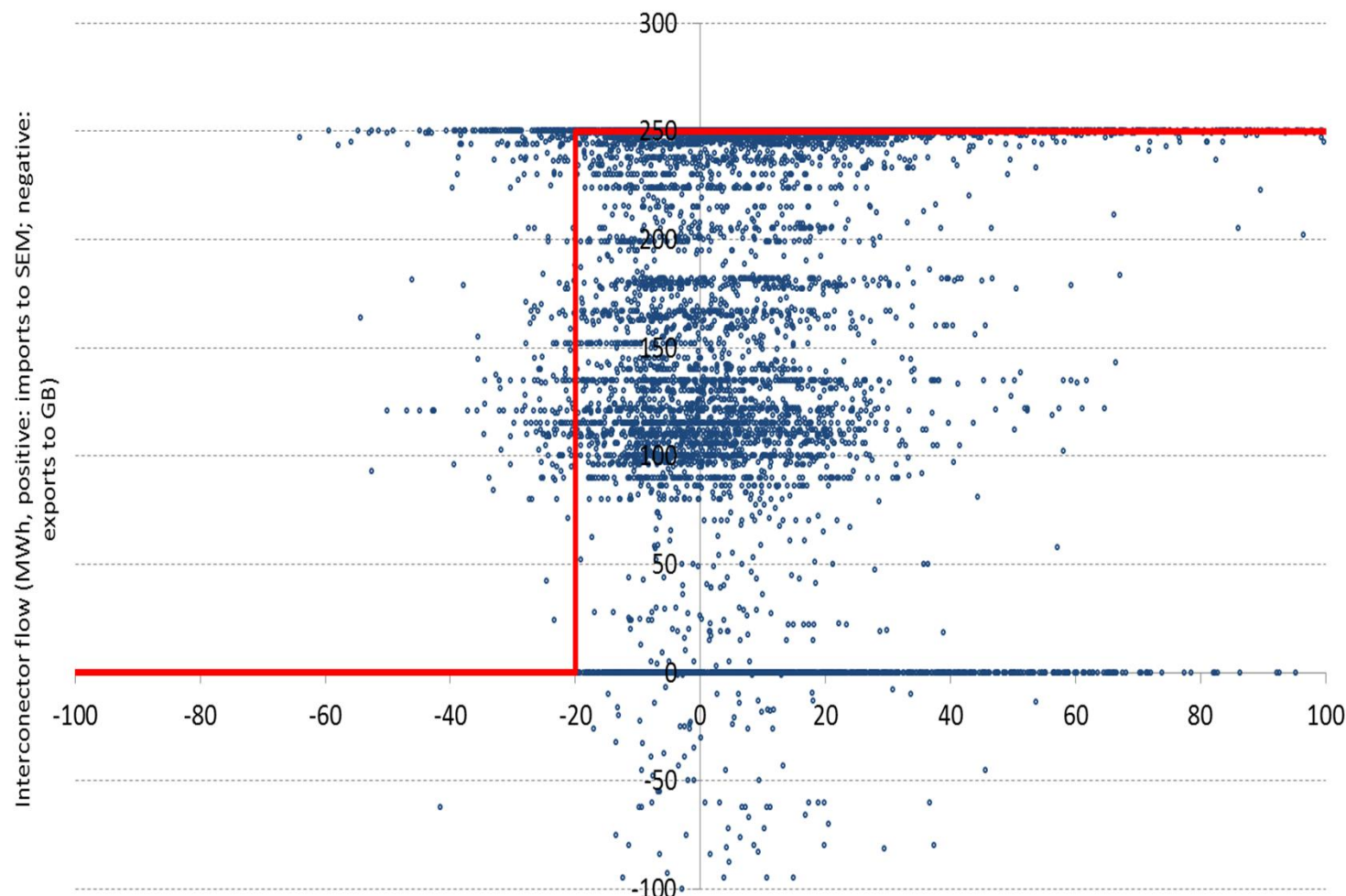
# I-SEM Energy Trading Arrangements



# Energy Trading Arrangements – Key Impact Assessment Criteria

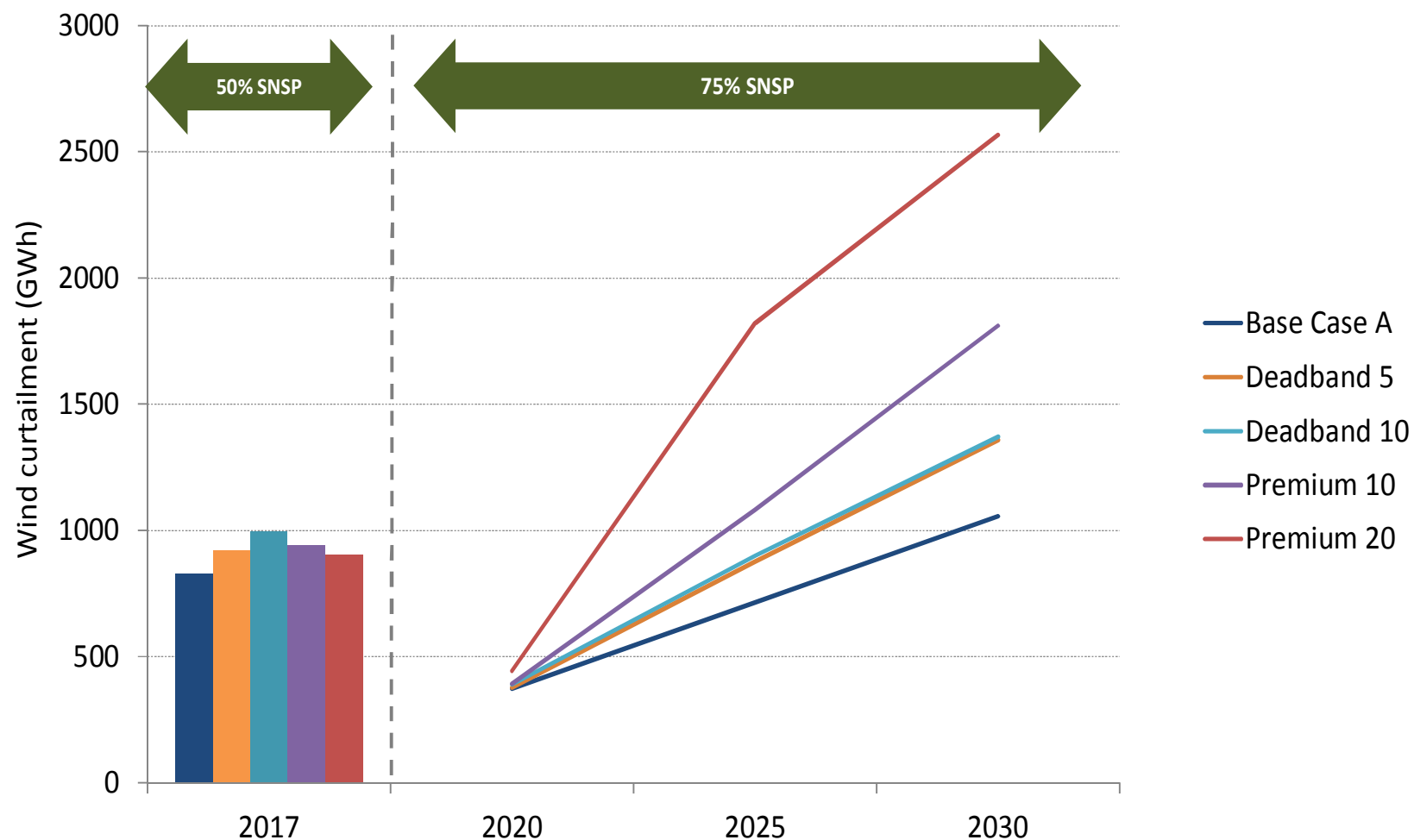
<b>Internal Electricity Market</b>	Supports most efficient implementation of the Target Model in the All-Island Market because of emphasis on centralised and transparent arrangements
<b>Security of Supply</b>	Delivers the DAM as both a strong reference market for forward trading, and a robust starting point for dispatch (with full integration of physical interconnector capacity).
<b>Competition</b>	Facilitates strongest competitive pressures through focus on unit-based bidding by generation into liquid centralised market places with full integration of physical interconnector capacity
<b>Environment</b>	Provides the best overall package in terms of delivering market signals to reduce curtailment, and facilitating greater ex-ante trading opportunities for variable renewables
<b>Equity</b>	Emphasis on centralised market places ensures market access for all participants

# Impact Assessment- More Efficient Cross Border Trade



SEM - GB price differential (€/MWh - nominal, positive: SEM price > GB price; negative: GB price > SEM price)

# Impact Assessment – More Efficient Cross Border Trade Reduces Curtailment



# I-SEM Energy Market– Key Impact on Energy Users

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- Increased competition in spot markets should put downward pressure on I-SEM prices
- Higher level engagement required from supply side in new market
- Firm contracts day ahead and intra day will increase incentives for demand side participation
- Firm day ahead (and intra day) markets should reduce risks to pool pass through customers
- Forward liquidity promoting measures will make it easier for suppliers to manage their risks
- Aggregator of last resort will provide transition to new market for smaller players

## Capacity Remuneration Mechanism (CRM)



# Rationale for CRM in I-SEM

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- Quasi -public good nature of reliability
- Market failures in an energy only markets leading to the missing money problem
- The magnification of these market failures in an small island system with high levels of variable generation
- Inflexible demand characteristics on Island
- Assessment against I-SEM assessment criteria
- Evidence from the TSOs Generation Adequacy reports
- Analysis on the impact of the changing system dynamics on the running patterns and hours of conventional generation

# I-SEM Draft Decision: Quantity Based CRM

- **Consultation Options and Responses**
  - We consulted on 5 CRMs – 2 price based and 3 quantity based
  - Majority of respondents favoured price based mechanism
  - Proposed Decision is quantity based CRM
- **Why Not Price Based Mechanism?**
  - Payments less sensitive to margin – potential over remuneration
  - Price based CRMs lead to prices that are too low at times of stress and too high at other times
  - Price based CRMs reward availability rather than flexibility

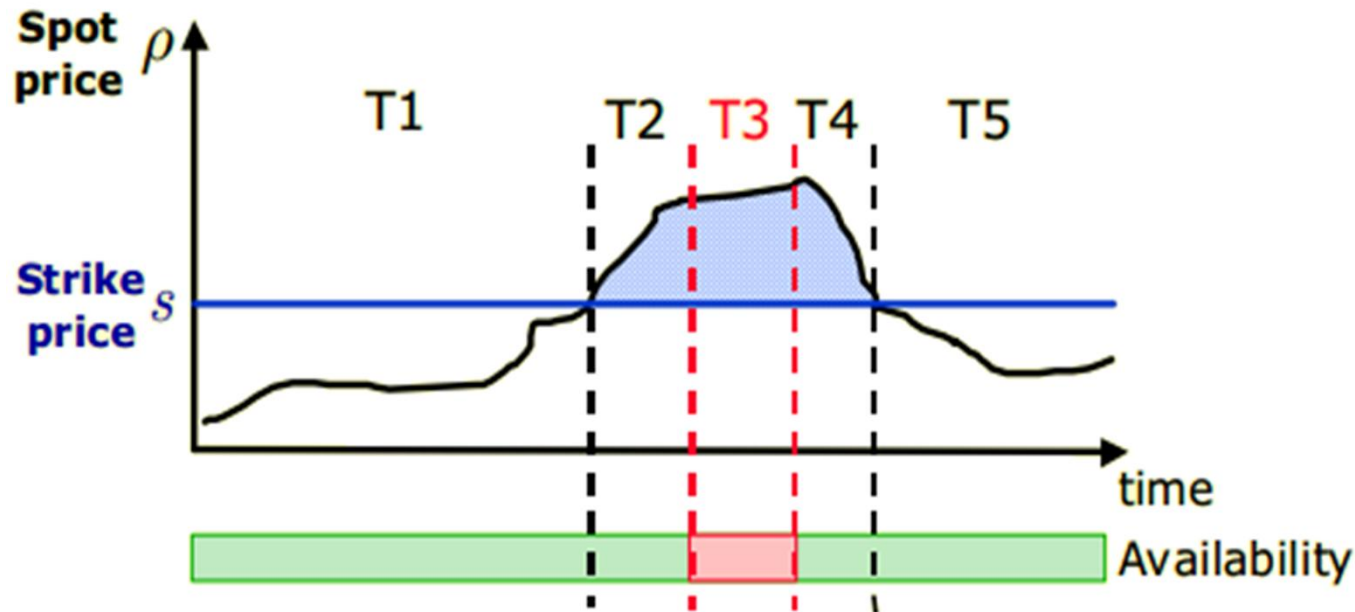
## **Why Quantity Based Mechanism?**

- Market based – regulatory determined required adequacy level, market determines its price
- Consistency with approach in GB
- Only eligible capacity remunerated
- Minimise or removes distortionary effects of CRM

## Reliability Options – How they work

- Large body of international best practice on ROs – New England, South American markets, Italy and possibly Germany
- An RO is a call option that requires a plant to be generating when the system is stressed
- The option would have a strike and reference price (DA/ID/Bal)
- When the reference price is above the strike price, the option to buy at the strike price is exercised by the TSO
- In exchange for the commitment to sell at the strike price, generators would receive an option fee
- Additional penalties could apply in the event that the generator are not available when called
- Detailed design issues like strike price, reference prices and extra penalty to be decided

## Preferred approach: Reliability Options



- When the reference price is above the strike price, the option to buy at the strike price would be exercised
- Generators would pay back the difference between the reference and strike prices
- Load could either have TSO contract on its behalf at strike price or participate in auction – would pay the difference between the reference price and strike price when consuming

# Centralised Reliability Options– Key Impact Assessment Criteria

<b>Internal Electricity Market</b>	Compatible with general European drive towards competitive quantity-based CRMs; with reliability options more consistent with efficient short-term energy price signals
<b>Security of Supply</b>	Transparent and flexible mechanism for providing efficient entry and exit signals and more compatible than other CRM designs with efficient short-term energy price signals
<b>Competition</b>	Provide transparent centralised platform for competition that facilitates efficient and coordinated entry and exit signals and mitigates market power
<b>Environmental</b>	CRM that is most compatible with efficient short-term energy price signals that should encourage the flexible resources that can help to reduce curtailment
<b>Equity</b>	Avoids double payments. Centralised platform supports access for new entrants and consumers all effectively pay the same price for the same level of generation adequacy.

# I-SEM CRM– Key Impact on Energy Users

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- Market based mechanism that minimises distortions in short term markets so incentivises demand response
- Centralised auction mechanism coordinates investment decisions and removes boom and bust cycles
- Sensitive to margin and hence better for consumers
- Move from long term priced based mechanism to reliability options should reduce end consumer bills by 8% in 2017 and 3% in 2020

## Next Steps

- **9 June:** SEM Committee Published Proposed Decision paper on I-SEM HLD including Impact Assessment
- **June/July:** Consultation Period
- **End August:** Final Decision Paper on I-SEM HLD for energy and capacity including full Impact Assessment
- **September 2014 –December 2016** – Detailed Design and Implementation