# IWEA Presentation to RLG

Rules Liaison Group

Wednesday 18th February

# Disclaimer

*This presentation outlines some potential areas for discussion at the Rules Liaison Group and does not represent a formal IWEA position. IWEA will respond formally to the consultations related to this workstream.*

# I-SEM and the implications for wind generation

**Current SEM:**

- Costs of balancing actions taken by TSO for energy and network management are socialized through Imperfections charges
- Wind forecast used by TSO
- No requirement for wind generators to submit bids to Day Ahead market as Variable Price takers
- Market prices use outturn wind and demand

**I-SEM:**

- Market participants required to forecast output (wind forecasting)
- Moving from socialized balancing responsibility (current SEM) to individual balance responsibility (I-SEM)
  - Particularly difficult for wind due to forecast risk
  - Costs are not clear
- Imbalances require active management (through forecasting or buying/selling power in the intraday market)

# Increasing Importance of Energy Revenues

Wind will be much more reliant on energy revenues and market prices:

- Won't be getting much from CRM, if anything
- DS3 will divert money away from CRM
- Wind will have limited access to System Services revenue
- Increasing numbers of projects out of support
- Trend towards market based support mechanisms in Europe

**Energy revenues are very important for wind**

# Day Ahead Market

- Balance responsibility is a big incentive to trade ex-ante. A wind generator that trades ex-ante (whether price-taking or making) should be better positioned than a wind generator that just relies on priority dispatch (PoD) and “shows up” in the Imbalance Market. The market design should ensure this.
- Price Taking: How this will work in Euphemia needs to be ironed out. Don’t want exposure to negative prices, since wind SRMC is virtually zero. A default PFloor of -€500/MWhr is set for fossil plant and is not appropriate for priority dispatch generation.
- Price Making: If a wind generator is prepared to take on all the risk that other price making generators in the market does, it should be allowed to do so. This option should exist.
  - Transparency of EUPHEMIA testing required, including publication of all inputs and output, to ensure wind generators understand market dynamics and options for risk management
  - Clarity required on whether there are likely to be bidding rules in place.
  - Would this impact Priority Dispatch?

# Intra-Day Market

- Wind needs the IDM to be liquid to manage forecast risk, so the design should ensure this.
  - Will there be auctions to condense liquidity?
  - Who is driving this?
  - PoD needs to be able to trade in IDM
- Need to introduce a signal that wind is available for export only
  - XBID/Alternative Mechanism?
- Need to ensure that early TSO actions in the BM don't impact liquidity in the IDM to detriment of wind.
  - Need gate closure one hour ahead of real time - better forecast
  - Stagger IDM and BM?
- How does early TSO actions impact the formation of the imbalance price (which wind is very exposed to if can't forecast accurately)?
- Detailed modelling is required to understand the above dynamics and facilitate an informed debate on the detailed design of the balancing market (may need to be linked back to EUPHEMIA testing outputs).

# Balancing

- Exposure of wind to the imbalance price should only be under circumstances where they forecast inaccurately.
  - Not for circumstances where they are moved away from preferred position for whatever reason (in the same way this is the case for other generators)
- Wind needs reduced volatility in BM/imbalance to risk entering ex-ante markets
- Larger 'Par' (marginal capacity setting the price) reduces exposure to potentially large Imbalance Prices
- Imbalance is unit based – how does this work with renewable portfolios, AOLR etc?

# Dispatch

## Physical Nominations

- There should be an option use the TSO forecast for PNs so that all generators don't have to submit PN
  - Consideration to be given to "starting point" for constraints and curtailment
- Generator should also be able to submit their own PN if they think it is more appropriate
- More detailed consideration to be given to PNs and whether they should be linked to trades – any adverse impacts?
- Clarity required around TSO Objective Function and incentives

## Dispatch

- Tagging and flagging for wind will be very important.
- How will the TSO differentiate between constraint and curtailment? Can often overlap.

# Other Considerations

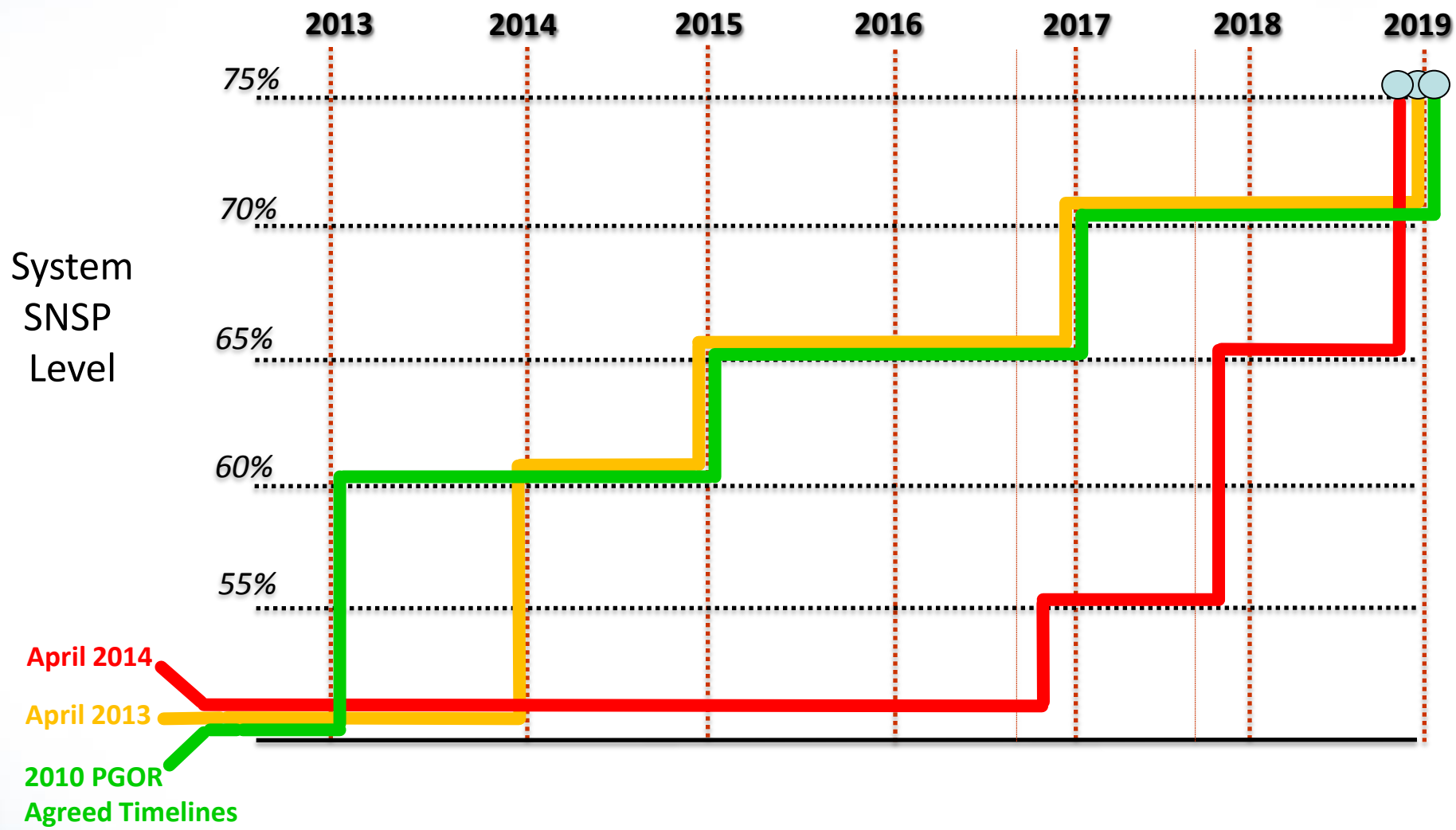
## Curtailment

- Focus should be on reduction of curtailment
  - Causes are not in control of wind generators e.g. SNSP, min gen etc.
- Removal of compensation for curtailment is not compatible with I-SEM market design
  - Artificial and complex undoing of traded position with potential to leave the generator exposed
  - Removes incentive to trade ex-ante
  - Only system constraint that is not compensated is curtailment - discrimination
- Need signal to ensure timely delivery of DS3 and increased SNSP levels
  - The decision to remove compensation for curtailment was linked to the delivery of DS3, which has been significantly delayed
  - The decision to remove compensation for curtailment in 2018 is not appropriate and needs to be revisited.

# DS3 Delivery Timelines

IWEA
Irish Wind Energy Association

## DS3 "Programme Delivery Review"



# Other Considerations

## Non-Firm Wind

- Potentially large volumes of non-firm wind in the future, given further large delays in ATRs
  - Importance of meaning of non-firm
- Delivery of firmness not in the control of the generator

# Some possible scenarios for wind trading

***Scenario 1***

- No wind enters the ex-ante markets
- All demand is matched by fossil plant
  - Higher DAM price as not influenced by low cost wind
- When wind later appears in Balancing Market and gets priority dispatch,
  - Large dispatch balancing costs (DBCs) for turning off other generation.
- This is unsustainable and wind needs to be incentivised to participate in the DAM.

# Some possible scenarios for wind trading

***Scenario 2***

- No wind enters the ex-ante markets
- TSO nets wind forecast from demand
- All remaining demand is matched by other generation
  - Lower DAM price due to lower demand to be met by price making generation
  - Lower DBC than Scenario 1
- Removes large amounts of participants from DAM and IDM.
- TSO acts as trader
- Is this appropriate or workable? Does it conflict with right of all demand to bid in DAM?

# Some possible scenarios for wind trading

***Scenario 3***

- Price-taking wind participates in DAM
- Trades secured at firm price
- Updated trades in IDM due to improved forecasting
  - Needs liquidity
- Balancing Market resolves any additional imbalance
  - Need to ensure incentives to trade are not removed due to BM exposure
- Removal of compensation for curtailment requires active removal of funds from wind – not compatible with trading arrangements

# Some possible scenarios for wind trading

***Scenario 4***

- Wind participates as Price Maker in ex ante markets as any other generator
- Secured trades at firm prices
- Wind can bid in incs and decs
  - Does this mean foregoing Priority Dispatch?

# Conclusions

- The challenge for the I-SEM Energy Trading Arrangements is to get the incentives right so that wind participates in the market
- If the risk is too great to participate wind will spill into balancing, making it harder for the TSO to manage and leading to an inefficient outcome with cost implications for consumers.
- Different trading options will enable wind projects to manage risks more effectively
- Need appropriate incentives to participate in ex-ante markets
- Need to ensure rules do not act as a disincentive to trade
  - constraint
  - curtailment
  - priority dispatch
  - non-firm access
- The causes of curtailment are continuing with DS3 seriously delayed
  - The decision to remove compensation for curtailment in 2018 is not appropriate and needs to be revisited.