



# Cross border participation in CRMs

Presentation materials

30 June 2015

# Interaction between CRMs is important to ensure least cost to customers...

## Objectives of IEM

- demand is met by the cheapest resources available at any given time, irrespective of their location
- investments (in generation and transmission) to meet future demand are made in the cheapest manner, in terms of both technology and location

## What happens if one system has a CRM and another doesn't?

- generation will tend to be built in markets with a CRM, even if it is more expensive to do so
- generation may not be built in markets without a CRM, even if it would have been cheaper to do so

... so need to go beyond implicit participation (to ensure x-border capacity gets paid)

# There are lots of design issues to think about in relation to explicit participation

1. Deciding how secure interconnected capacity is
2. Deciding whether there should be any limitations in the number of CRMs in which resources can participate
3. Deciding which entities should participate – interconnectors or interconnected generation
4. Deciding what the obligations on participating capacity should be
5. Deciding whether the sale and purchase of obligations should be co-ordinated

# 1. Interconnector reliability should be considered probabilistically

Zero probability of coincident events

- **Stress events never occur in neighbouring markets at same time.**
  - Can assume that only need to take into account risk of IC being physically unavailable. In this scenario an IC could in theory act as a resource in CRMs in both markets at the same time (assuming efficient energy markets)

Non-zero probability of coincident events

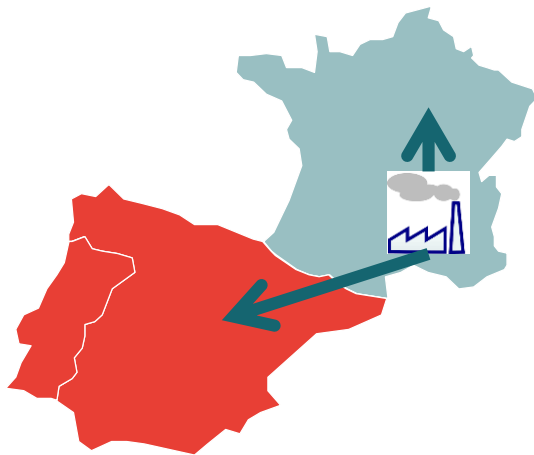
- **Intermediate position - most likely scenario**
  - IC contribution to security of supply needs to be considered in light of probability of coincident stress
  - Assume probability of coincidence = 0.8. This might imply that IC should be de-rated to 80% (in addition to physical availability risk)

100% probability of coincident events

- **Stress events in neighbouring markets always occur together**
  - There is no reliable capacity that IC can provide.
  - No value in allowing IC to bid, and best to assume IC at float in capacity calculations.

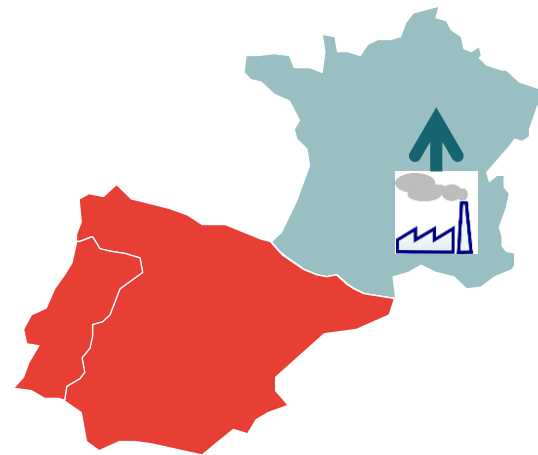
## 2. X-border capacity can be valuable to more than one system

Prob. of coincident stress = zero



- Power station can provide security of supply to both countries
- Facility should be allowed to compete in both CRMs (assuming derating is done properly)

Prob. of coincident stress = one



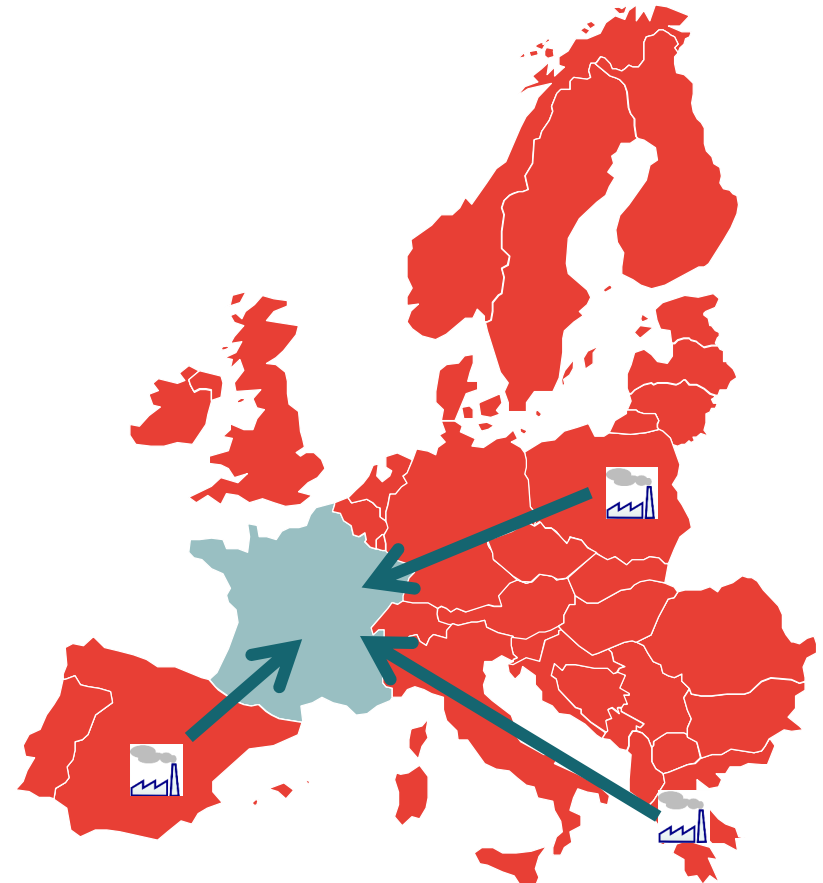
- Facility should be allowed to compete in both CRMs
- But for ES it will be irrelevant, as derating will ensure the eligible capacity of the FR power station is zero

### 3. Interconnector vs. generator participation is not about value, but may be about practicality

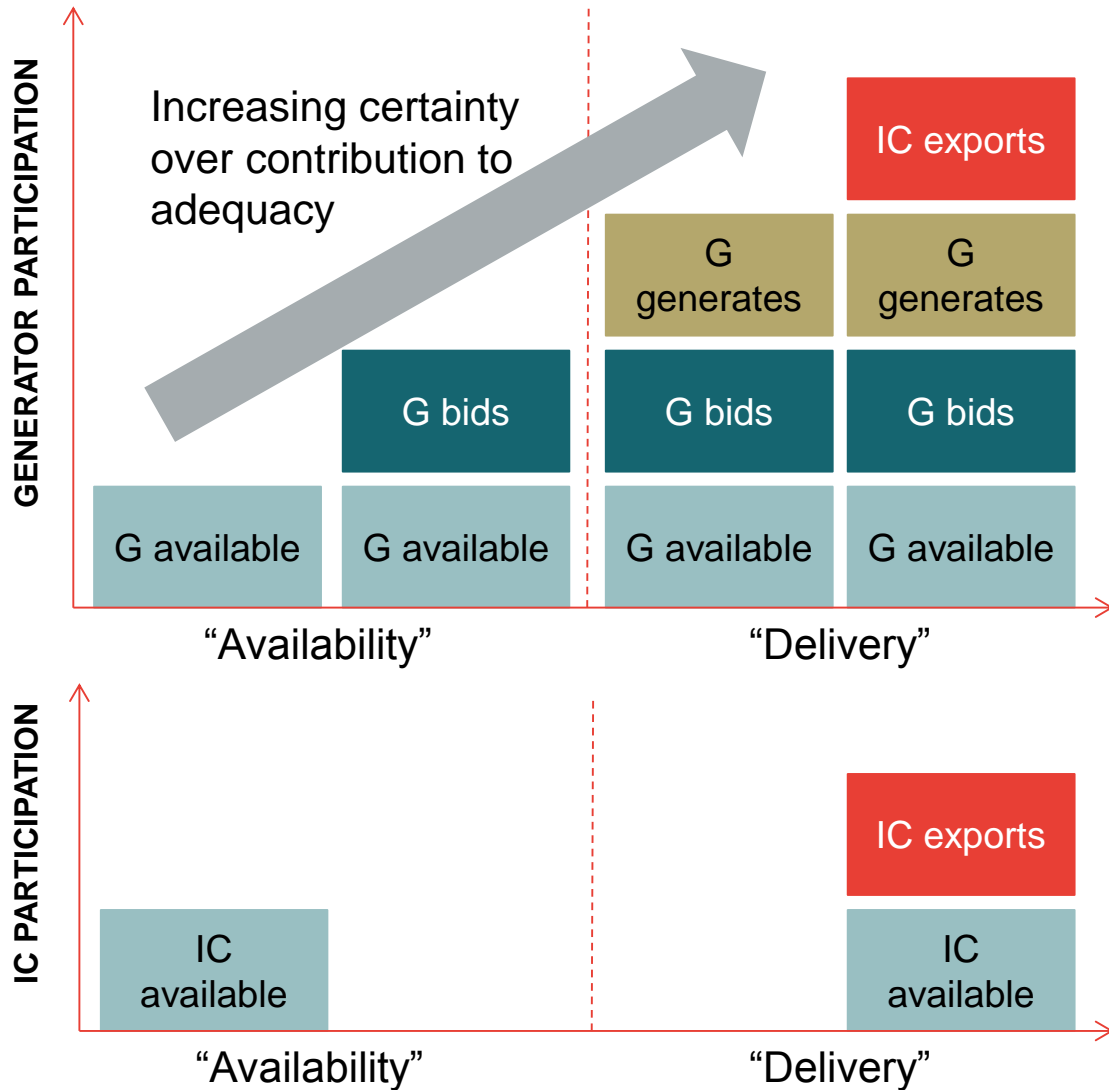
#### Value flows to scarcity

- For a given level of probability of coincident stress, it is interconnector capacity that is scarce
- Therefore it is interconnector capacity that should capture the value of x-border CRM
- This is clear if interconnectors participate
- If generators participate, have to ration participation to capability of interconnector...
- ... e.g. through an auction for right to participate in CRM (separate to PTRs)...
- ... with interconnector getting (in the first instance at least) the revenue

#### With generators, where do you draw the line?



## 4. The nature of obligations on x-border capacity can be the source of significant complexity



- European CRMs vary according to whether they require resources to be “available” (e.g. FR) or “delivering” (e.g. GB)
- Interpretation of “delivering” is particularly difficult – determined by the system as a whole, not an individual resource or interconnector
- Key question: who gets charged what if the IC does not flow, and can they bear this risk?
- In some ways, should be able to leave delivery to the market...
- ... but pre-ETM implementation, can markets be relied upon to ensure delivery (stress likely to develop intraday?)

## 5. Co-ordination of markets would be ideal – but it is not obvious how to get there...

### Ideal: similar to day ahead coupling

- Co-ordinated auction
- Demand curves from various countries
- Resources from various countries
- Simultaneous clearing of markets
- Cheapest resources (given derating) to provide required capacity

### Reality: far from that!

- MSs have individual arrangements
- Some centralised, some decentralised
- Different obligations (and so different risks and hence bid prices)
- Different timings of contracting
- No sense of co-ordinated assessment of probability of coincident stress

Outcomes based on relative investment cost

Outcomes based on investment cost, differential risk, transactions cost, ...

... and maybe a staged approach to harmonisation is the only option





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