



# Agenda

10:00 - 10:30: Registration

10:30 – 11:00: Introduction by the European Commission

11:00 -12:45: Demonstrating the necessity of a generation adequacy measure

12:45 - 14:00: Lunch break

14:00 -15:45: The participation of non-generation activities, demand-side, storage

15:45 - 16:15: Conclusion





# Work programme and deliverables

1. Demonstrating necessity
2. Eligibility 1: General design considerations, demand response and storage
3. Designing a competitive bidding process and eligibility 2: existing and new resources
4. Designing appropriate obligations and penalties
5. Eligibility 3: interconnector / cross-border participation
6. Example models





# Assessing generation adequacy and the necessity of capacity mechanisms

# EEAG Requirements

Summary	
EEAG requirement	Objective
(221) (222)	<ol style="list-style-type: none"><li>1. The nature and cause of generation adequacy problem should be analysed and identified, and its extent quantified.</li><li>2. National generation adequacy assessment should be consistent with ENTSO-E analysis.</li></ol>
(223) (224)	<ol style="list-style-type: none"><li>3. The Member States should clearly demonstrate the reasons why the market cannot be expected to deliver adequate capacity in the absence of intervention. The potential impact on security of supply of alternative market improvements should be assessed, particularly the potential correction of market and regulatory failures, and an increase in DSR and interconnection.</li></ol>





# Why might intervention be needed?

## Market failures

- reliability has features of a public good
- missing money

## Regulatory / market design failures

- price caps
- imbalance settlement
- lack of demand response
- insufficient interconnection



# Assessing generation adequacy

## Many factors to take into account

- projected supply
- projected demand
- influence of weather on demand
- future availability of generation (as a result of eg. weather, maintenance, fuel supplies)



# Quantifying generation adequacy

## Capacity margins

- Difference between peak demand and total available supply

## Loss of load probability / expectation

- Assesses the likelihood of insufficient supply

## Expected energy unserved

- Assesses the extent of insufficient supply





# Case practice: UK Capacity Market (SA.35980)

- Reliability standard of 3 hours LOLE. Extensive modelling of generation adequacy from various sources.
- Particular scrutiny of assumptions relating to imports. Commitment to improve the methodology for this as more data is available.
- Comparisons made with the latest ENTSO-E assessment, but this was not taken as an exclusive benchmark as it remains under development.
- Extensive analysis of market failures and work underway to address regulatory issues in the market.







## Discussion

1. How do you assess generation adequacy in your Member State? Are your national assessments consistent with ENTSO-E's assessments? Do you have a reliability standard?
2. Do you anticipate any future risk to security of electricity supply in your Member State?
3. Do you agree with the potential market and regulatory failures we have identified? Are there others?





# Ensuring non-discriminatory participation in generation adequacy measures



# EEAG Requirements

- Enable participation of all types of capacity (§ 232)
- Provide adequate incentives (§ 226)
- No restriction on participation unless i) insufficient technical performance or ii) overcompensation (§ 232.a)
- Tie-break rule: Give preference to low-carbon generators in case of equivalent technical and economic parameters (§ 233.e)





# Design choices that could impact on participation (1)

## Eligibility/participation requirements

- rules must allow participation
- de-minimis / aggregation
- collateral

## Adequate incentives - Lead times

- most important for new capacity.





## Design choices that could impact on participation (2)

### Adequate incentives - Agreement lengths

- important for enabling large new investments.

### Ensuring Performance

- Which is the obligation or delivery requirement?
- Addressing non-compliance: penalties?



# Discussion

1. Have we identified the most important design considerations for testing the extent to which a CRM enables diverse participation?
2. Are any particular features required to enable the participation of the demand side and storage?
3. Are there particular mechanism designs (or generation adequacy problems) for which more stringent (exclusive) technical requirements might be necessary?

