

## Comments to ENTSO-e's revised ERAA Methodology

**Office/department**  
Centre for Utilities and Supply

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### Background

ACER has launched a public consultation on Entso-e's **European Resource Adequacy Assessment - Methodology Proposal in accordance with Article 23 of the Electricity Regulation of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity (recast)the methodology for European Resource Adequacy Assessments (dated 22 April 2020)**.

These are the comments from the Danish Energy Agency (DEA; Government body under the Ministry of Climate, Energy and Utilities).

The DEA wishes to thank the ECG and ACER for the opportunity to comment on ENTSO-E's proposal for a revised ERAA Methodology.

### 1: Data transparency:

All relevant data *that influence adequacy* used by the Entso-e model developed under the Methodology should be made publicly available. The data in question are:

- Plant capacities, unit sizes, planned and unplanned outage by type and price zone for all relevant years.
- Interconnector capacities, planned and unplanned outage by type and price zone for all relevant years.
- Electricity demand by type and price zone in all relevant years.
- Time series for all climate years for wind, solar, demand, must-run profiles and areas not modelled that are connected to the model area.

Justification: Currently, Entso-e only publishes part of the data used for adequacy assessments. E.g. time series for wind and solar are published, but only some demand time series. A number of generic data for efficiency, outage etc (and not actually used data) are published. We recognize that the Entso-e is working towards more data transparency – but there is still a long way. As the model developed will be used as a decision tool e.g. on capacity mechanisms – and therefore will have impact on Member States' ability to influence their own security of supply, it is vital for credibility, that no assumptions in the model are left in the dark. Complete data transparency is also vital, when individual Member States run

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their own models for national or regional adequacy assessments. Danish experience with two different models show that minor data differences can have a large impact on adequacy results, especially when a given price zone is on the verge of having an adequacy challenge. It is also important that data for the same type of plant or interconnector are the same in all price zones – unless there is a very good reason for using different data. The Entso-e has mentioned confidentiality considerations as a limiting factor to transparency. However, it should be possible to overcome this by using anonymized data when necessary.

## **2: Model transparency:**

The new model developed under the ERAA methodology should be made publicly available together with a thorough description of what it does and how it operates. This will be the easiest way to enable independent scrutiny of model details. It will also make it easier to conduct national or regional resource assessments by Member States, research institutions or others.

When the new model is up and running, it should be tested, which model features are important and which are not. E.g. FMBC vs. NTC, start-stop modelling vs. ignoring start-stop, distribution of EENS in case of simultaneous EENS in several price zones (equalizing demand curtailment vs others). The tests should be made publicly available.

Currently (as in MAF17, MAF18 and MAF19), Entso-e uses a number (5) of different models for adequacy assessment. This is useful because it illustrates the accuracy (or lack thereof) of various models, as the models used produce rather different results on (in principle) the same data. We understand that when the new model is up and running, the Entso-e will then only use one model. We suggest that the Entso-e continues to compare results from different models with the same assumptions, and that these comparisons are published. This will contribute to understanding how the new Methodology works. We recognize that this is extra work – but given the importance of the ERAA, resources should be allocated to this task. Model uncertainty will not disappear when only one model is used. But it will be hidden.



### **3: Perfect foresight:**

The Methodology assumes perfect foresight (Article 4). Perfect foresight is not achievable in real life. We understand that the Entso-e will build the new model with perfect foresight on the reasoning that this is what is currently possible. Fine. However, it is not clear why it must be a mandatory part of the Methodology (thus also mandatory for other future adequacy models). If it were possible to build a model that could handle imperfect foresight, we see no reason to exclude it. After all, the model is supposed to represent the future adequacy as close to reality as possible. And perfect foresight is not reality.

### **4: CHP and heat market modelling:**

The Methodology states that CHP constraints should be taken into account. Yes, absolutely. But it is not trivial how to do that. It depends on the CHP type (extraction / backpressure) and on the size and operation of the heat storage. The Entso-e has argued that modeling of CHP is not mature enough (which we suppose is the reason why it is partly excluded). We disagree. Several models are in operation that can handle CHP running in the electricity market. In fact, CHP plants constitutes the majority of the Danish thermal capacity. Therefore modeling CHP is vital on the Danish electricity market. And how it is modelled can significantly affect the resource adequacy assessment for Denmark (and possibly also other Member States). The same applies to some types of electricity demand that deliver to a heat market (heat pumps, electrical boilers, Power-to-X etc).