INVITATION TO SUBMIT TENDERS - PILOT PROJECT ON THE PROVISION OF RESERVES FROM RE

Background and objective

Energinet buys reserves to be able to handle significant outages and to balance the power system. Various types of reserves are designed to ensure that Energinet is able to restore grid frequency in case of an unforeseen incident.

As the energy system transitions to 100% green energy, the level of imbalances is not expected to go down and unforeseen incidents will still occur, even if greater demand flexibility is expected, while non-fluctuating generation levels are also expected to decline. The integration of renewable energy and attainment of the objective of a 100% green energy system is heavily dependent on new sources for the provision of reserves and flexibility. In this context, highly useful resources include the utilisation of, for example, fluctuating renewable generation technologies and demand flexibility. Thus, there is a clear correlation between attaining and balancing a 100% green energy system and exploiting the potential of renewable energy and active demand-side response. If Energinet and the other TSOs in the synchronous areas cannot restore the frequency in the event of a major outage, consumers may be disconnected.

Energinet aims to inject as much flexibility as possible into the electricity system by making it possible for all generation and/or demand types to provide reserves to Energinet. Energinet aims for 100% technology neutrality when buying reserves, while also offering similar conditions and fair competition. Reserves must provide security of supply, and the important thing is that a reserve is provided so that electricity is available at all times.

When Energinet buys reserves, no technology is thus preferable to others as long as the product bought is provided.

As mentioned above, Energinet is facing a future where capacity from non-fluctuating generation sources is declining. This means that, in future, we may face situations in which the current conventional ancillary service providers are not, or only to a lesser extent, on hand. Consequently, Energinet is very interested in making sure that our framework and tender conditions ensure that available capacity is fully utilised so that electricity system flexibility is maintained, and Denmark thus continues to have a high level of security of supply. This creates value for society as a whole and for the individual service providers. The present framework and requirements exclude RE technology from participating in the capacity markets, and there is limited experience with the provision of aFRR which will once again be bought in DK1 as of 1 January 2020, and which will be implemented in DK2 as part of a Nordic market in 2020.

Energinet thus invites interested parties to participate in a pilot project aimed at testing the supply security from RE facilities in delivering the different types of reserves that Energinet buys in order to broaden our experience and adjust and change Energinet's current requirements and frameworks. Participation must take place via a balance responsible party, if the participant is not one. Energinet wants to test the following points:

- The technical properties of RE technologies in relation to requirements for the delivery of ancillary services (prequalification test - Link).
    - FCR, aFRR and mFRR in DK1.
    - FFR, FCR-D, FCR-N, aFRR and mFRR in DK2.
- Security and quality of forecasted generation of RE facilities.
    - Analysis of supply security of provision of reserves from RE.

- Analysis of forecast of estimated generation.

Interested parties are asked to submit a description of the facility/facility portfolio that they want to test in the market. This description must include the selected ancillary service(s) to be tested, descriptions of technology, physical units, control software, volume, bid sizes and expected time of testing of the reserves provision. Participation in the current market requires that bids are submitted via balance responsible parties.

To safeguard security of supply and reduce the pilot project's impact in the market, the pilot project limits the permitted volume per participant per reserve to 1 MW for FFR, FCR, FCR-N and FCR-D, 3 MW for aFRR in both DK1 and DK2, as well as 5 MW for mFRR in both DK1 and DK2, respectively. Moreover, all reserves must be prequalified before being approved for participation in the pilot project. Frequent updates of forecasts will also be required as will regular participant validation of the forecasting method.

Pilot project framework

The supplier and Energinet will pay their own expenses related to the implementation of functions necessary for the test, e.g. communication, control equipment, etc.

Any proceeds earned by the participant must be gained in existing markets/from existing products with a small volume in a temporary test period. During the pilot project, failure by a provider to deliver the capacity sold will be offset against payment.

The test period is expected to be maximum six months, starting on 1 April 2020. Within the test period, it must be possible to get sufficient operational experience to make a conclusive evaluation of the pilot project. By joining the pilot project, the participant undertakes to offer differentiated volumes every day. The participant also undertakes to deliver a written evaluation of the pilot project, which will provide input for the final preparation and design of the market framework, possibly allowing RE technologies to provide reserves to the electricity grid without backup. After the test period, a summary report comprising all relevant projects will be publicised by Energinet to share any knowledge acquired.

What does the market participant have to gain from participating?

- The opportunity to provide input to the design of future market requirements or a reduction hereof, based on personal challenges and experience.
- The opportunity to test ideas on actual market terms during the test period.

What are the risks for the market participant?

- Risk of requirements tested not becoming part of the future market rules as Energinet cannot guarantee a specific market design.
- The final market design may require adjustments to equipment or, at worst, completely exclude equipment from the market after the test period, if results fail to meet implemented requirements (e.g. if the supplier was granted exemption from requirements for the test period and fails to meet these in the following period).

Application

Interested market participants are asked to submit a 2 to 3-page application describing the project and concept. Please submit applications to TRM@energinet.dk and/or LKB@energinet.dk by 1 February 2020.

Energinet will generally aim to select projects that represent different concepts and technologies in order to gain experience of various segments of the energy sector. Energinet will aim to select pilot project participants that will allow tests of as many different types of technology as possible, tests in both DK1 and DK2, tests of a range of products, tests of both small and large portfolios, as well as offering credible set-ups.

Energinet will provide feedback on whether the application of the individual market participant has been selected for participation in the pilot project by 15 February 2020. When selections have been made, Energinet and the relevant market participants will draw up joint project plans, preparing for pilot project start-up on 1 April 2020.