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Eurelectric 's report on the procurement of distributed flexibility

What's inside ?

1 A comprehensive and integrated approach on the procurement of distributed flexibility

2 A Market-based approach for the procurement of distributed flexibility

3 5 main uses cases

Flexible Power · enedis · piclo · enera · GOPACS

4 set of overarching principles to concretely implement the procurement of distributed flexibility

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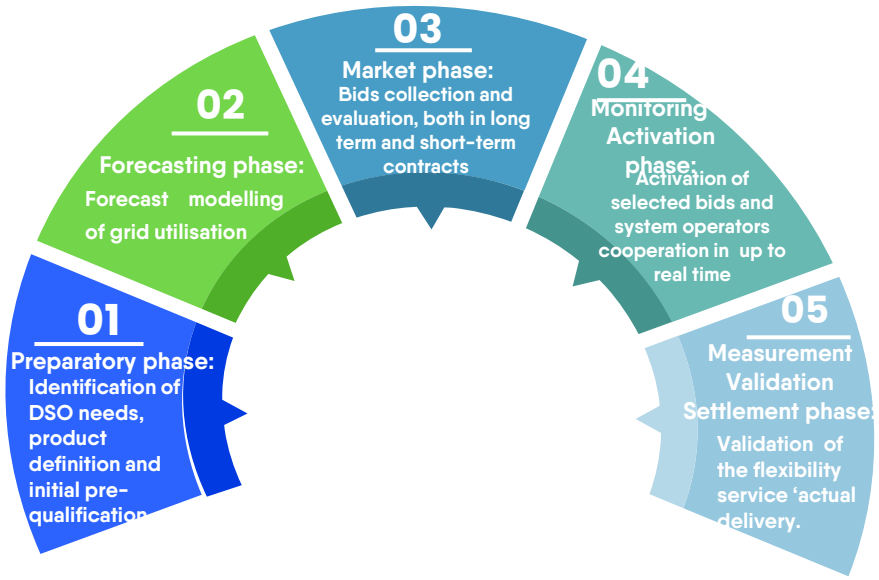
A MARKET BASE PROCUREMENT PROCESS



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OVERARCHING PRINCIPLES

APPLICABLE TO THE OVERALL PROCESS FOR MARKET BASED PROCUREMENT

TRANSPARENCY

- For market parties on the overall process and the outcome of DSO decision making
- On the definition of DSO needs and the tendering processes

DATA VISIBILITY

- Market participation shall be promoted by transparent information of network needs to avoid unwanted market behavior
- Data must be visible, machine readable, free and easily accessible

COORDINATION

- Real-time communication of needs between neighbouring System Operators (TSO-DSO or DSO-DSO)
- Between market processes (e.g. congestion management/balancing)

VALUE STACKING

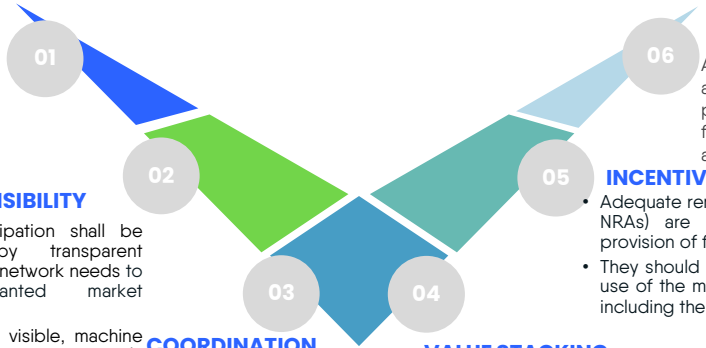
Any Flexibility Service Provider should be able to use its asset(s) to provide services to multiple markets and access multiple revenue streams while respecting the need to comply with REMIT

INCENTIVES

- Adequate renumeration schemes (set by NRAs) are needed for the efficient provision of flexibility services
- They should be improved to encourage use of the most cost-efficient solutions, including the procurement of flexibility

TECHNOLOGY NEUTRAL APPROACH

Applicable to product definition and the design of market platforms. Requires an agnostic framework – including for aggregated resources



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01. PREPARATORY PHASE

IDENTIFICATION OF DSO NEEDS, PRODUCT DEFINITION AND INITIAL PRE-QUALIFICATION

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01. PREPARATORY PHASE

IDENTIFICATION OF DSO NEEDS TO SOLVE/PREVENT CONGESTION

Definition of the DSO need

Different solutions for solving the needs in congestion scenarios: **DSO implemented solutions** (such as grid reconfiguration etc.), **flexible connection agreements**, **traditional reinforcement** (i.e. networks and substations), **flexibility procurement**, **network tariff**, and all of them should be considered (even a combination of options).

Economic assessment methodology

National economic assessment methodology to challenge the best solutions from a cost efficiency system point of view, starting from a zero-cost solution (e.g. grid reconfiguration etc.).

Methodology agreed among DSOs and NRAs and involvement of market actors ahead of the final economic assessment

Publication of the methodology and of the positive results for the congestion assessment (aggregation or anonymization of the results as appropriate). Negative results when requested by NRA.

Publication of the tender

If the results show the flexibility solution as one of the economic viable and possible solutions, **publication of a tender to test the market** by assessing the availability of technologies and services in order to identify the use cases where market-based procurement is possible or insufficient.

Publication of the tender' results and collection of best practices

Results of the tendering made **publicly available (and aggregate or anonymize them as appropriate).**

The EU DSO Entity should collect best practices at EU level, or wider, with their eventual recommendations sourcing different network assessments that compare flexibility solutions against traditional grid investments. Best practices where flexibility solutions have been used while reinforcements are put in place should also be collected.

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01. PREPARATORY PHASE

PRODUCT DEFINITION AND INITIAL PRE-QUALIFICATION

2 Product definition

- **3 main product categories for congestion management:**
  1. capacity product remunerated on a €/MW basis
  2. energy product remunerated on a €/MWh basis
  3. a combination of both
- **EU harmonisation of flexibility products attributes is required to avoid discrimination among market parties and to find sufficient alignment with balancing and wholesale markets. However, full standardisation of the product may hamper innovation.**

3 Pre-qualification

- **The pre-qualification process should be user friendly, striving to minimise the different steps and to standardise them where possible.**
- **Product pre-qualification could take place on an aggregated/ portfolio level if technically acceptable and the inclusion of qualified units in a national flexibility register is recommended.**
- **Dynamic grid pre-qualification** must be seen hand-in-hand with any form of restriction on the grid connection. Except for situations where there is a connection agreement with restrictions, if a certain activation in the grid situation leads to congestion, reverting it shall be subject to **financial compensation**.

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02. FORECASTING & PLANNING PHASE

PLANNING OF GRID USE AND IDENTIFYING POTENTIAL CONGESTION

1 NO "ONE SIZE FITS ALL"...

...when it comes to define the most suited timeframe as it depends on the type of event to address, the alternative options available and the level of security required by both the DSO and market participants.

2 SHORT/LONG-TERM FORECAST

Long term products may be particularly suitable in the early stages of a market to ensure availability when required. A natural evolution from long to short term mechanisms is expected as more liquidity and reliability is provided.

3 DATA INPUT

Data input from grid participants in general, and FSPs in particular, are also key to have accurate forecasts for load and generation on distribution networks.

4 FORECASTING TOOLS

New tools and procedures are required to improve and refine DSO's forecasts. Different levels of analysis and modelling of systems are required, including real-time state estimation. Adequate remuneration for such tools, including the necessary information and communication technology expenses and infrastructure shall be set up.

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03. MARKET PHASE

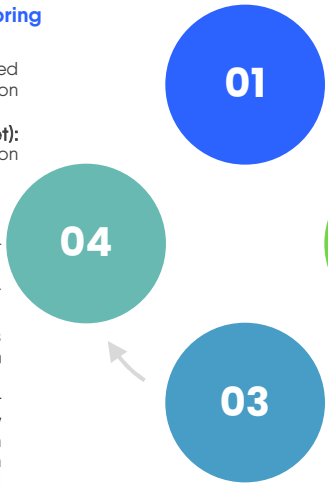
BID COLLECTION AND EVALUATION, BOTH LONG AND SHORT-TERM CONTRACTS

Information exchange with neighboring affected SOs

- **When the market is maturing:** a separated platform for TSO and DSO congestion management.
- **When the market is mature (target):** combined TSO and DSO congestion management with separate balancing.

Evaluation and sorting of bids

- **Rules on bid selection** set at least at national level and publicly available.
- **Compensation system** to be set under certain circumstances.
- Publication by DSOs of the market results as soon as possible with **regular reporting on local market functions.**
- **Regulatory mechanisms** to protect asset providers from unwanted operation by aggregators and to prevent a consumer from being activated in the flexibility market by a different aggregator than the one registered on the platform.



Information exchange with flexibility service providers

- DSOs should inform market participants when launching competitive auctions, providing **sufficient time** for market participants to submit their offers.

Collection of bids

- The **market platform and interfaces** used to collect them should be easily accessible to all types of flexibility providers, be secure, neutral and allow easy access to multiple markets.

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04. MONITORING & ACTIVATION PHASE

ACTIVATION OF THE SELECTED BIDS AND SYSTEM OPERATOR COOPERATION UP TO REAL TIME

Activation of bids in real time

- The activation of bids for congestion management may require **counteractions** to maintain system balance, performed either the FSP itself, the SO performing the congestion management action or the TSO.
- The FSP should only be paid for the amount of energy it actually delivers and for no more than what was requested.
- **Coordination** is required :
  - TSO-DSO or DSO-DSO to prevent double or conflicting activations.
  - Between market processes (e.g. Congestion Management & Balancing)

Real time monitoring of the grid

- Real time monitoring in distribution grids will become more important
- **The flexibility resources register** could play an important role in the monitoring phase (e.g. the flexibility resources register contains the location of the resources and the market parties operating the resource and how to monitor the resource).

Emergency actions

In emergency states, SOs may need to consider non-market-based fall-back provisions, pre-defined between relevant system operators and market participants, respective codes and operational policies.

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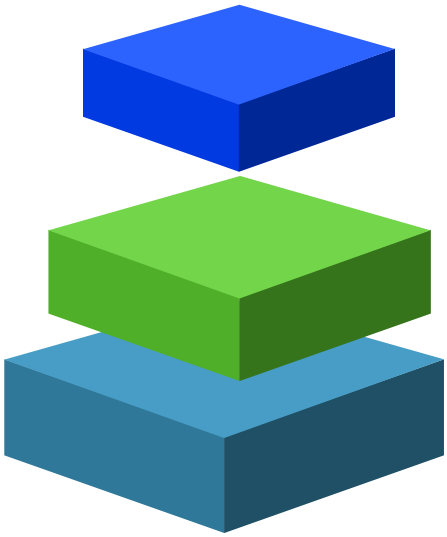
05. MEASUREMENT, VALIDATION & SETTLEMENT PHASE

VALIDATION OF THE FLEXIBILITY SERVICE'S ACTUAL DELIVERY



MEASUREMENT

- By principle, the main meters shall be the central source for measurement to guarantee the quality for the measurement.
- Certified submeters may be used and upon pre-approval of the contracted party and the DSO if the telemetry capabilities of the main meter do not match with the requirements from a specific product or in case there are multiple suppliers.

VALIDATION

- The actual delivery of a flexibility services must be subject to validation whatever the form of the product.
- The validation may be performed by the contracting system operator itself or by a third party on its behalf, but the contracting system operator will keep the legal responsibility for the validation by the contracted parties.
- In countries where rules for participation of distributed resources in certain market mechanisms have already been developed, these should also be applied to the new flexibility use cases.

SETTLEMENT

- DSOs/TSOs are entitled to put in place a penalty regime that ensures the delivery of the flexibility products they have procured (possibility for a grace factor upon the SOs' discretion).
- The accuracy of the baseline methodology is crucial. Different methodologies can co-exist if each is better suited to a particular type of asset/situation/technology, but the associated rules per methodology must be clearly defined at national level.

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Back up slides

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