

The FutureFlow project: Promoting TSO-TSO cooperation in operation of balancing systems

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Source: Entso-E



Designing eTrading Solutions for Electricity Balancing and Redispatching in Europe

gemalto

gen-i

HORIZON 2020, Call:	H2020-LCE-2015-3 Advanced architectures and tools for pan-European markets for ancillary services and balancing
Project title:	Designing eTrading Solutions for Electricity Balancing and Redispatching in Europe
Project acronym:	FutureFlow
Grant Agreement No.:	691777

Duration:

Coordinator:

Consortium:

General objective:

To design and pilot test for access of advanced consumers and distributed generators to a Regional Platform for balancing and redispatching services

4 years (1.1.2016 - 31.12.2019)

12 partners from 8 countries

ELES d. o. o., Slovenia

Maximum grant amount:

ELES

MA.

SAP

12,9 mio EUR







Liviu Dumitrescu TSO operator in Romania

»The participation of Demand Side Management and Distributed Generators units shall enrich the competition in the ancillary services markets and prepare the ground for entrants on a wide scale«



Benefits for stakeholders







Miha Novak Slovenian NRA

»Developed solutions tested with various field use-cases provide adequate input for policy makers«

FutureFlow

The Challenge

Consumers, equipped with state-of-the-art devices, are no longer just ordinary consumers, but can also produce electricity.

Their potential is to become active players in power system security. Like guardians of the power system, contributing to the most challenging of all TSOs' balancing services.





Benefits for stakeholders



kWH CO2 €





Michael Hoffmann the owner of a chemical company in Austria

»FutureFlow brings a new business model and opportunity for my company while being environmentally friendly«

FutureFlow



Advanced Technology

Regional balancing and redispatching platform.

Use Case 1 Completing the factory tests of the IT prototype system.

Use Case 2:

Measuring costs and benefits of the IT platform on national level.

Use Case 3:

Measuring costs and benefits involving costumers in all participating countries

Use Case 4:

Providers are alowed to switch from one aggregator to the other.







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aFRR measurement and verification methodologies

Issues

- Approaches in the four control areas are not comparable in many cases
- Different states of development concerning VPP and DRES integration
- Strategy
 - Show common approaches
 - Highlight good practices, avoid the term best practice
 - Explain barriers for VPP and DRES without mentioning a control area
 - Avoid discussions about harmonization (as long as not crucial for the project) ... this is the task of the TSOs
- Results
 - A general introduction into the verification topic
 - A possible standardized verification procedure
 - The proposal to stay flexible (approach as explained by APG in last meeting)



aFRR verification methodologies: Content

- Introduction
 - Dealing with pools of distributed resources
- Measurements
 - Metering point definition
 - Accuracy
 - Filtering
- Online data requirements
- Baseline methodologies ... show good practices
 - (Corrected) power market schedule,
 - Baseline submitted with short lead time (>= FAT),
 - Continuation of the current measurements
 - Possible generation (of renewable generators), AAP (available active power)
 - Further methods may be applicable but not sufficient practical experience yet.
- Possible standardized procedure for verification
- Overview about prequalification procedure in Austria



Definitions: aFRR activations





Correction of baseline





Trading schedule used as baseline



Trading schedule

Corrected trading schedule



Latest measurement value at reception of activation command used as baseline





Balancing reverve provided by renewables



16



The proposed standardized procedure





Measurements and verification: Findings

- It seems to be a promising approach to accept any source of flexibility as long as the main requirements for aFRR provision are fulfilled.
- Many rules have been developed for big generation units and an adaption may be needed in some cases to facilitate the participation of DRES and VPP in aFRR (e.g. device precision class, tolerances of delivery).
- Measurement point on machine level is preferable for industrial resources.
- There is no common procedure for baseline calculation to meet all the requirements (characteristics of resources, approach for P/f-control, national power market clearing rules).
- It is recommended to allow different verification approaches as long as the fundamental requirements are fulfilled.
- Some TSO accept new proposals for verification methods developed by the providers of flexibilities if requirements are met. This is a good practice to facilitate participation of DRES and VPP.





Outlook: Field tests



Many thanks for your kind attention!

