

Recommendations for “Flex Readiness” for E-Assets

Electrification of transport, heating and industry will introduce more flexible assets in the power system. These flexible assets will play an essential role in covering the increasing need for flexibility resulting from the integration of renewables. There is however a sizeable amount of flexibility potential to be unlocked at consumer level.

Reaching the ambitious energy and climate targets by 2030 and by 2050 requires not only accelerating renewable build-up. It also requires making efficient use of renewable energy by increasing the electrification of different economic sectors, including industry, transport and buildings. Moreover, consumer assets such as electric vehicles and heat pumps, aiming to reduce carbon intensity in transport and buildings respectively, are capable of being steered thanks to a combination of sub- and embedded meters, as well as embedded and home automation.

For the electricity system, flexibility plays an important role in maintaining the stability of the system and helping to keep generation and consumption in balance. By steering electrical assets in an effective way, Balancing Service providers (BSPs) and Energy Services Providers (ESPs) can activate the flexibility, which is available behind the meter, to deliver flexibility services to the system, but also to offer energy services tailored to consumers’ preferences. The end-consumer can choose, on a voluntary basis, to participate to such flexibility.

[Elia’s recent study on Adequacy and Flexibility](#) quantified that the needs for flexibility, at different time horizons, will almost double towards 2034. The study showed that sufficient flexible assets will be available in the system to cover these needs. However, these flexible assets present in industry and at residential consumers still need to be unlocked. Doing so will help increasing renewable integration and reduce system costs (up to 250 – 400 mio € p.a.).

Solving on the short term the need for additional downward flexibility during sunny and/or windy days (“incompressibility periods”)

The sharp increase in variable wind and solar production requires the development of additional flexibility in the system. Whilst a significant share of installed wind parks already reacts to market price signals, e.g. reducing their output in case of (very) negative prices, this isn’t the case for the majority of the installed PV in Belgium (which mostly concern residential rooftop panels).

In the future, demand will have to become more flexible to adapt to renewable production to the extent possible (demand-side management). The right (price) incentives should be developed and provided to steer demand to moments of strong wind and solar production.

In addition, action should also be taken on the generation side to ensure that there is always sufficient flexibility to match demand and off-take. [Elia’s recent study on Adequacy and Flexibility](#) indicates that additional actions should be taken to develop downward flexibility to avoid problems with surplus energy, especially on sunny days during spring and summer. Indeed, on those days, the proposed photovoltaic production capacity can exceed the total offtake.

Call for action

Elia urges to accelerate the development of flexibility to support the next steps in the energy transition by fostering the participation of flexible E-assets, like electric vehicles, heat pumps, batteries, solar panels,... in the market to facilitate the further integration of renewable energy (and e.g. cope with issues of incompressibility).

Therefore, Elia calls upon the need for newly installed flexible assets to be 'Flex Ready' (as of a certain date) by means of developing the technical capability to react on market-based signals (e.g. enable reaction of PV installations to negative market prices, enable reaction of heat pumps and electric vehicles to high prices). The flexible operation of solar panels will also come at a win for the asset owners, as it will resolve the issue that they continue to inject during (very) negative market prices, which eventually will be reflected in the remuneration they receive for their injection.

Concretely, Elia invites:

- The regions and the federal level to support the development of the necessary framework in order to ensure that new E-assets are 'Flex Ready' and hence capable of steering their output on market-based signals;
- Synergrid to elaborate and implement the technical requirements for 'Flex Ready' assets in the requirements for connection of these assets to the different LV & MV grids;
- The regions and federal level to support and stimulate initiatives that resort in exposing, on a voluntary basis, flexible assets to market-based signals.