Recommendations for submetering requirements for flexibility

Decarbonisation brings more flexibility needs. 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, in order to deliver flexibility services to the system, but also to offer energy services tailored to consumers' preferences.

Elia's recent study on Adequacy and Flexibility shows that decabonisation and more renewables are increasing the need for flexibility at different timeframes. However, it also shows that unlocking flexibility from different sources, including from industry and residential consumers, can help increasing renewable integration and reduce system costs.

Access and sharing data are key to unlock flexibility. Recent European legislation is supporting access and sharing of data behind the meter.

The market demand of data of submeters, including embedded meters is growing. Recent European legislation is supporting access and sharing of data behind the meter. This includes tackling access and sharing of data at the level of assets such as batteries and electric vehicles (recast Renewable Energy Directive or RED), publicly accessible recharging infrastructure (Alternative Fuels Infrastructure Regulation, or AFIR), and building's systems including building management systems, private charging points and meters (proposed review of the Energy Performance of Buildings Directive, or EPBD).

Next to this, the European Data Act is empowering users to get access and give access to the data from connected devices, and the proposed review of the Electricity Market Design (EMDR) will make possible the use of data from dedicated metering devices (submeters and embedded meters) for the observability and settlement of flexibility services.

Member States should now organize efficiently data management from and behind the meter and address the remaining barriers preventing the use of data from submeters and embedded meters.

While recent EU legislation is fully supporting the access and sharing for behind the meter data from submeters and dedicated meters, the main challenge is to ensure their coherent and swift implementation at national level. There is an urgent need for Member States to start coordinating the easy access to and sharing of data at smart meter level, as well as from data behind the meter. In the implementation, it is important to take into account the services that these assets could offer – including flexibility services, smart charging services, etc.

Despite the advances from EU legislation, there are still some EU legislations, for example the Directive on metering instrument requirements (MID), that are not fit for these use cases and are slowing down the process of BSP/ESPs unlocking flexibility on large scale[1].

The royal decree containing the federal technical grid code for the management of the transmission network of electricity and access to it stipulates in article 275 that the transmission system operator determines the technical criteria of the metering equipment including the accuracy of the measurements. Article 276 adds that those criteria are specified in the connection contract or in the Terms and Conditions of the ancillary services.

Art. 275. Tenzij anders bepaald in de toepasselijke wetgeving bepaalt de transmissienetbeheerder de technische criteria waaraan de in artikel 267 bedoelde meetuitrustingen moeten voldoen, onder meer:
…
4° de nauwkeurigheid van de metingen;
…

Art. 276. De criteria worden in het aansluitingscontract of, in voorkomend geval, in de overeenkomst voor ondersteunende diensten gepreciseerd en door de commissie goedgekeurd.

Elia has recently updated the metering requirements for grid users connected to the federal transmission grid for flexibility services (mFRR, aFRR, multiple BRP, explicit flex, …). For assets larger than 100kVA, some metering requirements are weakened considering that the deviations caused by this relaxation stay within acceptable boundaries.

For assets smaller than 100kVA, any financial transaction with energy meters including customer billing (i.e. multiple BRP, energy communities, mFRR, aFRR with transfer of Energy) requires compliancy with the Directive 2014/32/EU of the European Parliament and of the Council of 26 February 2014 on the harmonization of the laws of the Member States relating to the making available on the market of measuring instruments, i.e. the Measurement Instrument Directive (MID). This directive is on national level transposed to the "Koninklijk besluit betreffende meetinstrument of the 15th of April 2016". Those legislations require amongst others a minimum accuracy for energy meters of 2%[2] and a readable display on the meter.

Flexibility assets usually have embedded meters into their design. Per design the embedded meters will not have a display available on them. Additionally Elia has performed a thorough analysis of the accuracy of submetering devices, including embedded meters of those assets and Elia observes accuracy levels up to 10% for market assets like electric vehicles and heat pumps. Currently, those assets are in many cases not meeting the MID requirements and therefore, cannot be used for consumer billing reasons. If Elia would require that all those assets are to be compliant with MID, Elia would have to disqualify almost all current meters and thus also flexible assets, including most of the embedded meters. The benefit of installing additional MID compliant meter would be insufficient to cover the additional cost.

Energy metering devices used for billing purposes must be compliant with the European Measurement Instrument Directive (MID), that outlines safety requirements for measurement instruments across

[1] The Power of Flex by Elia Group - Issuu
[2] Accuracy level according IEC 62053-21:2020 and IEC 62053-22:2021 corresponding with class A of Directive 2014/32/EU (mapping according Annex C of EN 50470-3)

Europe. The legislation is drafted having smart meters at access point in mind and is not fitting the need for flexible assets with submeters, including embedded meters.

A derogation is needed for submetering from relevant EU legislation such as the MID, while such legislation is adapted.

Elia urges to allow a derogation for submetering from the European legislation (short term) and to modify the European legislation to fit purpose for submetering and embedded meters. Based on the currently installed meter devices on assets which could provide flexibility, submetering requirements would have to evolve for all flexibility services towards submetering accuracy requirements between 2% and 10%. for assets smaller than 100kVA. Other metering requirements besides accuracy would also have to be reviewed in order to allow flexibility assets (with embedded meters) to be compliant.

The evaluation of the Measurement Instrument Directive is also on the work program of 2024 of the European Commission:
The evaluation will assess the functioning of the Measuring Instruments Directive. It will examine the scope (product range) of the Directive and the technical requirements for all products included in its scope. It will also focus on the essential requirements and will verify if they are still fit for purpose considering the technological progress and the current state of technology. Evaluation will also address the digital compliance aspects and consider the possibility of simplifying reporting obligations for Member States stemming from the Directive.

<u>Call for action</u>:

- Member States should efficiently organize access and sharing of data from and behind the meter, in line with the new requirements from recent EU legislation.
- Legislation related to metering requirements for submetering and embedded meters must be reviewed in the light of flexibility use case both on national and on European level.