

What does interoperability mean and how can it be achieved for the benefit of consumers

Summary

Interoperability is key in achieving a successful transition to a new, flexible European energy system. Smart Meters, Smart Appliances, E-mobility charging stations and other equipment used for the digitalisation of the energy system should be able to have a seamless exchange of information among each other.

In order for consumers to be able to benefit from the energy system transition and freely choose (and switch) from competitive energy related services there should be an efficient and non-discriminatory way to access consumption data. This does not only require the availability of standards for this data access, but also the right selection, combination and implementation of such standards.

1. Interoperability, how it can be reached

First of all it is important to understand what exactly interoperability means.

The Smart Energy Grid Coordination Group (that executed the M490 mandate of the Commission to work on interoperability for smart grids) defined interoperability as:

“The ability of two or more networks, systems, devices, applications, or components to interwork, to exchange and use information in order to perform required functions”. Ref [1]

Interoperability can generally exist on different layers of a system:

- Physical layer which is the hardware to connect systems or devices
- Communication layer which describes the way how data will be exchanged, for example how to identify the sender and receiver.
- Information layer fixes the format of the data, the “language” to be used
- Functional layer specifies the transaction, for example how many messages are needed and what should be the response

An analogy with sending mail:



- Physical layer is a paper or computer to write the message.
- Communication layer is an envelope or Email with an address.
- Information layer is the message itself written in an agreed language (eg English).
- Functional layer is an agreement on the reaction: is a reply expected for example.

Communication standards are available for Energy Consumption data and that is the first thing to do when requiring interoperability: select the appropriate standards.

Since the physical infrastructure for exchanging consumption information will be different in member states, but finally could also be chosen by consumers (do I want to receive my consumption data by Email, by Whats App, on a memory stick, etc.) it is not necessary to fix a standard for the physical and communication layer. It would however be very helpful if the format of the data (the information layer) is fixed and how consumers can access the data (the functional layer).

2. Interoperability, data format and interoperability standards

In the original text of the Electricity Directive, article 24, the European Commission required the use of a “European Data Format” and standard process for the exchange of electricity consumption data. As explained above this concerns just the function and information interoperability layers.

The benefit of having a European format for consumption data, is in the first case for consumers. Competitive tools and services can be developed for a single European market based on a single European format. For example smart phone apps and laptop applications can work with this single format to analyse consumption data and alert or advise consumers based on their consumption pattern. When deviating patterns are recognised, consumers (or their care takers) can be informed about this anomaly and take action.

ESMIG supports the proposal made by the European Commission to have a single data format for consumption data. We recommend to give priority to the download of (historic) consumption data by consumers. Only then the consumer will get access to competitive tools and services that use this data for advice regarding their energy consumption. A change of service company that collected the consumption data should not lead to a different way of accessing the data by the consumer.

Through later amendments, the European Parliament introduced an alternative for the data format, referred to as the use of “interoperability standards”. As explained above interoperability standards are multiple, can cover various layers (including a data format), can have options that need to be fixed, etc. Furthermore we believe that the choice of standards should be restricted to formal standards defined and maintained by the official Standards Development Organisations. The introduction of the alternative “interoperability standards”, without further explanation, is confusing and will not lead to interoperability.

In case this alternative has been introduced because some member states already have developed and are using a national data format and processes for data exchange, then other solutions are possible to avoid a mandatory



change of an existing system. For example the European data format could be restricted to the download of consumption data by consumers. A large majority of member states don't have a national solution for this download of data to a consumer yet. In case a national format for download of consumer data exists, the concerning member state(s) could be advised to use the European format as soon as they upgrade their system.

ESMIG calls on the European Parliament to reconsider the alternative solution for a European Data Format by the use of "interoperability standards", because this alternative is confusing, will not lead to interoperability and is a barrier for the introduction of new energy related tools and services for consumers.

References

[1] - SG-CG/M490/I_Smart Grid Interoperability, CEN-CENELEC-ETSI Smart Grid Coordination Group, 31-10-2014

About ESMIG

ESMIG is the European voice of the providers of smart energy solutions. Our members provide products, information technology and services for multi-commodity metering, display and management of energy consumption and production at consumer premises.

Our activities are focused around systems for smart metering, consumer energy management and safe and secure data transfer.

We work closely with EU policy makers and other EU associations to make Europe's energy and water systems cleaner, reliable, more efficient and the European consumer informed, empowered and engaged.

