Ministry of Economic Affairs
and Employment of Finland

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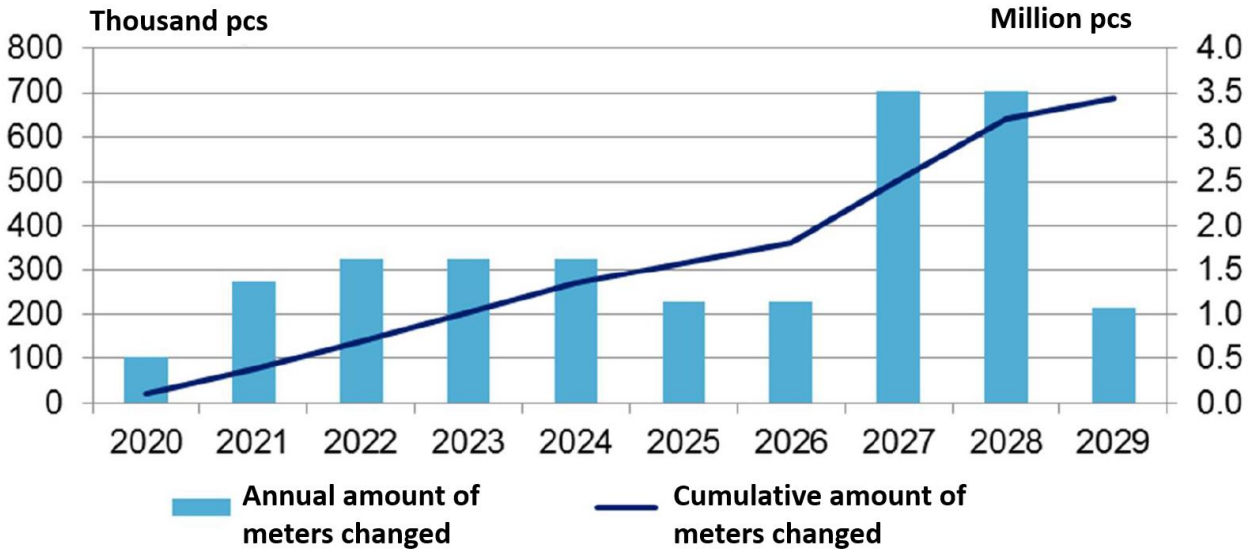
FI NON-PAPER: COMPATIBILITY OF MEASUREMENT INSTRUMENT DIRECTIVE WITH CLEAN ENERGY PACKAGE'S ELECTRICITY MARKET DESIGN

Background

Finland is the first country in Europe to carry out full roll-out of smart meters with advanced functionalities. The roll-out was initiated by a legislative degree in 2009 when around 40% of the customers already had a meter capable of hourly metering. The legislative degree stipulated that 80% of the customers should receive a smart meter by the end of 2013. The key functionalities set up in the legislation were hourly metering, reading of the meter once a day, hourly settlement of all customers and an output for real-time data. The realization of the roll-out was 97% at the end of 2013 and reaching close to 100% at the moment. To note, already in 1995 all the customers with fuse over 3x63A were equipped with meters capable of hourly metering.

The responsible party for electricity metering are the network operators. The regulatory model anticipates techno-economic lifetime for the meters to be 10 to 20 years. The network operators can then choose a suitable lifetime for the calculations in the regulatory model. Currently, the average lifetime is around 13.5 years. In the graph below is an estimate of the replacement of the current smart meters based on the roll-outs and average economic lifetime.



The roll-out has brought many benefits to the customers and the industry and can be considered very successful. The current meters enable the customers to choose a dynamic, hourly-based supply contract or other innovative products. They also allow the customers to examine their hourly consumption through web-based applications. The hourly settlement based on the real measurements has abolished the need for load curves enhancing the functioning of retail markets. Remote reading lowers the costs for the network operators. In addition, they provide many detailed information for the operators of the electricity quality and disturbances.

However, the costs have been criticized heavily especially by parties not seeing direct benefits. For the public acceptance it is critical that the already installed meters and the data they provide can be utilized until the end of their lifetime also in the emerging new concepts such as energy communities and aggregators.

Measurement instrument directive 2014/32/EU and WELMEC guide 11.2

The Measurement instrument directive (MID) annex I 10.5:

Whether or not a measuring instrument intended for utility measurement purposes can be remotely read it shall in any case be fitted with a metrologically controlled display accessible without tools to the consumer. The reading of this display is the measurement result that serves as the basis for the price to pay.

WELMEC guide 11.2 point 5.2.:

the client shall be enabled to check the invoice based on the interval values. The access to the data shall be possible by the user interface in an acceptable way (not more than 100 key actions shall lead to the wished specific value).

Conflict between measurement instrument directive and electricity market design

The electricity market design proposed by the Commission in the clean energy package in 2016 places great emphasis in increasing the possibilities for the customers to participate in the markets and to lower their electricity bills. We fully endorse these goals and pride ourselves for being able to provide all customers, down to retail customers, possibility to participate to all market places, including reserve markets.

The above mentioned parts of MID and WELMEC guide has raised concerns in Finland. The concerns consider 1) dynamic contracts and 2) energy communities which will be discussed in more detail below.

Dynamic price contracts

The competent authority in Finland, Finnish Safety and Chemicals Agency (TUKES), has adopted an interpretation of MID and WELMEC guide that the customer has to be able to check directly from the meter the data that is used for the basis of the customer’s bill. Regarding dynamic pricing, this would mean that the customer would have to be able to read the individual hourly consumption from the last billing period directly from the meter display. Similarly, if the DSO introduces dynamic tariffs, the basis for these tariffs should be found from the meter.

Existing smart meters rolled out in Europe typically have limited capacity to store data and it could be impossible to store hourly data in the meter

for several months. Also the display and user interface are very crude in the meters making it very hard to access data recorded several weeks ago.

Energy communities

We are currently planning to implement energy communities to our legislation. We are considering to implement a model where multi-apartment houses could share the electricity produced on the rooftop with its dwellers. The netting of the production would be carried out only within the settlement period (currently 1 hour). The basis for the netting would be the readings of the customers and the production from the installed smart meters. The dwellers would be subject to all taxes, energy and network charges for the part of the they are procuring from the network. Netting within the settlement period would be carried out in the centralised data management system, datahub. It is unsure whether this is compatible with MID.

Discussion

We are very concerned that the 1st generation smart meters in whole Europe would be deemed incompatible with MID requirements. This would mean that it would not be possible to offer dynamic contracts. Also easy and cost-efficient realisation of energy communities could turn out to be impossible. This would be in stark contradiction to the goals of clean energy package to put consumers in the centre.

We consider consumer protection to be essential in providing new possibilities for the consumers. However, we have already far more advanced and user-friendlier means to provide the customer all the data needed to verify their bills, such as mobile apps, than the small display on the meter.

Questions:

1. How should the requirements in Measurement instrument directive (MID) annex I 10.5 be interpreted regarding hourly dynamic price contracts in order to facilitate dynamic pricing with the first generation smart meters?
2. Is cumulative consumption enough to fulfil these requirements?
3. Are current practices in data transfer (e.g. PLC, 3G) in line with the directive requirements?

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