

Summary

Executive summary

Smart metering has reached a stage of early maturity with mass-rollouts underway in significant parts of Western Europe. Almost 40 percent of the 281 million electricity customers in EU28+2 had a smart meter at the end of 2017, a share that is set to increase to 70 percent over the coming five years. As a consequence, annual shipments of smart electricity meters will reach a peak of around 28 million units per year in 2019/2020. The majority of the new installations will take place in France, Spain and the UK, with significant contribution also coming from countries like Austria and the Netherlands. After Italy, which had a head-start, Spain was the first major country in Western Europe to begin mass deployments at the start of this decade. France and the UK have started to ramp up the rate of installations, which will peak at an aggregate level of 10–12 million units per year in the period 2018–2020.

Italy and Sweden were the first European countries to embark on nationwide deployments of smart meters in the last decade. As the systems deployed in both countries reach their end-of-life, the DSOs are making preparations for a second wave of rollouts. In Italy, Enel's distribution arm e-distribuzione is leading the way with plans to install 13 million second generation meters by 2019 and another 28 million in the following decade. Sweden faces a more complex situation with some remaining uncertainty around regulations and a greater diversity of DSOs. Over the past years, some of the earliest moving municipal DSOs from the first wave began upgrading their systems. In May 2017, Ellevio launched the first major second wave tender for the upgrading of 0.9 million metering points. The rollout will be the first where one existing large-scale system will be replaced by another.

Germany is taking a highly cautious approach to smart meters. The country is planning for a 15–20 years' transition period during which smart meters are gradually introduced for selected customer groups. In July 2016, Germany reached a significant milestone as the new regulatory framework and roadmap for smart meters was formally approved. In the medium term, smart meters will become mandatory for around 10 percent of the customers by

2025/2028. For the remaining 90 percent, households using less than 6,000 kWh per year, the technology will be optional with a price cap. This does leave some room for more extensive rollouts during the 2020s by DSOs that can identify strong business cases.

Adoption trends in Central Eastern Europe are mixed. Estonia was the first country in the region to complete a nationwide rollout at the end of 2016. Latvia is doing a partial rollout to larger electricity customers and Lithuania has recently launched a pilot project. Poland has seen some large-scale installations but there have not yet been any final decisions about the regulatory framework of technical standards. At the end of 2017, one of the five DSOs were committed to a complete rollout while the others had performed or planned to perform large-scale pilots. Czechia, Slovakia and Hungary have different approaches to smart meters. The cost benefit analysis in Czechia had a negative result and deterred the country from going ahead with a rollout. Slovakia found a positive business case for a partial rollout and will deploy smart meters to around 30 percent of the customer base accounting for half of the yearly consumption until 2020. Hungary has established a subsidiary of the national TSO for the task of managing a national pilot project over the next years. Romania has seen an accelerated uptake in the past years as all three DSOs initiated significant deployments. Bulgaria does not plan a mandatory rollout, but the country's DSOs are gradually deploying smart meters to selected customers for similar reasons as in Romania. Greece is still in the process of organising a large-scale pilot that could lead up to an eventual nationwide rollout by the country's only DSO.

PLC has been the dominant technology platform for smart metering solutions in Europe from the onset. Berg Insight however believes that IoT-optimised cellular technologies such as LTE-M/NB-IoT and RF mesh networks will steadily increase their market shares in smart metering over the next 5–10 years. The shift from 2G to 4G/5G will eventually offer improved performance at lower cost. LTE-M will probably be the most suitable alternative for smart electricity metering, while NB-IoT will cover the needs in smart gas and water metering. At the same time, the standardisation of RF mesh networks by the Wi-SUN Alliance and other standard bodies has a good potential for establishing a thriving ecosystem for connected products in the smart cities and smart energy markets.