

Smart Metering in Europe

Smart Metering in Europe is the twelfth consecutive report from Berg Insight analysing the latest developments for smart metering (electricity and gas) in Europe.

This strategic research report from Berg Insight provides you with over 250 pages of unique business intelligence, including 5-year industry forecasts, expert commentary and real-life case studies on which to base your business decisions.

Highlights from the twelfth edition of the report:

- **Full coverage** of the European market with in-depth market profiles of all countries in EU28+2.
- **Case studies** of smart electricity and gas metering projects by the leading energy groups in Europe.
- **360-degree** overview of next generation standards for PLC and RF smart grid communication.
- **Updated** profiles of the key players in the metering industry.
- **New** detailed forecasts for smart electricity and gas meters in 30 countries until 2023.
- **Summary** of the latest developments in the European energy industry.

Berg Insight's M2M Research Series

What are the key business opportunities in the emerging wireless M2M/IoT market? Berg Insight's M2M Research Series is a unique series of 25 market reports published on a regular basis. Each title offers detailed analysis of a specific vertical application area such as smart metering, fleet management or vehicle telematics. Once per year we also publish summaries of our research with detailed forecasts for the Global and European wireless M2M markets, respectively.

www.berginsight.com



Order now!

Please visit our web site to order this report and find more information about our other titles at www.berginsight.com

See inside for further details →



Record years ahead for the European smart metering market

Smart metering has reached a stage of early maturity with mass-rollouts underway in significant parts of Western Europe. Almost one third of the 283 million electricity customers in EU28+2 had a smart meter at the end of 2016, a share that is set to double over the next five years. As a consequence, annual shipments of smart electricity meters will reach a peak of around 28 million units per year in the final years of this decade. 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. During 2015, France and the UK 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. At the same time nationwide rollouts will also get underway in Austria, Ireland, Luxembourg, Norway and possibly Portugal. In addition, Sweden, Finland and Denmark already have introduced smart meters for all or most customers. Including deployments in Central Eastern Europe, the penetration rate in the EU will be around 60 percent by 2020. Not quite on par with the original policy target, but nevertheless a significant achievement and a decisive technological shift in the history of electric power.

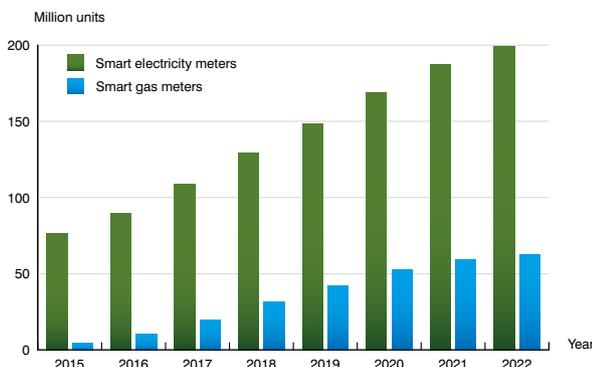
Germany is the primary reason why the EU's 80 percent target for smart meters will not be met. The country is planning for a 15–20 years' transition period during which smart meters are gradually introduced for selected customer groups. In July 2016, Germany reached a significant milestone as the new 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.

The adoption trends in Central Eastern Europe are mixed. Estonia will be 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 several

large-scale projects underway, but there is still uncertainty around the regulatory process. 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 for a partial rollout and will deploy smart meters for 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 began to see an accelerated uptake during 2014/2015 as all three DSOs initiated significant deployments. 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. Outside of the EU, Montenegro has completed a large smart metering rollout and Serbia launched an ambitious project in 2015.

While most other European countries are deploying their first generation of smart meters, the early adopters Italy and Sweden are preparing for the second wave. The system solutions deployed in the early 2000s are becoming outdated in terms of functionality and performance. In addition, the meters and communications equipment are reaching the end of their technical lifespan of around 10–15 years. Enel officially showcased its second generation smart metering system for Italy in July 2016. The company intends to start with massive replacements in 2017 at the same time as it will begin a major fibre network rollout to households in metropolitan areas. Sweden has its first second wave projects underway and will see growing activity over the coming years.

Among smart meter communication technologies, Berg Insight perceives a gradual shift from PLC towards wireless technologies and hybrid PLC/RF. Massive investments in the development of new technologies for the Internet of Things has generated a plethora of wireless networking standards optimised for low cost and ultra-low power consumption. These range from evolved 4G/5G cellular standards with improved indoor coverage and lower component costs to LPWA networks and RF mesh technologies for IP-based communication.



Installed base of smart gas meters (EU28+2 2015–2022) and installed base of smart electricity meters (EU28+2 2015–2022)

This report answers the following questions:

- What are Enel's plans for the second wave of smart meters in Italy?
- What will be the effects of Germany's new legislation for the introduction of smart meters?
- Which countries are going forward with smart metering in Central Eastern Europe?
- Who were the winners in the recent tenders in Norway and Austria?
- Which emerging wireless IoT networking technologies are best positioned for smart metering applications?
- Which are the leading suppliers of smart metering solutions for the European market?
- What are the plans for smart gas meter rollouts until 2022?
- How are ICT providers positioning themselves in the value chain?

Executive summary

1 Electricity, gas and district heating markets in Europe

- 1.1 Energy industry players
- 1.2 Electricity market
- 1.3 Gas market
- 1.4 District heating market

2 Smart metering solutions

- 2.1 Introduction to smart grids
- 2.2 Smart metering
 - 2.2.1 Smart metering applications
 - 2.2.2 Smart metering infrastructure
 - 2.2.3 Benefits of smart metering
- 2.3 Project strategies
 - 2.3.1 System design and sourcing
 - 2.3.2 Rollout and integration
 - 2.3.3 Implementation and operation
 - 2.3.4 Communicating with customers
- 2.4 Regulatory issues
 - 2.4.1 Models for the introduction of smart meters
 - 2.4.2 Standards and guidelines
 - 2.4.3 Individual rights issues

3 Networks and communication technologies

- 3.1 Smart grid communication networks
- 3.2 PLC technology and standards
 - 3.2.1 International standards organisations
 - 3.2.2 G3-PLC
 - 3.2.3 PRIME
 - 3.2.4 Meters & More
 - 3.2.5 LonWorks
 - 3.2.6 HomeGrid
 - 3.2.7 HomePlug
- 3.3 Wireless technologies and standards
 - 3.3.1 International standard organisations
 - 3.3.2 Network architectures
 - 3.3.3 Unlicensed and licensed frequency bands
- 3.4 Cellular technologies
 - 3.4.1 2G/3G mobile networks
 - 3.4.2 4G mobile networks
 - 3.4.3 LTE-M and NB-IOT
- 3.5 LPWA technologies
 - 3.5.1 Proprietary and semi-proprietary LPWA technologies
 - 3.5.2 LoRa
 - 3.5.3 Sigfox
 - 3.5.4 Wi-SUN
 - 3.5.5 ZigBee and JupiterMesh
 - 3.5.6 Wireless M-Bus

4 Smart metering industry players

- 4.1 Meter vendors
 - 4.1.1 Landis+Gyr
 - 4.1.2 Itron
 - 4.1.3 Elster
 - 4.1.4 Aclara Technologies
 - 4.1.5 ADD Grup
 - 4.1.6 AEM
 - 4.1.7 Aidon
 - 4.1.8 Apator
 - 4.1.9 Circutor
 - 4.1.10 Diehl Metering
 - 4.1.11 EDMI Meters
 - 4.1.12 Elgama Elektronika
 - 4.1.13 EMH Metering
 - 4.1.14 Flonidan
 - 4.1.15 Hager
 - 4.1.16 Hexing Electrical

- 4.1.17 Iskraemeco
- 4.1.18 Janz
- 4.1.19 Kaifa Technology
- 4.1.20 Kamstrup
- 4.1.21 Linyang Energy
- 4.1.22 MeterSIt
- 4.1.23 Networked Energy Services
- 4.1.24 Pietro Fiorentini
- 4.1.25 RIZ
- 4.1.26 Sagemcom
- 4.1.27 Sanxing Electric
- 4.1.28 Wasion
- 4.1.29 ZIV
- 4.1.30 ZPA Smart Energy
- 4.2 Communication solution providers
 - 4.2.1 AP Systems
 - 4.2.2 Corinex
 - 4.2.3 Cyan Technology/Connode
 - 4.2.4 Devolo
 - 4.2.5 NURI Telecom
 - 4.2.6 Ormazabal
 - 4.2.7 Power Plus Communications
 - 4.2.8 Sensus
 - 4.2.9 Silver Spring Networks
 - 4.2.10 Trilliant
 - 4.2.11 Xemex
- 4.3 Software solution providers
 - 4.3.1 Cuculus
 - 4.3.2 Enoro
 - 4.3.3 Ferranti Computer Systems
 - 4.3.4 Görlitz
 - 4.3.5 Kisters
 - 4.3.6 Oracle
 - 4.3.7 Powel
 - 4.3.8 SAP
 - 4.3.9 Telecontrol STM
- 4.4 System integrators and communication service providers
 - 4.4.1 Arqiva
 - 4.4.2 Atos Worldgrid
 - 4.4.3 Capgemini
 - 4.4.4 CGI
 - 4.4.5 Ericsson
 - 4.4.6 IBM
 - 4.4.7 Kapsch
 - 4.4.8 LG CNS
 - 4.4.9 Rejlers
 - 4.4.10 Schneider Electric
 - 4.4.11 Siemens
 - 4.4.12 Telefónica
 - 4.4.13 Telekom Austria
 - 4.4.14 UtilityConnect
 - 4.4.15 Vodafone

5 Market profiles

- 5.1 Regional summary
 - 5.1.1 EU smart metering policies
 - 5.1.2 Top smart metering projects in EU28+2 countries
- 5.2 Austria
- 5.3 Belgium
- 5.4 Bulgaria
- 5.5 Croatia
- 5.6 Cyprus
- 5.7 Czechia
- 5.8 Denmark
- 5.9 Estonia
- 5.10 Finland
- 5.11 France
- 5.12 Germany
- 5.13 Greece

- 5.14 Hungary
- 5.15 Ireland
- 5.16 Italy
- 5.17 Latvia
- 5.18 Lithuania
- 5.19 Luxembourg
- 5.20 Malta
- 5.21 Netherlands
- 5.22 Norway
- 5.23 Poland
- 5.24 Portugal
- 5.25 Romania
- 5.26 Slovakia
- 5.27 Slovenia
- 5.28 Spain
- 5.29 Sweden
- 5.30 Switzerland
- 5.31 United Kingdom

6 Case studies: Smart metering projects in Europe

- 6.1 Enel
 - 6.1.1 Enel Open Meter and the second generation rollout in Italy
 - 6.1.2 Endesa's smart metering project in Spain
 - 6.1.3 Smart meter rollout plan for Romania
- 6.2 Enedis (formerly ERDF)
 - 6.2.1 The Linky Programme
 - 6.2.2 System development and large-scale pilot
 - 6.2.3 Full-scale rollout plan
- 6.3 E.ON
 - 6.3.1 Sweden
 - 6.3.2 Germany
 - 6.3.3 United Kingdom
 - 6.3.4 Central Eastern Europe
- 6.4 Iberdrola
 - 6.4.1 The PRIME project
 - 6.4.2 Smart metering rollout in Spain
- 6.5 Current smart meter rollouts in Scandinavia
 - 6.5.1 DONG Energy
 - 6.5.2 Hafslund
 - 6.5.3 SORIA
- 6.6 Smart gas meter rollouts in France and Italy
 - 6.6.1 GrDF
 - 6.6.2 Zi Rete Gas
- 6.7 Smart meter communication platforms in Germany and the UK
 - 6.7.1 Germany
 - 6.7.2 United Kingdom

7 Market forecasts and trends

- 7.1 Market trends
 - 7.1.1 Mass-rollouts finally get underway in Western Europe
 - 7.1.2 Mixed outlooks in Germany and Central Eastern Europe
 - 7.1.3 Italy and Sweden prepare for second wave deployments
 - 7.1.4 Technology innovation to drive growing uptake of wireless communication
- 7.2 Smart electricity metering market forecast
 - 7.2.1 Capital expenditure forecast
 - 7.2.2 Communication technology market shares
- 7.3 Smart gas metering market forecast

Glossary

About the Author



Tobias Ryberg is co-founder and principal analyst responsible for the M2M research series. He is an experienced analyst and author of numerous articles and reports about telecom and IT for leading Swedish and international publishers. The European Smart Metering market has been his major research area for the past 13 years.

Berg Insight offers premier business intelligence to the telecom industry. We produce concise reports providing key facts and strategic insights about pivotal developments in our focus areas. Berg Insight also offers detailed market forecast databases and advisory services. Our vision is to be the most valuable source of intelligence for our customers.

Who should buy this report?

Smart Metering in Europe in its twelfth edition is the foremost source of information about the ongoing transformation of the metering sector (electricity and gas). Whether you are a vendor, utility, telecom operator, investor, consultant, or government agency, you will gain valuable insights from our in-depth research.

Related products

- Smart Homes and Home Automation
- Security Applications and Wireless M2M
- The Global M2M/IoT Communications Market
- mHealth and Home Monitoring

Order form – TO RECEIVE YOUR COPY OF SMART METERING IN EUROPE

You can place your order in the following alternative ways:

1. Place your order online in our web shop at www.berginsight.com
2. Fax this order sheet to us at fax number: +46 31 711 30 96
3. Mail this order sheet to us at: Berg Insight AB, Viktoriagatan 3, 411 25 Gothenburg, Sweden
4. Email your order to: info@berginsight.com
5. Phone us at +46 31 711 30 91

Choose type of format

- Paper copy 1200 EUR
 PDF 1-5 user license 1800 EUR
 PDF corporate license..... 3600 EUR

Family/Surname	Forename	Position	Company
Address		Country	Postcode
Telephone	FAX	Email	

VAT is chargeable on all orders from Sweden. Orders from all other countries in the European Union must include the buyer's VAT Registration number below in order to avoid the addition of VAT.

Your PO number	Your VAT/TVA/IVA/BTW/MWST number
----------------	----------------------------------

Please charge my credit card

- VISA Mastercard

Card number	Expiry date (MM/YY)	CV code
Cardholder's name	Signature	
Billing address		
Postcode	Country	

- We enclose our cheque payable to Berg Insight AB
 Please invoice me

Signature	Date
-----------	------

Reports will be dispatched once full payment has been received. For any enquiries regarding this, please contact us. Payment may be made by credit card, cheque made payable to Berg Insight AB, Viktoriagatan 3, 411 25 Gothenburg, Sweden or by direct bank transfer to Skandinaviska Enskilda Banken, 106 40 Stockholm, Sweden.

Account Holder: Berg Insight AB
 Account number: 5011 10 402 80
 BIC/SWIFT: ESSESESS
 IBAN: SE92 5000 0000 0501 1104 0280

