

# Smart Grids in Europe: A Quick Guide for U.S. Exporters

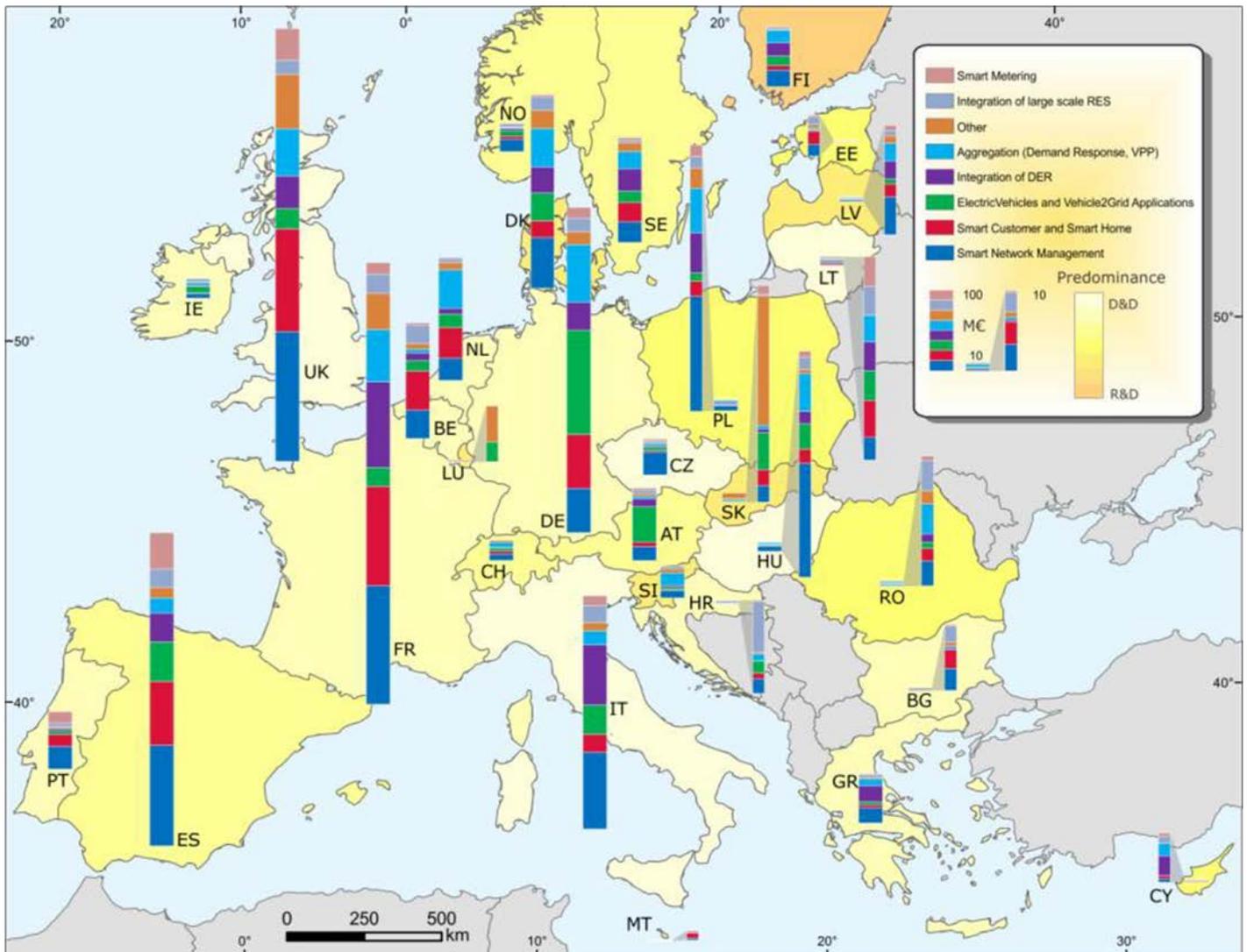
Prepared by the U.S. Commercial Service Smart Grids Affinity Group  
For European Utility Week, Nov. 3-5, 2015, Vienna, Austria

## Context

- Investment in the EU transmission and distribution system is projected at \$660 billion in the time period of 2014-35. Of this sum, around one third or \$200 billion is expected to be invested in smart grid systems.
- The EU currently imports over half of its energy supply
- Overriding political goals for SG are energy de-carbonization, reliability, and security of supply
- European utilities are largely unbundled, ie, not vertically integrated
- The European electricity market is in flux: increasing share of renewables; need for capacity reserves; changing role of utilities; non-market mechanisms; new owners and investors

## Projects (does not include smart meter roll-outs)

- There currently are over 450 SG projects, both R&D and D&D, throughout Europe
- The largest investments have been in France and the UK
- Total spending on SG projects to date is around \$4.1 billion, with spending on D&D far outweighing R&D
- The most active project partners have been universities/research institutes and DSOs
- The most targeted applications thus far have been in smart network management and smart customer/smart homes, in particular control/automation systems and distributed ICT architecture.



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### Smart Meters (electricity)

- For countries with positive CBA, 80% coverage by 2020 is required
- Rollout (80% or more) mandated in 11 member states; three are complete and three more are planning a selective rollout
- That will cover 72% of all EU households; 196 million meters; \$45.5 billion investment
- Most common communication technologies are PLC and GPRS
- No consensus on minimum system functionalities, but some common themes exist:
  - Enables remote on/off and power limiting functions
  - Allows remote reading
  - Two-way communication for maintenance and control
  - Provides readings direct to the customer
  - Provides readings in real time to the network operator (frequency varies)
  - Supports advanced tariff system
  - Data privacy, security and fraud prevention systems in place
  - Records and saves metering data for export

Smart grid rollout schedule for selected EU countries:

Country	Status	Start year	Completion year
Italy	<i>complete</i>	2001	2011
Sweden	<i>complete</i>	2003	2009
Finland	<i>complete</i>	2009	2013
Malta	<i>mandated</i>	2010	2014
Spain	<i>mandated</i>	2011	2018
Austria	<i>mandated</i>	2012	2019
Ireland	<i>mandated</i>	2012	2020
Poland	<i>under discussion</i>	2012	2020
Estonia	<i>mandated</i>	2013	2017
Romania	<i>under discussion</i>	2013	2020
Denmark	<i>mandated</i>	2014	2020
France	<i>mandated</i>	2014	2020
Greece	<i>mandated</i>	2014	2020
Netherlands	<i>mandated</i>	2014	2020
Luxembourg	<i>mandated</i>	2015	2018
UK	<i>mandated</i>	2015	2020

### Market entry tips

- Understand the players and motives in each country and present your value proposition accordingly (What are the market drivers? Are the utilities unbundled? Privately owned? Who are the largest DSOs and what are their challenges? What is the state of public debate?)
- Utility customers are inherently conservative; relationships with key players and local providers will be crucial
- Europe is both technologically sophisticated and highly regulated; be prepared for stiff competition and significant bureaucratic hurdles

Sources: European Commission, JRC Science and Policy Reports, [Smart Grid Projects Outlook 2014](#); European Commission, Directorate General for Energy, [Smart Grids Evolution in the EU, December, 2013](#); International Energy Agency, [World Energy Investment Outlook 2014](#); U.S. Commercial Service staff, 2015.