

## Launch Webinar

# European Market Monitor on Energy Storage (EMMES)

**The definitive analysis of latest status and trends in Europe**

18 January 2018

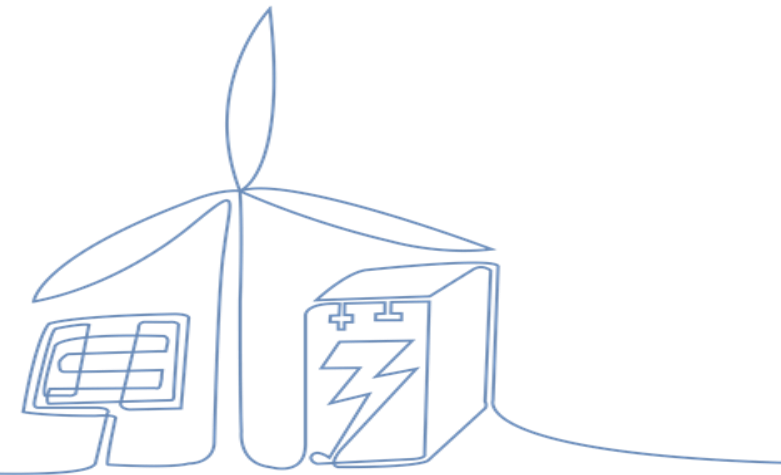
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## Today's Webinar Presenters



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Delta-ee



Andy Bradley  
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Delta-ee

- ▶ **Introduction**
  - About EASE and Delta-ee
  - What is EMMES?
  
- ▶ **Headlines on how the EU Market evolved in 2017**
  
- ▶ **Status of European Policy and what to watch in 2018**
  
- ▶ **Key Segment and Country Trends**
  
- ▶ **How to get EMMES, contacts & questions**



## About EASE

The mission of EASE is to actively support the deployment of energy storage as an indispensable instrument in order to improve the flexibility of and to deliver services to the energy system with respect to EU energy and climate policy.

EASE is the voice of the European energy storage industry with members drawn from across the sector

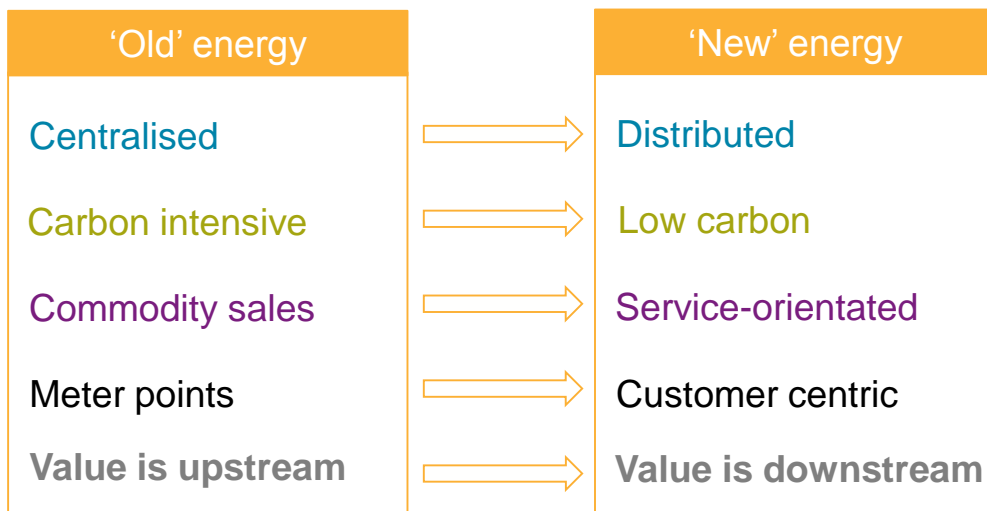
EASE seeks to build a European platform for sharing and disseminating energy storage related information – of which EMMES is part.

Visit [www.ease-storage.eu](http://www.ease-storage.eu) for more information.

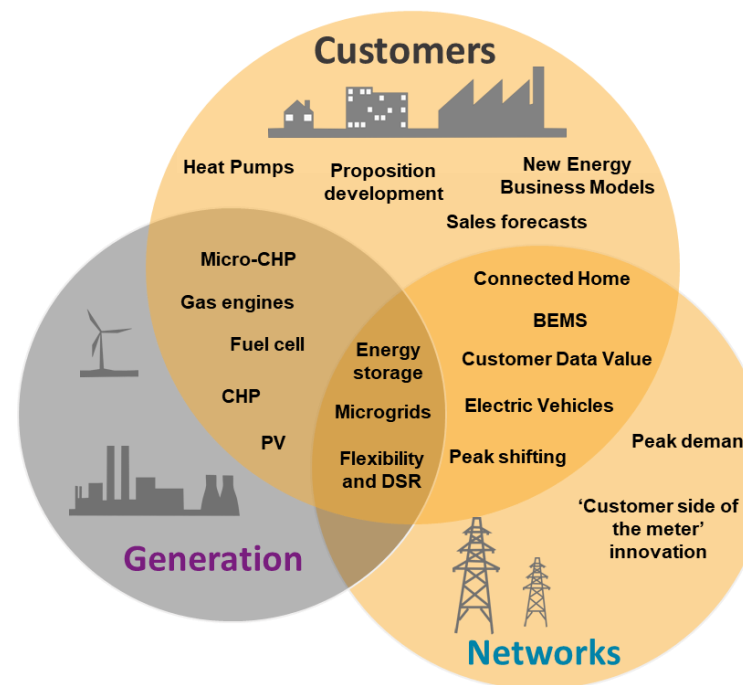




Helping clients navigate the transformation of the energy system - from 'old' energy to 'new' energy



Our areas of expertise:



Selected clients include:



## Flexibility and Storage Research

Enables you to take advantage of the opportunities emerging from demand side flexibility and distributed storage

Visit <https://www.delta-ee.com/flexandstorage> for more information.

Market Infobase

Data and forecasts

Competitor Infobase

Data and profiles

Energy Storage

In-depth industry research

BTM Flexibility

In-depth industry research

EMMES is the definitive analysis of the European markets for energy storage and how they are developing

- ▶ EMMES is produced by Delta Energy & Environment (Delta-ee), in close partnership with EASE (European Association for Storage of Energy)
- ▶ Based upon primary research with leading companies and stakeholders – many of whom are members of EASE
- ▶ Market data that companies can rely on, updated **every 6 months**
- ▶ Three main objectives:
  - ▶ Provide a common set of data, market and policy information that industry stakeholders can rely on
  - ▶ Establish an accepted evidence base to support debate with policy makers and shapers
  - ▶ Save members' resources, time and effort to stay abreast of the market
- ▶ EMMES is available to EASE members and to subscribers of Delta-ee's Energy Storage Research Service
- ▶ Each biannual EMMES report can be purchased by non-members for €3,000

# European Market Monitor On Energy Storage (EMMES)

EMMES is the definitive analysis of the European markets for energy storage and how they are developing



Which countries are showing rapid growth?

Which technologies are dominating country markets today?



What are the drivers & barriers in each country?

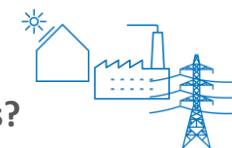


How is European policy affecting the market today and shaping it into the future?

Which technologies have the best opportunities in future?



What segments are the best opportunity in which countries?



EMMES includes coverage of all energy storage technologies on the market (with the exception of pumped hydro).

The first edition published in December 2017 focuses on battery storage, but other energy storage technologies will be monitored in subsequent editions as they become more important (in particular thermal storage).

## Each EMMES report includes:

- ▶ Overview of EU policy and future changes
- ▶ Country energy storage summaries (2015-2017):
  - ▶ Installed base in residential, C&I and front-of-meter sectors (MW / MWh)
  - ▶ Battery sales in residential, C&I and front-of-meter sectors (units or MW / MWh)
  - ▶ Key developments which explain the market trends
- ▶ Forecast of European storage market in 2018
- ▶ Overview of thermal storage market

▶ Summary of <b>Energy Storage Market</b> in Europe.....	4
▶ Overview of EU Policy and Regulation.....	5
▶ Country Markets	
– France.....	8
– Germany .....	11
– Italy .....	15
– UK .....	18
– Other Countries: Netherlands, Belgium & Republic of Ireland.....	22
▶ Regions	
– Central / Eastern Europe .....	26
– Iberia .....	30
– Nordics .....	33
▶ Overview of <b>Thermal Storage Market</b> in Europe .....	36
▶ Appendix 1: Summary Data Table of Annually Installed Capacity – Electrical Storage.....	39
▶ Appendix 2: Other C&I energy storage market overview (Italy, France, Nordics).....	40



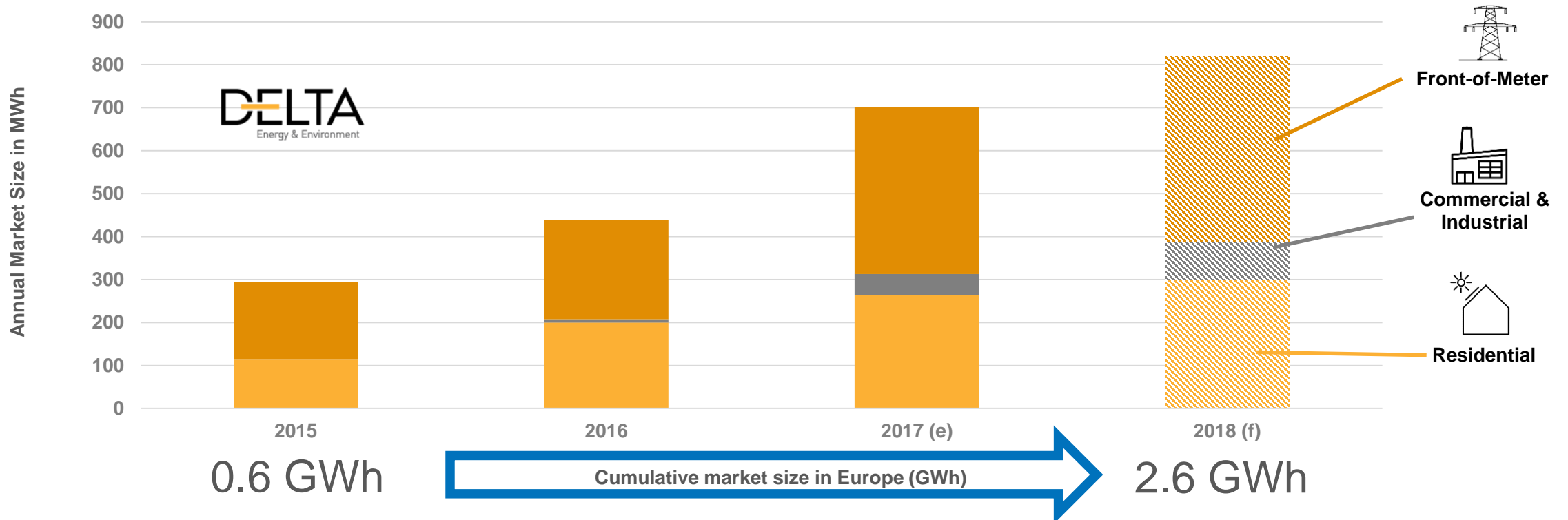
- ▶ **Introduction**
  - About EASE and Delta-ee
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## Summary of the energy storage\* market in Europe.

- **We expect that the annual market will grow by 50% in 2017**, continuing the strong growth seen in 2016.
- Our forecast is that the market will continue to grow in 2018 but at a slightly slower rate (primarily impacted by slower uptake of front-of-meter projects).
- **However, the front-of-meter segment will continue to account for the largest share of deployed electrical storage**
- Residential is expected to continue on its growth trajectory, while C&I will start to emerge as a more certain market in a few countries.

Electrical energy storage capacity annually installed in Europe (MWh)



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- There is currently **no clear EU regulatory framework specific to energy storage**.
- Policymakers recognise implicitly that more energy storage is being held back by an outdated market design and regulatory framework.
- High-level policies are going in the right direction, but specific regulations must now follow
- Industry needs to work together and speak with a clear single voice to policy makers and regulators.

### Main policies and regulations impacting the EU storage market today

- **Renewable energy directive** (2009/28/EC)
- **EU network codes**
- **Internal energy market directive** (2009/72/EC)
- **Commission Staff Working Document “Energy Storage – the Role of Electricity”** (Feb 2017)

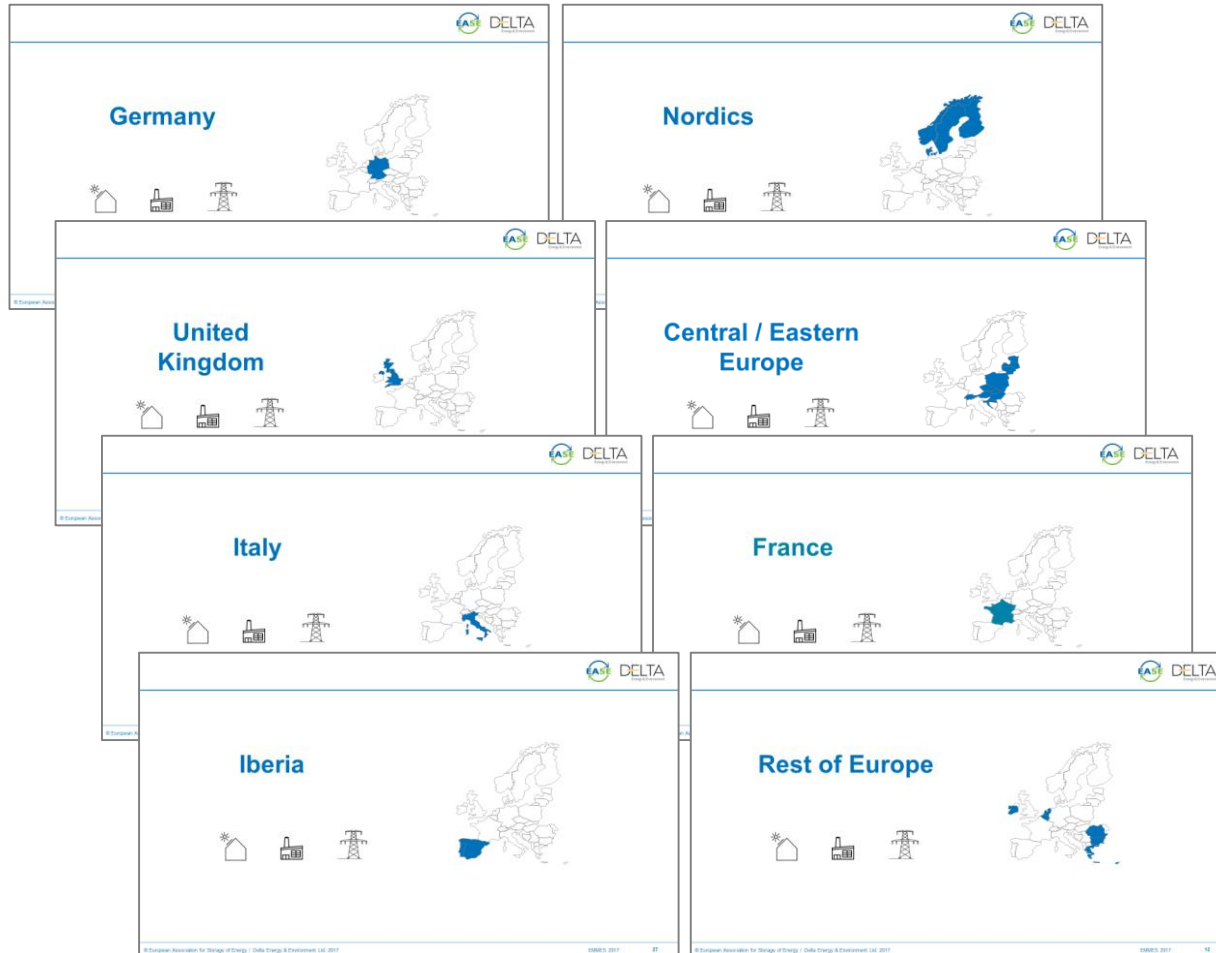
### Policy changes that may happen

- The 'Clean Energy for all Europeans' Package, published by the European Commission in November 2016, contains several legislative and non-legislative proposals that, once adopted, will have a significant effect on the energy storage industry:
  - **Proposal for a revised Electricity Directive**
  - **Proposal for a revised Electricity Regulation**
  - **Recast Renewable energy directive**
- Final agreement between the Commission, Parliament, and Council on these three files is not expected before Q3 2018.
- Entry into force could be around 2020, depending on the timeline of the discussions.

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# EMMES Report – Contents

Comprehensive geographical coverage of Europe  
(broken down into 8 regions)

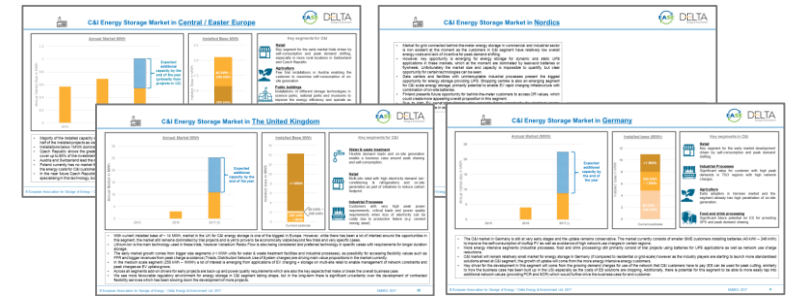


Looking at three major segments

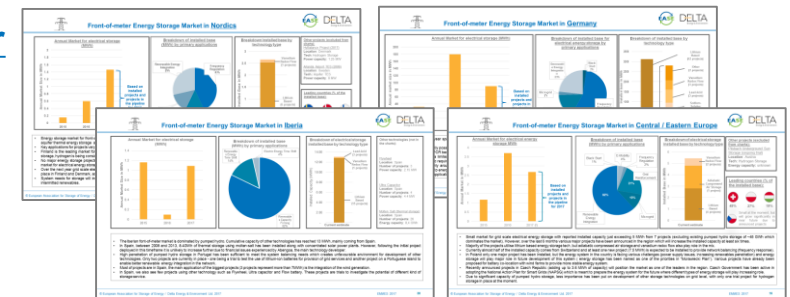
## Residential



## C&I



## Front-of-meter



Overview of EU policy and  
future changes



Forecast of European  
storage market in 2018



Overview of the potential capacity from  
thermal energy storage in the key regions

Residential



Commercial & Industrial



Front-of-meter

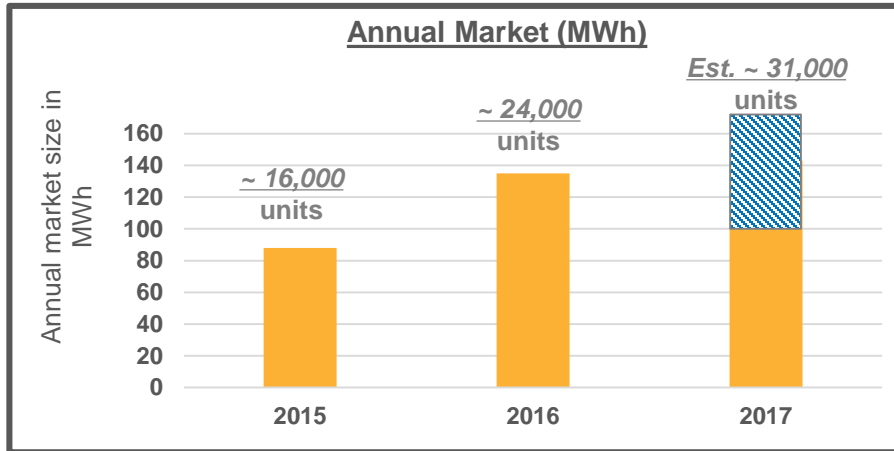






## Residential segment – uniform, strong growth with new country markets emerging

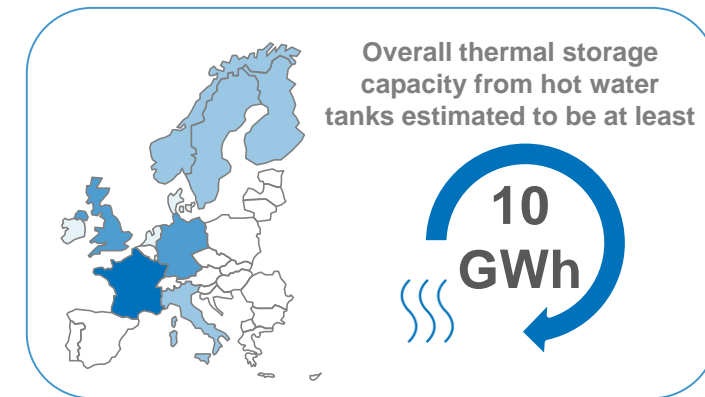
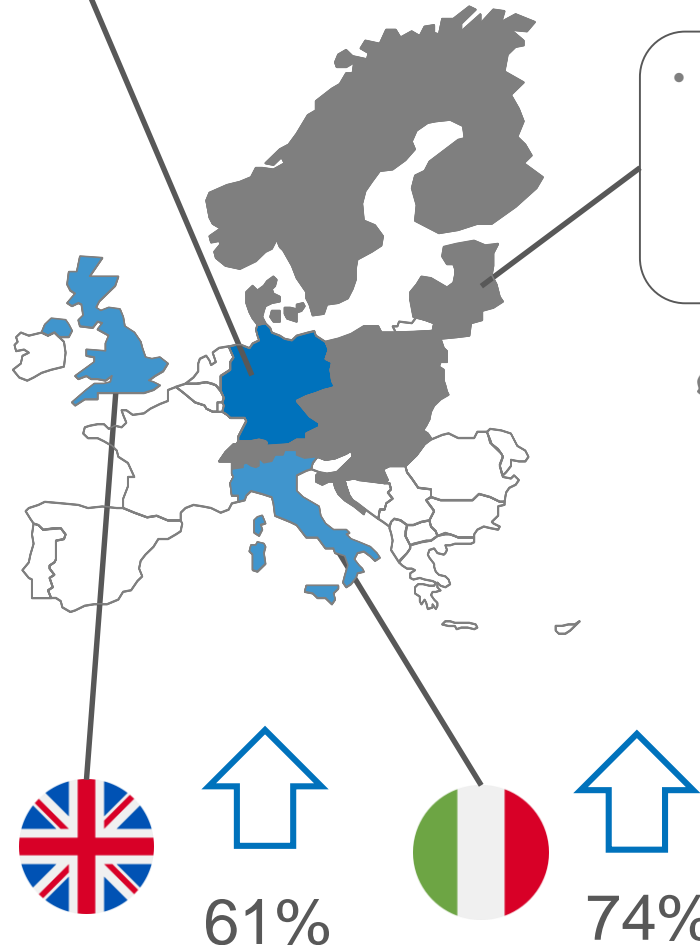
- **Germany** is leading the way with the estimated number of systems installed exceeding 30k.



- Other markets are emerging with fundamentally different drivers and not necessarily driven by existing rooftop PV market. Look out for **Nordics, Republic of Ireland and Eastern Europe**.



- **Italy and the UK** are starting to catch up and showing significant growth rates from 2016 to 2017.
  - Growing awareness and new BMs driving the UK
  - Subsidies and policy creating better economics in Italy



Residential



Commercial & Industrial



Front-of-meter





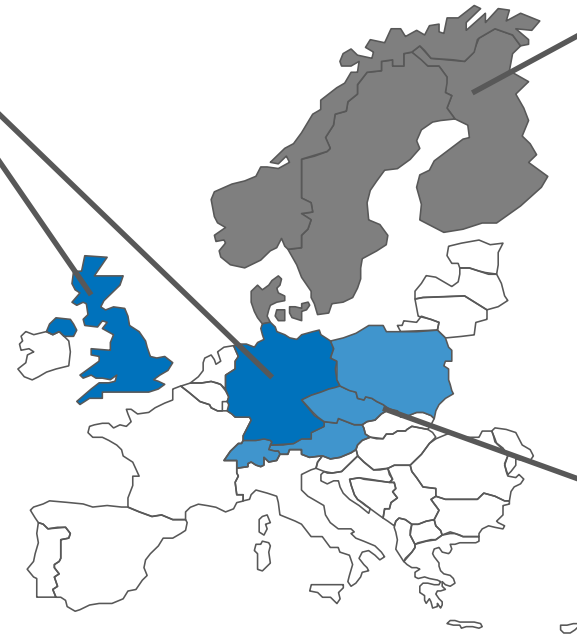
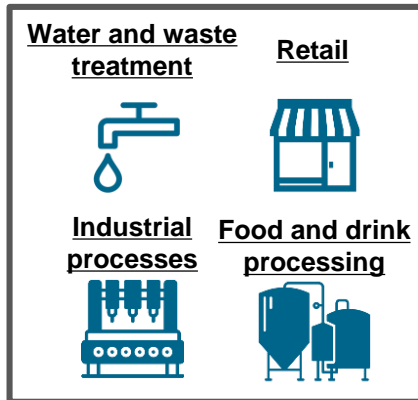
## C&I Segment – a small market today but becoming established

- UK and Germany are the leading markets with key segments emerging from both. As players are understanding the market specifics, new business models are emerging targeting these segments.

- Data Centers in Nordics will play an important role in the uptake of energy storage for C&I applications

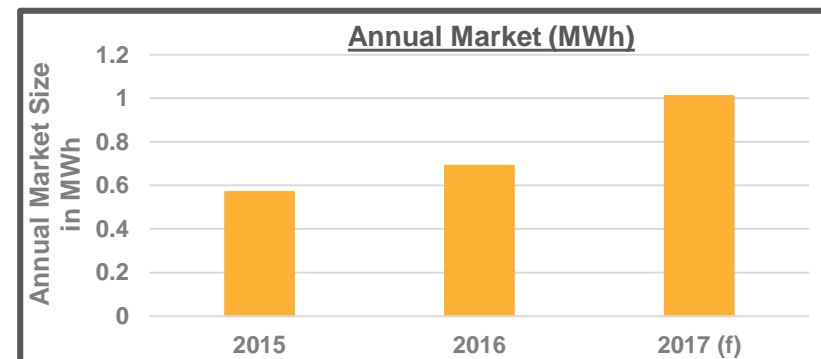
### Key segments in C&I (Germany and UK)

#### Storage-as-a-service



Over the past 3 years, approximately € 3.3 billion has been invested in data center development across Nordics and this growth is expected to continue.

- Markets in Central and Eastern Europe present emerging opportunities for energy storage in the C&I space due to rising energy costs, energy efficiency incentives and power supply issues.



#### Leading markets in the region



Future potential



Residential

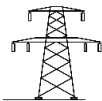


Commercial & Industrial



Front-of-meter



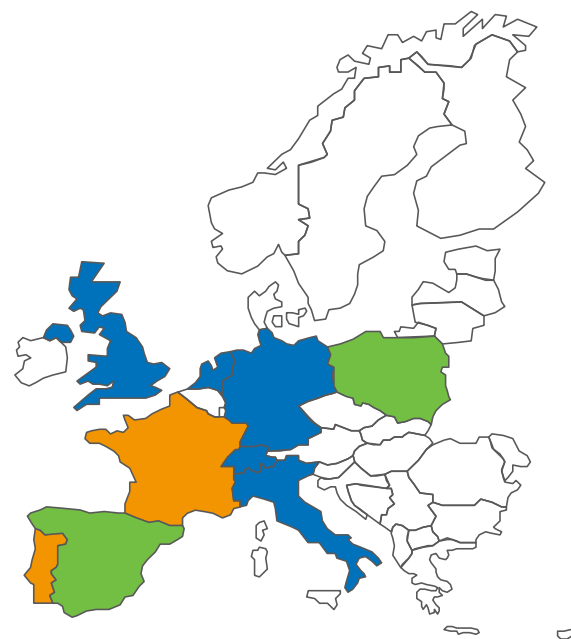


## Front-of-meter segment – driven by country specific factors and projects

The front-of-meter segment has been accounting for the largest share of deployed **electrical storage**. However the market has proven to be volatile on a country by country basis while behind the meter continues to grow consistently.

- **Germany, UK, Italy and France have the biggest capacities** while Nordics and Eastern Europe present emerging opportunity.
- Segment fluctuates year by year as big projects are driven by single values (e.g. frequency response).

- **Lithium-ion is the dominating technology.**
- Other technologies will play bigger role as need for longer duration storage grows.



Island driven

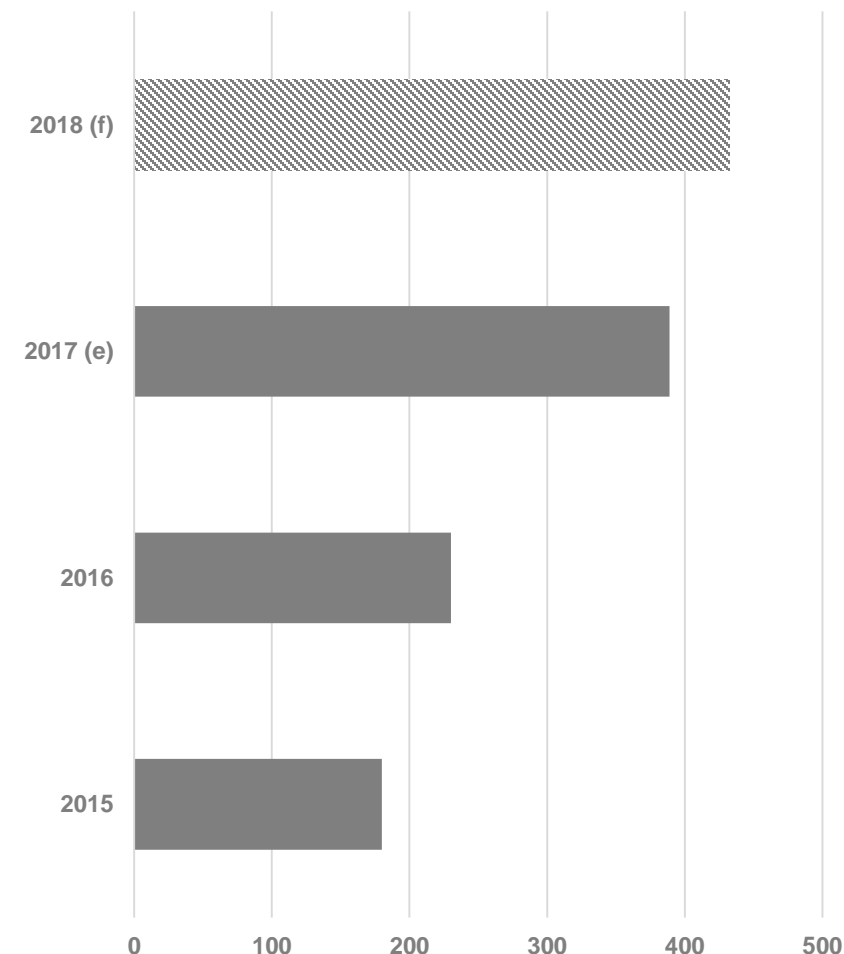


Ancillary services  
markets (focus on FR)



RE integration

Electrical energy storage capacity annually installed in Europe (MWh)



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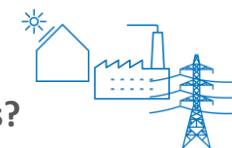


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Questions?

Thank you for your attention

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