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# **EU Funding Possibilities for Smart Grids: Horizon 2020 Trends for WP 2016-17**

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# FP7 R&D support to grids: 2007-2013...

## Distribution

- ✓ Integration of smart customers
- ✓ Integration of distributed energy resources and new uses
- ✓ Network operations, planning, market design

## Transmission:

- ✓ Planning & architecture
- ✓ Power Technology
- ✓ Network operations and coordination
- ✓ Market architectures

## DSO/TSO

## Storage

## ICT infrastructure for smart grids

## Security

## Coordination EC/National projects

**Total investment 2007 – 2013:** 400 M€; Some projects run until 2017



# Grids & Storage - Overview

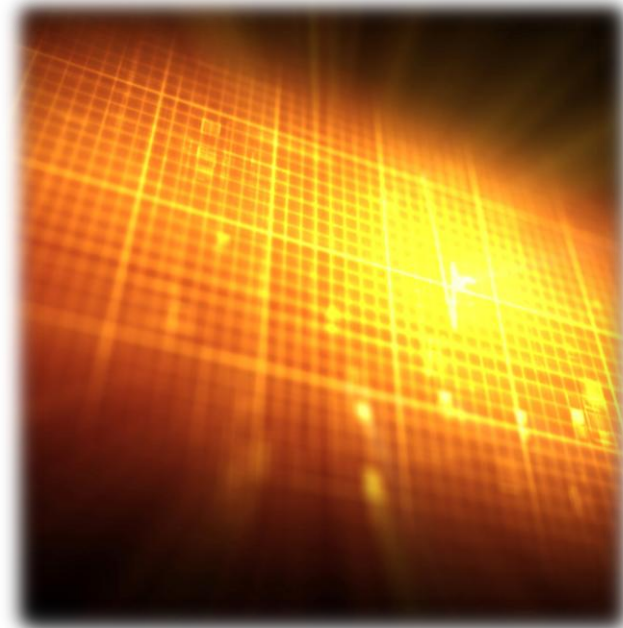
- **Distribution Grid = 2014**
- **Transmission grid = 2015**
- **Small scale storage & storage technology - 2014**
- **Large scale storage = 2015**
- **Total budget: about 100M€/year**

*Smart Cities & Communities: 2014 & 2015,  
about 100M€/year*

# Grid 2014:

- **LCE-7: Distribution Grid**

- 1. Development of ICT tools and services for smart grids**  
(3 to 4 projects of about 2.5 to 3 M€)
- 2. Demonstrate innovative demand response in the real grid**  
(3 to 4 projects of about 9 to 12 M€)
- 3. Cheap smart meters (< 100 €)**  
(3 to 5 projects of about 2.5 to 3 M€)
- 4. Study best future ICT infrastructure**  
(1 project: about 1 M€)



# Projects funded

## LCE 7 Distribution grid & retail market

- ✓ 10 projects funded
- ✓ 3 large IA (Innovative integration of existing technologies) EC cont: 37,6 M€
- ✓ 6 small IA (ICT tools & flexible smart metering architecture) EC cont: 19,4 M€
- ✓ 1 CSA (CBA for smartgrid ICT infrastructures) EC cont: 1 M€
- ✓ Total EC contribution: 58 M€

### Example:

- ✓ UPGRID: Real proven solutions to enable active demand and distributed generation flexible integration, through a fully controllable LOW Voltage and medium voltage distribution grid
- ✓ 19 partners
- ✓ Total EC funding: 11,9 M€
- ✓ Co-ordinator: IBERDROLA DISTRIBUCION ELECTRICA, S.A.

## Storage 2014:



- **LCE-8: Local/Small Scale Energy Storage**  
TRL: from 5-6 to higher (demonstration)  
(2 to 4 projects of about 8 to 12 M€)
- **LCE-10: Next Generation Energy Storage**  
TRL: from 2 to 5 (research)  
(1 to 2 projects of about 6 to 9 M€)

# Projects funded

## LCE 8 Local/small scale storage

- ✓ 5 IA funded (or in last phase of grant preparation)
- ✓ Total EC contribution: 54,2 M€

### Example:

- ✓ NETFFICIENT : Energy and economic efficiency for today's smart communities through integrated multi storage technologies (hybrid battery and flywheel energy storage system developed for F1)
- ✓ 13 partners
- ✓ Total EC funding: 9 M€
- ✓ Co-ordinator: AYESA ADVANCED TECHNOLOGIES SA

# Projects funded

## LCE 10 Next generation technologies for energy storage

- ✓ 1 RIA funded
- ✓ Total EC contribution: 6,5 M€

### Example:

- ✓ Na-Ion bAttery Demonstration for Electric Storage (feasibility of ambient temperature Na-ion battery)
- ✓ 16 partners
- ✓ Total EC funding: 6,5 M€
- ✓ Co-ordinator: COMMISSARIAT A L ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES



## **Grid 2015: 71.48 M€ deadline 5/5-2015**

- **LCE-5: Meshed HVDC  
off-shore Grid**  
1 or 2 projects about 30 - 40 M€  
Innovation action only
- **LCE-6: Transmission grid  
and wholesale market**  
2 to 3 projects: about 12 - 15 M€
- **Both innovation actions and  
research & innovation actions**



# **Storage 2015: 36 M€ deadline 5/5-2015**

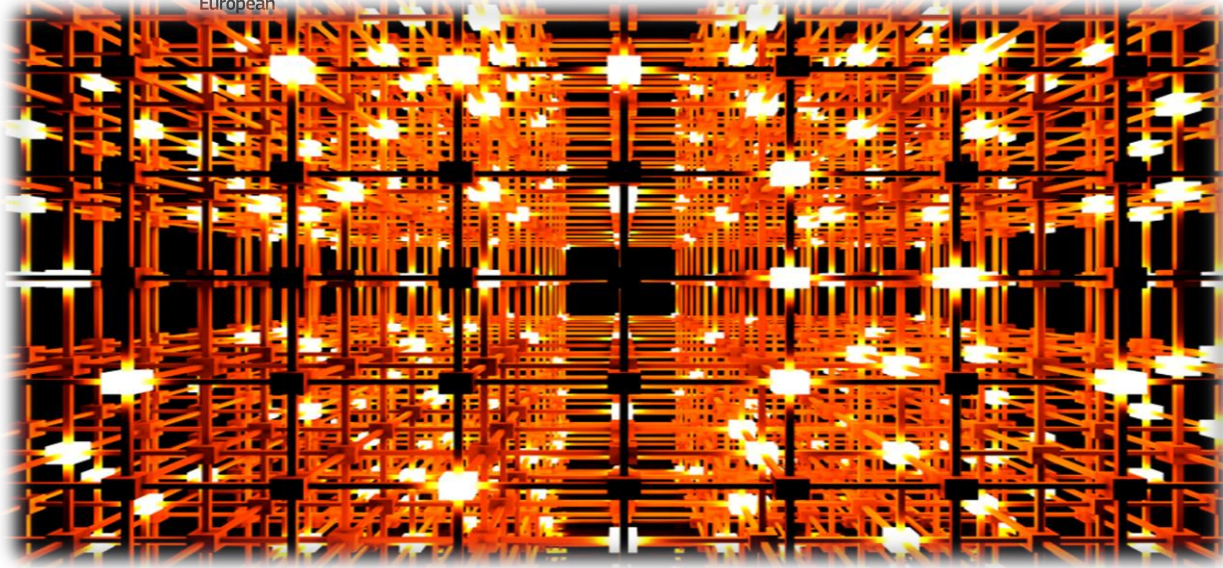
- **LCE-9: Large Scale Energy Storage**

**project size:  
about 16 - 20M€  
~ two projects**





# Integrated approach



- **All innovation actions shall integrate**
  - **Innovative Technology development**
  - **Innovative Business models**
  - **Develop plans for market uptake**
  - **Check existing market barriers and work out proposals for solutions (policy, legislation, regulation, etc.)**



# Trends for WP 2016-17

## Overall approach:

- ✓ the new integrated approach of the Set-Plan reflected through Topics integrating demand response, smart grid, storage and links with other networks
- ✓ Centre of gravity in electricity system - openings to connections between energy networks
- ✓ Proposals to demonstrate relevance and compatibility with the broad EU energy policy context: Climate-Energy packages, Energy Union and associated objectives



# Trends for WP 2016-17

## Main Topics:

- ✓ Next generation innovative technologies enabling smart grids, storage and energy system integration with increasing share of renewables: distribution network (RIA) (TRL 3-5)
- ✓ Demonstration of smart grid, storage and system integration technologies with increasing share of renewables: distribution system (IA) (TRL 5-7)
- ✓ Support to R&I strategy for smart grid and storage (CSA)
- ✓ Demonstration of smart transmission grid, storage and system integration technologies with increasing share of renewables (IA) (TRL 5-7)
- ✓ Tools for integration and coordination of the energy system (e.g. DSO/TSO co-ordination) (RIA)



# Thank you

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<http://www.smartgrids.eu/>

[http://ec.europa.eu/research/energy/index\\_en.cfm](http://ec.europa.eu/research/energy/index_en.cfm)

<http://ses.jrc.ec.europa.eu/project-maps>

[http://ec.europa.eu/energy/index\\_en.htm](http://ec.europa.eu/energy/index_en.htm)