DT-ICT-11-2019: Big data solutions for energy

#H2020Energy info day

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Energy

Who we are

DG CONNECT, Unit G1 – Data Policy and Innovation

DG ENERGY, Unit C2 – New Energy Technologies, Innovation and Clean Coal

Energy transition

Global warming

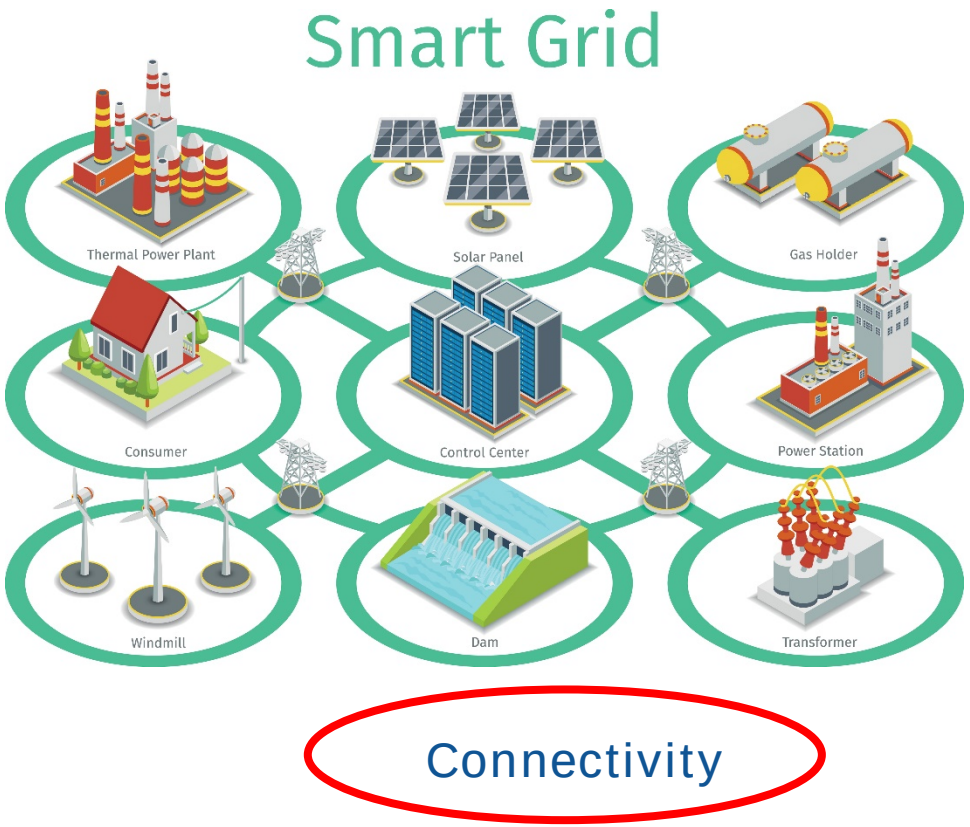
Energy efficiency

Energy generation

Buildings - Energy – Transport - Industry

New energy system

- **Electrification** (EV, smart charging, etc.)
- **Decentralisation** (demand response, PV, storage, etc.)
- **Digitalisation** (network technologies, smart metering, beyond the meter measures, smart appliances, IoT, etc.)



Digitalisation of the energy system

Multiplication of connected objects (Internet of Things)

Exponential increase in Generation of data (Big Data)

Reliable & Secure energy & telecom infrastructure

Develop the future energy system – increase the digital capacity of the energy sector for the benefit of a system that is able to integrate higher shares of RES and promotes energy efficiency

From policy…

…to implementing instrument

Big Data Solutions for Energy (DT-ICT-11-2019)

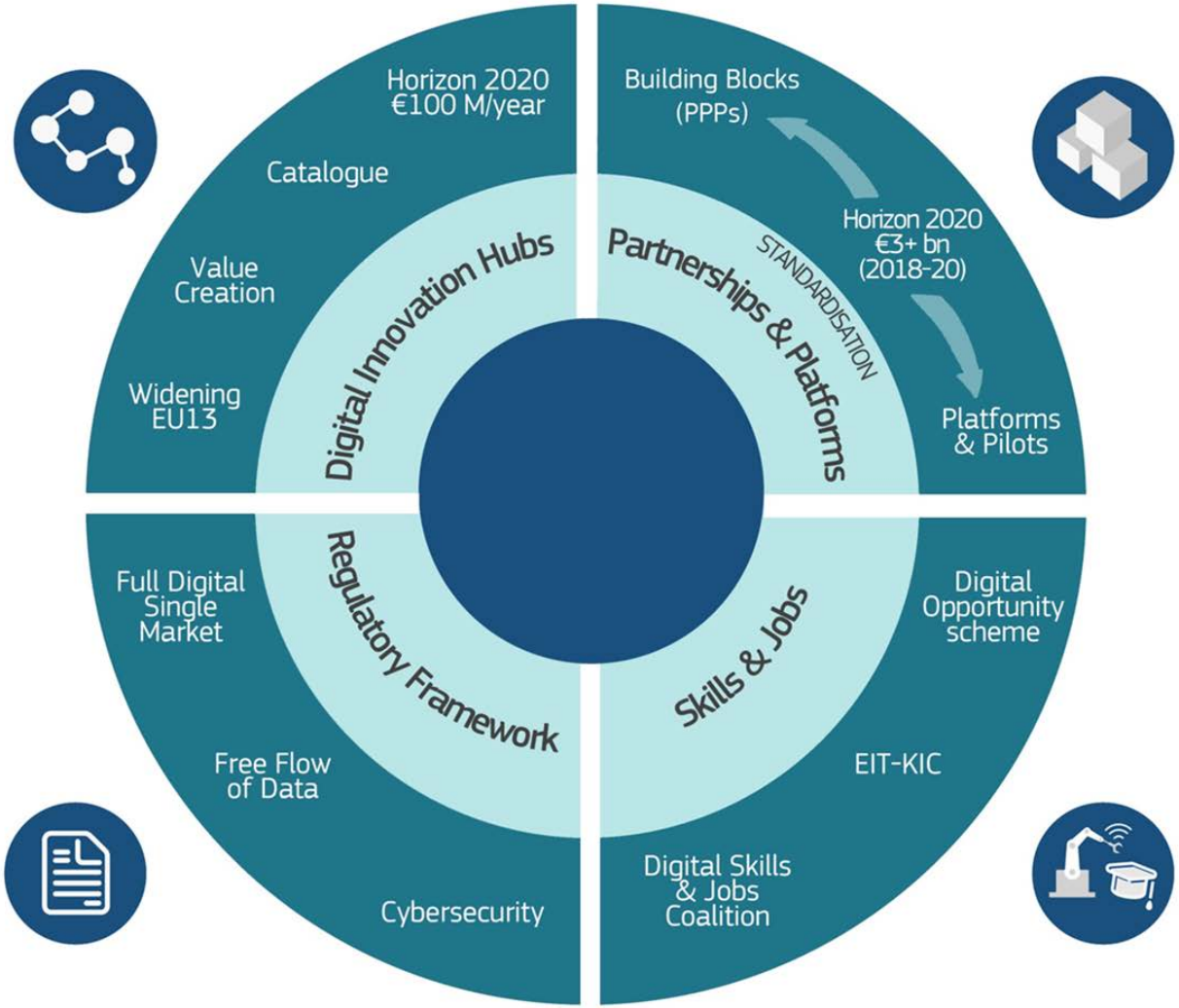
Call identifier	Opening date	Closing date	Total budget	Expected project size
DT-ICT-11-2019	16 Oct 2018	4 April 2019	€40 M	€10 M

Art.30.3 (EC right to object to transfer or licensing) to be part of all **Grant Agreements**

Background

Big Data Solutions for Energy (DT-ICT-11-2019)

- Big Data Value Public Private Partnership (**BDVA**) www.bdva.eu
- **Digitizing European Industry**: Platforms and Pilots focus on data intensive sectors involving key European industries
- **Objective**: to demonstrate how industrial sectors can be transformed by putting digital and Big Data technologies at their core.


Horizon 2020
€100 M/year
Catalogue
Value
Creation
Widening
EU13
Digital Innovation Hubs
Building Blocks
(PPPs)
Horizon 2020
€3+ bn
(2018-20)
Partnerships & Platforms
STANDARDISATION
Platforms
& Pilots
Full Digital
Single
Market
Free Flow
of Data
Cybersecurity
Regulatory Framework
Skills & Jobs
Digital
Opportunity
scheme
EIT-KIC
Digital Skills
& Jobs
Coalition

Platform Building

- Collaboration on interoperability
- Encourage experimentation
- Prevent further fragmentation
- Facilitate alliances across sectors and domains

Piloting

- Realistic settings
- Increase availability of facilities
- Integration with legacy systems

Ecosystem Development

- Promote Open API
- Actively engage SMEs, start-ups & entrepreneurs

Standardisation

- A key consideration in any platform development
- Towards European leadership (APIs & de-facto)

Ongoing projects

Big Data Solutions for Energy (DT-ICT-11-2019)

TransformingTransport
Transport and Logictics

DataBio
Agriculture, Fisheries and Forestery

Big Medilytics
Health

Boost 4.0
Manufacturing

The Challenge

Big Data Solutions for Energy (DT-ICT-11-2019)

Tomorrow's energy grids:

- consist of heterogeneous interconnected systems,
- **small-scale and dispersed energy generation** and consumption devices,
- **huge amount of data** is generated
- the electricity sector: **big data tools and architectures needed** for optimised energy system management

The Work Programme (1)

Big Data Solutions for Energy (DT-ICT-11-2019)

Innovation Actions targeting large-scale pilot test-beds for big data application in the electricity sector.

AIM 1: develop/pilot and **deploy** an architecture for large-scale multi-party data exchange, management & governance and real-time processing (including distributed/edge processing) in the electricity sector

AIM 2: translate this architecture into an open, modular data analytics toolbox for the safe and effective operation of grids and provision of innovative energy services."

The Work Programme (2)

Big Data Solutions for Energy (DT-ICT-11-2019)

The **architecture** should:

- ensure **compatibility** with legacy formats, interfaces and operating systems of the energy system,
- allow **replication** and **scale-up**,
- be compliant with **EU standards**,
- enable the **integration** of relevant digital technologies like IoT, AI, cloud and big data services.

The Work Programme (2)

Big Data Solutions for Energy (DT-ICT-11-2019)

The **analytics toolbox** shall:

- **be** able to handle a wide variety of data
- **support the development of a wide range of energy services**, **a**t least to increase the efficiency and reliability of the operation of the electricity network (e.g. by predictive maintenance)
- **optimize the management** of assets connected to the grid (in particular small-scale/renewable electricity generation and those used for demand response)
- **increase the efficiency and comfort** of buildings
- **de-risk investments** in energy efficiency (e.g. by reliably predicting and monitoring energy savings)

The Work Programme (3)

Big Data Solutions for Energy (DT-ICT-11-2019)

Applicants should:

- demonstrate that they have access to **large-scale and realistic datasets**
- involve:
  - network operators, suppliers, independent aggregators
  - ESCO's, power exchanges, building management and renovation sectors,
  - software integrators/developers
- Proposals should address: **analytics, simulation, prediction, cloud computing**
- Projects shall **collaborate** with EU-funded projects through the **BRIDGE initiative**

Impact (1)

Big Data Solutions for Energy (DT-ICT-11-2019)

Effective **integration** of relevant digital technologies in the energy sector, resulting in integrated value chains and efficient business processes

Enhancing **energy asset management**, increasing **consumer participation** and innovative network management, creating **new data-driven business models** and opportunities and innovative energy services;

Impact (2)

Big Data Solutions for Energy (DT-ICT-11-2019)

Contribution to **increasing the use of renewable energy** and increased **energy efficiency** based on optimised energy asset management

Improving **availability** of big data and big data management & analysis facilities for real-life scale research, simulation and test purposes

New **data-driven paradigms** for energy management systems able to deal with increased complexity of the energy systems;

Requirements (1)

Big Data Solutions for Energy (DT-ICT-11-2019)

- **Industrial partners** in the consortium are represented by professionals in **core business operations** (as opposed to research laboratories)
- The plan is consistent with the **business strategy** of the industrial partners (*e.g. avoid committing to technologies that the decision makers in the respective companies have no intention of deploying)*
- Innovations developed in the pilot must **work in actual operating conditions** and be consistent with important business parameters such as reliability, accuracy, cost structure.
- Explicitly **evaluate/measure changes** in the cost structure and in the technological constraints and performance **at the end of the pilot**

Requirements (2)

Big Data Solutions for Energy (DT-ICT-11-2019)

- The proposal must account of the **ownership, user right, cost structure of the data assets** to be used and/or produced during and after the pilot
- Privacy → General Data Protection Regulation (**GDPR**)

Thank you!

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The new Funding & Tender Opportunities Portal replaces the Participant Portal !

Link

Other useful links

H2020 cross-cutting activities

Info sessions on funding for Digitising and Transforming European industry and services