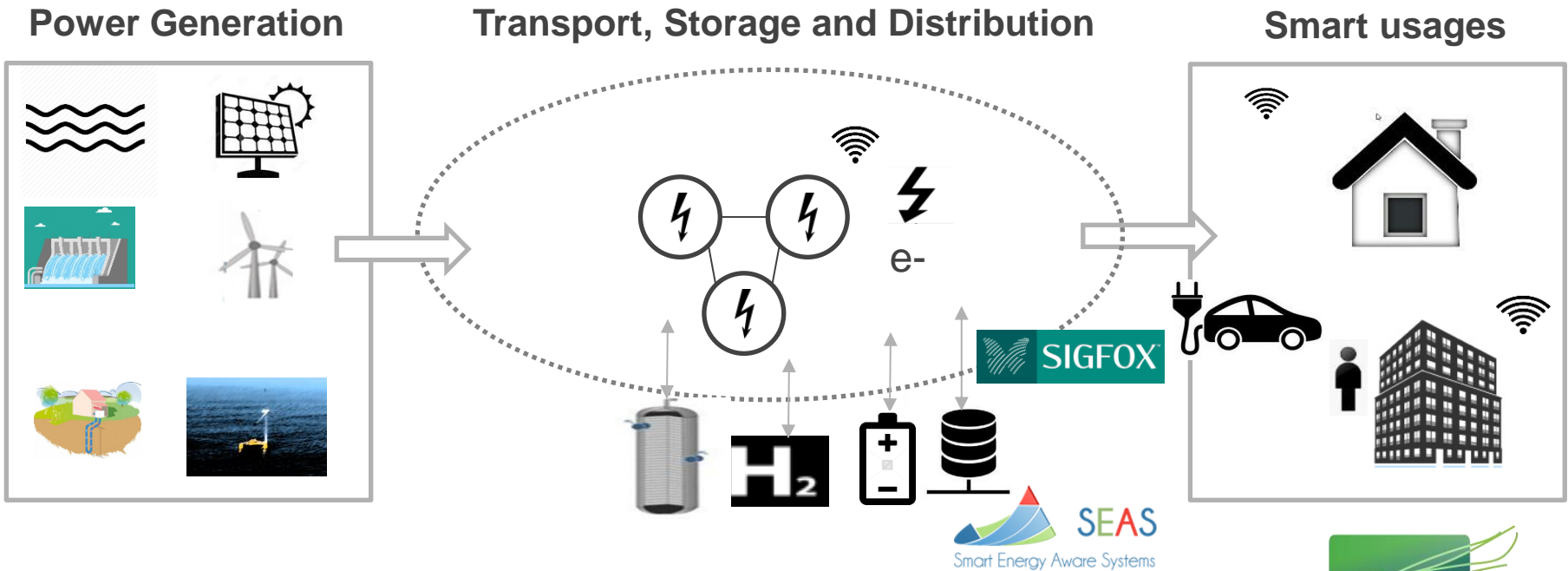# Global Digital Forum
Smart Energy – What does it mean ?

Raphaël SCHOENTGEN

ENGIE, Director of Research & Technology

Eindhoven, 19 September 2016

Digitalization boosts the energy revolution at all layers of the value chain

Power Generation

Transport, Storage and Distribution

Smart usages

- **Grid modelling**
  - Local
  - Global

- **Smart monitoring**
  - Multi-fluid and sources
  - Multi usages

- **Smart bricks and devices**
  - Smart district
  - Smart island
  - Smart appliances
  - Smart building

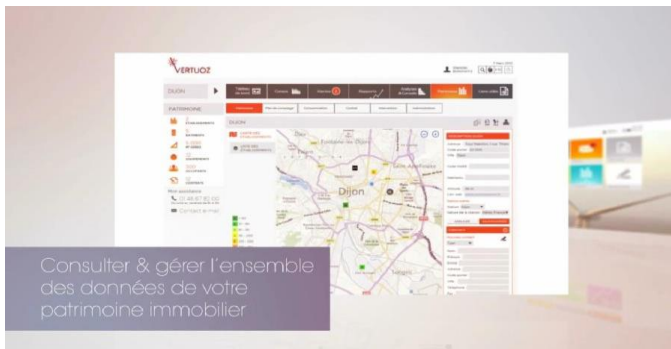# A web based solution for monitoring and analyzing Energy and Environmental efficiency for buildings.

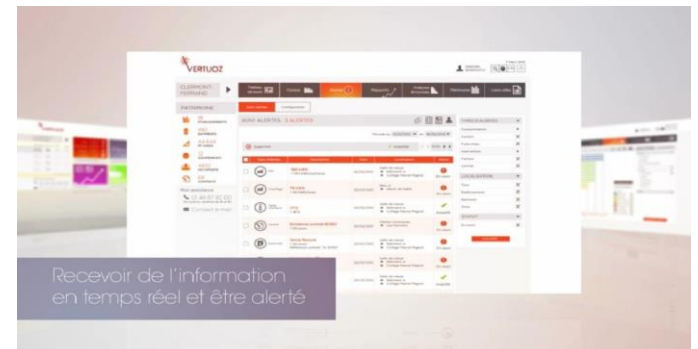## Simulation of building maintenance to optimize Energy efficiency

Monitor the energy consumptions from multi-energies and multi-sites

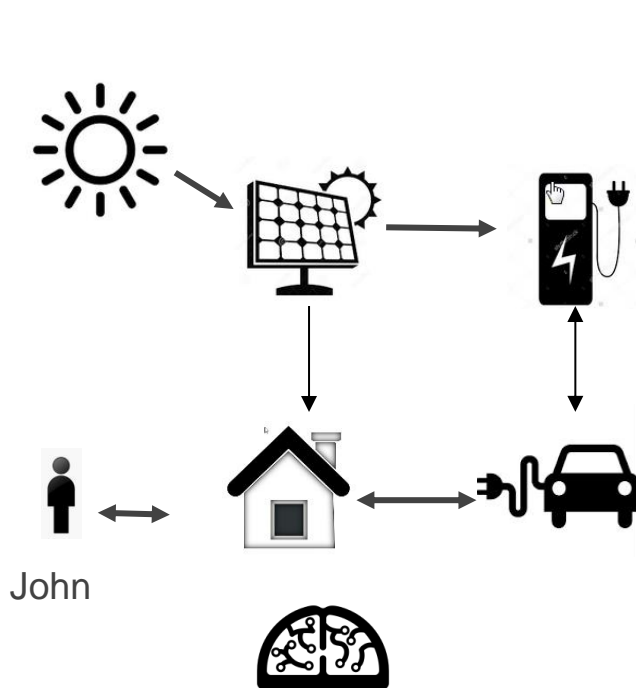## Dashboard customization with simple and relevant indicators

Encourage customers to reduce their energy consumption

SEAS Project

How Semantic and Artificial Intelligence leverage the power of Internet of Things

John knows about
- His needs,
- The capabilities of his assets
- The limits of the assets
- The environmental context

John

He could optimize the use of the assets and maximize the value

**But too many objects, too many interactions and too many cases,
=> Cannot be efficient by doing it manually**

SEAS
Smart Energy Aware Systems

- Developing the **Knowledge Model for Machine to Machine**
- Developing **Use Cases** related to the energy sector
- Implement **Automated interactions** and **Artificial Intelligence**

All appliances handle electrons together by themselves !

Smart Grids examples - Smart ZAE and REIDS

Mastering the integration of physical grid, multi-fluid and Digital layer is one of the key challenge, R&D in the Energy sector is addressing

Smart ZAE project (Toulouse)

Smart ZAE project has been developed by INEO Scle and ENGIE Lab in order to test the **combination of wind energy, solar, and the storage under different formats.**
A capacity to trade electrons with the neighboring is also embedded.

REIDS (Singapore)

Largest micro-grid demonstration platform in the tropical area.

ENGIE will develop and test a **Multifluid Energy Solution** integrating **renewable energy sources, storage solutions, hydrogen and biogas facilities.**