

The logo for the SET PLAN Conference 2015 is contained within a white right-angled triangle. The text is stacked vertically: 'SET' and 'PLAN' are in a large, bold, black sans-serif font, 'Conference' is in a smaller black font, and '2015' is in a medium-sized black font. Below the year, the tagline 'Research, innovation and competitiveness for the Energy Union' is written in a smaller black font.

**SET
PLAN**
Conference
2015

Research, innovation
and competitiveness
for the Energy Union

**DEMAND RESPONSE, SMART BUILDINGS, HOMES,
APPLIANCES AND HOME AUTOMATION SYSTEMS**

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Schneider Electric

SESSION 3

Participation of the consumer in the energy transition
Tuesday 22 September 2015

Vision

- > The transition towards a smarter energy is key for European economies
 - > a **cheaper & greener** energy: make more competitive our Industries and Commercial activities – while reaching sustainability goals
 - > an **European excellence** to export to other geographies

- > It's happening now, with 2 main drivers
 - > Progressive introduction of **renewable energies** in the energy mix ; on the supply / generation side,
 - > Deployment of **active energy efficiency**; on the demand-side



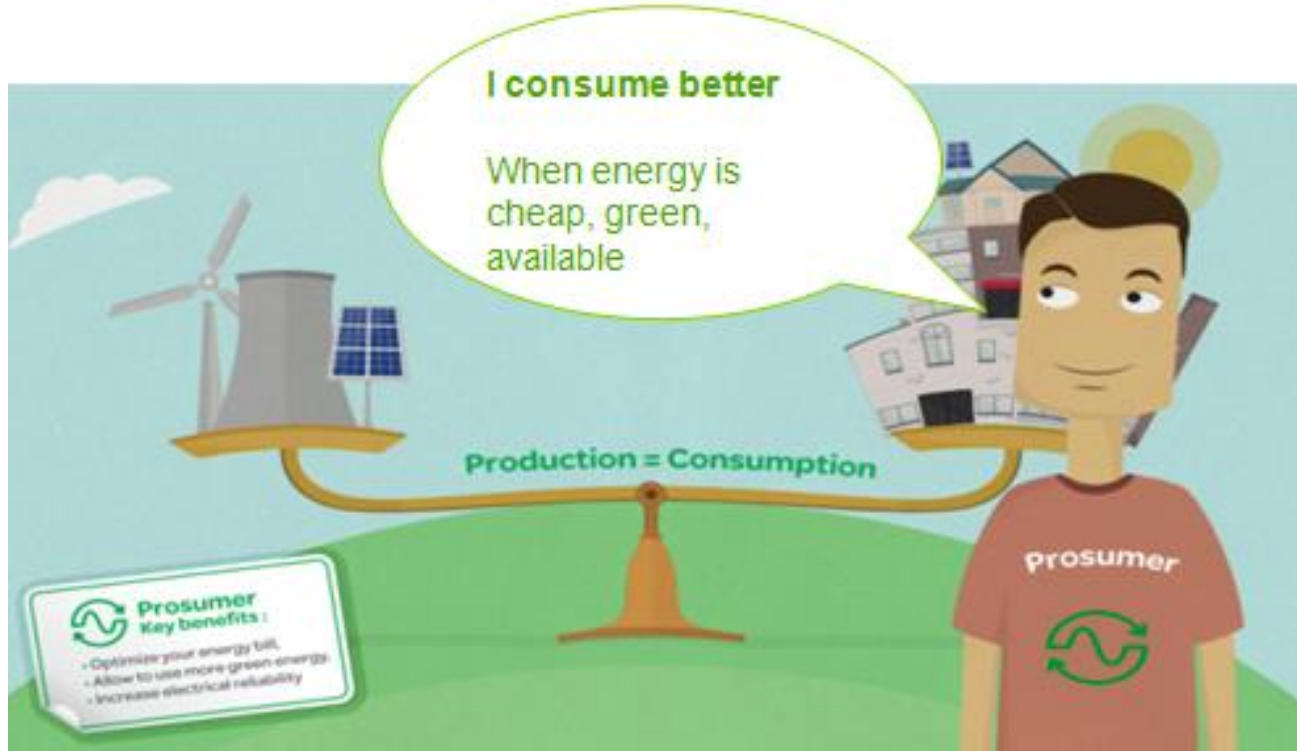
It requires new roles & responsibilities for end-use consumers:
Consume less... and Consume better

E.g. to be empowered as Prosumers

pro-sum-er |prō-soōmər|

–noun

A commercial or industrial business, or residential homeowner, that proactively produces and consumes energy.



> Able to :

- > Avoid inefficiencies
- > Shift usage
- > Store energy
- > Schedule production

> In order to :

- > Optimize vs. tariffs
- > Optimize self production
- > Participate to DR request
- > Run through blackouts

Technology enablers :



Connected, Smart building

=



On premise energy & process automation

+



Cloud-based energy arbitrage service



1 Local control energy resources (loads, storage and production assets)

Shape the energy profile. Turn flexibility "On".



2 Demand-side Operation

Optimize the use of your energies, for you and your community.



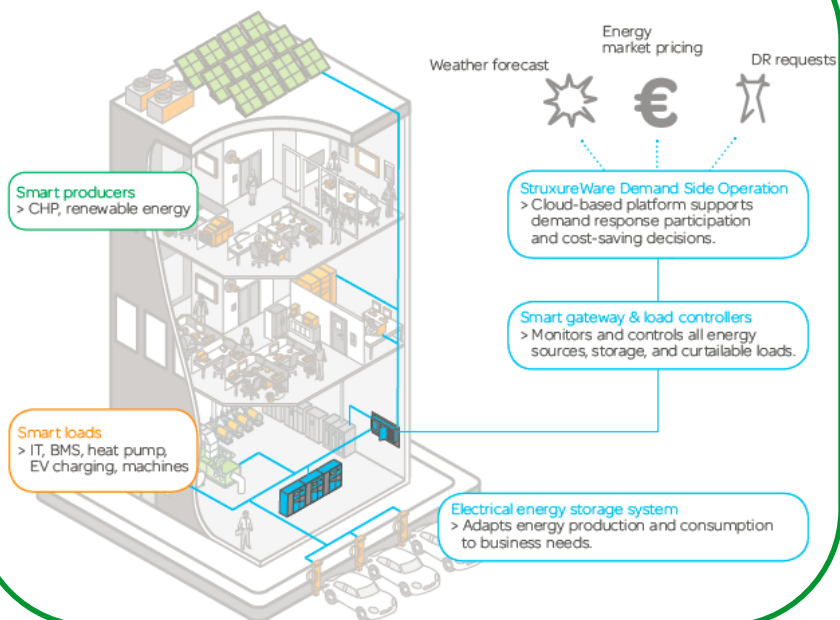
3 Virtual Power Plant

Integrate into the great picture – in a Smart Grid.

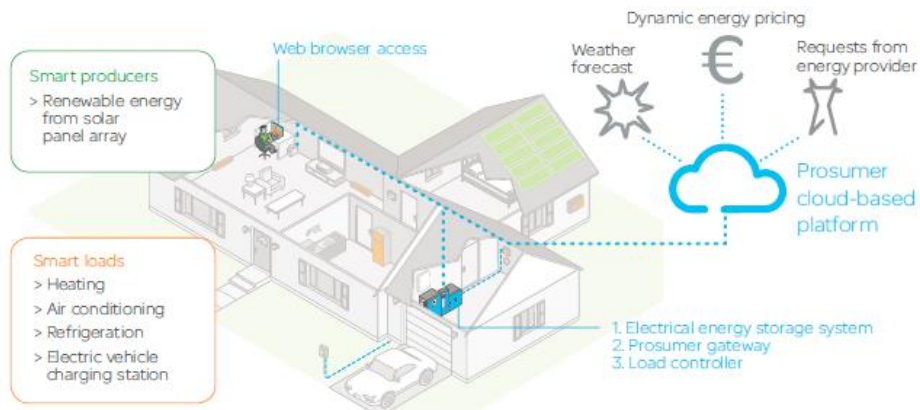


Key technologies

@Workplace



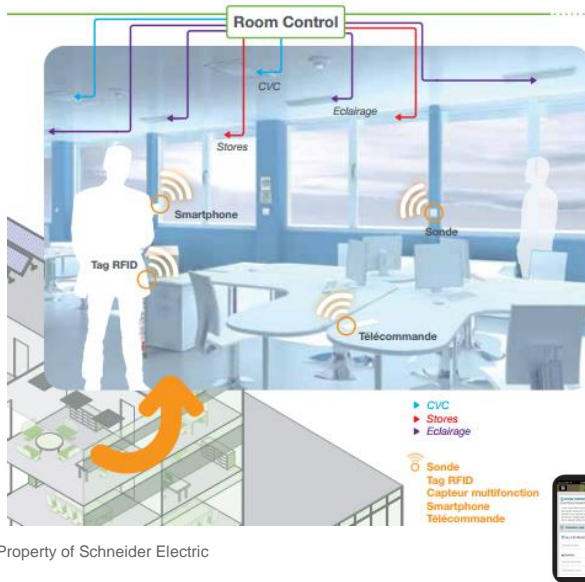
@Home



Example of technologies : @Workplace

Consume less : Active Energy Efficiency

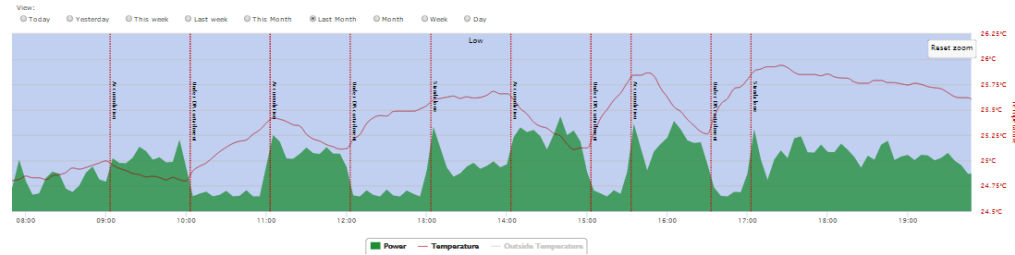
> Optimize energy use when a person enters the room... put on-hold when he leaves.



Confidential Property of Schneider Electric

Consume better: Flexibility management

> Use thermal inertia of the building as a storage bank and participate in demand-response events



(August 28th, Grenoble, France)

> While ensuring people confort

Example of technologies : @Home

Consume less : Active Energy Efficiency

> Optimize comfort... Schedule presence...
activate on hold...



Consume better: Flexibility management

> Self consumption of PV and blackout management thanks to storage system



Technology challenges?

Not on core bricks...

- > The Technologies are available :
 - > Big data and analytics can provide great quality forecast and optimization
 - > M2M and IoT provide reliable connectivity and cost-effective sensors
 - > Storage technologies exists
 - > Most of the loads can be controlled
- > Not all at competitive pricing point
 - > But this should arrive with scale
 - Batteries, M2M

... but on their integration

- > No “smart grid” ready appliances and systems
 - > Imply costly (retro) engineering
 - upfront costs makes hard to scale down to mid-size workplace and homes.
 - Focus on HVAC, Storage
- > The channel is not skilled enough
 - > Electricians shall add system integration (programming), M2M and Software to their skills
 - Creating bottlenecks and higher costs.

Societal impact & impact on consumers

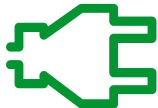
It's only energy... Make it simple



The energy I need
when I need it.



Why should I pay more



Easy to plug



And a green touch...

And avoid pushback...

We don't like:

- changing behavior
- cramping our style
- losing control

We distrust:

- smart meters
- utility motives
- "Big Brother"

We don't understand:

- smart grid
- dynamic pricing
- demand response

We want:

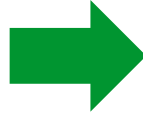
- control & choice
- "cruise control"
- low cost



End-users should be empowered as Prosumers
Endavour a "bottom-up" adoption rather than a "top-down"
mandate – and limited impact on their activity

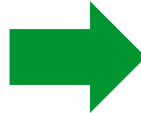
Conclusion and next steps

> How to promote investment in the sector/technology?



- > Ensure fair participation of Prosumers in the energy markets
 - > Better reward demand-side flexibility & self consumption
 - > Provide financial scheme to reduce upfront investment

> What are the gaps in European R&I (if any) and what is the scope for synergies and cooperation at EU



- > Definition and deployment of “smart grid” ready standards for systems and appliances



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