



Smart Home and Energy

The smart home beyond the smart meter

Why and how ?

From a utility perspective

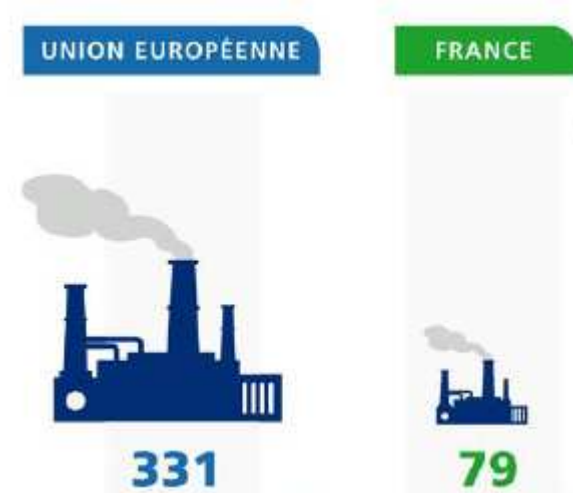
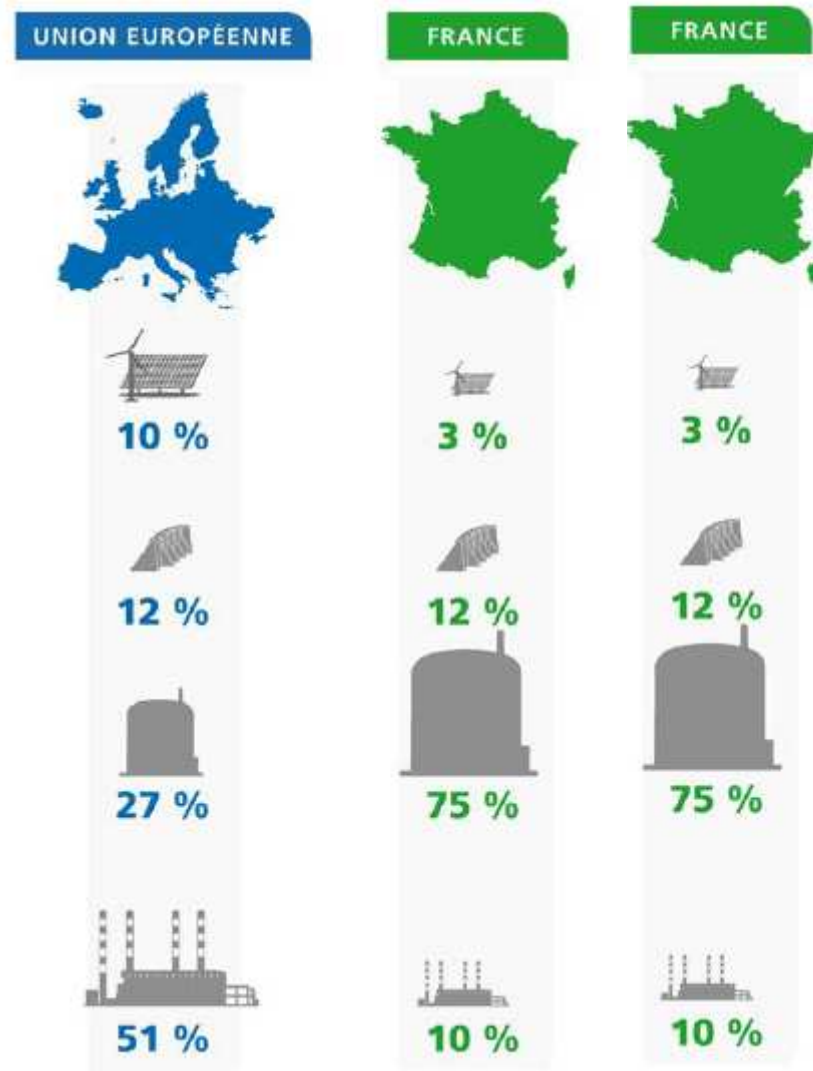
Jean-Paul Krivine

TelecomsTech World – London – November 2013



**A French context less
constrained than in Germany**

The French context (1)



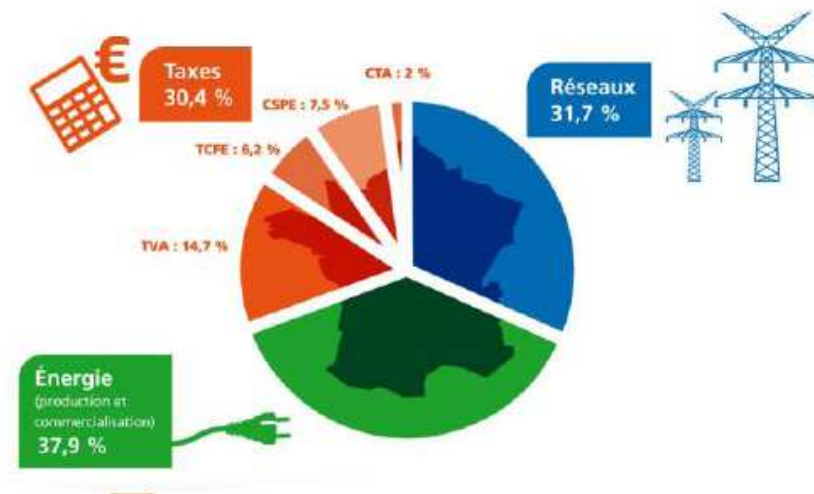
CO2/kWh

The CO2 challenge

The French context (2)

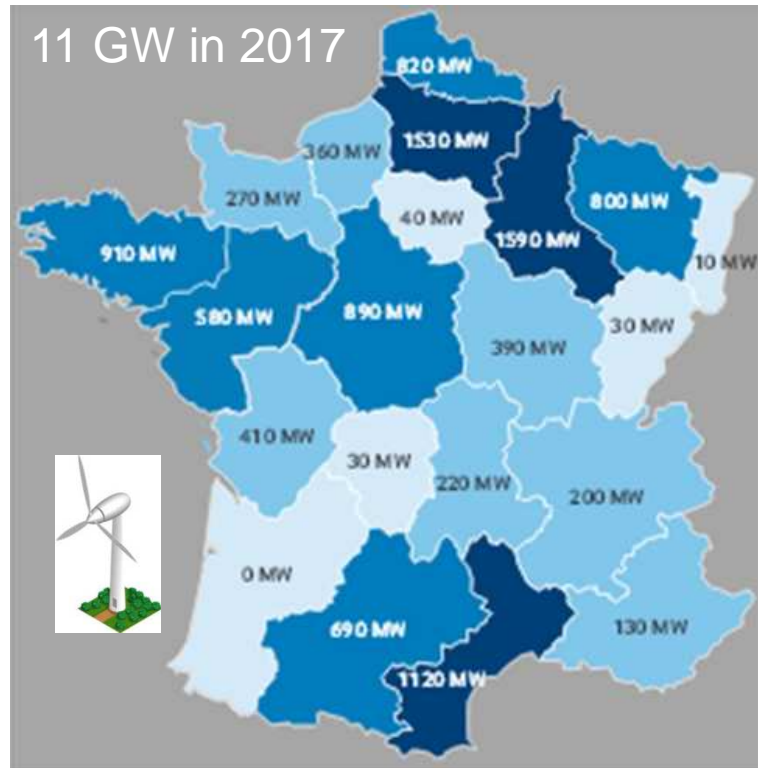


c€/kWh (residential)
Taxes included
(eurostat)



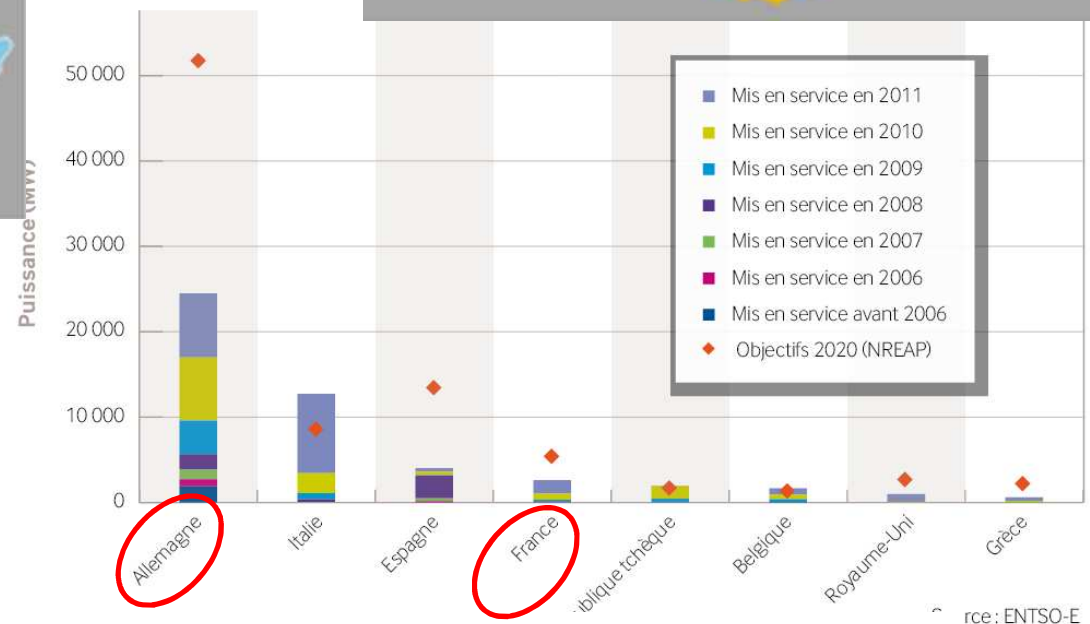
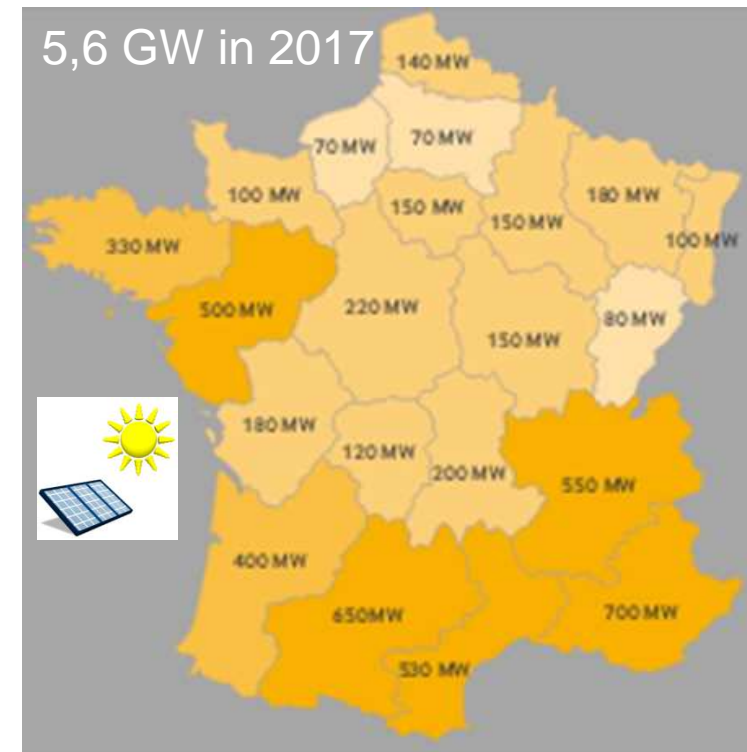
The energy price challenge

The French context (3)



The renewable challenge

(Source: RTE 2012)



PV developments and 2020 targets

Source: ENTSO-E

The French context (4)

Synthèse des analyses de la défaillance pour les différents scénarios de consommation et d'échanges

Puissance manquante (GW)	2014	2015	2016	2017
Scénario Référence avec échanges	0	0	1,2	2,1
Scénario Référence « sans échanges »*	3,1	4,6	7,5	8,6
Scénario Haut avec échanges	0	0	2,3	3,4
Scénario MDE renforcée avec échanges	0	0	0	0
Scénario Bas avec échanges	0	0	0	0

* « l'hypothèse centrale » mentionnée à l'article 5 du décret n°2006-1170 du 20 septembre 2006

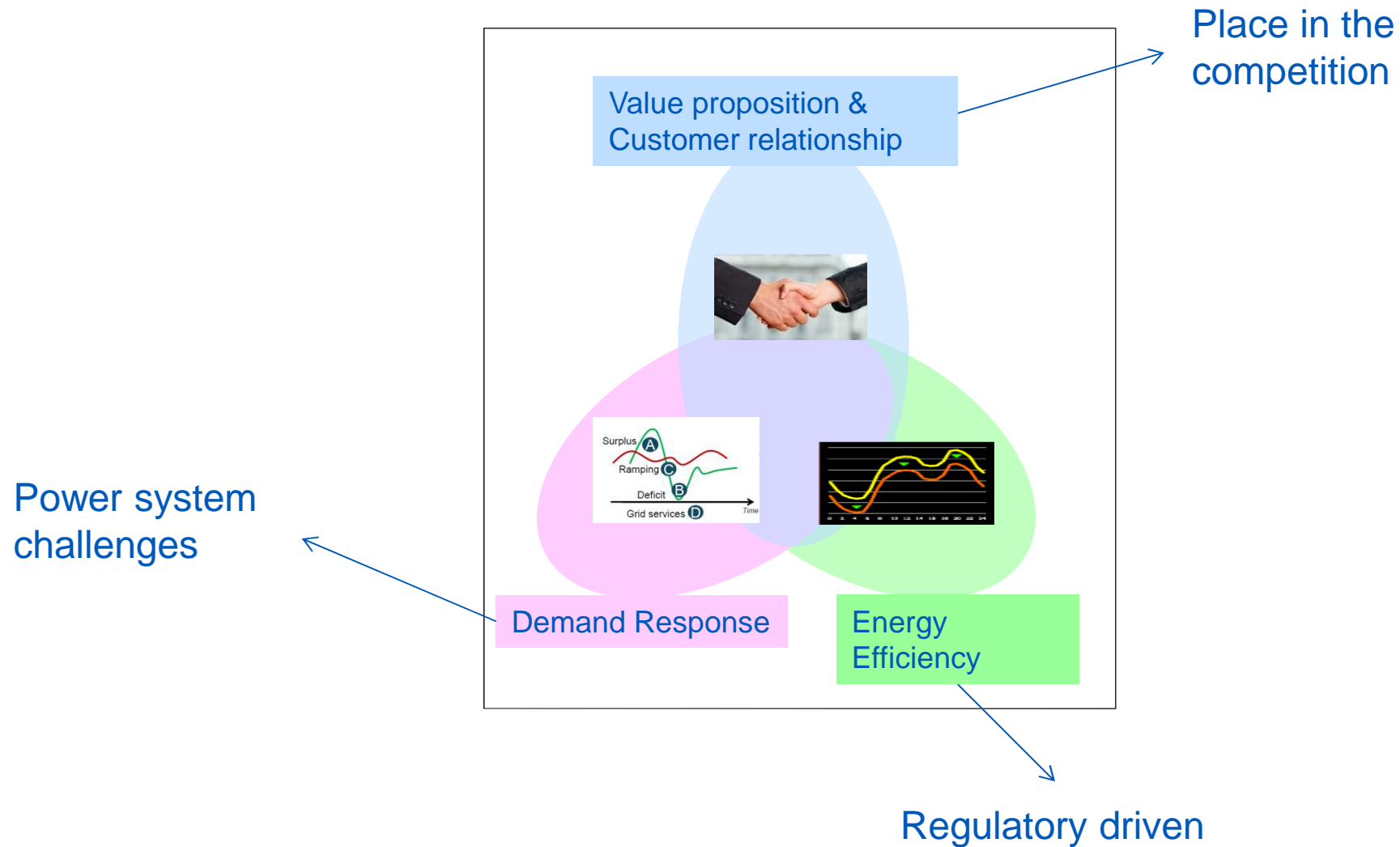
2,1 GW.
6 h 30
(including
Fessenheim
shutdown)

(Source: RTE 2012)

The smart home beyond the smart meter

Stakes for an energy supplier

Smart energy: revenue sources and business models



Flexibility & demand response

□ Why?

- Balancing consumption/generation.
- Power system security and stability.
- Local constraints and network congestions.

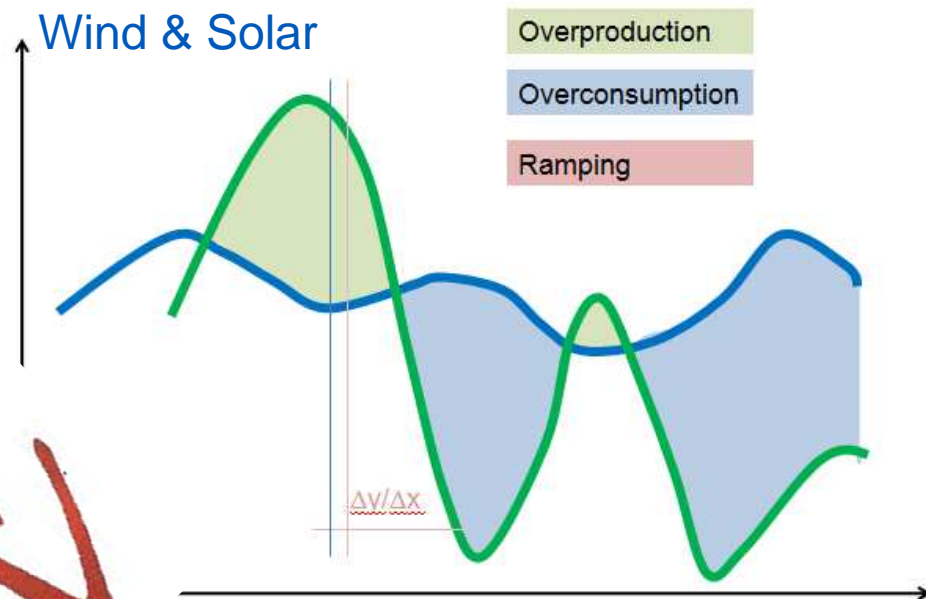
□ Value?

- Value in capacity
 - To avoid investments in generation
 - To avoid network investments
- Value in energy
 - To substitute high cost production generation.

□ How to deliver it?

- Market design is evolving
 - Capacity mechanism, incentives for load-shifting, relations with Balance Responsible Parties...
- Aggregators
 - Aggregation, optimisation
 - Constraints (activation, ramp-up, granularity, risks)

- Call for tenders capacity 2012 : 400 MW
- Fast reserve: 1000 MW
- Complementary reserve: 500 MW
- Free offers on fast reserve: 500 MW



**Today... economics is fragile,
markets are limited.**



Value proposition in the smart home



Why now ?



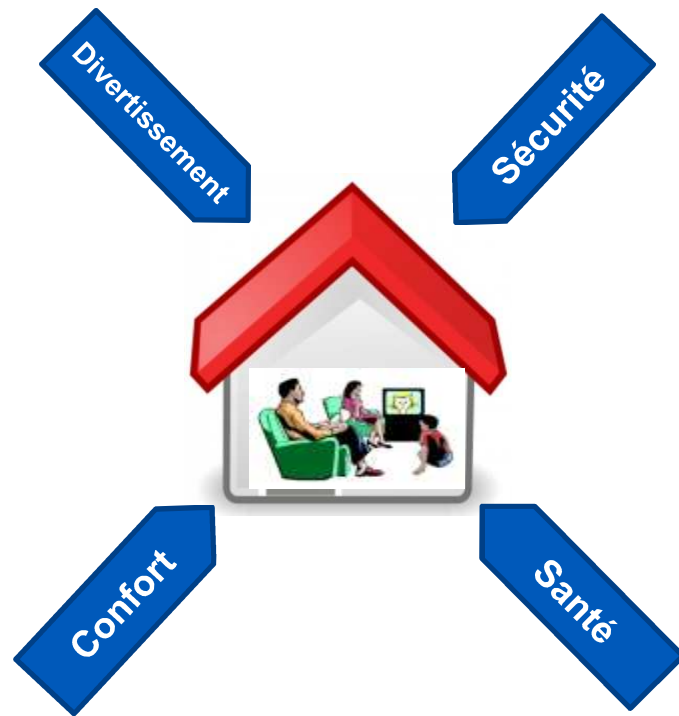
Connectivity everywhere

France:
 78% population Home Internet
 22 millions Internet Broad-Band
 66 millions mobile subscription
 4G : 25% in 2015, 60% in 2020
 26 millions on social networks

Internet of things



And Energy?



?
Energy



Expectation regarding energy

Customers care on energy:

- ☐ **When receiving their bill**
(too high, not understandable...)



- ☐ **When there is no more power at home**



- ☐ when they need an appointment for meter reading, new connection...
- ☐ A small minority are interested in the energy content (green energy).

What “smart” is going to change?

- ☐ ***Nothing in terms of main expectations***

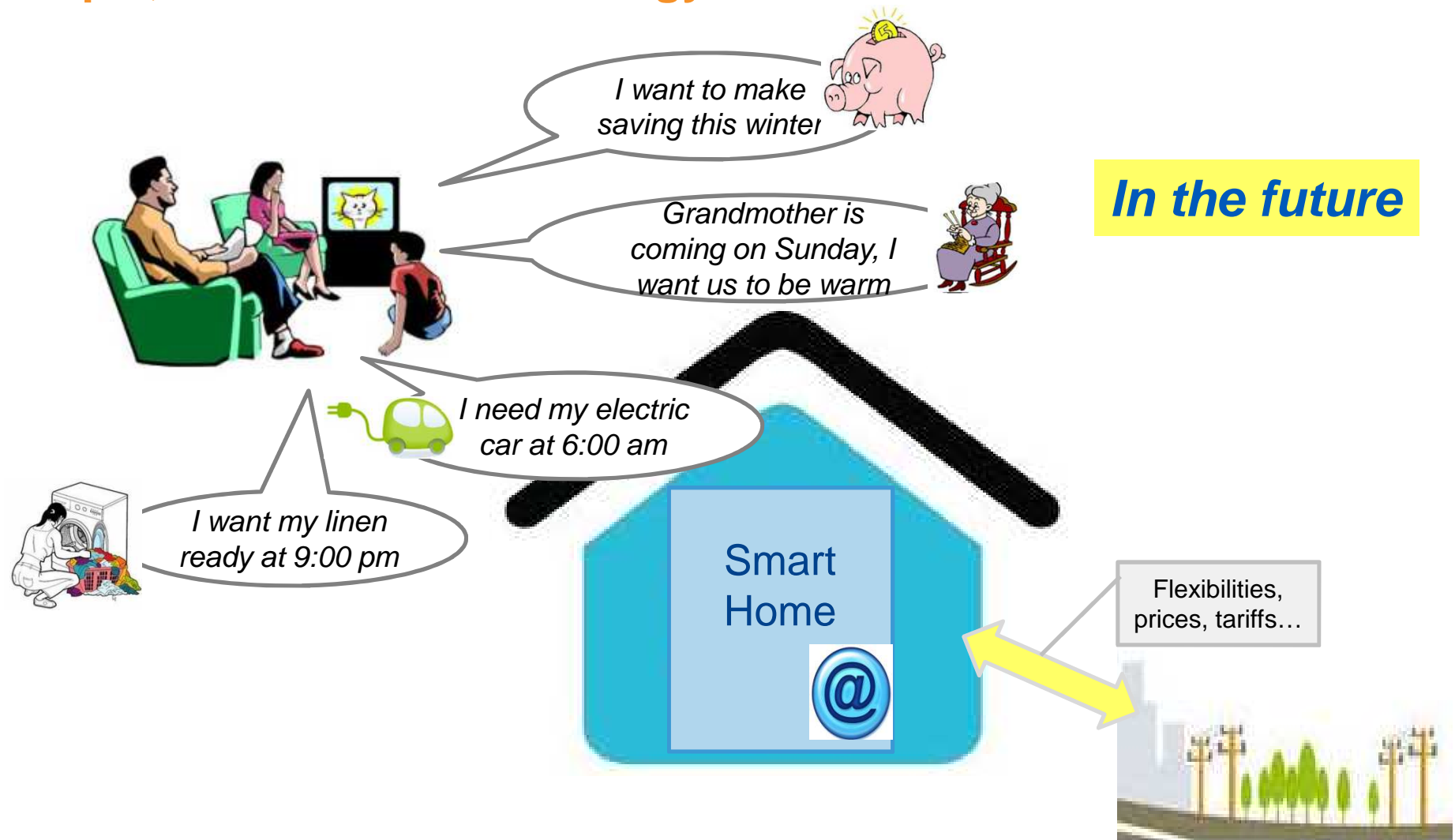


- ☐ *But stronger requirements in the way these expectations have to be answered...*

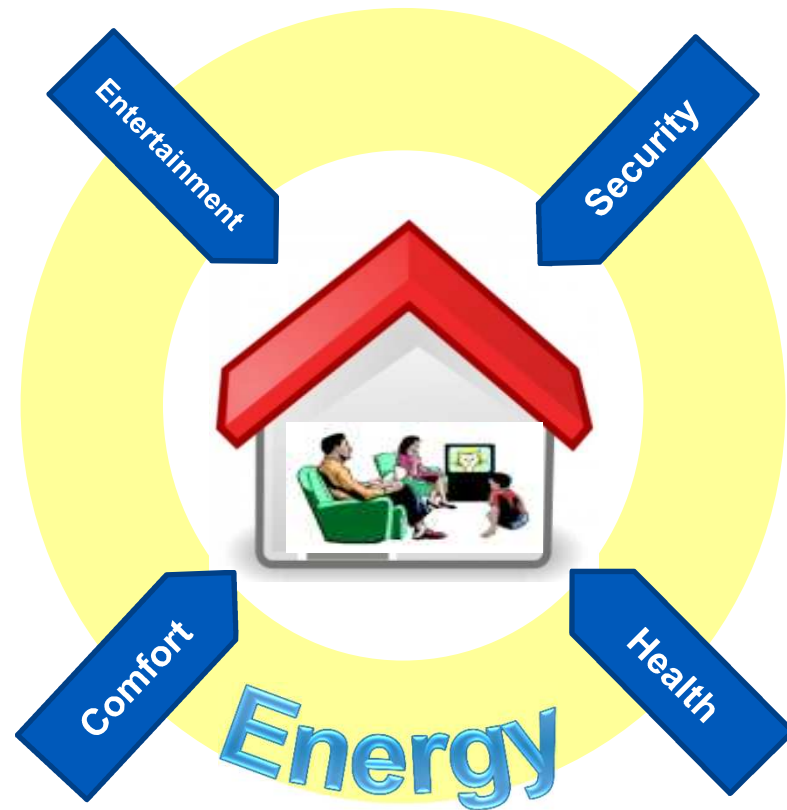


Energy consumption is not a “social practice”, it results from other activities that involve electric appliances.

People, Smart Home and energy

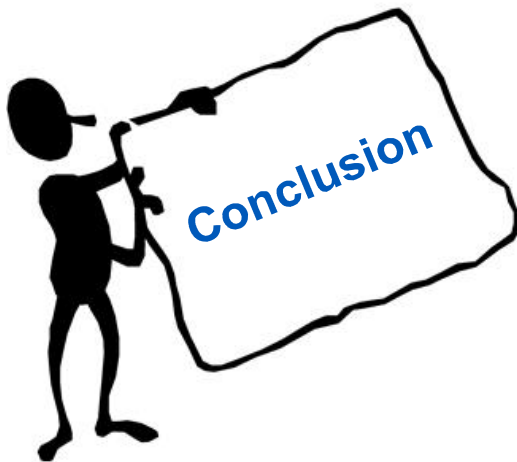


And Energy?



Conclusions

- ☐ Drivers for customers are comfort, entertainment, health, security...
- ☐ Energy is not an activity nor a social practice... Price is the only matter...
- ☐ Energy alone doesn't provide positive business cases in the smart home...



Illustrations

Smart thermostat Nest

- The promise : comfort, easy to use (learning)

The Nest is the iPhone of thermostats.

Suddenly, I can't imagine my house without a Nest.

- And... automatic savings (demand response)

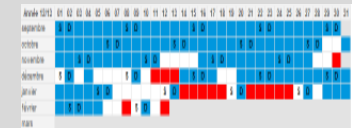


Hot boilers in France

- Off-peak/on-peak tariffs and dynamic prices
 - Tempo (1995) : 300 “blue days”, 43 “white days” and 22 “red days”. EJP, off-peak/on-peak
- Customer promise
 - Saving with comfort
 - No trouble, easy to perform.
- Solution: automatism
 - Rippled signal



- A success : between 15 and 30 years experience
 - 10 millions customers
 - 8 - 9 GW



Netatmo

- Air quality and weather

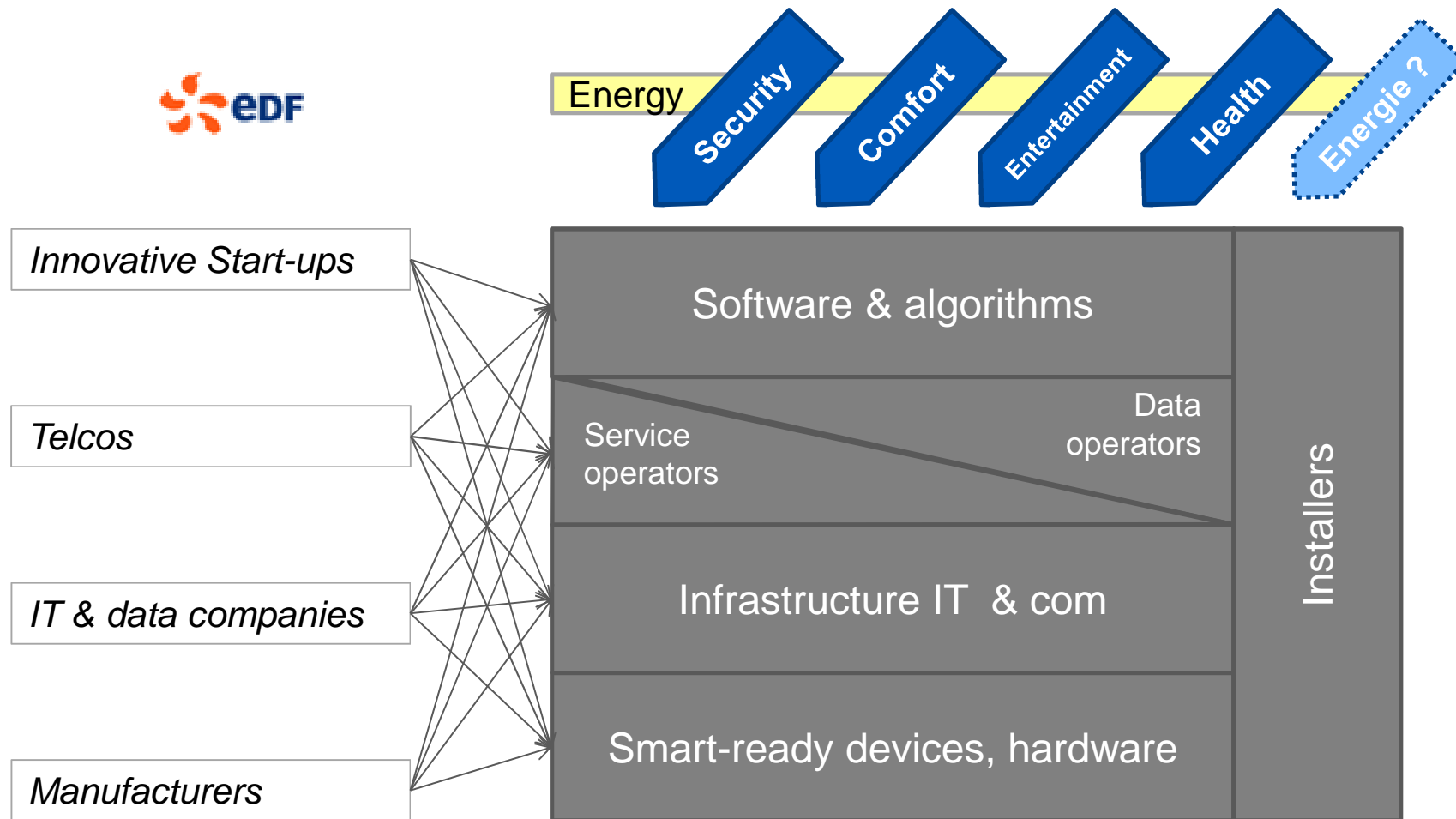
netatmo
BY S+ARCK®



- Take control on your boiler
 - Comfort
 - “Up to 25% saving”

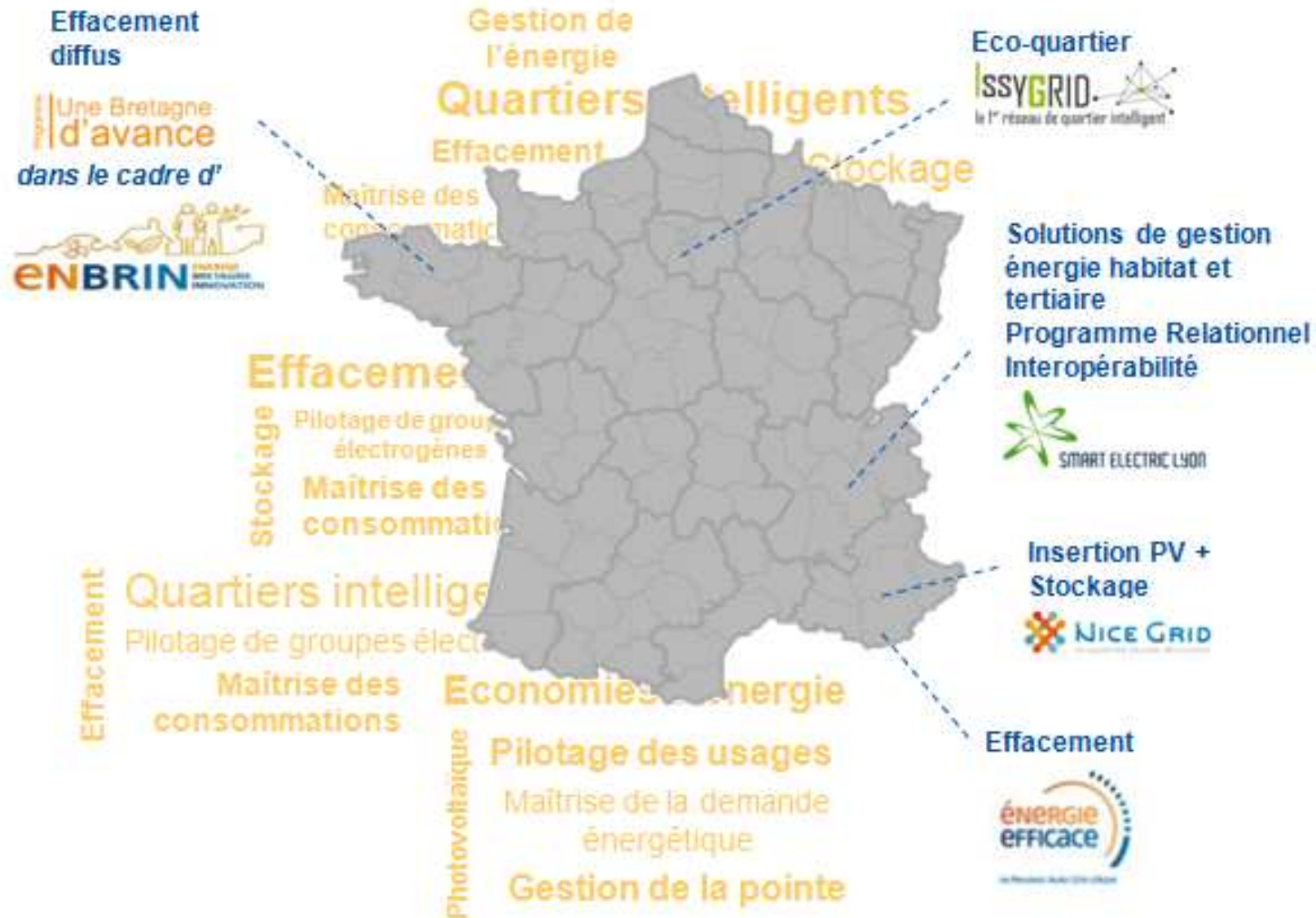


Partnerships



“Vertical” and “horizontal” partners

EDF trials in France



Thank you

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