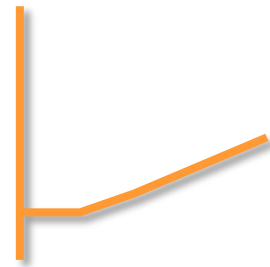


ENERGY POOL



CEER 2015 Annual Conference
Unlocking energy market flexibility and demand side response
29.01.2015

Energy Pool
Agregator
UE leader to manage Industrial DR



YOUNG, FAST DEVELOPING COMPANY

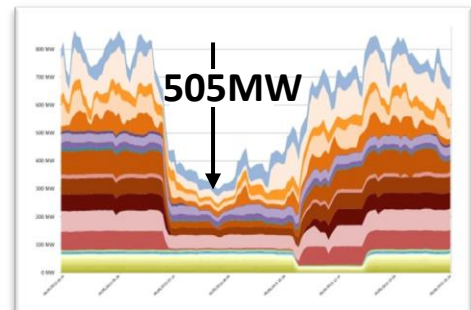
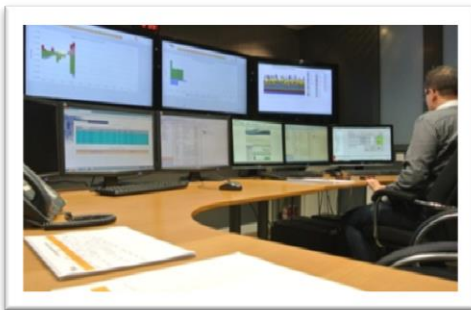
- 2009** Company set up in France
- 2010** Strategic partnership with Schneider Electric
- 2013** First operations in BE & UK
- 2014** First operations in Cameroon, Japan & Norway
- 2015** First operations in South Korea 65 employees

RECOGNISED FIELDS OF EXPERTISE & CUSTOMERS

- Engineering
- Market design & Regulatory
- Operational excellence
- Sites** - Steel industry, electrometallurgy, pulp and paper, cement industry, agri-food industry, hospitals, on-site generation, industrial gas, cold storage, water supply and treatment ,CHP...
- Electricity system players**
TSO
Utilities
DNO

OPERATING CENTERS
1500 MW managed 24/7

- Chambéry
- St Albans
- Douala
- Tokyo

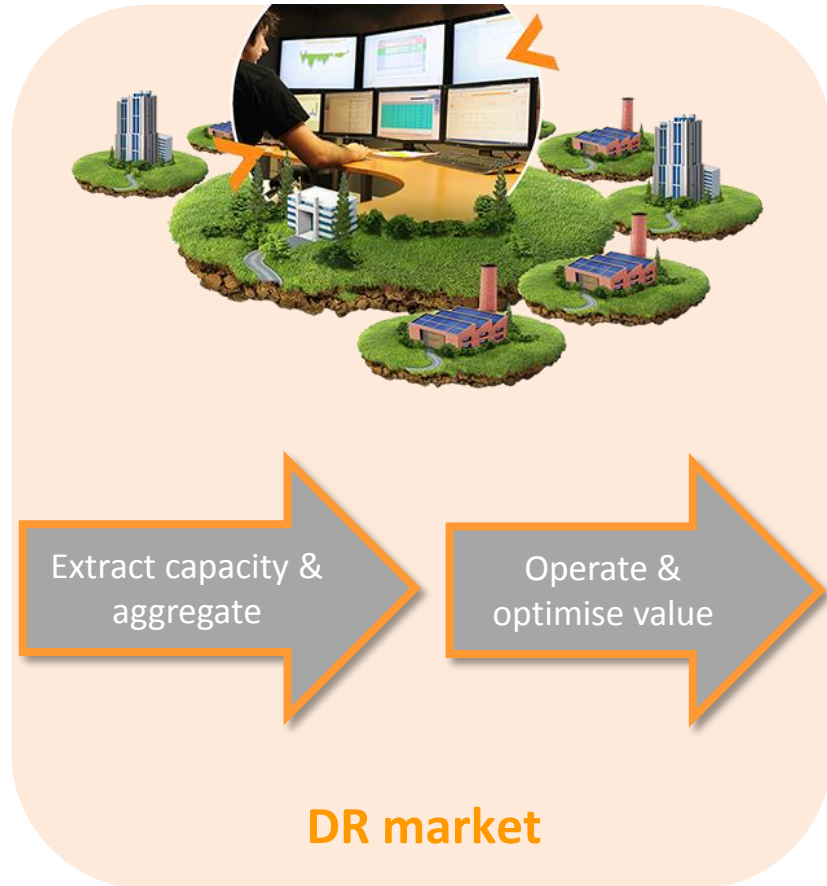
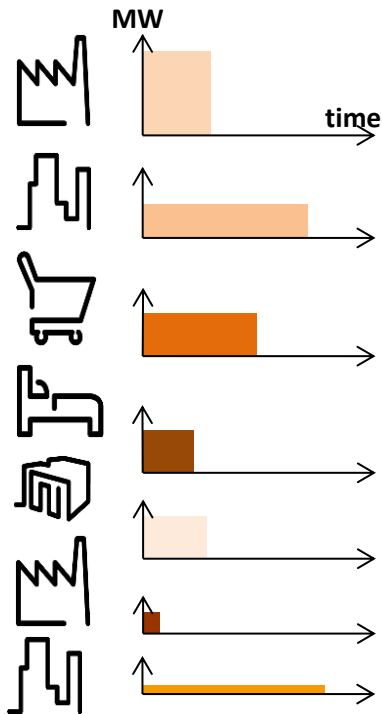


R&D programs

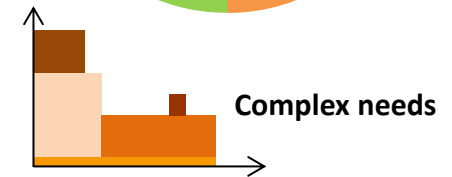
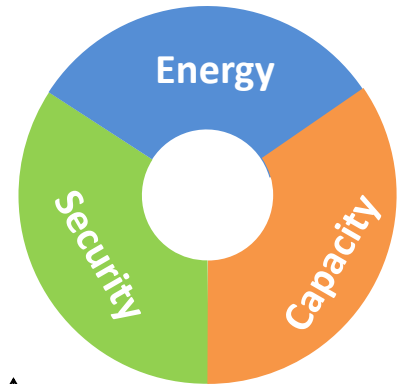
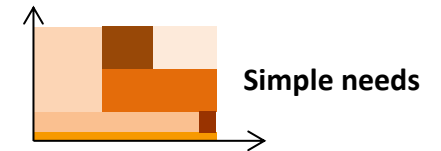
- Renewable integration through DR
- Electric vehicle and DR
- Electrical storage and DR
- VPP & microgrid

Aggregators bring together consumers... ...to deliver a reliable service to the electricity system

Individual flexible capabilities



System needs TSO, DNO, Utilities

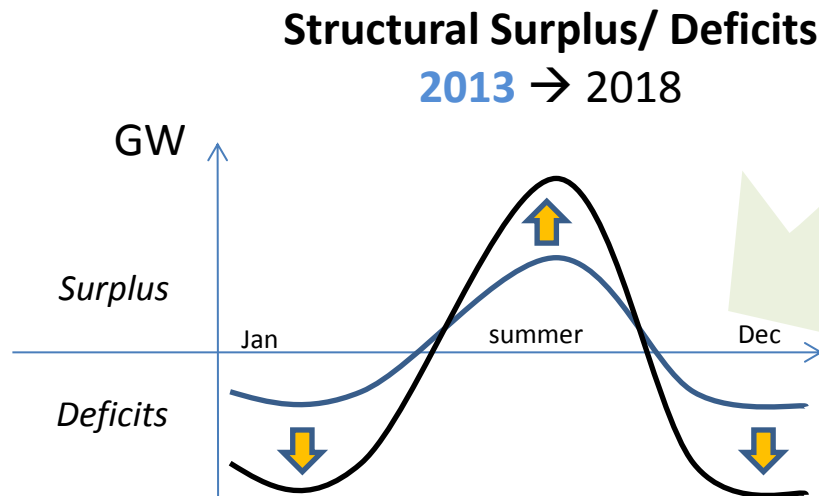
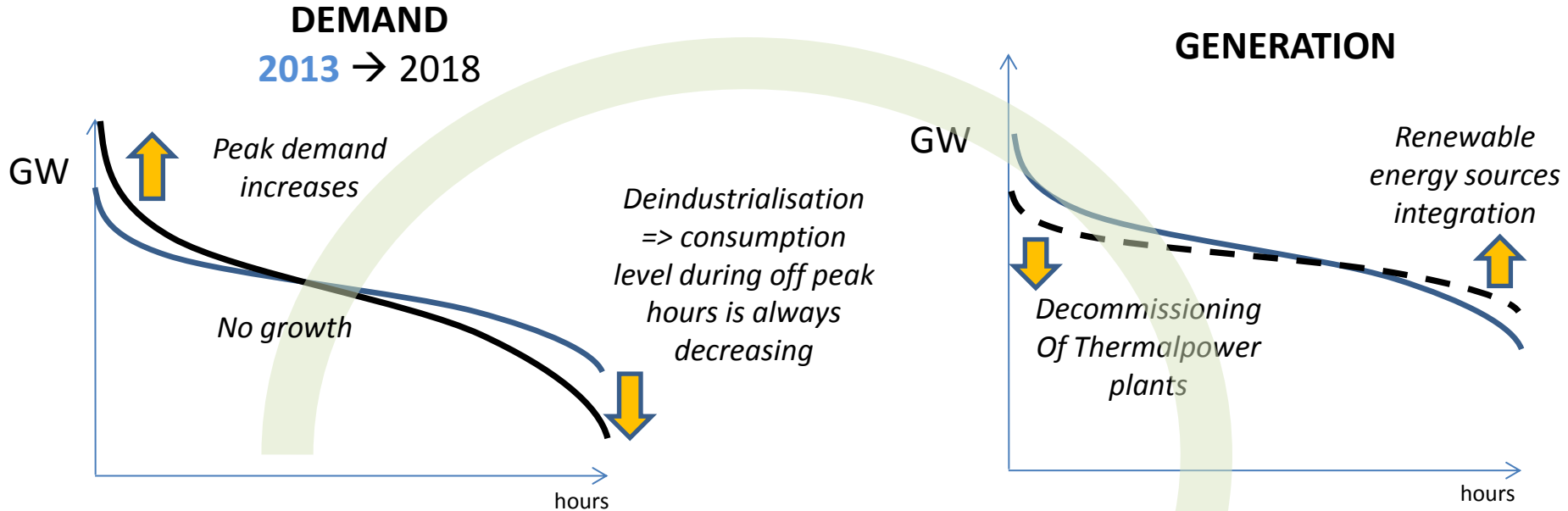


Contribution of Aggregators / Flexibility service providers

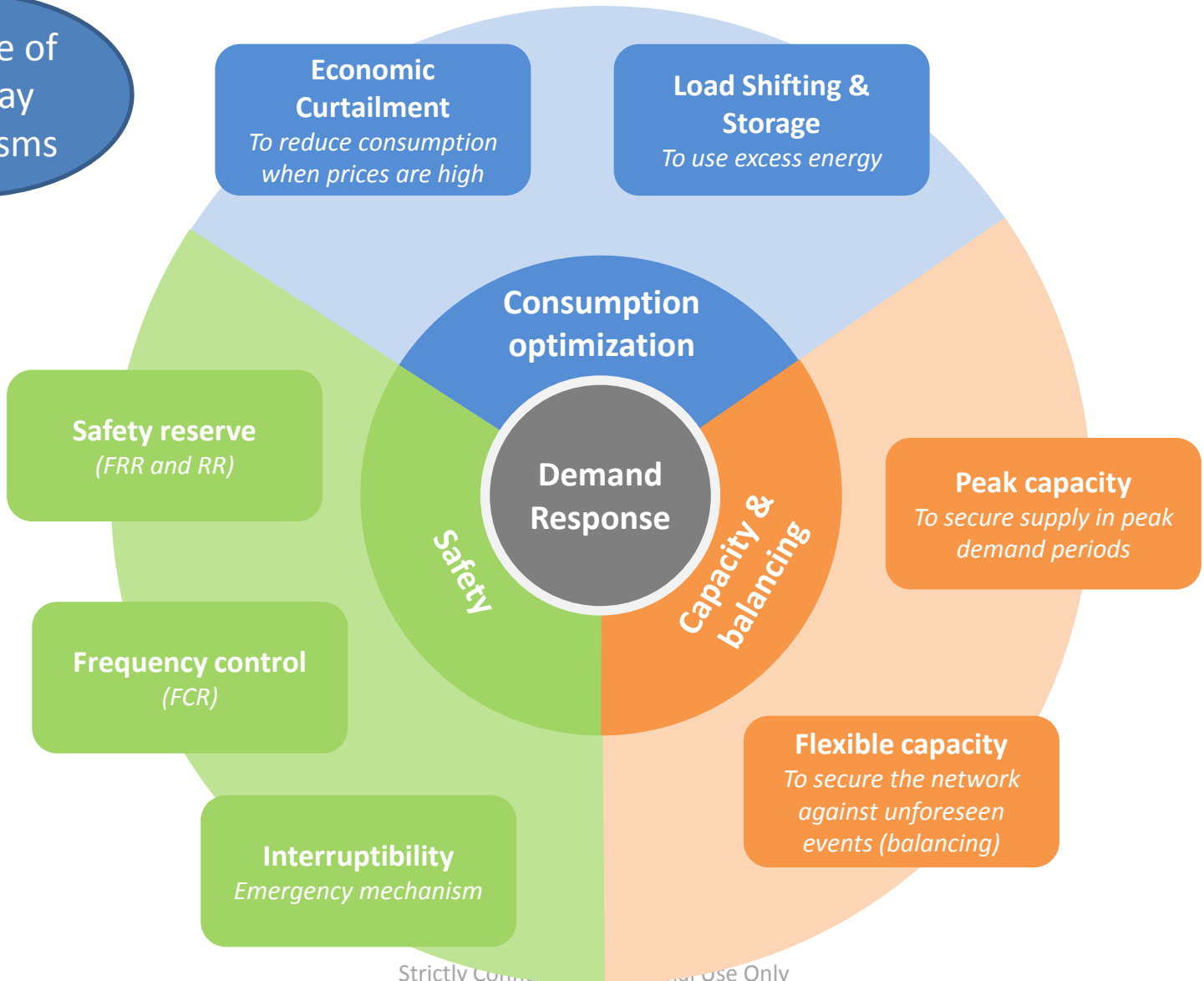
- Allow consumers to identify & value their consumption flexibility
- Make it be a reliable source of flexibility
- Increase DR participation in the market (size, availability constraints...)

Demand and Supply have different trends

... will increase costs at an intolerable level






Example of intraday mechanisms



Different consumers role

Energy Pool core business

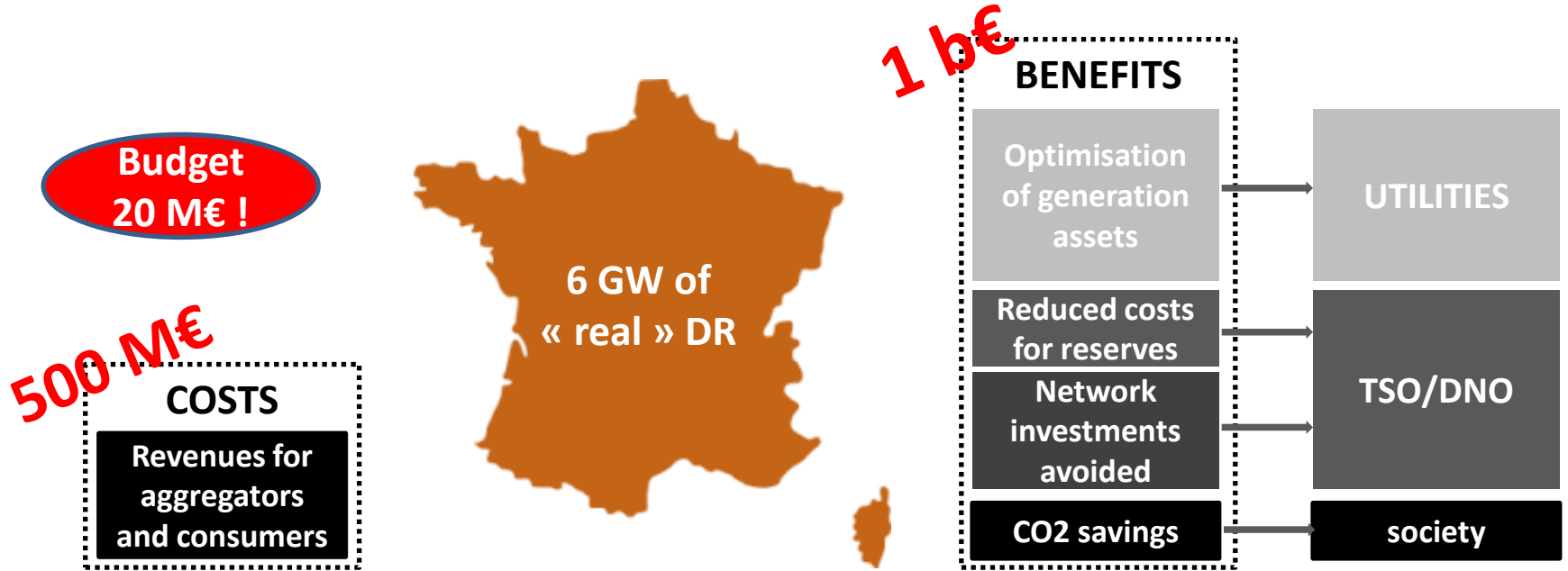
	Industry 	Commercial / Buildings 	Residential 
Individual capacity (MW) +	Large	Small	Very small (+ only during peak hours)
Implementation speed	Fast	Slow	Slow if implemented by private entities Medium if roll out of smart meters
MW acquisition cost	Low	Medium	High
End-user priority	Production schedule, business orders, energy price	Customer service	Comfort, simplicity
Curtable process complexity/DR MWh cost	High	Low (automatised)	Low (automatised)

All consumers have an addressable DR potential, but their individual potentials & expectations are different.
This variety of profiles need to be taken into account while developing “DR markets”.

We must reduce costs for consumers without detrimental effects for utilities !

DR is a good way to achieve this goal : France exemple

Potential of real DR = 10% of peak consumption



DR = a change of paradigm requiring strong political support

DR = can only develop if :

- we consider its total benefits and remunerate it accordingly
- Make sure those benefiting from DR, directly or indirectly pay for it



Potential savings
(% annual bill)



Endusers potential & savings A strategic way to reduce the electric bill

Real time to day ahead

Day ahead to one year

Above one year

Safety

Energy +/-

Capacity

Consumption scheduling

supply contract optimization

Food industry

-5 à - 10%

Chemistry

-10 à - 30%

Datacenter

-5 à - 10%

Electrometallurgy

-15 à - 25%

Cold storage

-10 à - 30%

Hospital

-5 à - 10%

minerals and materials

-5 à - 20%

Electrolyse process & Metal

-10 à - 30%

Pulp /cartonboard

-5 à - 15%

Air liquid production

-10 à - 30%

Steel industry

-5 à - 10%

Tertiary

-5 à - 10%

Confidential

What you can do to develop Demand Response ?

What you're doing...

- Opening the markets to DR
- Removing barriers to aggregation
- Harmonizing market rules

Your efforts can be void if...

- No budget is found to pay DR : but don't create subsidies
- An unfair allocation of costs is made among the beneficiaries of DR
- No effective control is made to check performance of « real DR »



While opening the markets, make sure:

- An adequate budget is found for the service DR is delivering
- You're paying for "real DR"
- Beneficiaries of DR are directly/indirectly contributing to the payment of DR services

APPENDICES



	Real time to day ahead	Day ahead to one year	Above one year
Generation	<ul style="list-style-type: none"> Asset optimization* Provide profitable balancing services 	<ul style="list-style-type: none"> Assets optimization* 	<ul style="list-style-type: none"> Reduce investment in peaking plants
Utilities	<ul style="list-style-type: none"> Savings for endusers Reduce imbalance costs Cost effective balancing management for BRP 	<ul style="list-style-type: none"> Sourcing cost optimization 	<ul style="list-style-type: none"> Sourcing cost optimization Attractive and competitive supply contracts
TSO/DNO	<ul style="list-style-type: none"> Facilitate the management of RES intermittency and grid constraints Geolocation-based interruptibility 	<ul style="list-style-type: none"> Savings in the procurement of balancing energy and reserves 	<ul style="list-style-type: none"> Reduce grid investments
	-10 to -15% savings	*+1 to 5% efficiency rate	-2 to -4% investments

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