



Smart energy management

FEBELIEC – UWE
20/10/2016
A member BDRA
(Belgian Demand Response Association)



Smart energy management

HOW Monetizing your flexibility



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DEMAND RESPONSE MARKET

DR Mechanisms available in
Belgium





DR Mechanisms available for DSO connected site

As from 2017

		Availability	Response Time / Warning Time	Activation Duration (Max.)	Recuperation between Activation	Maximum Activation per month or period	Remuneration
	SDR4/12 (Strategic Demand Reserve)	☀ & ☾ 24/7 1st November to 31 March	1h30	4 hours or 12 hours	4 hours	40 / period 100 h of activation maximum (SDR 2016-2017) 40 h maximum on rolling periods of 30 days	+/- 35000€/MW + (Variable: €/MWh)
	R3 Flex (ex-R3DP)	☀ & ☾ 24/7 All year	≤15minutes (At 7 minutes 30 50% of engaged power)	2 hours	12 hours	8 / month	+/-2200€ per MW/month
	R3 Standard (ex-R3 Production)	☀ & ☾ 24/7 All year	≤15minutes (At 7 minutes 30 50% of engaged power)	8 hours	n/a	“unlimited”	3500€ per MW/month + (Variable ⁽¹⁾ : €/MWh)
	Asymmetric: R1Up – R1Down Symmetric: R1 100 & 200mHz	☀ & ☾ 24/7 All year	Reaction to frequency signal in 15 to max. ≤30 seconds	15 minutes	n/a	n/a (Info: Statically: Asymmetric average of 20/month)	Depending of service: Between +/-5 & 25€/MW/h

⁽¹⁾ Only CIPU site

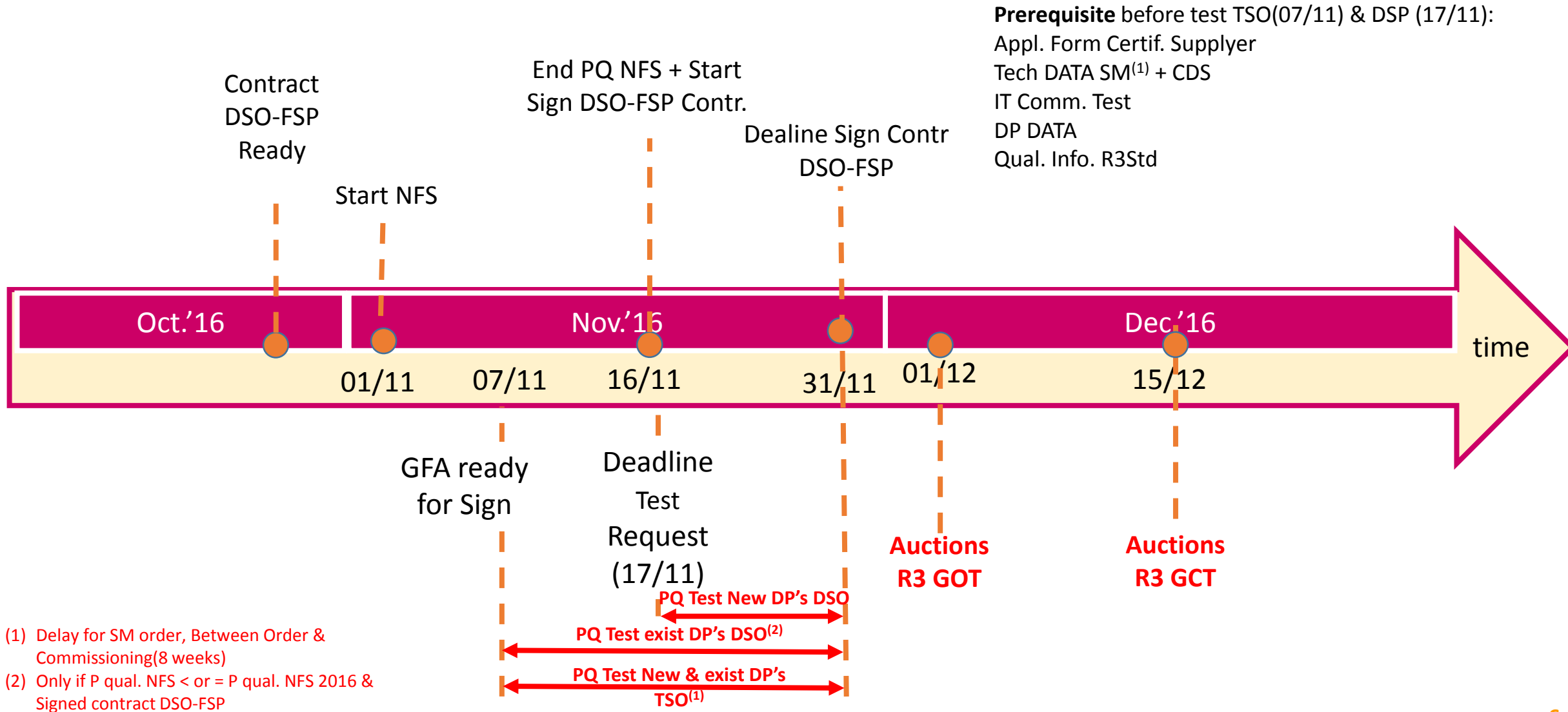
		Commitment period	Auction timeline
	<i>SDR (Strategic Demand Reserve)</i>	01 th of November until 31 of March	Mid-April 2017 for winter 2017-2018
	R3 Flex (ex-R3DP)	Month	Around the 15 th of the month M-1 for month M
	R3 Standard (ex-R3 Production)		
	Asymmetric: R1Up – R1Down Symmetric: R1 100 & 200mHz	Week	S-2 for S

- Short term commitments allow optimisation between different markets depending on market price evolution
- Some services can be combined allowing maximisation of the value of your flexible assets

TIMELINE before being operational

Before being able to participate to the first auction...!

TO HOLD IN MIND



(1) Delay for SM order, Between Order & Commissioning(8 weeks)

(2) Only if P qual. NFS < or = P qual. NFS 2016 & Signed contract DSO-FSP



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Some Examples of valorization

IDEAS





Cement, Limestone, Chalk,
etc = Milling Processes



Mills + Auxiliaries
(Pumps,
Ventillations,
Motors with
Variators



**R3 Flex & R1
Services**



Metals



Oven + Auxiliaries
(Ventillation,
Motors, etc



**R3 Flex & R1
Services**



Paper Industry



Refiners, Pulpers,
DIP, ...+ Auxiliaries



**R3 Flex & R1
Services**



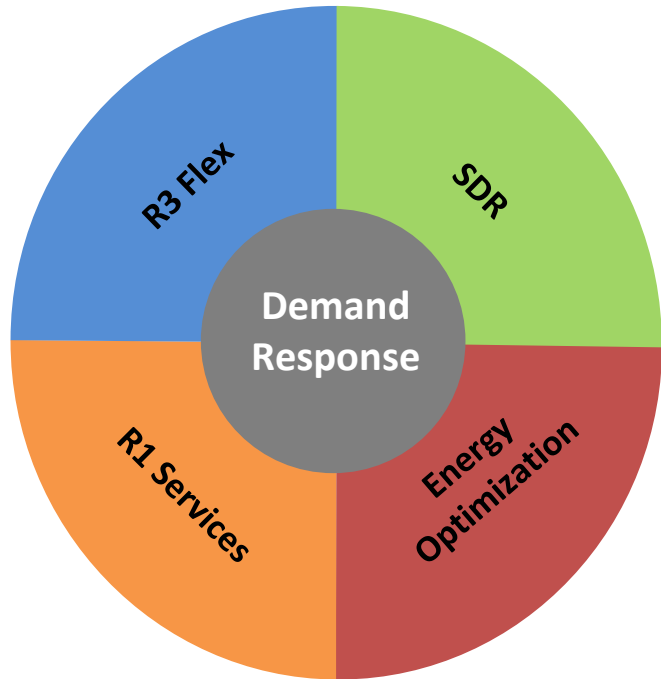
Petro-Chemicals Sector



Extruders,
Electrolysis,
Auxiliaries



**R3 Flex & R1
Services**



Generator

Cooling,
Ventilation,
Pumps,
Transport,
Lightning Mgt,
Compressors,
etc.



CHP

Other Large Electro Consumers



Data Center



Water



Cold Storage



Ice Rink



Building/Hospital



Agro-Food



HVAC

WITH

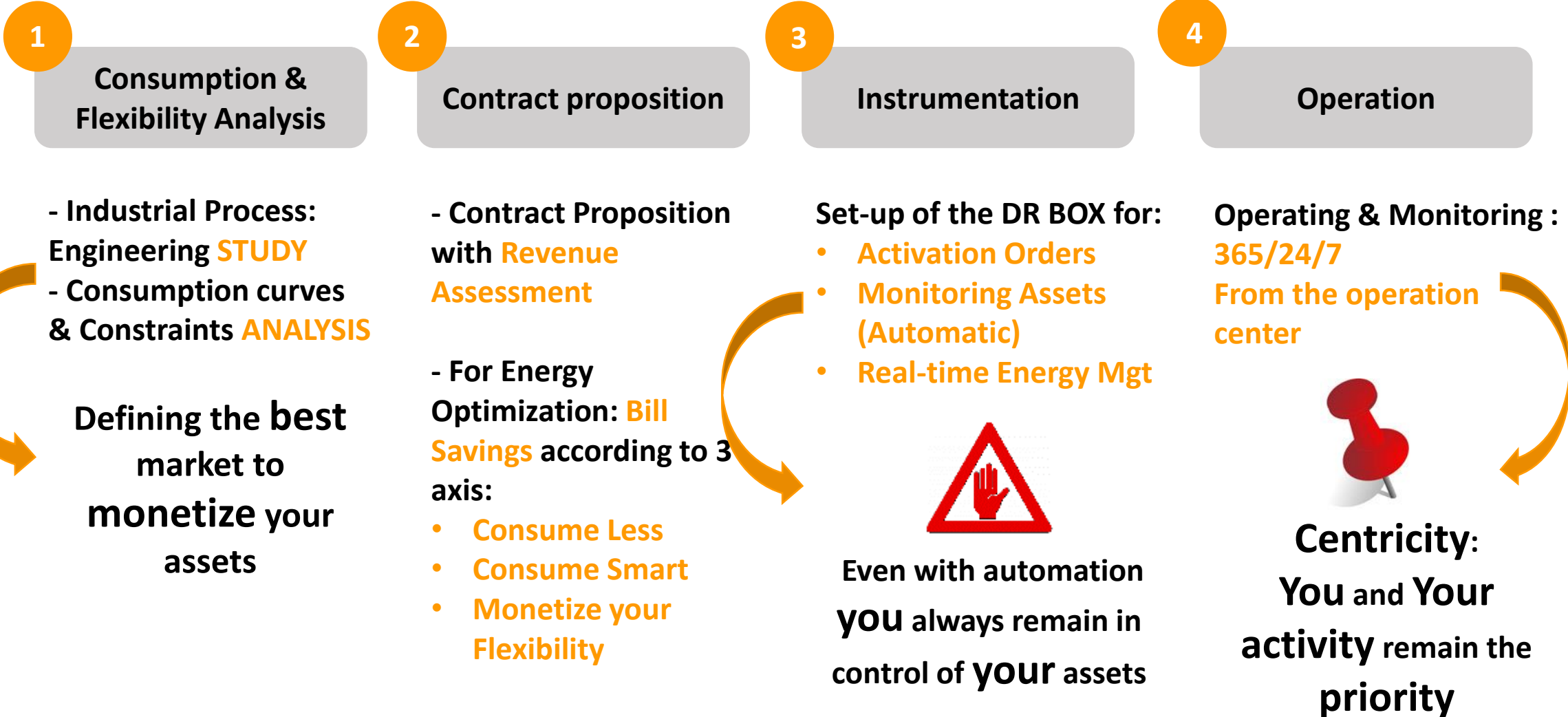


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AGGREGATOR ADDED VALUE

Pragmatism & Solutions





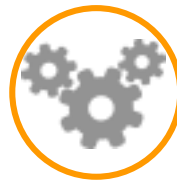
Taylor made offer to maximize the value of your flexibility



Managing & operating your commitment

You define your strategy – we operate

No administrative, nor operational burden for your sites – direct access to your performance and economic balance at any time via **our web portal**



Marketing your flexibility without risk

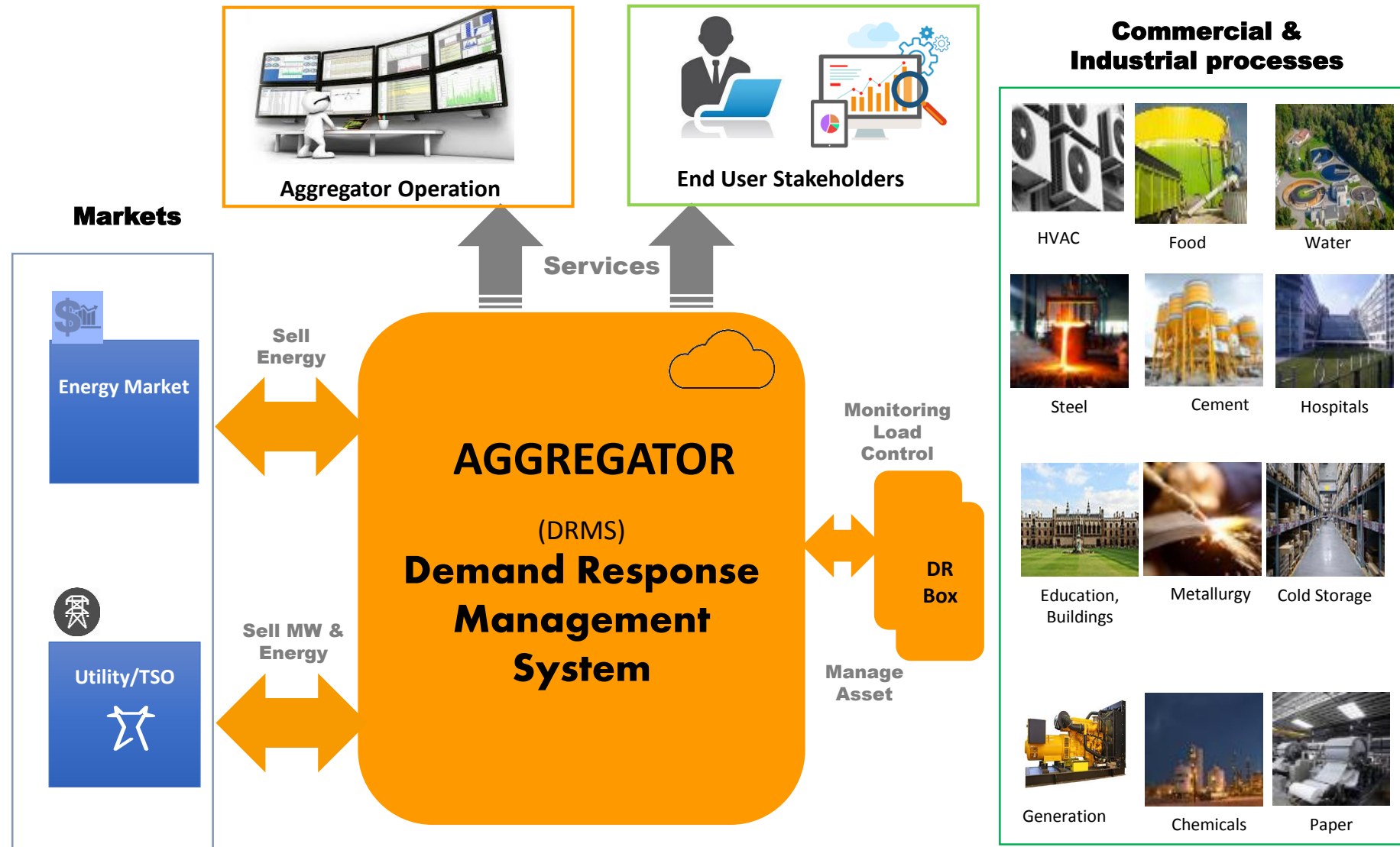
The Aggregator designs a monetization strategy best suited to take into account your constraints. Any variation of your availability from a day to day basis **does not give raise to any penalty.**

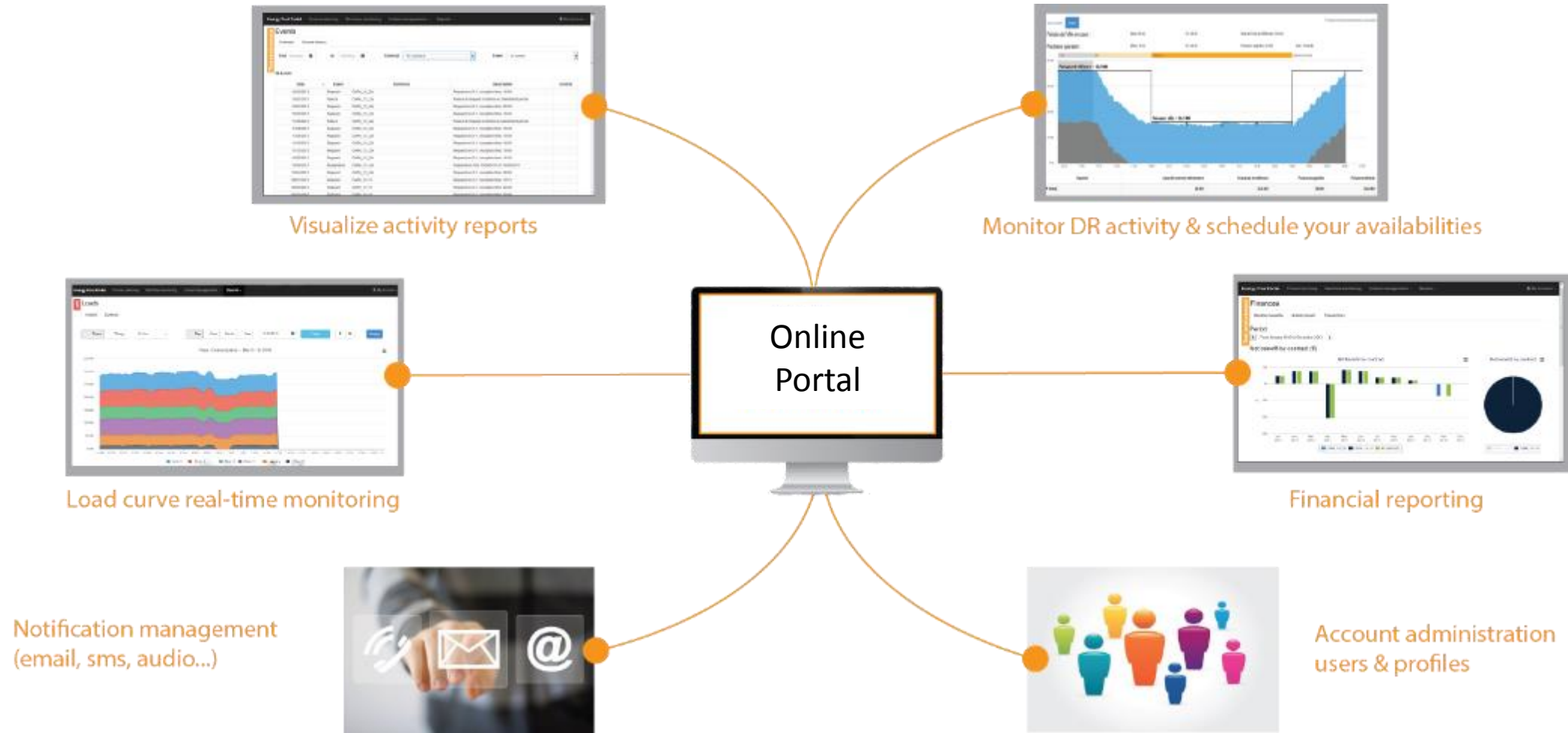


Build the best strategy to maximize the value of your assets

Take the benefit of **cross mechanisms participation.** An Aggregator assists you in defining the best engagement along the year to **maximize the value of your flexibility**

DRMS Service & Advantages







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A LAST IDEA

Residential & Tertiary sector

Valorization



First steps to achieve the ideal world?...



Office Buildings:
HVAC
Lighting



Residential:
Freezer
PV
Batteries



Artisanal Sector:
Cold Mgt



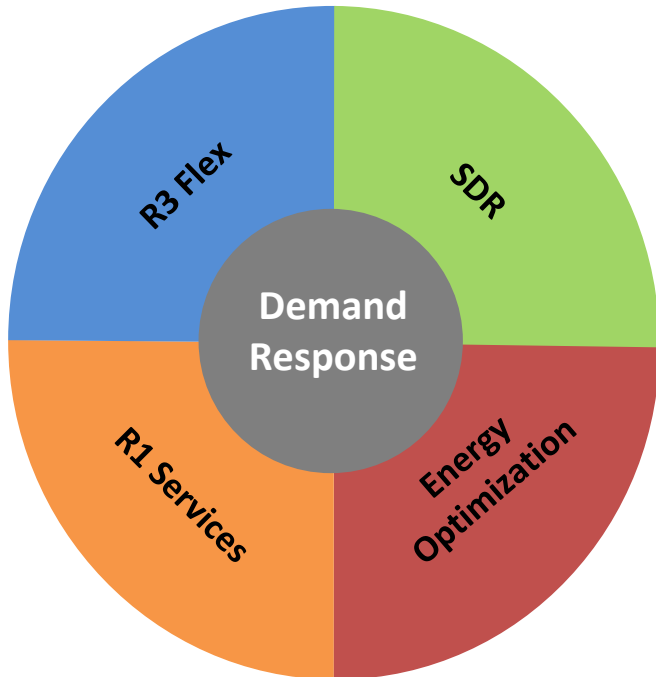
Could be addressable by
the Demand Response
**BUT NEED INTELLIGENT
METERING**



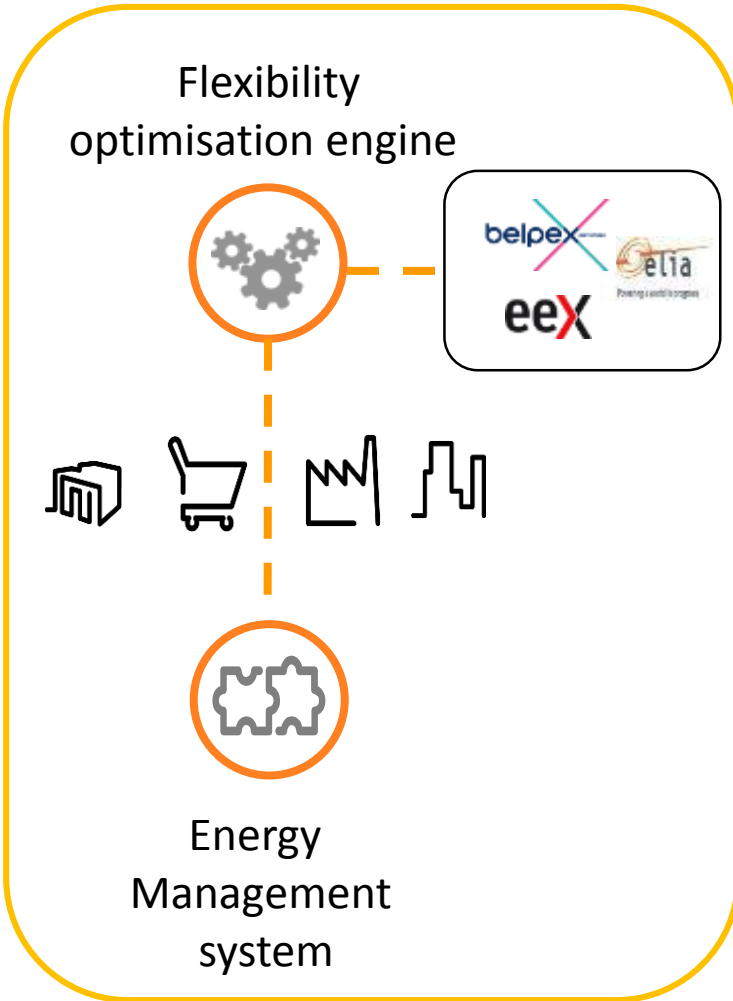
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CONCLUSION

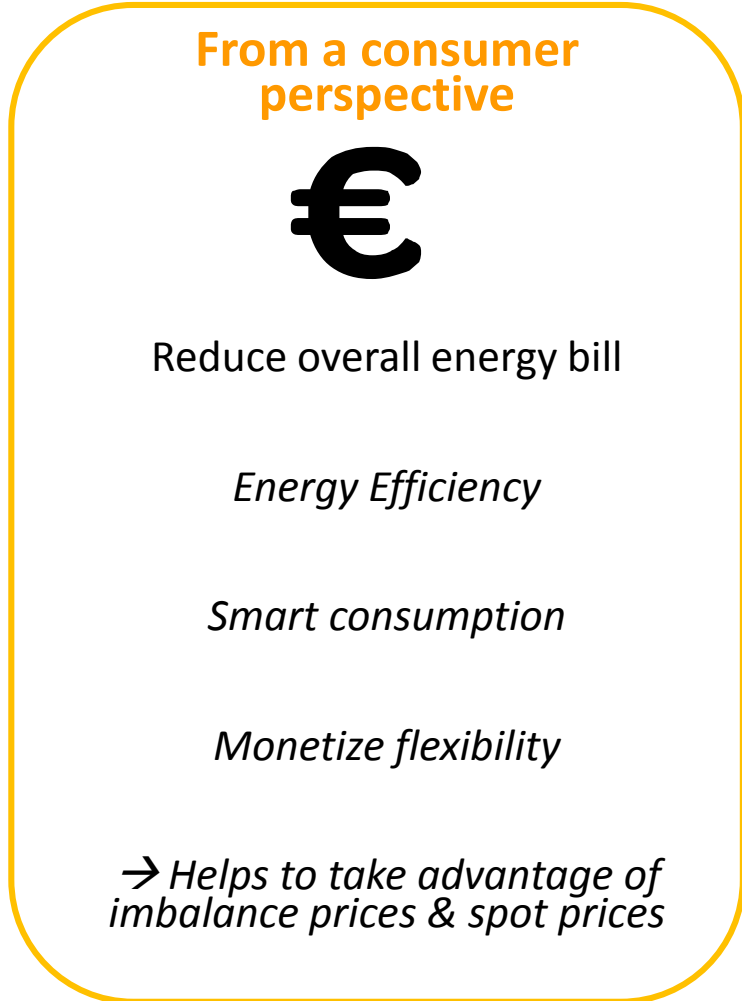




Aggregator's solution



Value Creation





The Aggregator in a Nutshell

Empowering their customer to monetize their Flexibility



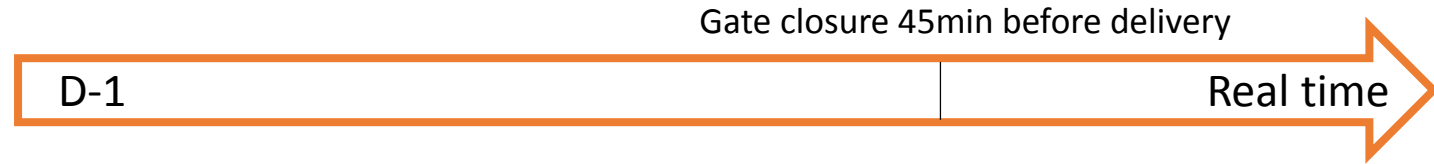
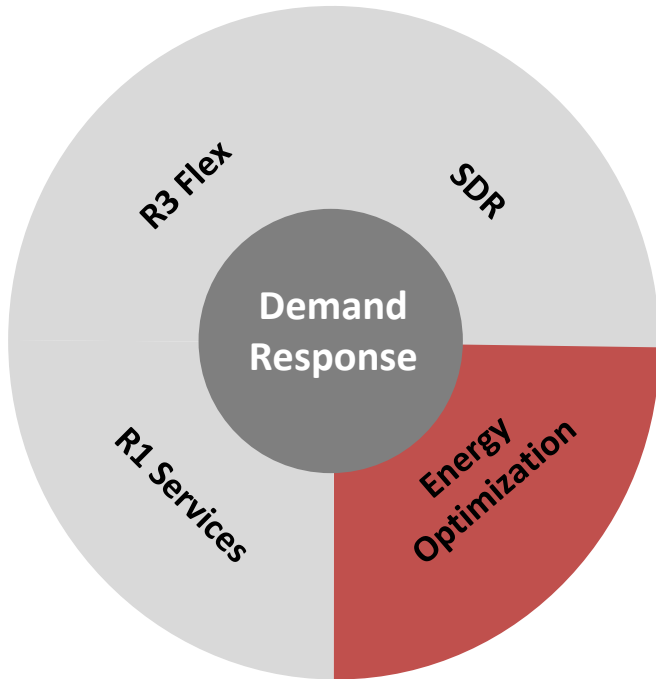


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UP-COMING

ADDITIONAL VALORIZATION
OPPORTUNITY





Day-ahead market

Intra-day market

Balancing market

- **BIDS introduction:**
 - > As from D-1 +/- 14h00 after DAM market closure = Gate Opening Bid Ladder
- **BIDS:**
 - > Bids Modification possible up to 45 minutes before neutralization time = Start of Activation.
 - > Response time = Per ¼ hour, The bid inform how time the MW's offered are repetitive in the hour
- **REMUNERATION:** in €/MWh per activation

The Bid Ladder Pilot allows Free Bids for energy Balancing from **TSO-connected** NON-CIPU generation and load offered to Elia by a FSP^(*), i.e.: independent aggregator, Grid Users or BRP's as **from July 2017**



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