GreenWatch
Power control & services

Active demand-side management

GAC project

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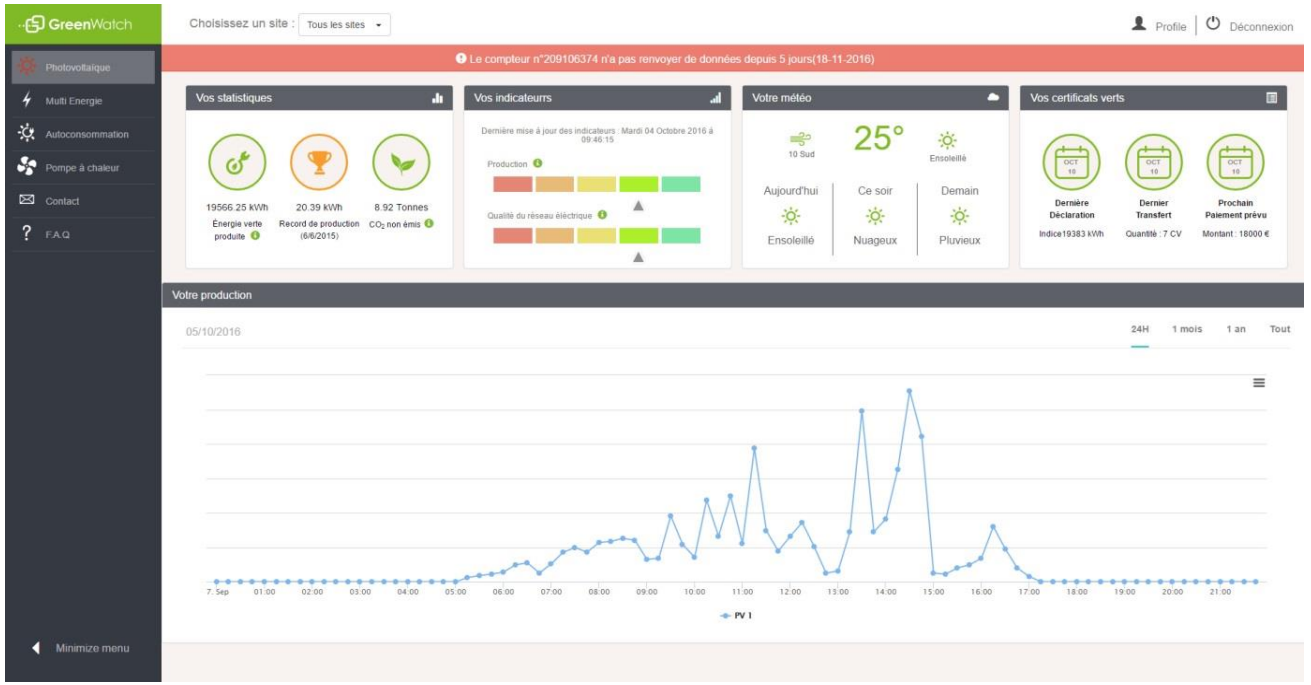
- PV monitoring of 6.000 residential clients
- Multi-energy monitoring
- After-sale service
- Experience since 2009
- Offer and demand flexibility
- Remote load optimization



Offer and demand flexibility

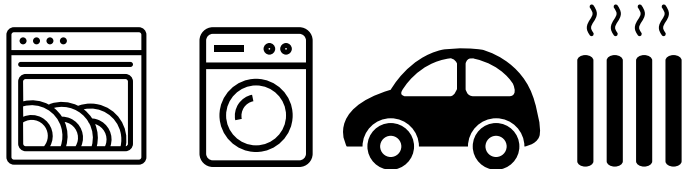
Control of PV inverters

PV predictions

PremaSol

Control of residential loads

gac



GATEWAY

GWio

RS232

RS485

- Monitoring
- Smart load control

ICT platform

- Evaluation, prediction, activation and monitoring of offer & demand flexibility
- Market interaction

Active demand-side management

- Control of local loads – communication & algorithms
- Hardware implementation – communication
- ICT architecture – communication with the market
- Distribution grid data – regulatory aspects
- Sociological study – user interface/acceptance

May 2017 – July 2020

Demand flexibility

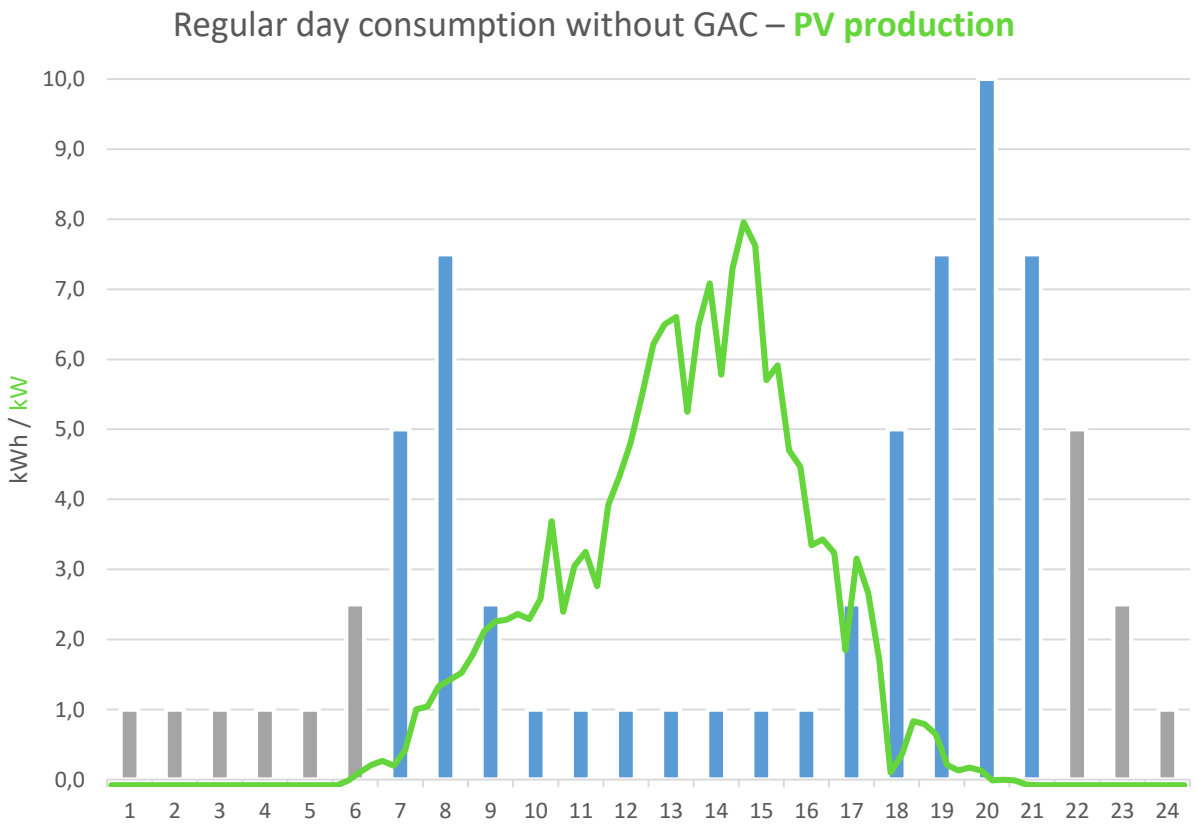
Valorization of flexibility :

Individual : prosumers

- Self-consumption optimization

Collective : neighbordhood

- Self-consumption optimization (peer-to-peer)



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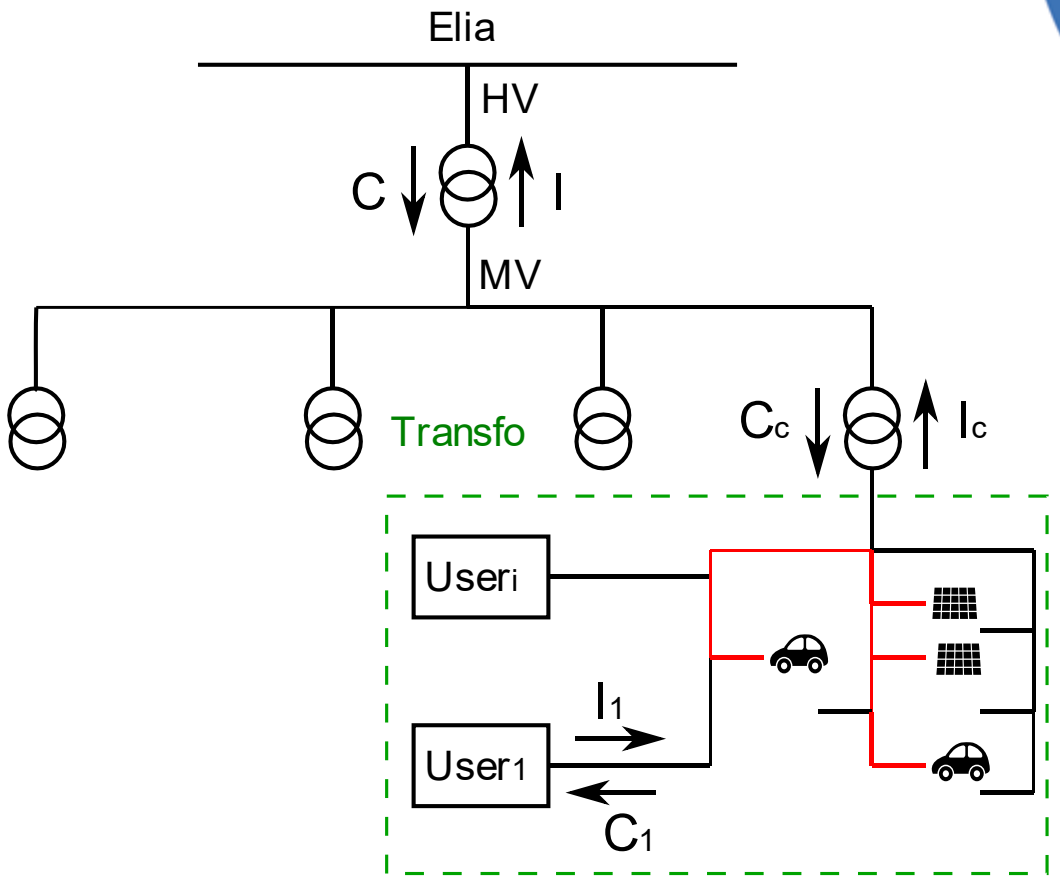

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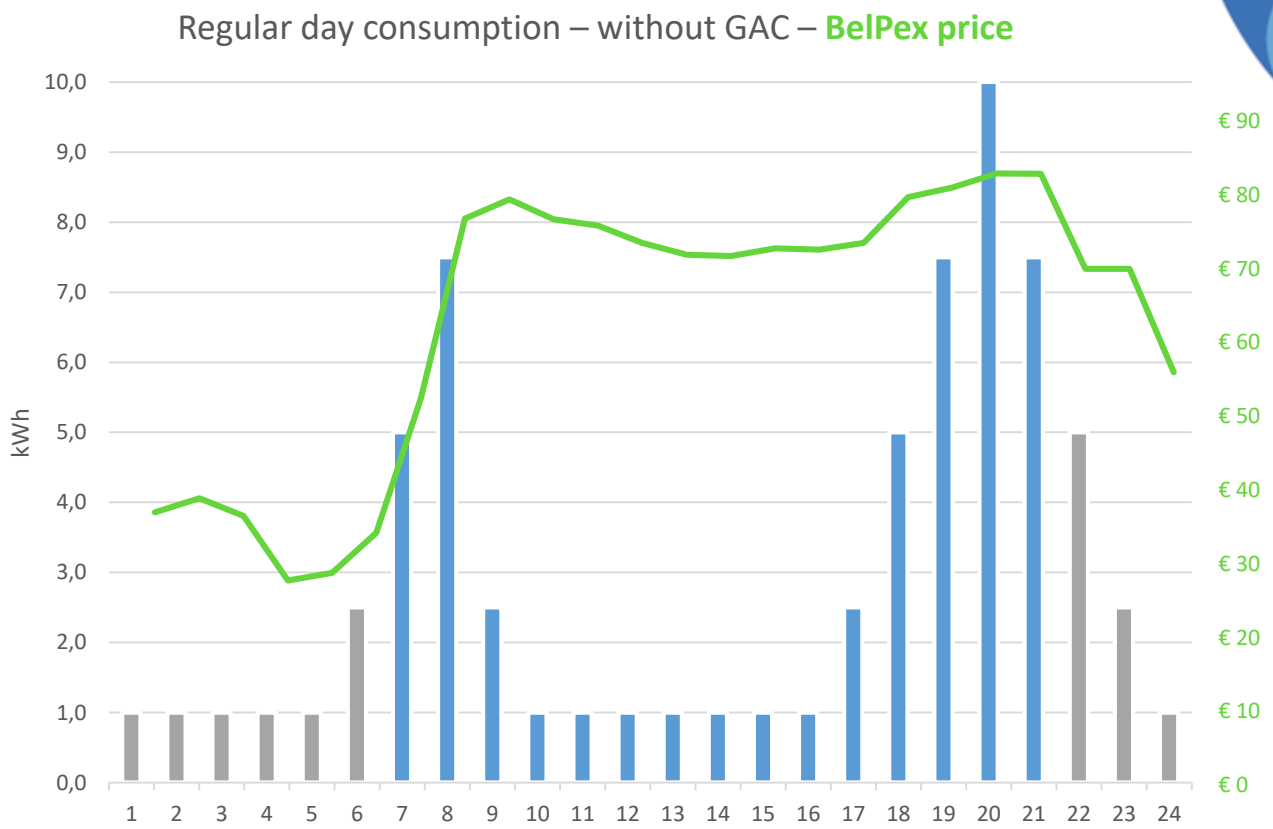
Demand flexibility

Valorization of flexibility :

Individual : tariff incentives

- Dynamic pricing
- Peak pricing
- Pricing periods



Demand flexibility

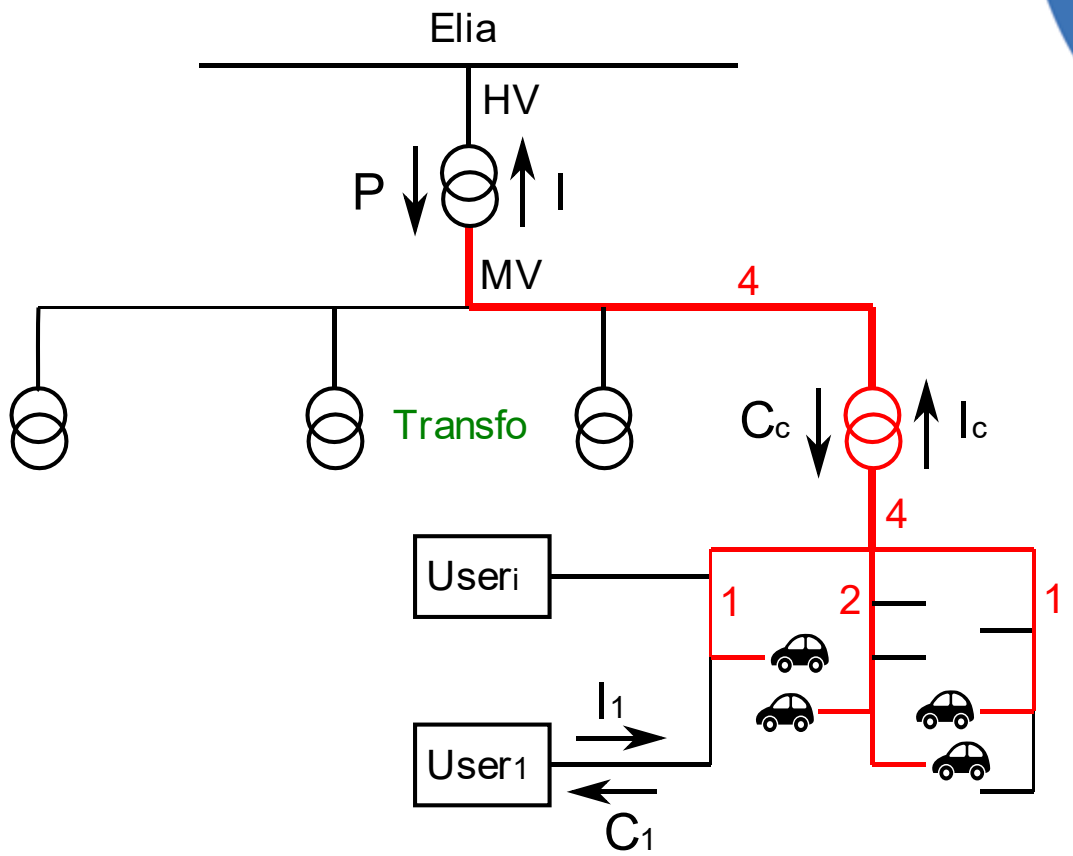
Valorization of flexibility :

Individual : tariff incentives

- Dynamic pricing
- Peak pricing
- Pricing periods

Collective : neighbordhood

- Flexibility to the DSO
- Flexibility market



Project implementation

- Neighborhood with 50 houses controled
- DSO is partner of the project
- Preliminary results (+10 years)

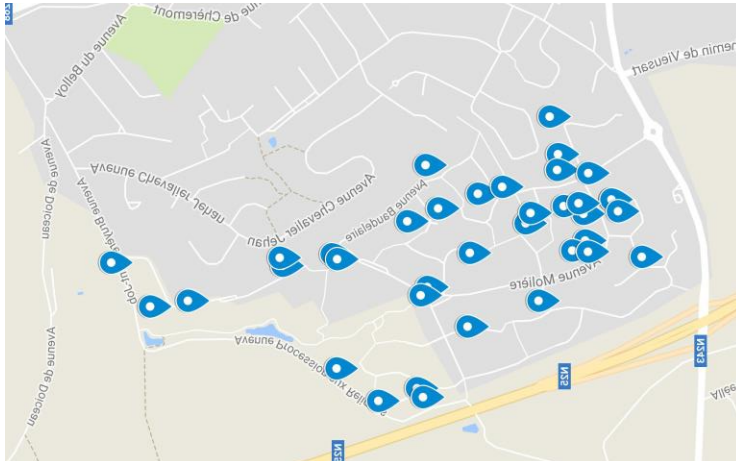
Increase in self-consumption

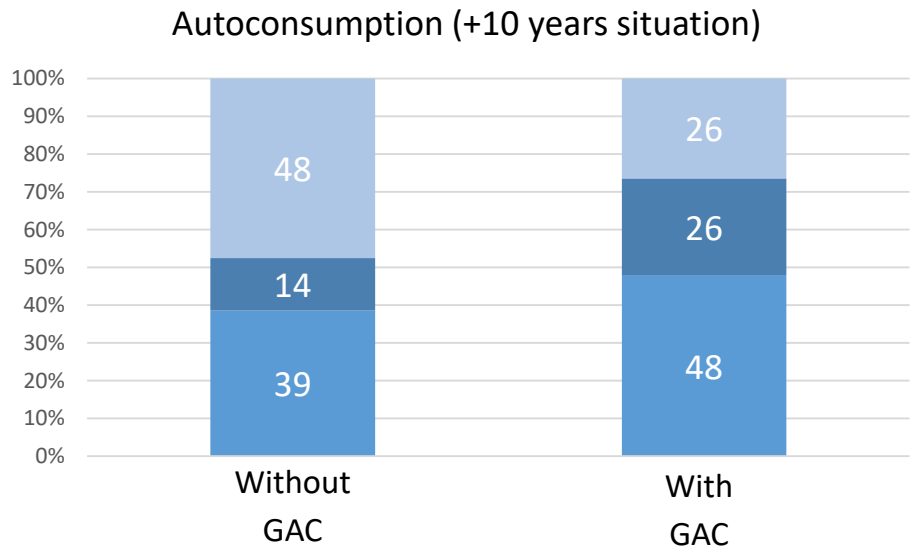
✓ Neighbordhood : 53 % → 74 %

✓ Individual : 39 % → 48 %

Decrease in consumption peaks

(individual and neighborhood)





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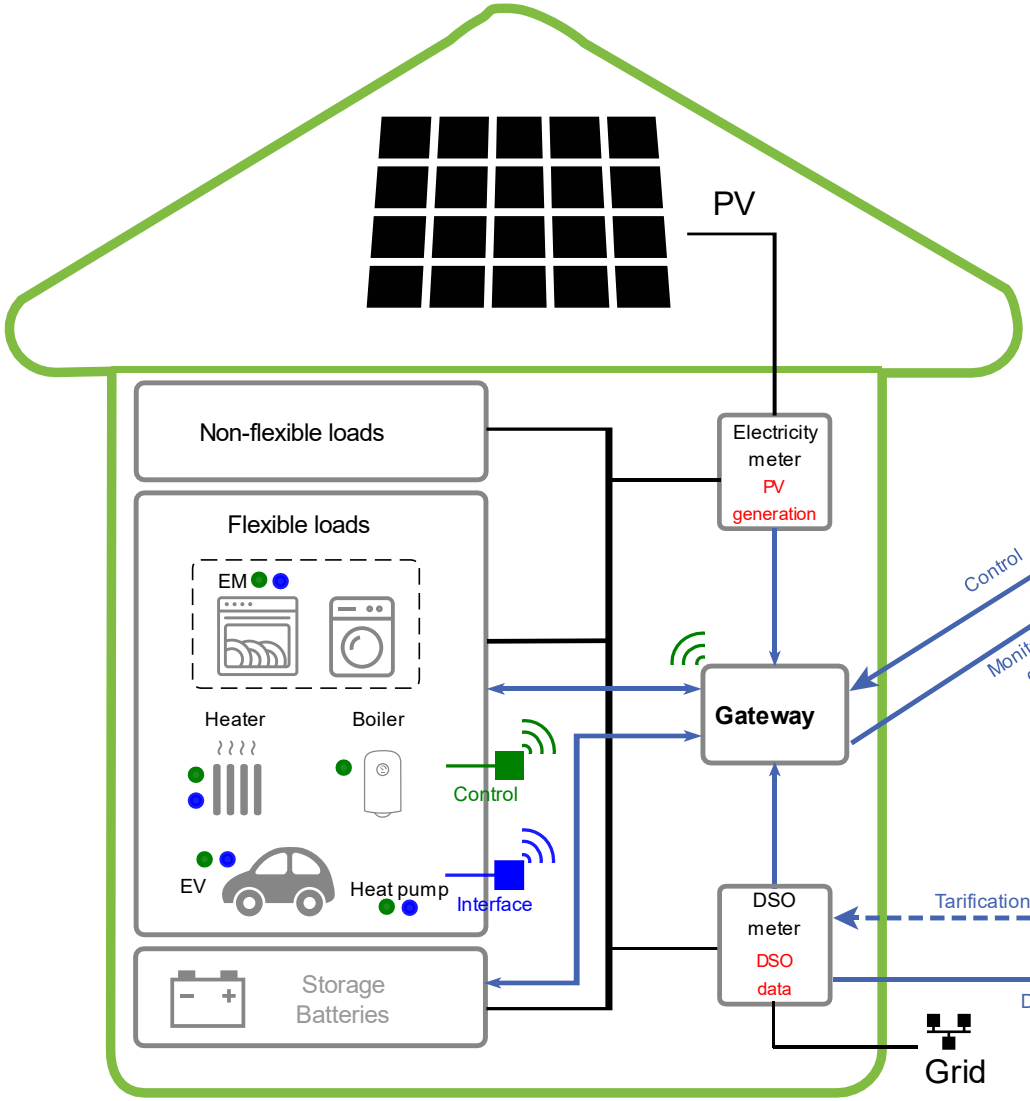
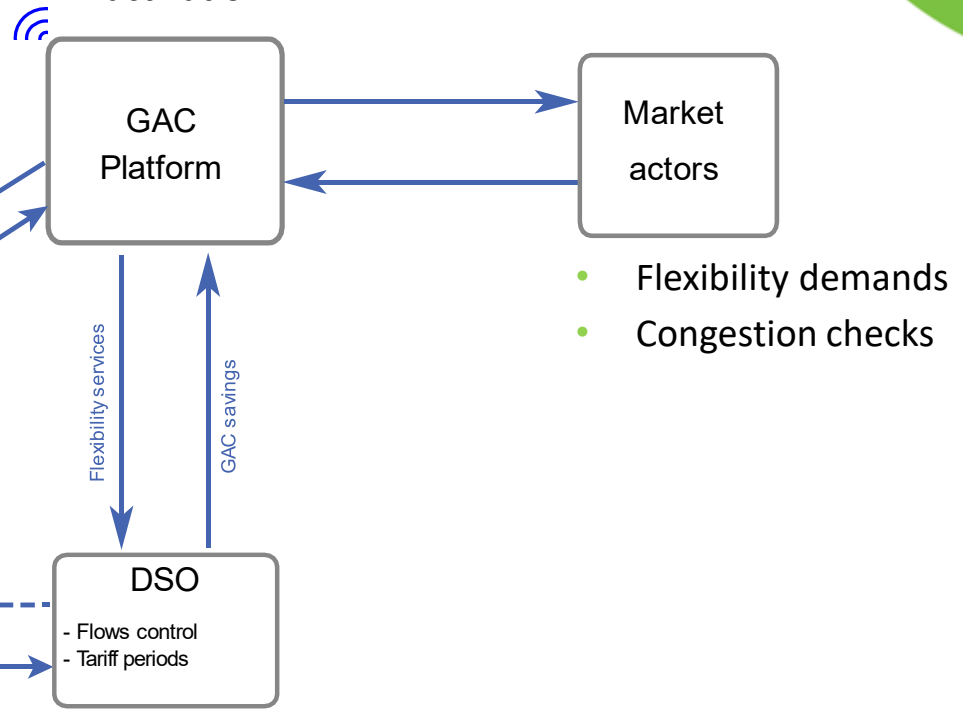
Solution architecture

- Aggregation
- Monitoring
- Optimization
  - Tariff incentives
  - Flexibility
- Facilitation of flexibility activation





- Flexibility demands
- Congestion checks

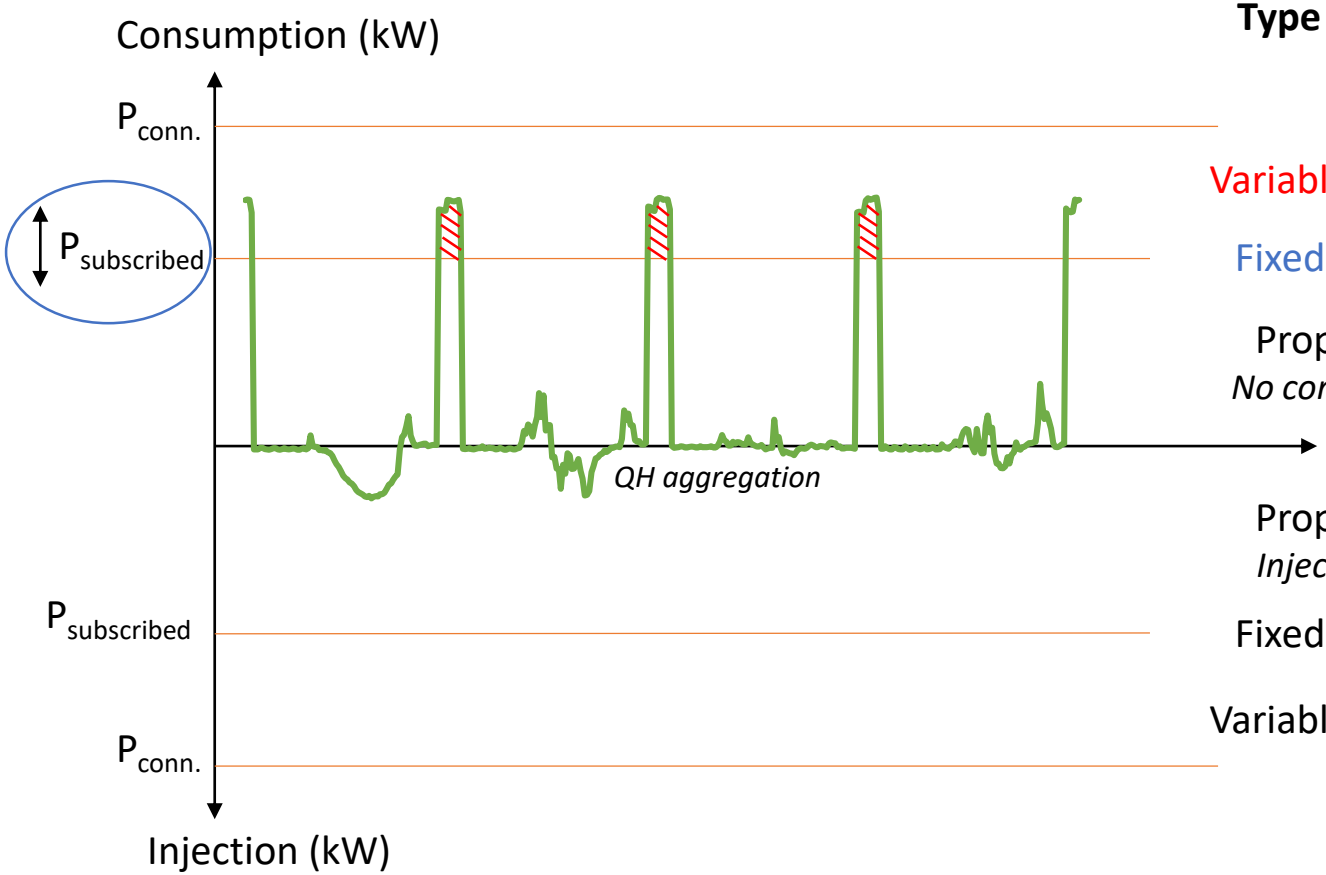
What are we looking for?

- Additional services we could include in our offer
  - *Centralised and decentralised batteries, blockchain*

- Additional playgrounds to test our solutions & more
  - ERA-NET project, H2020, …

BACK-UP SLIDES

DSO – Tariff incentive?



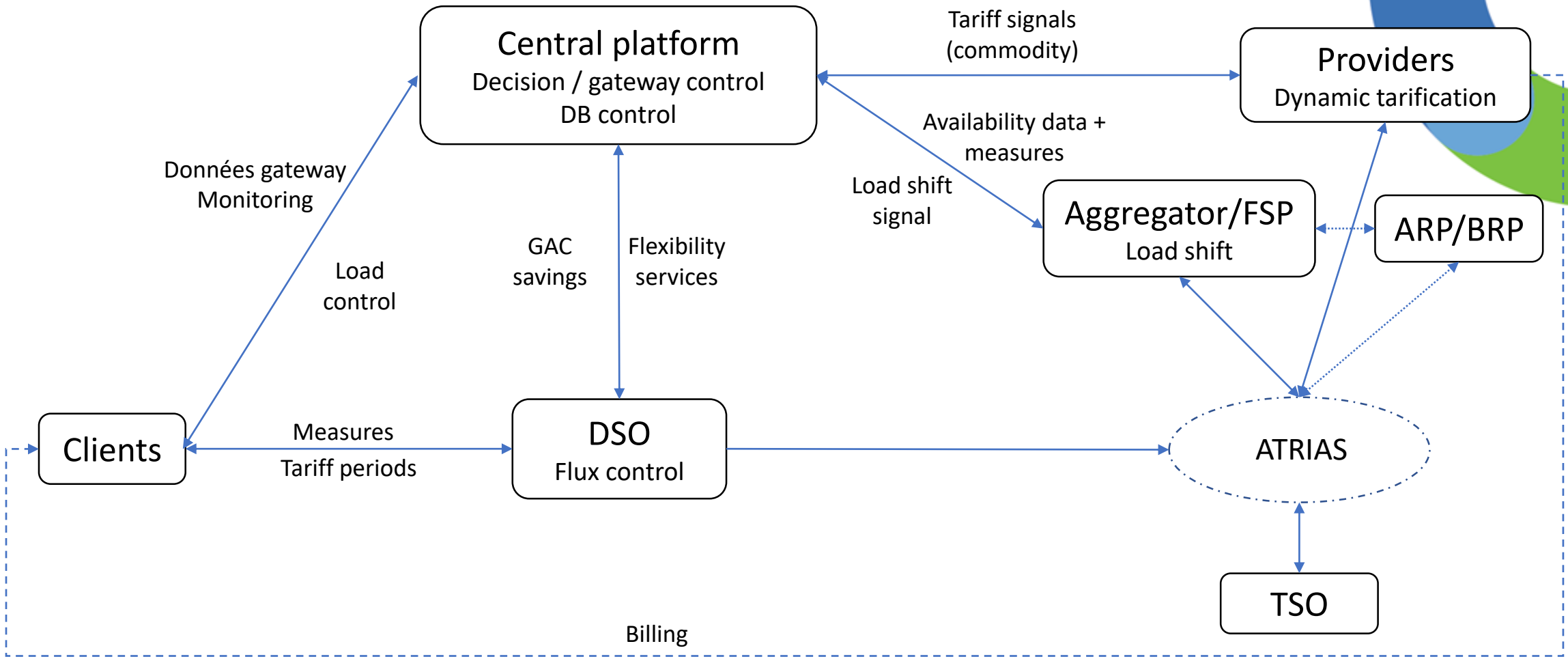
Type of tariff	GAC objective	Units
Variable capacitive	Avoid peaks	€/kW or €/kWh
Fixed capacitive	Lower P subscribed	€/kVA
Proportional *No compensation*	Increase autoconsumption	€/kWh
Proportional *Injection tariff*		
Fixed capacitive		
Variable capacitive		

Proportional tariff

- Tariff MV + transfo MV/LV + tariff LV → consumption transfo
- Tariff LV → autoconsumption neighbordhood

→ Diversification of time periods

Global scheme



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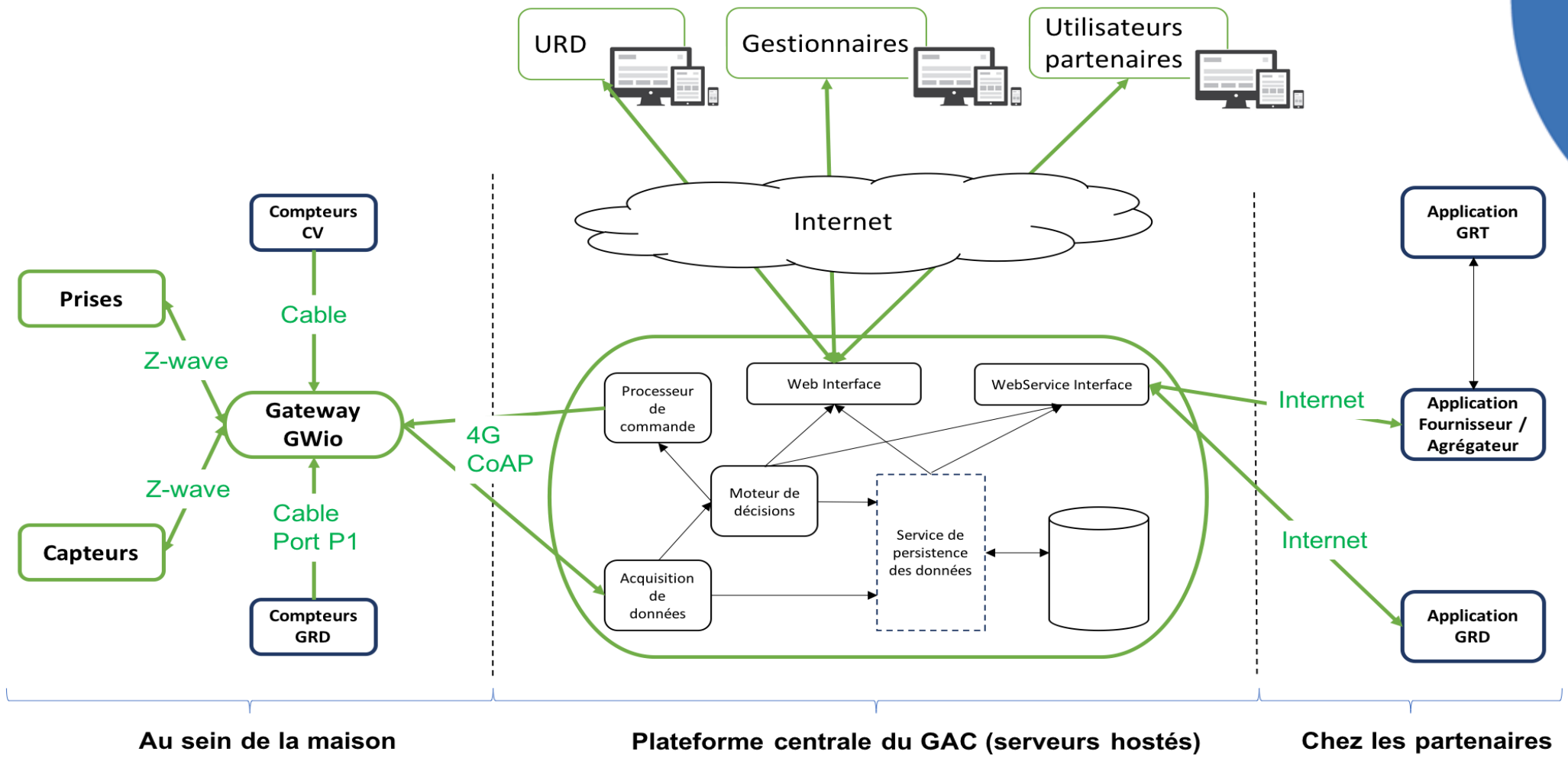
IT ARCHITECTURE



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