

Balancing renewable power at the European scale

Aggregation, Demand Response, Balance Responsibility, and so much more...





- Content -

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- 2) Creating a “real-time operator”**
- 3) Why at the European scale ?**

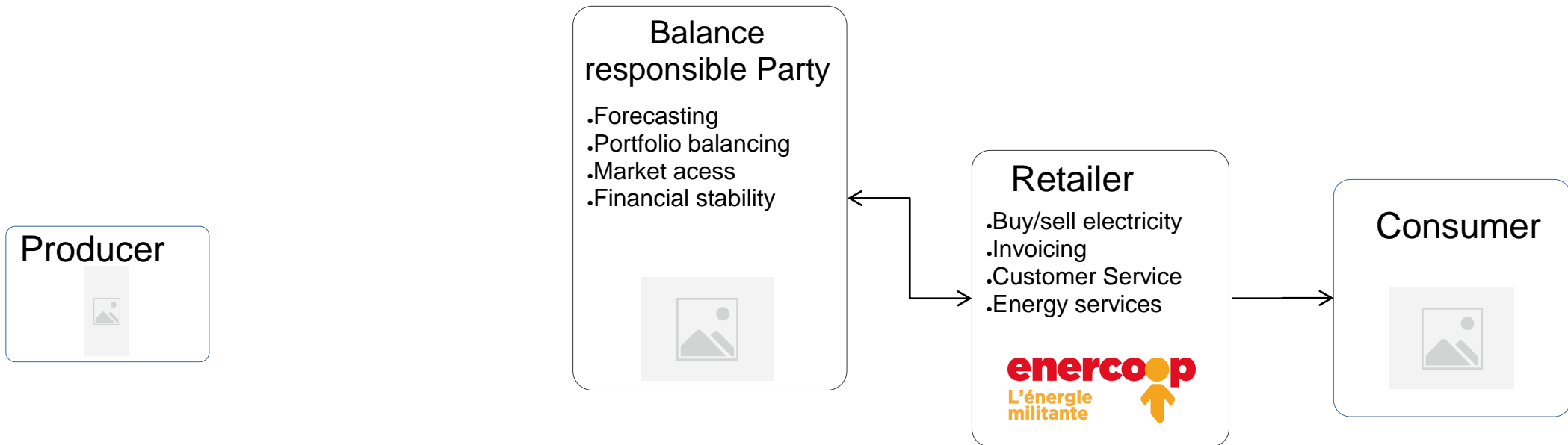
Part I

The electricity value chain





Electricity Market Players



→ Selling energy or services



What is a BRP ?

The **balance responsible party (BRP)** is *financially* responsible for maintaining balance between

Production

Market buying

Imports



Portfolio balancing

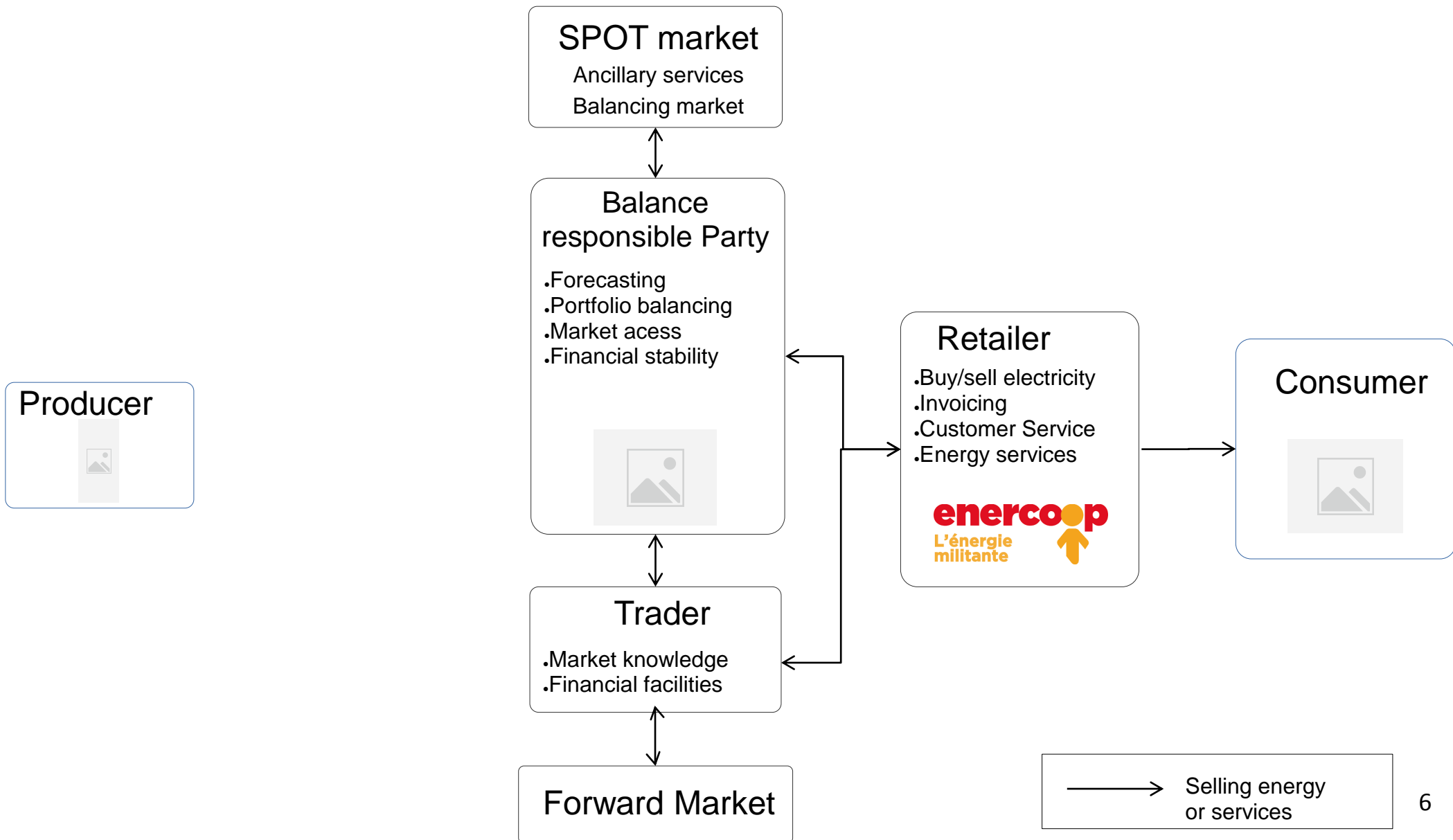
Load

Market selling

Exports

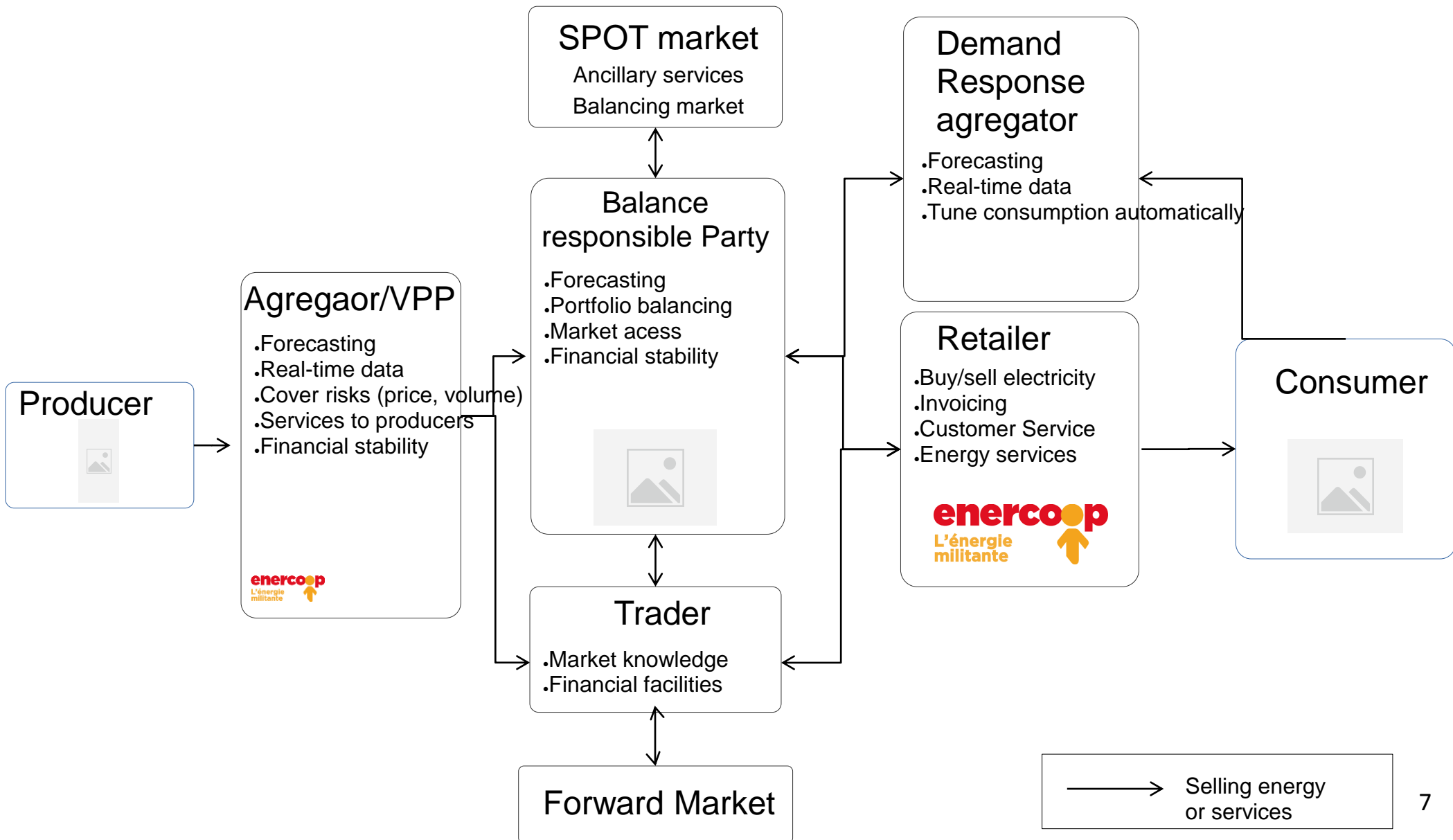


Electricity Market Players





Electricity Market Players



Part III

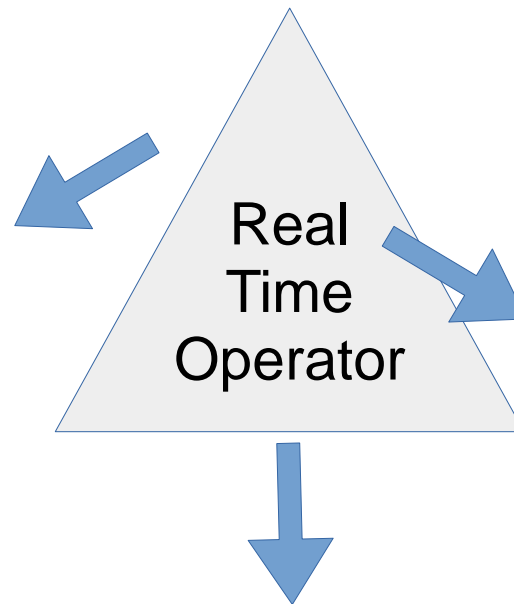
Create a real-time operator





Why ?

It's becoming
Core business



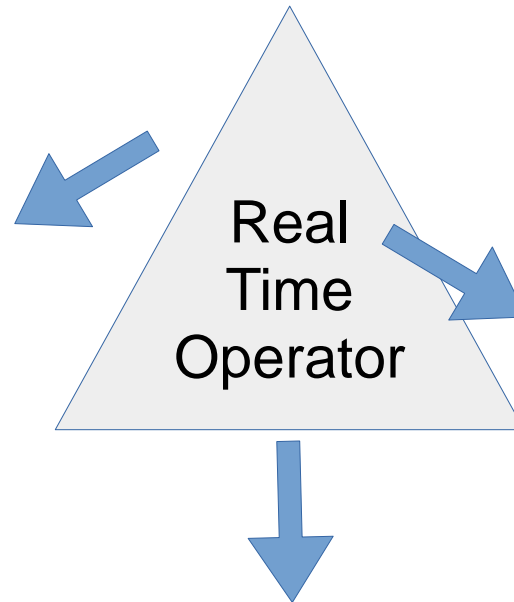
We should master
the data

We can offer
new services



Let's do it our way

Transparency
for the producers
technology,
market value



Transparency
for the consumer
technology,
data privacy

Cooperative
shared decisions,
shared ownership,
non-profit

Partie IV

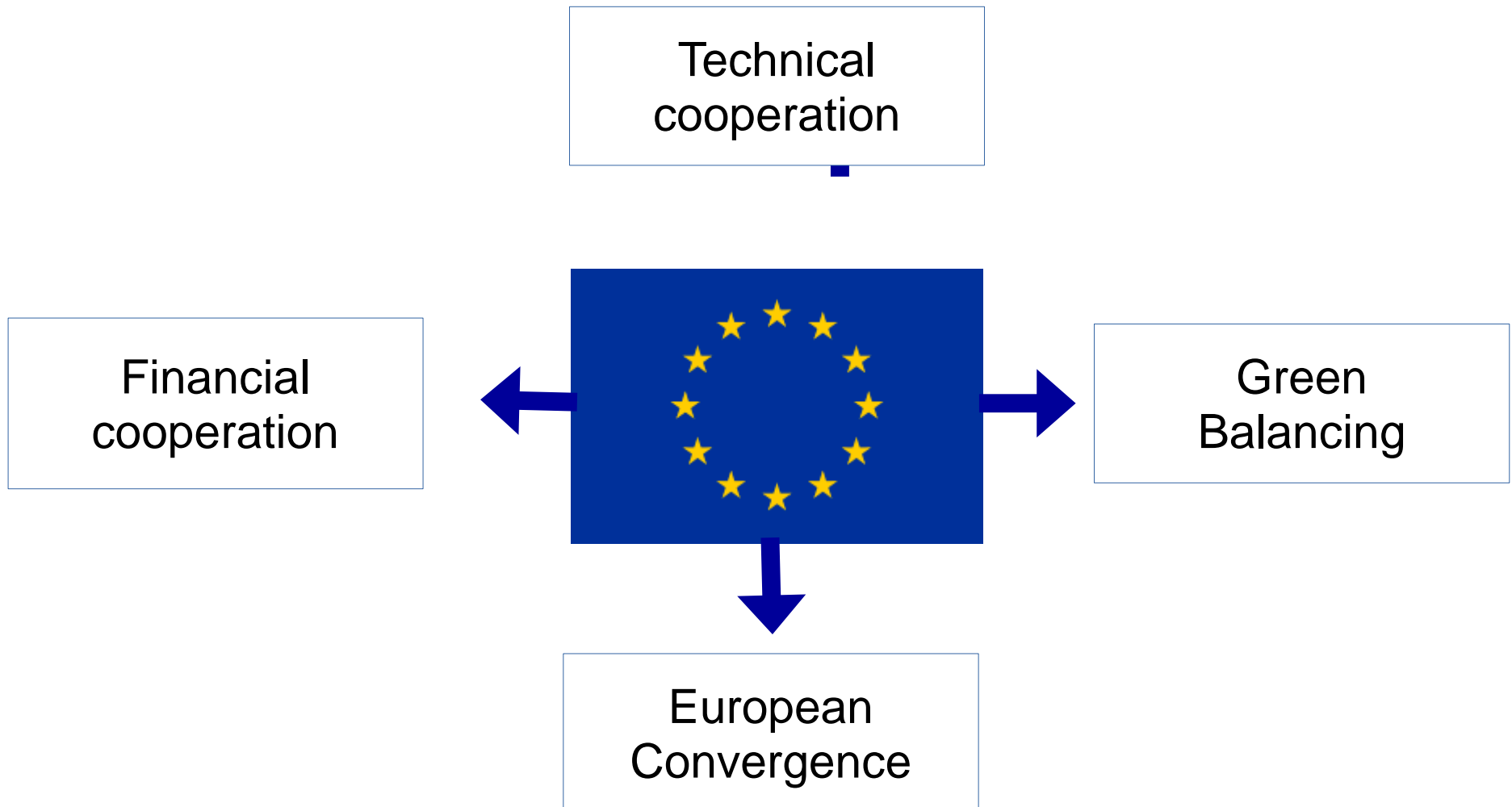
The European scale





The assets of the European scale

Today, balancing perimeters are at the national scale. So, why work together ?





Balancing : Now



Buys grey
electricity

Sells green
electricity





Balancing : Tomorrow



Green Balancing
(through interconnexions)





-Conclusion -

Let's create a real-time operator together because :

It's core business

- Pivotal role in the value chain
- Master production/consumption data
- Instrumental to launch new services (VPP, demand response)



It's doable !

- Reasonable investment
- Third party softwares already exist
- Balance responsibility is already a cost for us => internalisation

At the European scale

- Pool our skills
- Share the costs
- Go towards Green balancing



Thank you for
your attention !





First steps

1. Master the real-time data
2. Get access to the markets
3. Become BRP
4. Launch new services (demand/production aggregation, etc.)
5. ...



The technical needs

Data

- .Retrieve data from producers (as close as possible from real-time)
- .Retrieve data from consumers (as close as possible from real-time)
- .Retrieve data from TSO, DSO and markets
- .Aggregate, store and analyse data

Forecasting

- .Forecast production for each type of source, if possible with weather data
- .Forecast consumption via auto-regressive functions and additional weather data
- .Typical time-scale : day-ahead
- .At Enercoop we already have a PhD student working on forecasting

Market access

- .Need to access day ahead and intraday markets
- .Need to submit nominations to the TSO
- .Dedicated market/TSO software are already available ([Ez-Nergy](#))



The practical needs

Contracts

- .Contract with the Power Exchange
- .Contract with the TSO
- .(Contract with the DSO)
- .Contracts with producers/consumers allowing for aggregation

Human Resources

- .Enercoop's main BRP has only 2 employees !

Finance

- .Banking guarantee
- .Budget for internal or external IT
- .The typical total cost of the balance responsibility is 1€/Mwh (in France)



Technical Cooperation

Though balancing mechanisms, responsibilities and markets are not identical in Europe, the c

- Pool our technical skills (understand balancing mechanisms)
- Pool our informatics skills (big data, market access, invoicing)
- Develop together our new services (forecasting, demand response, VPP, ...)
- Share side costs (weather forecast cost, market access cost, ...)



Financial cooperation

- .Share the costs (human resources, informatics....)
- .Obtain more easily a banking guarantee (as a bigger market player)
- .Smooth the financial variability (balancing prices are volatile due to production and consumption)
- .Obtain European subsidies such as H2020 SME Phase 2