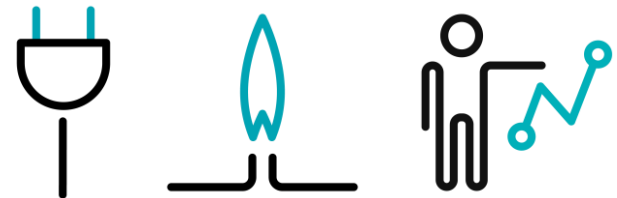


# Market model for the transfer of energy

## WORKSHOP IEA DSM – RESPONSIVE CONSUMERS AND VALUE OF FLEXIBILITY

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# Importance of demand-side flexibility

- Development of intermittent RES => need for more flexibility
- Lack of liquidity on markets where flexibility can be valorized
- How to bring more flexibility to Belgian markets?
  - Open markets to x-border exchanges
  - Open to other kind of (local) resources
    - Demand, small scale storage

# Importance of demand-side flexibility

Demand-side response can contribute to:

- Grid security (ancillary services)
- Security of supply (strategic reserve)
- Limit price spikes for the benefit of all consumers
- A better operation of the electricity markets by increasing liquidity and reducing market power

Demand-side response can generate additional revenues for consumers

## Preliminary comment

### **There is no single organized flexibility market**

Flexibility is a characteristic of resources that allows to capture benefits on some existing markets such as

1. Balancing markets (in Belgium: aFRR, mFRR)
2. Intraday market
3. Day ahead market
4. Strategic reserve market

# Why a market model?

The final customer must be the core of the chosen process

- He has to own his own flexibility
- He should be able to valorize it as he likes, on the market(s) of his choice with the intermediate party of his choice

But currently, he can only valorize it

- Via his supplier (who is not always interested because demand response could be in competition with his own production units and/or he keeps it for his own needs / to balance his portfolio)
- Via the TSO (participation of demand response is limited for some products)

⇒ **Lifting the barriers to access to markets is necessary**

⇒ **Freedom to valorize his flexibility must be given to the final customer**

# Why a market model?

Freedom of valorizing his flexibility must be given to the final customer ...

... **BUT** this freedom should not adversely affect other market participants

→ Without corrective measures, this could be the case

## The final customer

- signs a contract with the supplier in order for this latter to provide him with the necessary electricity needed to cover his consumption
- signs a contract with a third party (Flexibility service provider - FSP) to valorize his flexibility

# Why a market model?

## The supplier

- predicts his final customer's consumption
- buys electricity in order to cover this demand
- injects the predicted volume into the grid

## In parallel, the FSP

- sells the final customer's flexibility to a buyer (TSO, other market party) without informing the supplier,
- requires from the final customer to reduce his offtake by the volume sold
- diverts that volume of electricity to another final customer.



# Why a market model?

1. The supplier must pay the electricity he bought for his final customer. However the customer has not consumed it, it is not “seen” by the metering devices and the supplier can thus not invoice it to him

⇒ The supplier has a **shortfall that must be compensated**

The FSP sold this electricity => The FSP must compensate the supplier

2. The balancing responsible party (BRP) of the supplier has injected more electricity than the customer has consumed, the BRP has an imbalance and is exposed to a penalty (positive or negative)

⇒ The **imbalance must be neutralized**

## Why a market model?

3. If the final customer whose flexibility is activated is not able to adapt his consumption for the requested amount, the FSP does not assume the balancing responsibility between commitment and actual adaptation of consumption

**=> The FSP must take the responsibility of the imbalance between committed and delivered energies**

## Why a market model?

A market model is needed to correct these effects

BUT there are **confidentiality issues**:

- Supplier: with regard to the selling price
- FSP: with regard to his portfolio of final customers

The model adopted is intended to be applied to those final customers that are equipped with adequate metering devices (most of the time 15-minutes)

# Components of the model

## Main principles (1):

- *Every final customer is entitled to valorize his flexibility without opposition of his supplier or his BRP*
- *The FSP must take balancing responsibility for the activation of flexibility of the demand he manages*
- *The FSP may not act at the expense of other parties.*  
*Therefore:*
  1. *The balance perimeter of the source BRP must be corrected;*
  2. *The electricity supplier of the source final customer's must be subject to financial compensation.*

# Components of the model

## Main principles (2):

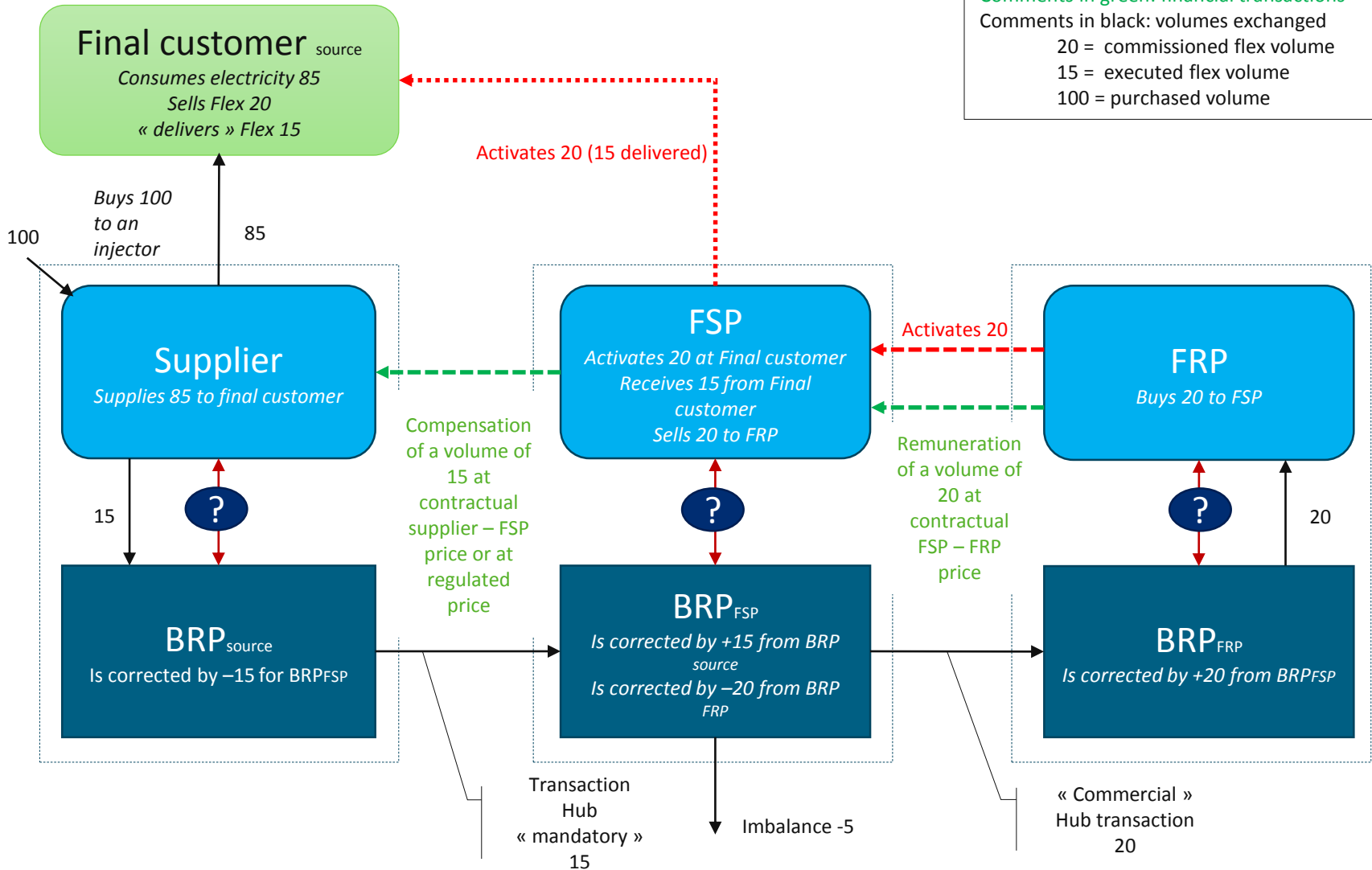
- *The final customer is the owner of his measurement and metering data, he must be free to have access to his data, in a timely manner with regard to the process for rewarding flexibility and be able to provide them freely*
- ***Confidentiality of commercially sensitive data must be guaranteed***

## Roles

- *New role: FSP*

# Interaction model

Comments in red: activations  
 Comments in green: financial transactions  
 Comments in black: volumes exchanged  
 20 = commissioned flex volume  
 15 = executed flex volume  
 100 = purchased volume



# Key characteristics

- a centralised data management model linked to the flexibility volumes allowing the neutralisation of the imbalance of the supplier's BRP and the accountability of the FSP (baseline + transfer of energy blocks among BRPs)
- a bilateral financial compensation model between FSP and supplier (at supply price or negotiated price)
  - + in case of disagreement, a fall back solution:
    - Transfer prices\*
    - Contractual clauses

needed, to avoid that a market player can hinder the access of demand response flexibility to the markets

## Key characteristics

- Give confidence to the suppliers that they will receive their financial compensation => common bank guarantee requested from the FSP toward all the suppliers in whose he activate demand flexibility
- Importance of giving confidence to market parties that receive aggregated data without being able to check it => external audit of the data management
- Regulated only when it is needed => possibility to derogate from the model if all the parties agree (supplier, FSP and their BRPs) (opt out)



## New law of July 2017

- The new law allows to implement the model detailed previously
  - Principles mentioned
  - New missions for CREG
  - New missions for ELIA
- Next steps
  - First phase of implementation: 1<sup>st</sup> June 2018: non reserved R3 market (bid ladder), end of year all R3 market

# Conclusion

- Demand response essential for good market operation (flexibility, SoS, competition)
- Customer has the right to market his flexibility
- Barriers to entry for Demand Response (DR) as low as possible: DR to market via final customer, supplier **and** FSP
- Confidentiality on price and flexible final customer identity is important => more complex market design
- Preferred models:
  - Free agreement of market players
  - Bilateral model
- Give confidence to the market players about
  - Data management by the TSO without possibility to check  
→ External audit

## References

- Etude CREG (F)160503-CDC-1459 du 3 mai 2016;
  - Intermediate report of 22 January 2016 – executive summary;
- Belgian law of 13 July 2017 (MB 19 July 2017);
- Décision CREG (B)1677 du 15 Mars 2018 (art. 19bis, §§ 3 à 5 de la loi de l'électricité);
- Elia's formal consultation on transfer of energy rules (art. 19bis, §2 of the electricity law).

# CREG



Commission for Electricity and Gas Regulation