



# Product Design Group Flexibility 26/04/2024



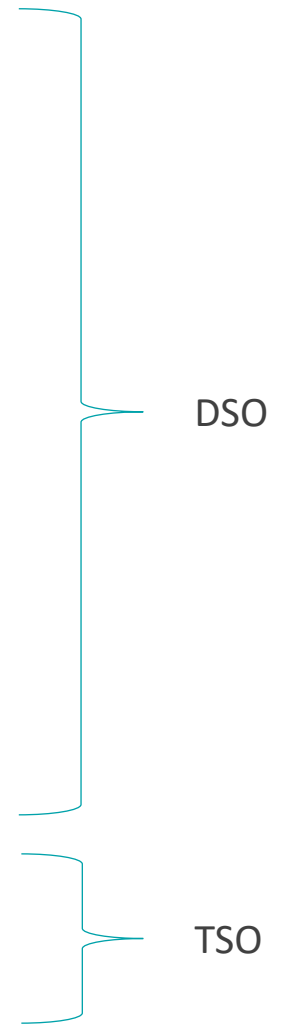
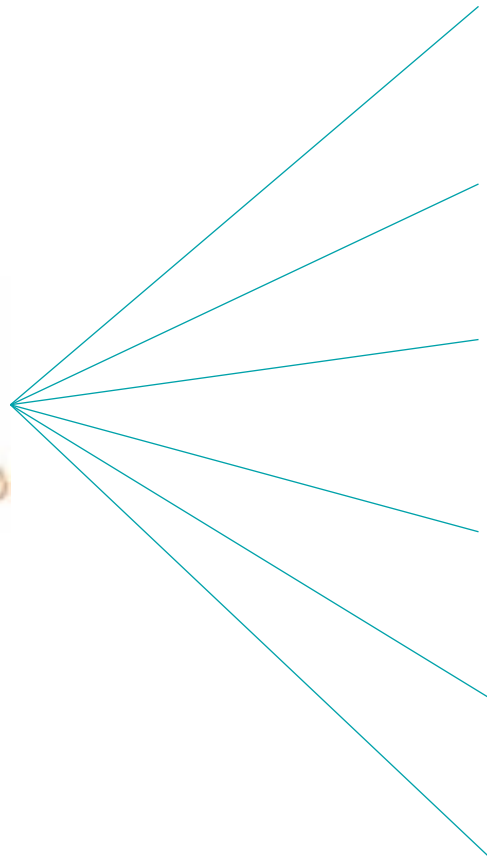
# Agenda

- Roadmap Flex 2024-2025
- Document release 2
  - Inform on Feedback consultation
  - Discuss next steps
- Document release 1b
- Study on the need of correction mechanisms on DSO end points
- Networking Drink

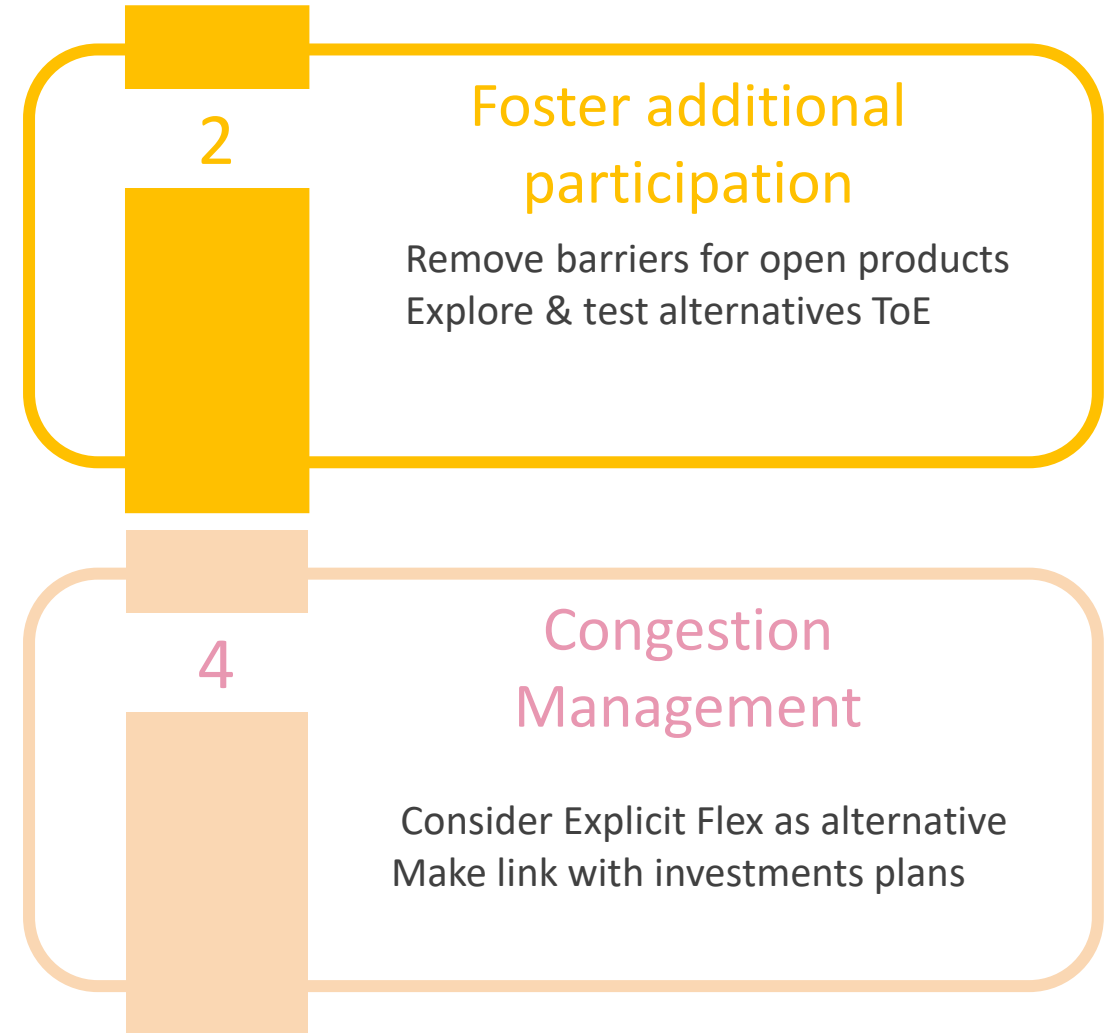
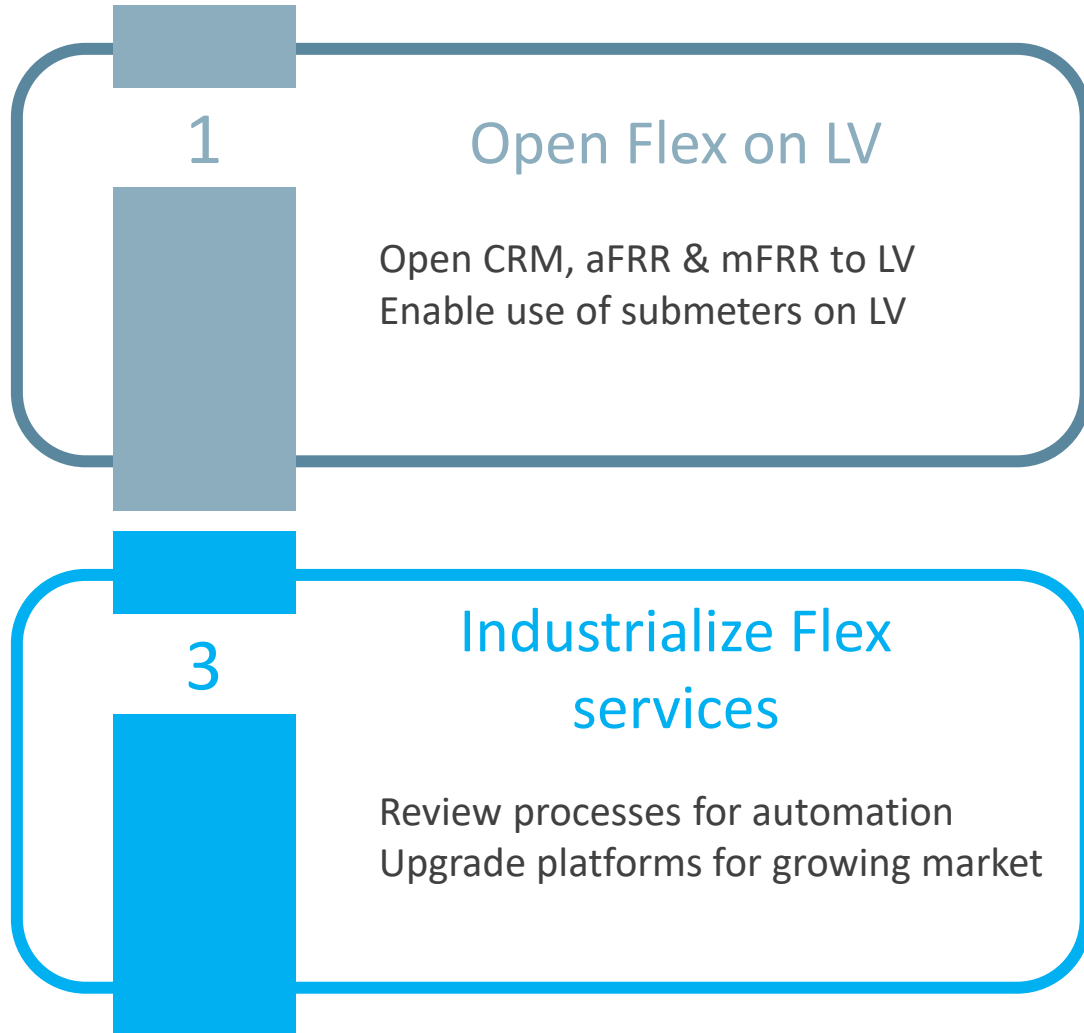
# Roadmap Flex 2024-2025



# Flex... a shared ambition



# Flex... a shared ambition



# 1- Open Flex on LV

|            | HV                | MV   | LV          |
|------------|-------------------|------|-------------|
| FCR        | Live              | Live | Live        |
| aFRR       | Live              | Live | Feb 2024 *  |
| mFRR       | Live              | Live | End 2024 ** |
| CRM        | Live              | Live | May 2024 *  |
| Congestion | Pilots DSOs & TSO |      |             |

\* & \*\*: subject to regulators validation

## 2- Foster additional participation

- Introduce Transfer of Energy Regimes
- Dedicated Meter Device requirements
- Visibility on congestion zones
- Simplification and industrialization of processes
- Reduce administrative work
- Foster end customer interest
- Enable flexibility within Closed Distribution System







## 3- Industrialize Services

- Steep growth expected of Flex devices
- Necessity to rethink processes
- Drive for automation
- Certainty to refactor the platforms



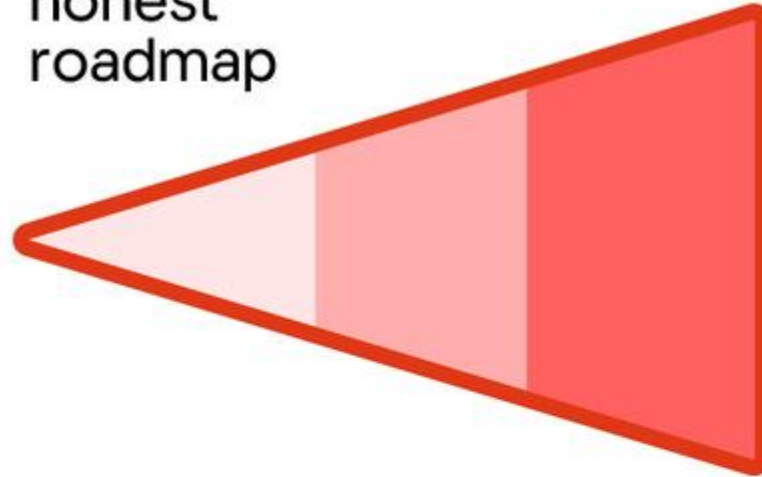
# Roadmap Flex

misleading  
roadmap



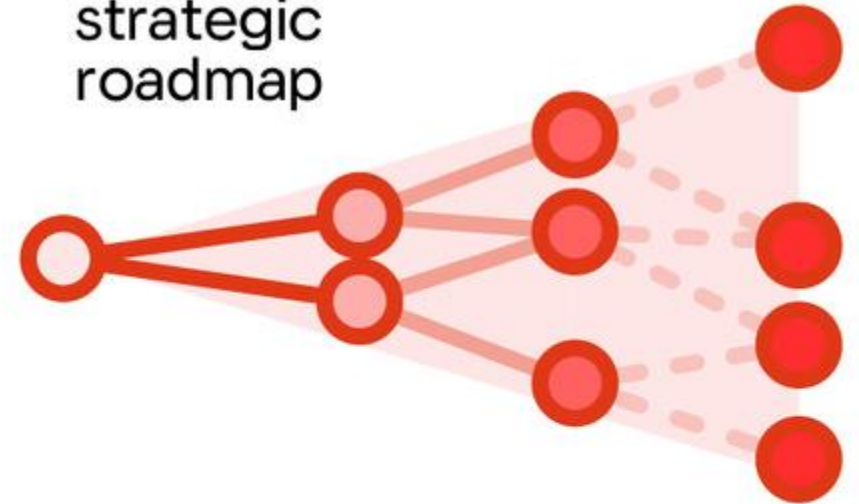
“We will follow this linear path from zero to our inevitable victory, and these are the milestones that will get us there.”

honest  
roadmap



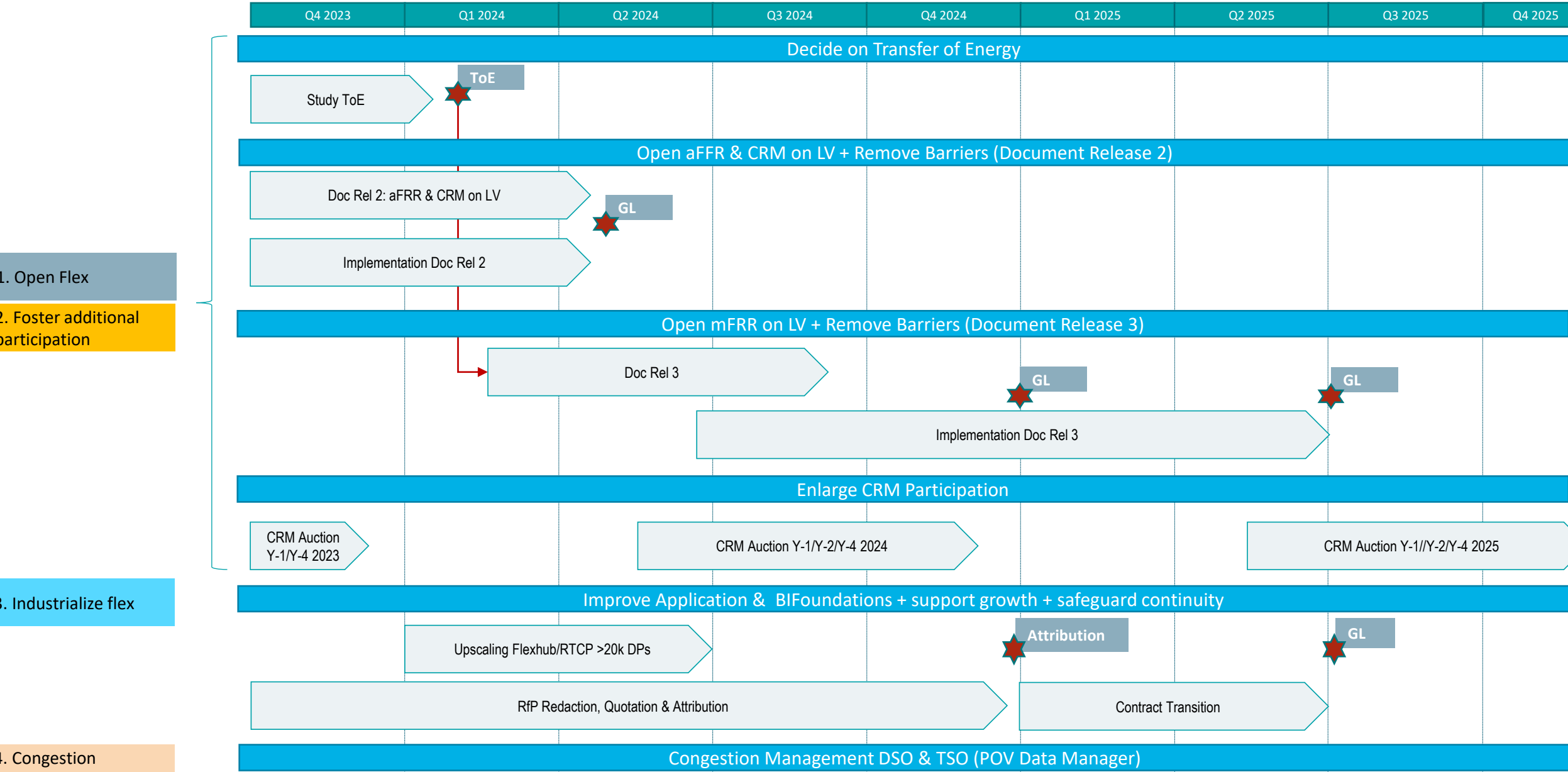
“We know where we are today, and have a good idea about the near future, but recognize that the future becomes uncertain.”

strategic  
roadmap



“We know where we are today, and anticipate decision points that will change our path. We are intentionally gathering the data that will help us make those decisions.”

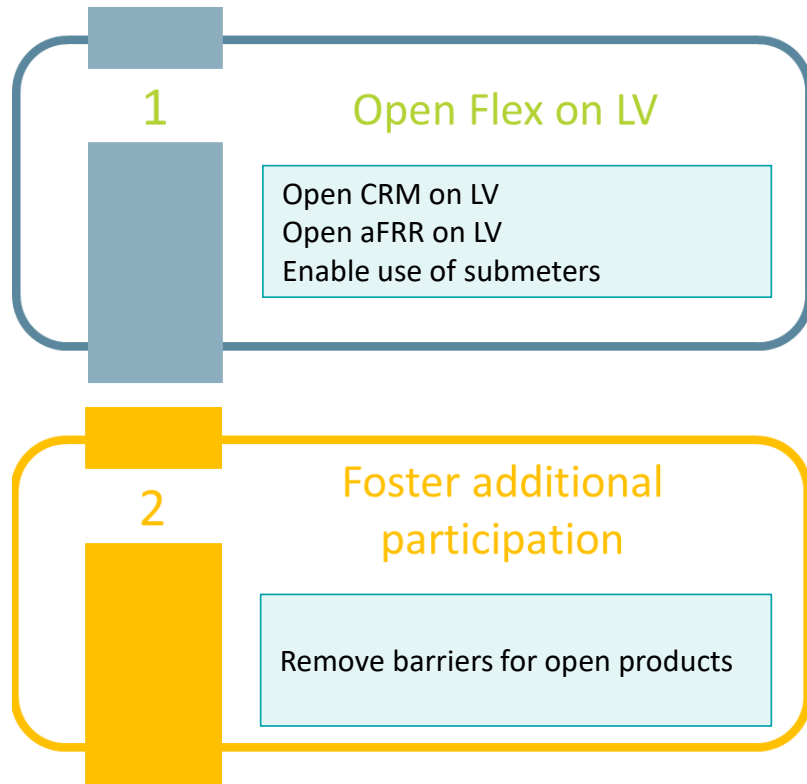
# From ambitions to Roadmap Flex



# Management Explanation Roadmap

| Project  | Goal   |
|--|--|
| Upscaling Flexhub/RTCP >20k DPs                | <ul style="list-style-type: none"> <li>Current Flexhub &amp; RTCP platform are scaled for 12k Flex Delivery Points (20k in peak). Project aims to start the upgrade of the platforms and processes in order to cope with more than 12k Flex Delivery Points</li> </ul>   |
| RFP Flexhub/Infrastructure                     | <ul style="list-style-type: none"> <li>Current contracts with NSX, IBM &amp; Delaware end in July 25 (maximum extension possible). Goal of this project is to have a new contract for the operations &amp; projects on the Flexhub and the Infrastructure of Flexhub/RTCP. The new contract should support the evolution on the Flex Domain till 2032.</li> </ul>  |
| Studie VITO: correctie mechanismen DSO-klanten | <ul style="list-style-type: none"> <li>In order to decide on which ToE mechanism to apply on DSO customers (LV &amp; MV) two tracks have been started. The VITO study aims to have a neutral &amp; objective view on how the problem is tackled outside Belgium, to list the pro &amp; cons and have a recommendation.</li> </ul>  |
| Alternatieve ToE on MV klanten                 | <ul style="list-style-type: none"> <li>In order to decide on which ToE mechanism to apply on DSO customers (LV &amp; MV) two tracks have been started. The real-life case aims to have some MV-customers participating in an alternative way of settling the ToE.</li> </ul>   |
| Doc Rel 2: General                             | <ul style="list-style-type: none"> <li>Amongst other Doc Rel 2 should allow the opening of aFRR and CRM on Low Voltage. In particular it adds the capabilities of grouping, an optimized onboarding procedure, a simplified NFS-procedure and relaxed metring requirements. The Doc Releases are subject to public consultation and regulators validation. In parallel Flexhub &amp; RTCP will be adapted to reflect the changes described in the doc releases. Finally the Terms and Conditions of Elia will be adapted.</li> </ul> |
| Doc Rel 2: aFRR on LV                          | <ul style="list-style-type: none"> <li>Opening of aFRR on LV can be achieved after validation Doc Rel 1. Low entry is expected, based on the feedback FSP. Therefor Doc Rel 2 aimed to remove barriers like for example the meter requirements or the work intensive onboarding/prequalification process.</li> </ul>   |
| Doc Rel 2: CRM 3.0                             | <ul style="list-style-type: none"> <li>LV-customers should be able to participate to the CRM auctions as of may 2024. Doc Rel 2 describes the changes to the processes and tools to allow this participation</li> </ul>  |

# Doc Rel 2

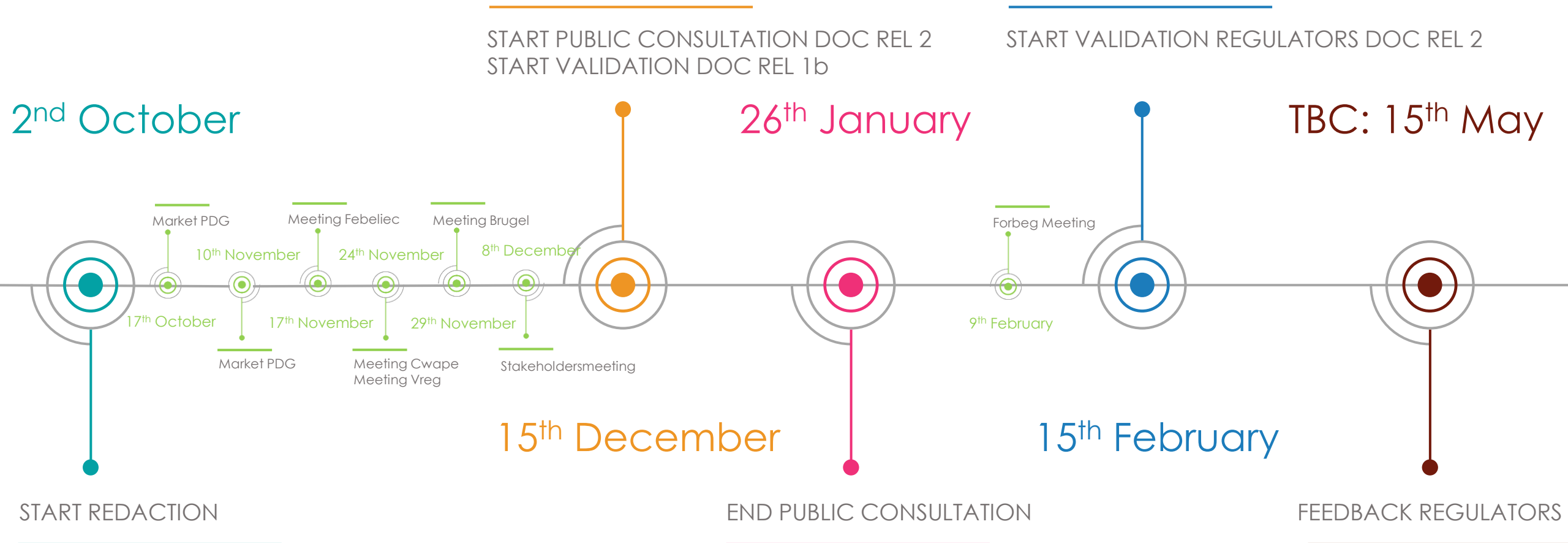




# Context



# Timeline – Doc Release 2





# Recap Content



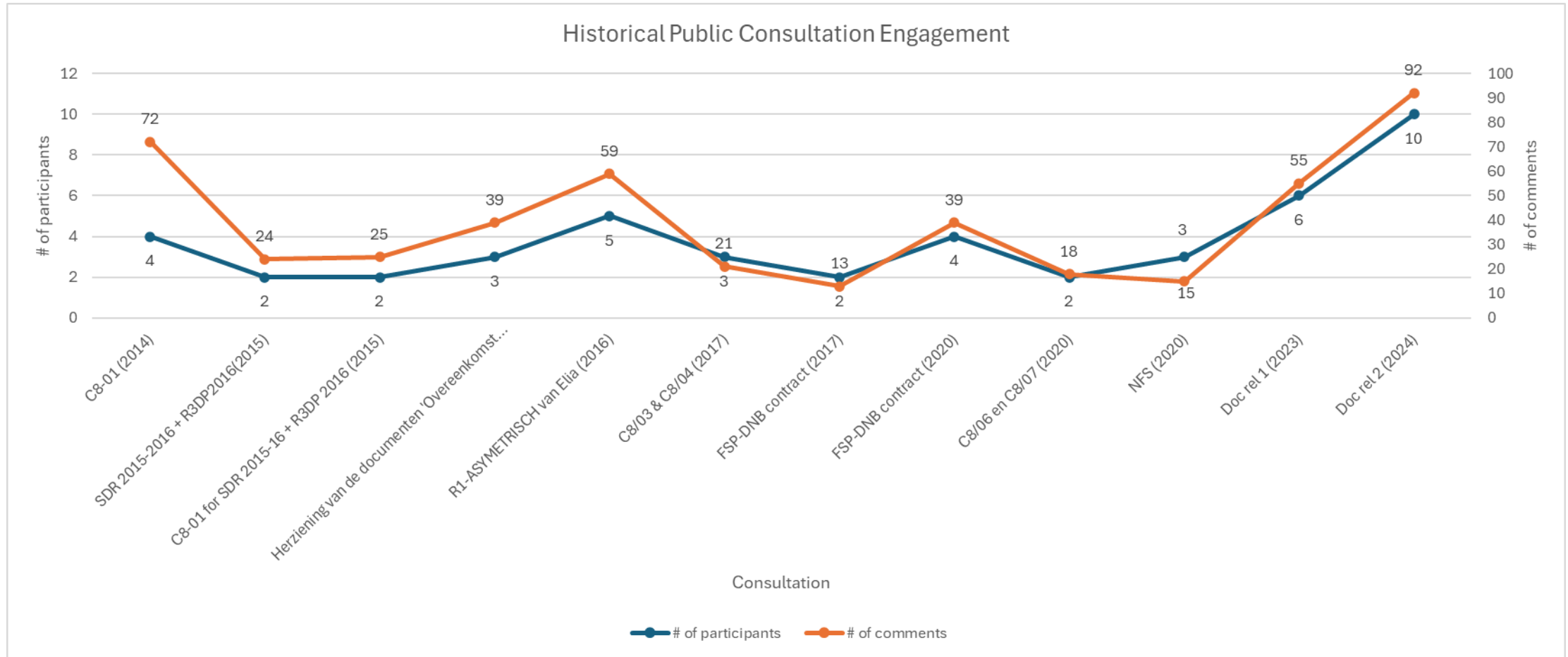
# Scope Doc Rel 2

- Remarks of regulators on Doc Release 1 (incorporated in Doc Rel 1b)
- AFRR LV Implementation
  - Pooling & Aggregation via LV Delivery Point Group
  - Automate Onboarding process for LV (unified request)
- CRM 3.0
  - Additional / Existing Delivery Point
  - Pooling & Aggregation via LV Delivery Point Group
- Interactions between flex and supply markets
- aFRR LV metering requirements
- Calculated meters
- 1 NFS Description for all three regions



# Consultation

# Evolution of consultations



# Active market actors

## Consulting



## Reacting



# General feedback

- Parties welcome the consultation and appreciate the **opportunities** given **to interact** with the DSOs & Elia
- Current proposals are seen as a **step in right direction** especially on the opening of the Flex Market on LV
- Although it is mentioned that it should **go faster**
- And that the **Time-2-Market** between elaboration of an idea and final go live is **too long**
- Generally speaking, there is a demand to get **clarity on next steps and roadmap**

# Feedback on content: NFS

## Feedback market:

- Relaxation for LV is welcomed
- Limited value
- Insured capacity within which end client has freedom
- Request for clear timing for processing NFS
- Proactive view on green/red zone is request
- Request for abolition or aligned with Low voltage

## Feedback Synergrid:

- Operational safety is of the utmost importance: NFS should remain possible
- The connection agreement specifies that the grid design is based on statistical assumptions and therefore does not ensure the insured capacity of end clients simultaneously.
- No change in document release 2. Assessment of further relaxation in document release 3

# Feedback on content: ToE

## Feedback market:

- Some parties expect no participation to aFRR LV with current opt-out framework
- Imposition of Opt-Out is seen as a barrier as FSPs report difficulties to agree on an Opt-Out agreement with suppliers
- Request for simple and less costly solution with limited/no administration
- Request for default ToE mechanism which avoids contractual framework between FSP/Supplier/BRP
- Integrate in regular market processes (Atrias)

## Feedback Synergrid:

- ToE is part of Roadmap in 2024 as part of document release 3
- VITO/Energyville-study ongoing



# Feedback on content: Data communication, sampling & aggregation

## Feedback Market:

- Real-time data communication is costly
- Data granularity requested harms the businesscase
- Necessity of having real-time 4 seconds data is questioned
- Fallback back files are complex to handle
- Request for sending aggregated data over a pool

## Feedback Synergrid:

- 4" granularity, individual and real-time data are requirements from the T&C BSP aFRR and should be treated in this context
- Level of aggregation will be influenced by ToE solution

# Feedback on content: Local vs Central gateway

## Feedback Market:

- Direct device communication (local gateway) is too costly
- Prevents streaming aggregated data for multiple private meters behind an access point
- Cloud steering is needed for participation of low voltage, which is not possible in local gateway set-up
- Request for reasoning behind end of transition period of central gateway by end 2024

## Feedback Synergrid:

- Deadline extended until 31/12/2026
- In meantime, possible solution investigated (e.g. mandate FSP to fulfil tasks on behalf of DSO)

# Feedback on content: multiple FSP

## Feedback Market:

- Barrier for unlocking full potential of flexibility with residential clients
- Lack of level playing field with other countries
- General favour for multiple-supply solutions

## Feedback Synergrid:

- First focus should be on removing barriers in case of single FSP and opening all products to LV (implementation ToE and mFRR)
- Multiple FSP will not be considered before end 2025

# Feedback on content: Mandates

## Feedback Market:

- Request to unify mandates over all products
- Request to automate mandates to reduce administrative workload

## Feedback Synergrid:

- Development of automated mandate capabilities will be requested as a feature of the new Flexhub contract (start contract: 2025)

# Feedback on content: CDSO

## Feedback Market:

- Request clarify processes for CDSO-level Delivery Points
- Roles and responsibilities should be clarified for Delivery Points on CDSO network
- Request to include CDSO in FSP-DSO contract
- CDSO-metering specification should be clarified

## Feedback Synergrid:

- Discussions started with Febeliec as part of Doc Rel2
- Scope not ready on time. Discussions still ongoing

# Feedback on content: mFRR on LV

## Feedback Market:

- Request to speed up the opening of mFRR on LV

## Feedback Synergrid:

- We agree on the necessity, but priority was given to aFRR
- Opening of mFRR on LV will be based on experience gained on aFRR on LV
- Definition of next steps in opening mFRR on LV is depending on ToE-decision
- Part of document release 3

# Feedback on content: SMR3

## Feedback market:

- Considering limited SMR3 meters role out, exceptions on the rules are requested
- An obligation of SMR 3 for aFRR and CRM participation is a barrier
- IT Challenges limit effective number of SMR3
- Suppliers do not offer dynamic contract and therefore no SMR3 is active in market
- End user is additionally charged for SMR3

## Feedback Synergrid:

- SMR3 imposed for “active customers” is the future
- Exceptions are given for regions without SMR3 possibilities
- IT challenges are not a barrier for DSO: IT-systems can cope with high amount of SMR3
- SMR3 regime is possible without a dynamic contract
- Additional charge is limited (E.g. Fluvius 1,17€/year)



# Feedback on content: CRM

## Feedback market:

- Request to be able to participate to both Y-1 as Y-4 auction for LV

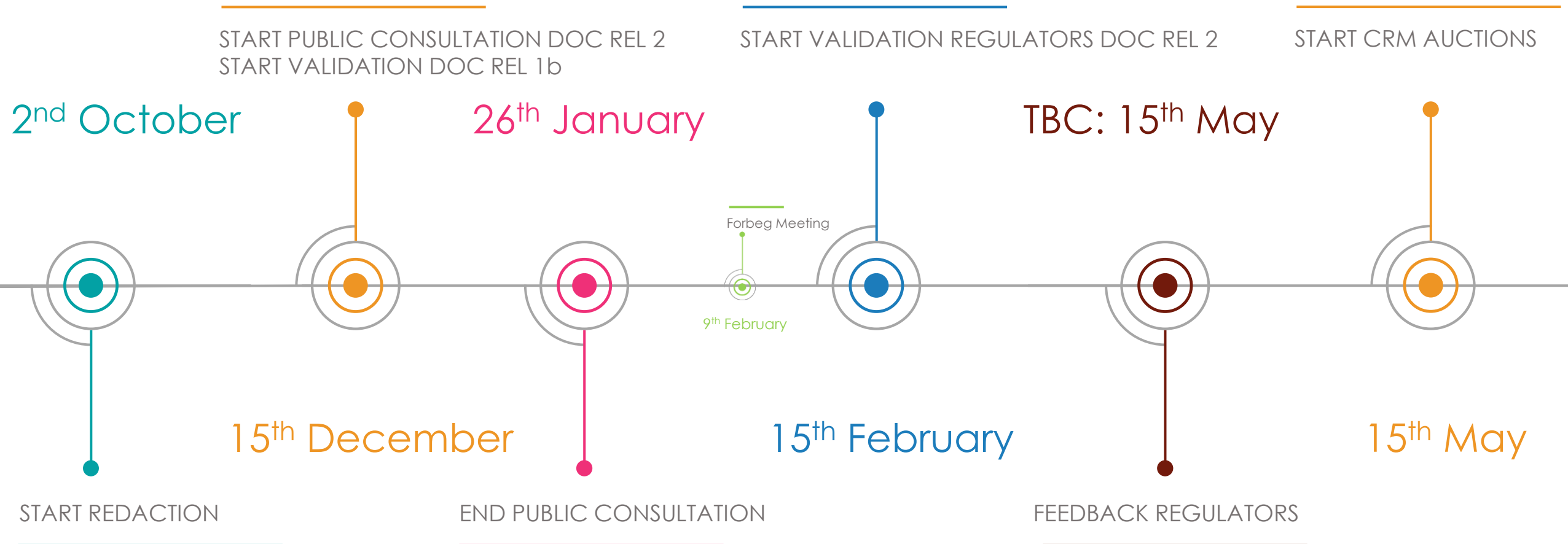
## Feedback Synergrid:

- Seems to be a misunderstanding in the text
- As of May 24 LV can participate to all CRM auctions (subject to regulators validation)
- Text will be adapted to avoid confusion

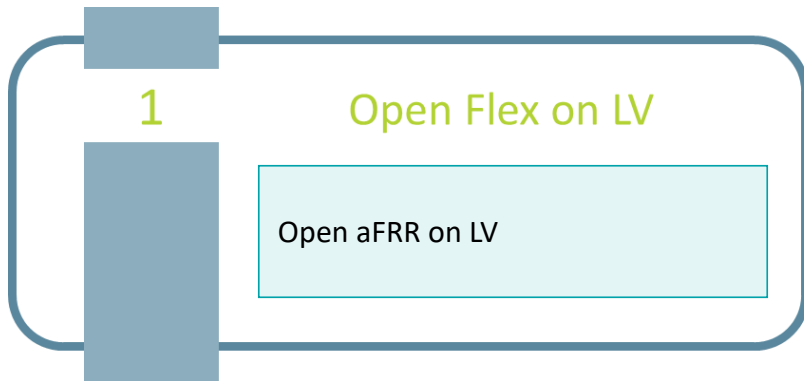


# Next steps

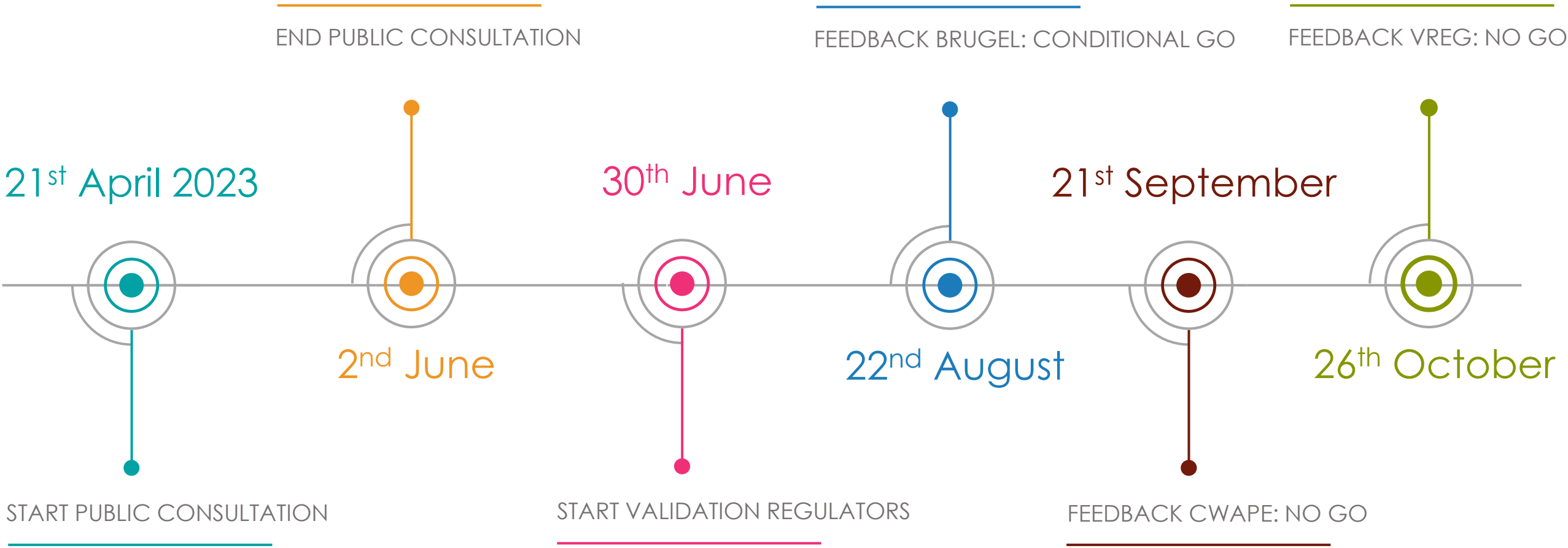
# Timeline – Doc Release 2



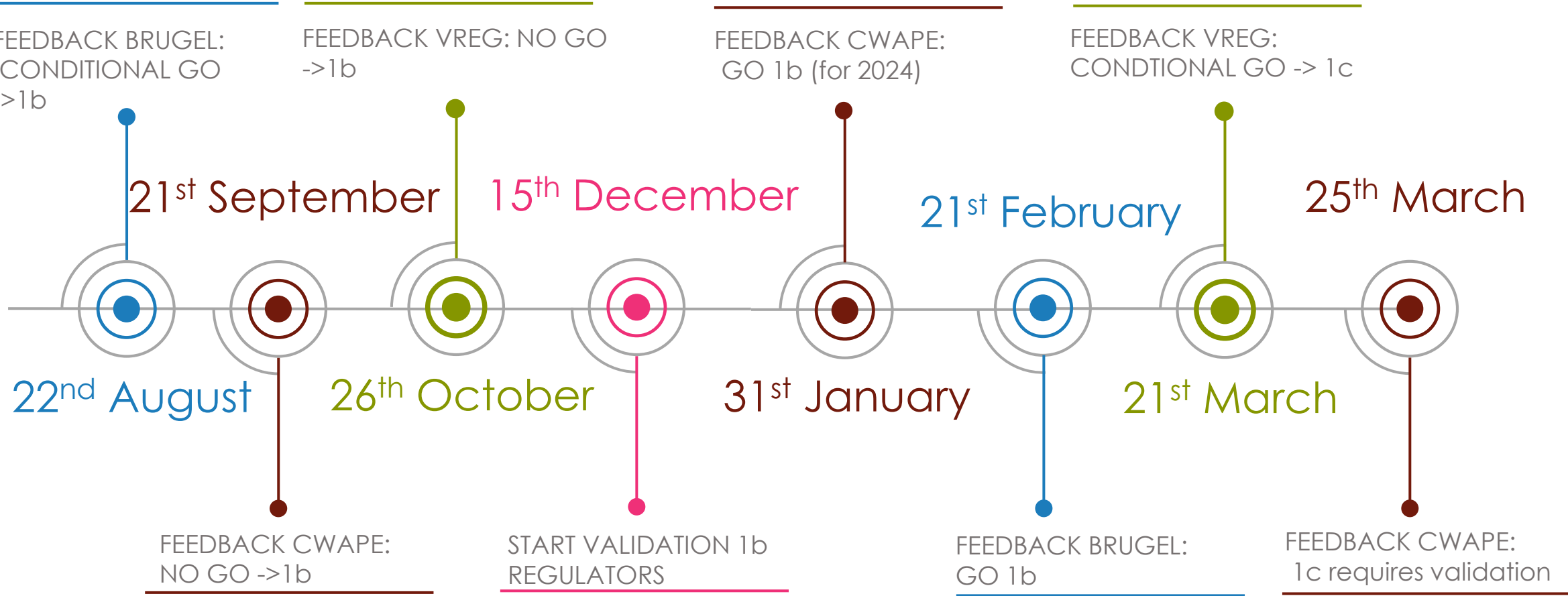
# Doc Rel 1b – “Fast Track aFRR”



# Timeline –Doc Release 1



# Timeline –Doc Release 1 continued



# Document release 1 - Status

- (A version of) Document release 1 has been approved in all regions with request for (small) modifications
- Having a uniform version across all regions would require another round of validation by regional regulators
- Document release 2 is expected to be around the corner

Decision: Publish doc rel 1b for Wallonia & Brussels, 1c for Flanders

Not intended as a precedent: doc rel 2 will once again be 1 uniform document for all regions



# Document release 1 – Publication schedule

- Publication of relevant documents on Synergrid website on 1<sup>st</sup> of May
  - On the webpage of the PDG Flexibility
  - Via the consultation page
- Market-wide communication of publication on 2<sup>nd</sup> of May

# Q&A – Document releases



# Study on the need of correction mechanisms on DSO end points





**Energy**  
**Ville**

# Study on the need for correction mechanisms for independent aggregation of DSO End Points:

## Summary of findings

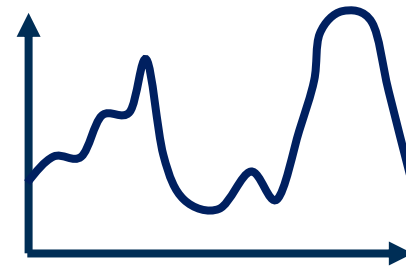
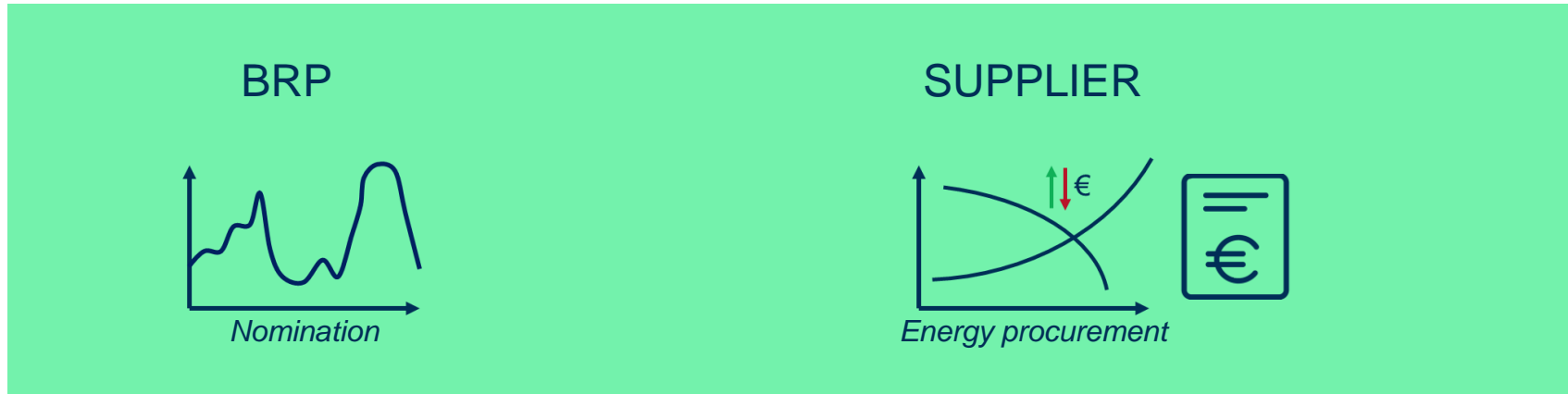
**Annelies Delnooz**



# INTRODUCTION

# Introduction

Need for correction mechanisms

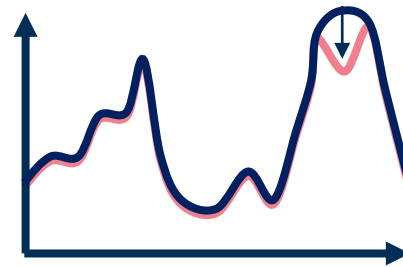
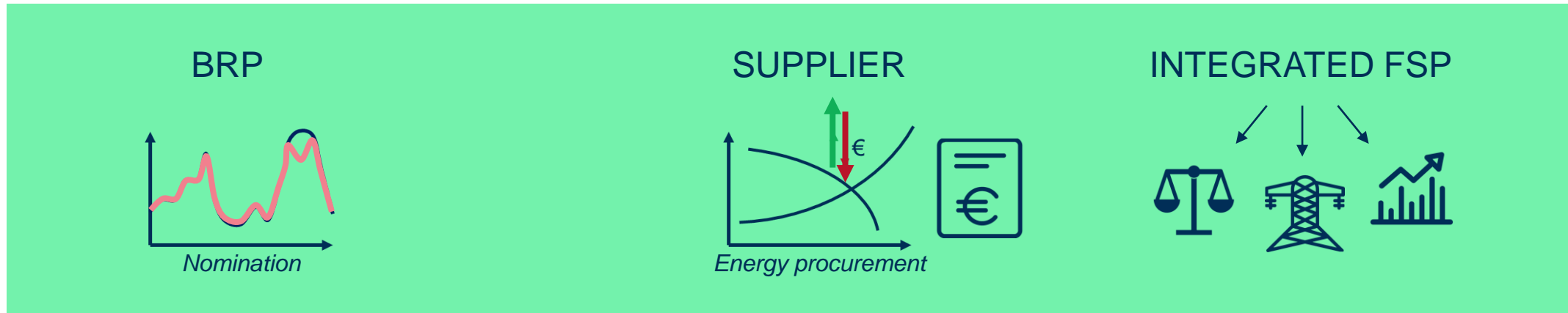


FLEXIBLE CONSUMER



# Introduction

Need for correction mechanisms



FLEXIBLE CONSUMER

# Introduction

Need for correction mechanisms

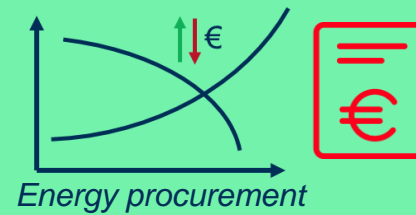
*Imbalance issue*

BRP

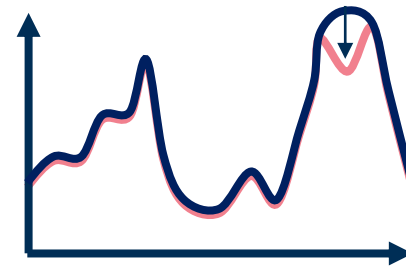
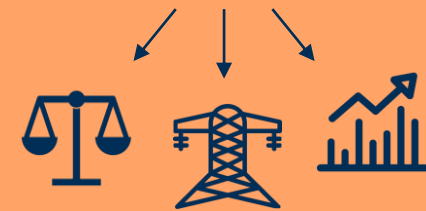


*Loss of revenue*

SUPPLIER



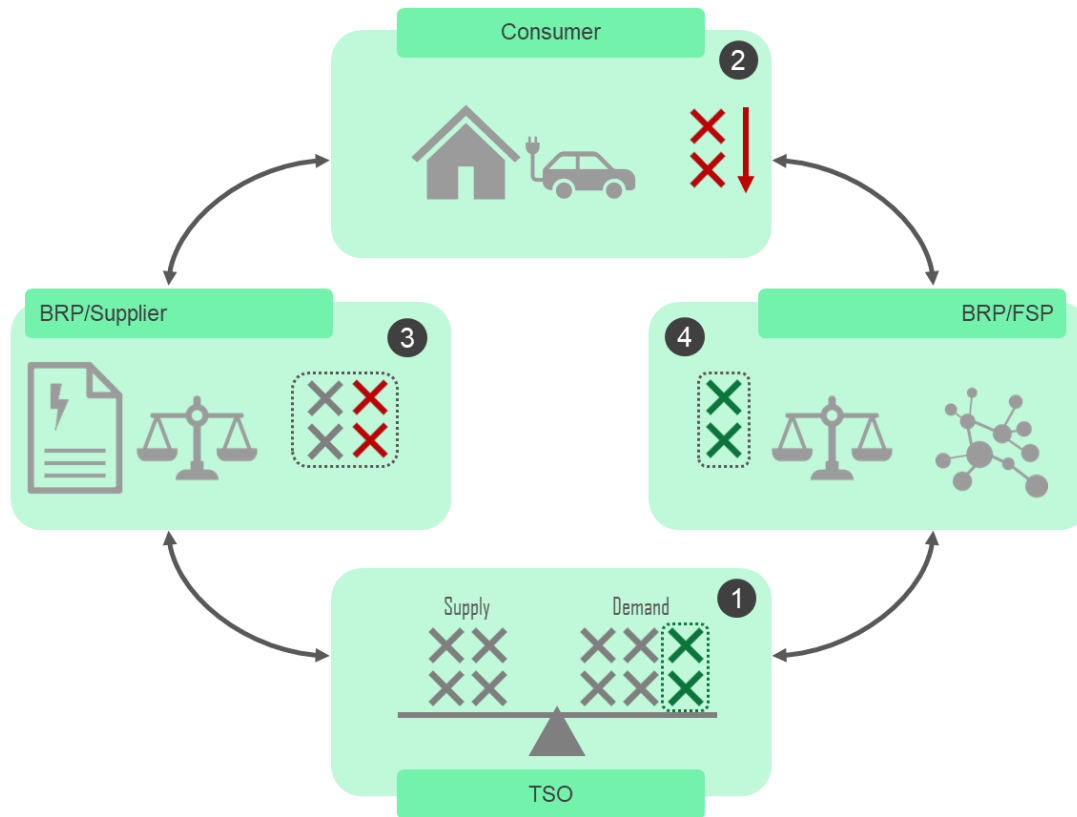
INDEPENDENT FSP



FLEXIBLE CONSUMER

# Introduction

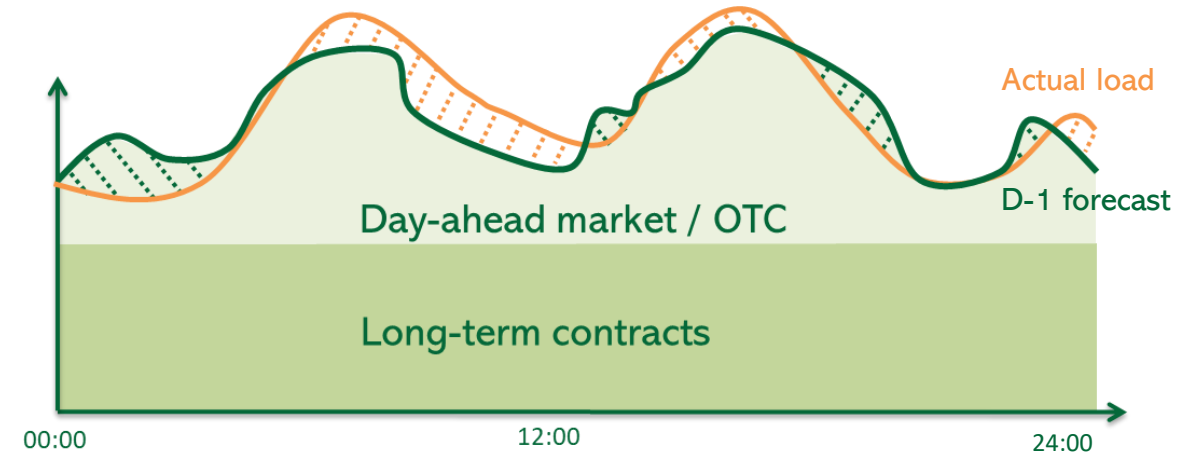
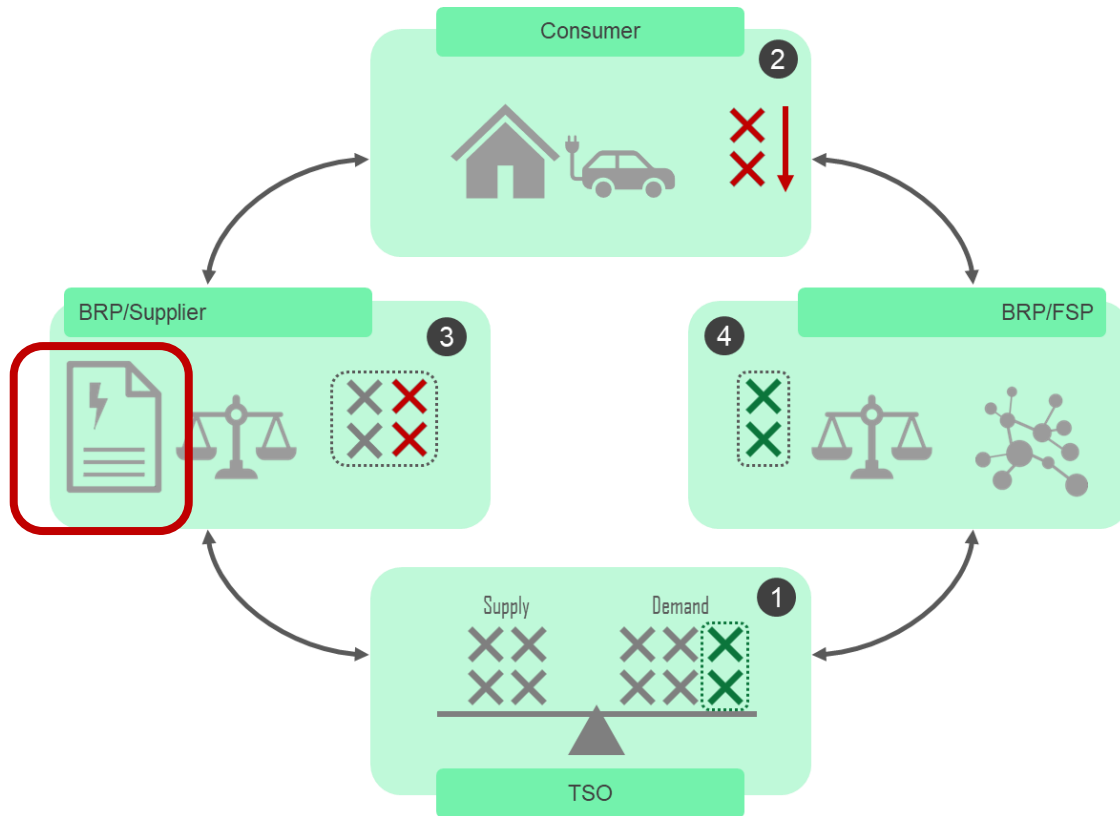
## The imbalance issue



- 1 The TSO experiences an imbalance within its control area due to an excess of demand
- 2 Via the FSP, the consumer receives a request to reduce his demand in order to compensate for the imbalance
- 3 The BRP/Supplier did not foresee the activation of flexibility and is 'missing' demand in his portfolio. Due to the opposite direction of the system imbalance this deviation is beneficial and he receives a compensation from the TSO.
- 4 The TSO adjusts the portfolio of the BRP/FSP for the activated balancing energy bid in line with the EBGL. The BRP/FSP portfolio then deviates in the same direction as the system imbalance, resulting in a compensation to be paid by the BRP/FSP to the TSO.

# Introduction

The loss of revenue

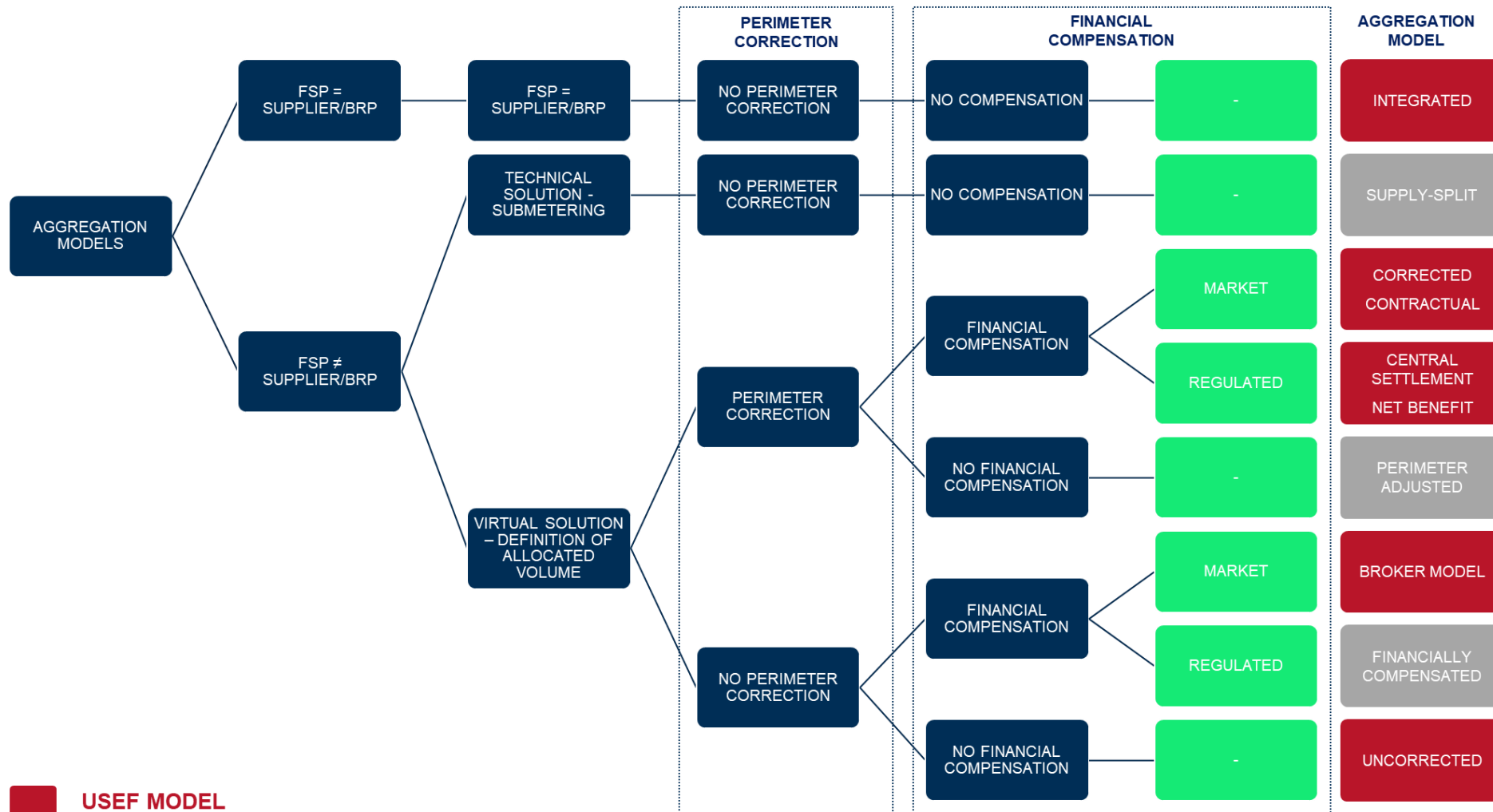


 Shortage of energy procured

 Surplus of energy procured

# Introduction

## Aggregation implementation models



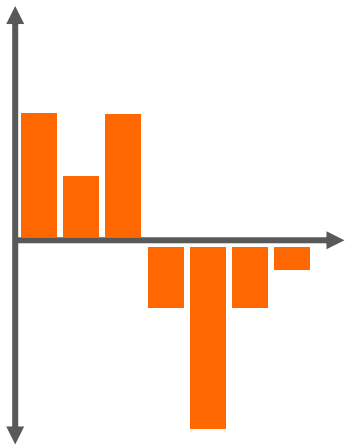
■ USEF MODEL

# Introduction

Complexity of the problem

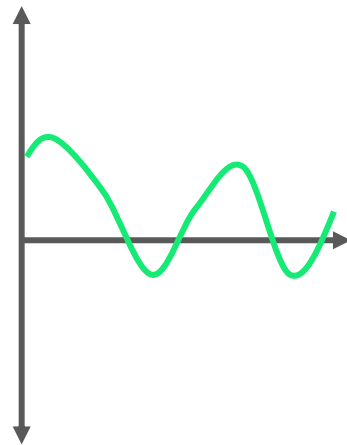
## FLEXIBILITY DIRECTION

Consume more or less?



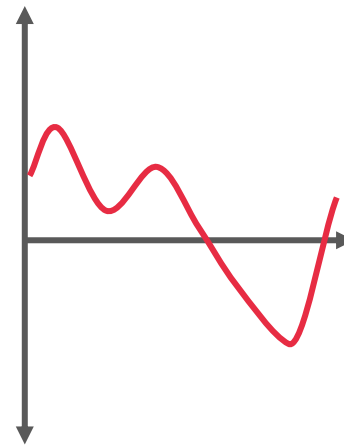
## IMBALANCE PRICE

Pay Elia or get paid?



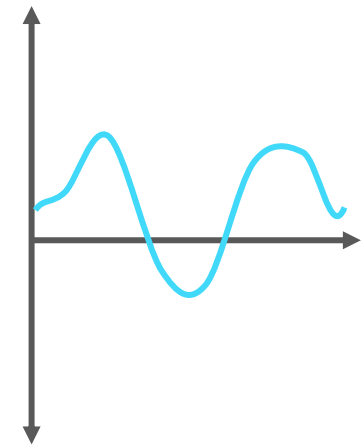
## SERVICE DELIVERY PRICE

Pay Elia or get paid?



## DA MARKET PRICE

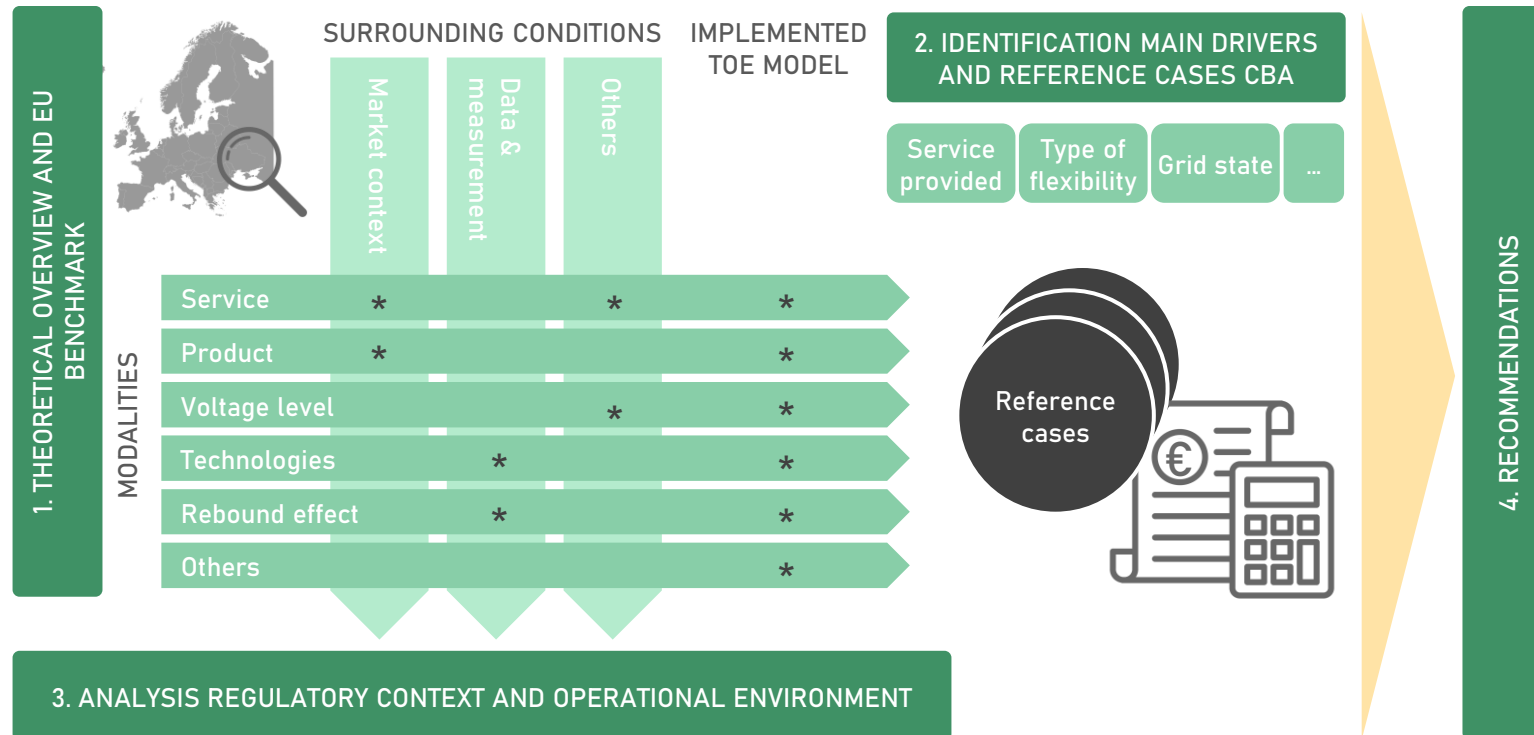
How much does electricity cost?



# Introduction

## Objective and approach

*The objective of this study is to investigate the need for correction mechanisms (perimeter correction and financial compensation) for flexibility activation. Starting from the implemented independent aggregation rules in Belgium and the ongoing design proposals, this study will focus on the possible design adaptations necessary for 1) the extension of correction mechanisms or 2) the introduction of alternative models to a large participation of delivery points connected to the distribution grid*



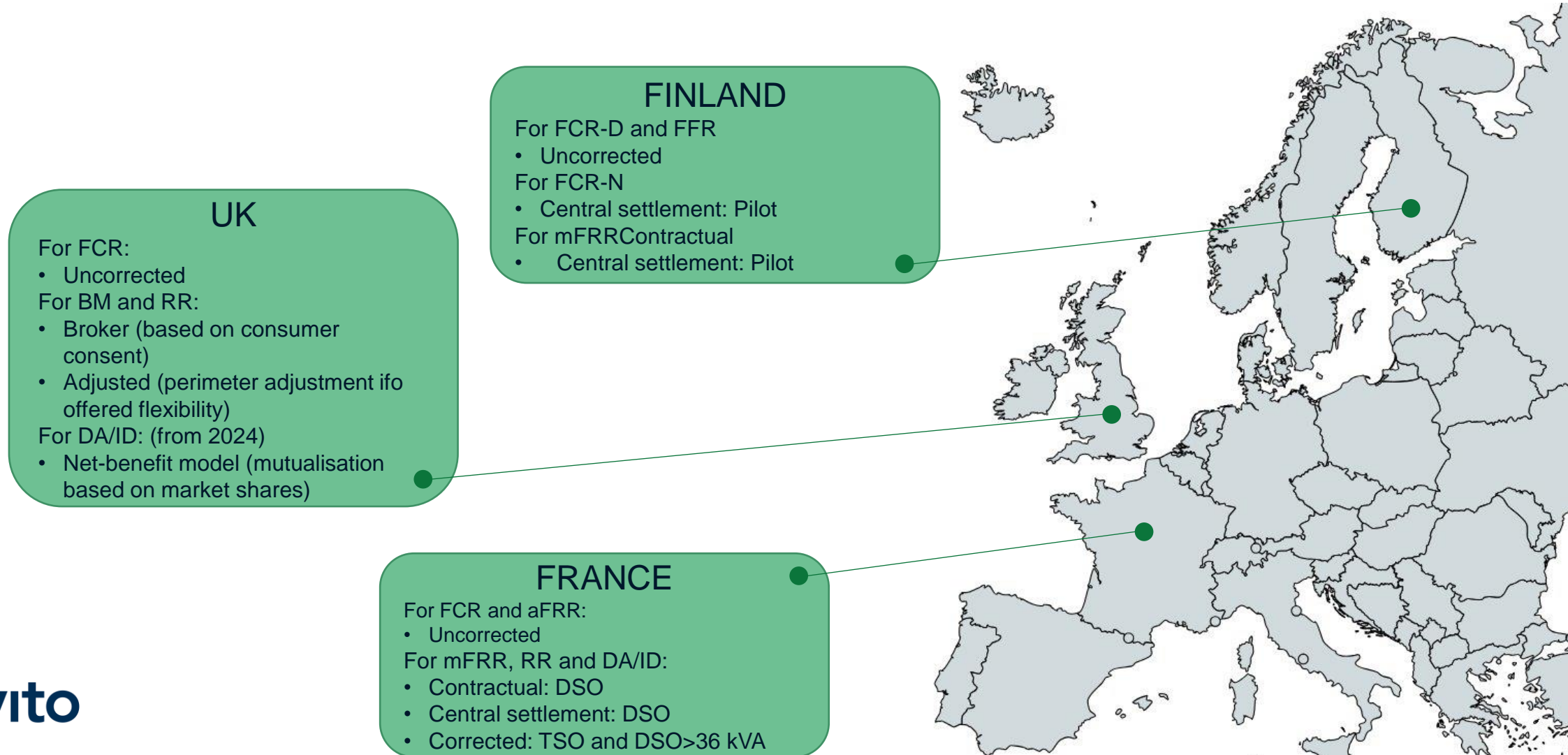




# EUROPEAN OUTLOOK

# European outlook

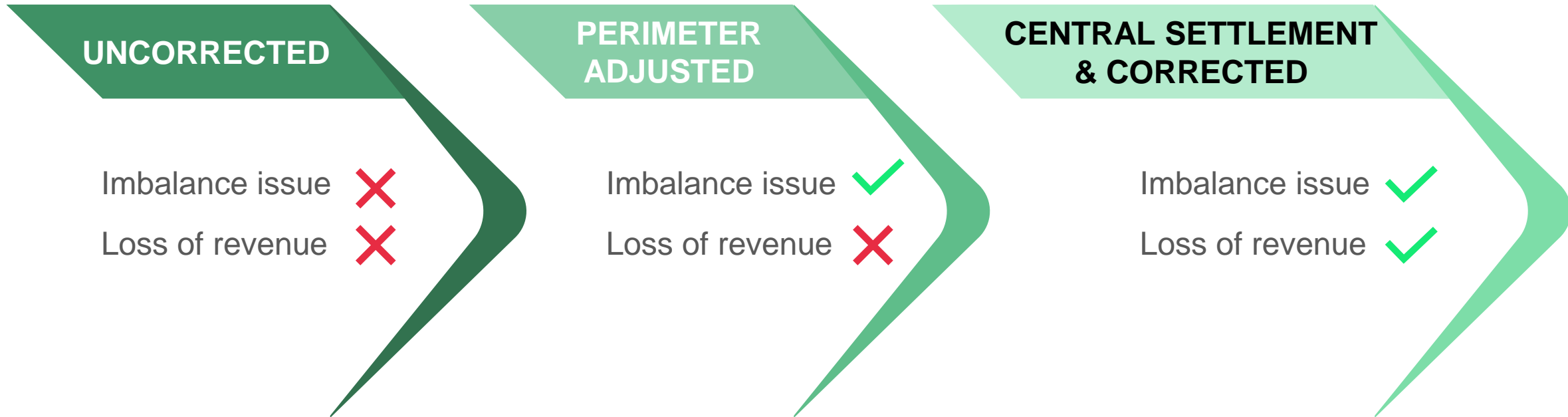
Limited Participation of LV Flexibility in EU  
Reduced sense of urgency in EU countries  
Proliferation of implementations





**QUALITATIVE  
IMPACT  
ASSESSMENT**

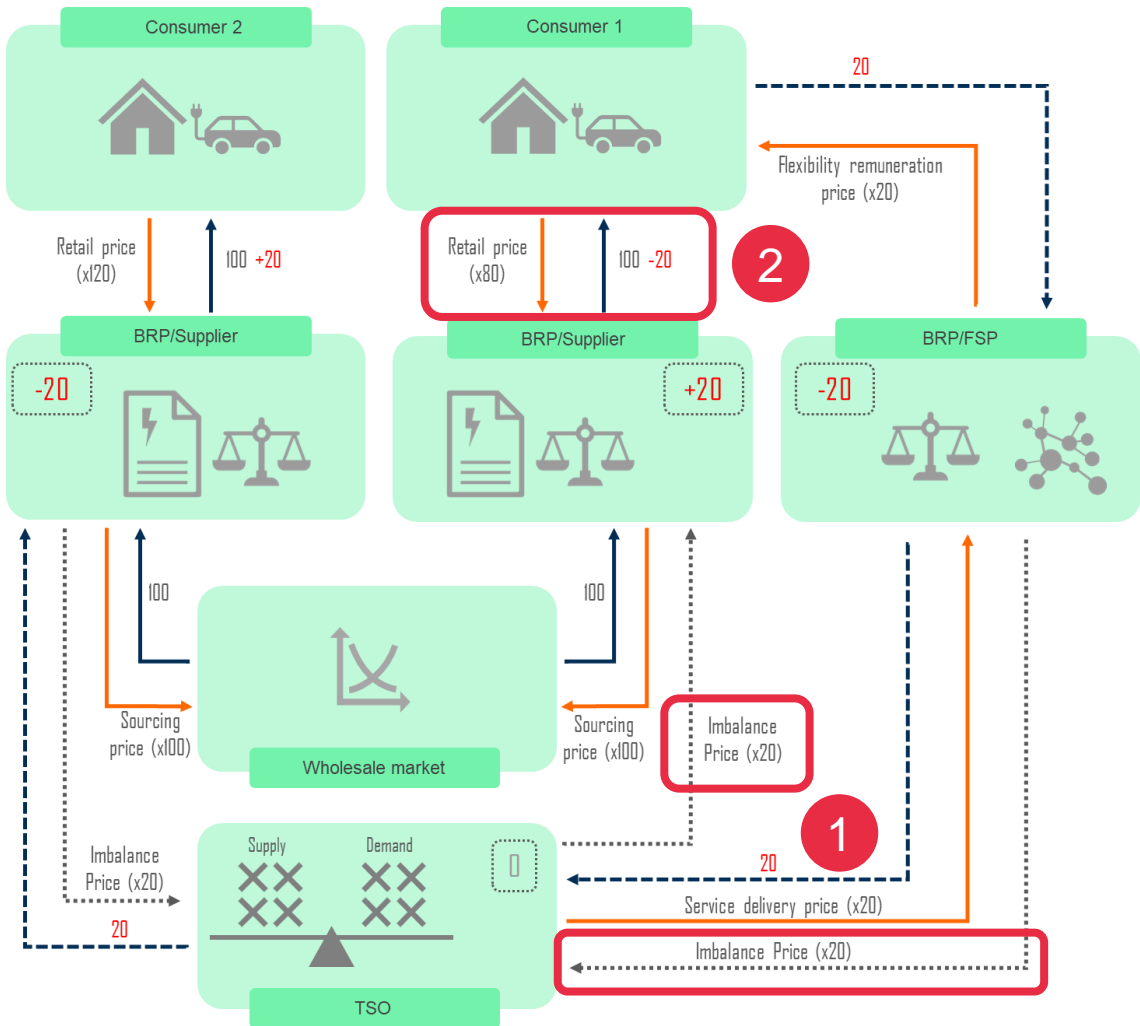
# Qualitative impact assessment





# Qualitative impact assessment

Uncorrected model: no corrections nor financial compensations

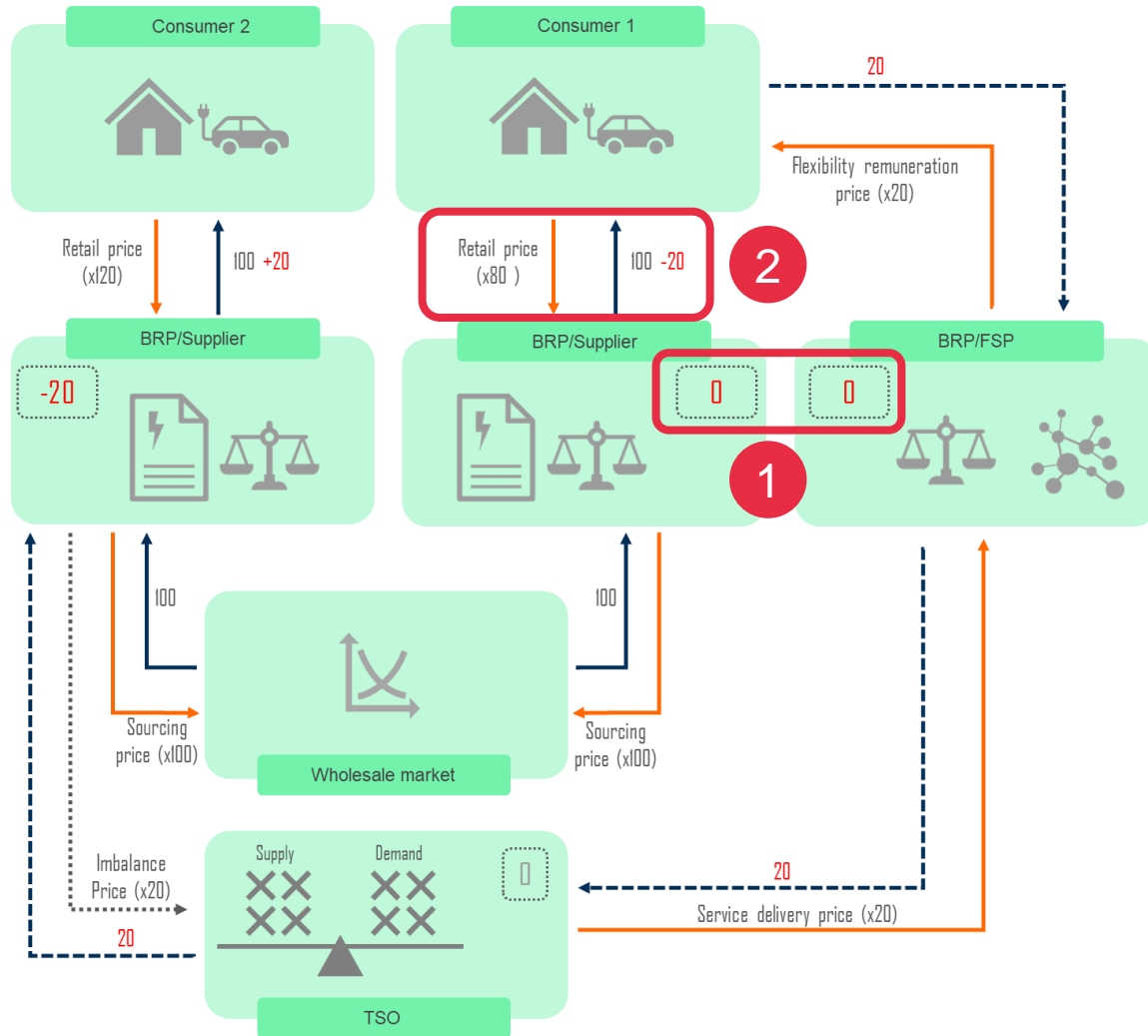


- 1 Independent FSP: exposed to the balancing cost following the SO adjustments which is a significant cost factor.  
Supplier: Imbalance revenue (being potentially in an opposite system imbalance) roughly compensates
- 2 Supplier: Loss of revenue and costs to procure electricity for flexible customers are not covered.

The current model presents a substantial negative impact on independent FSPs, rendering their participation in and provision of flexibility to the market unattractive.

# Qualitative impact assessment

Perimeter adjusted model: perimeter is adjusted



- 1 Independent FSP: no longer exposed to the balancing cost following the SO adjustments  
Supplier: no longer receives an imbalance revenue
- 2 Supplier: Loss of revenue and costs to procure electricity for flexible customers are not covered.

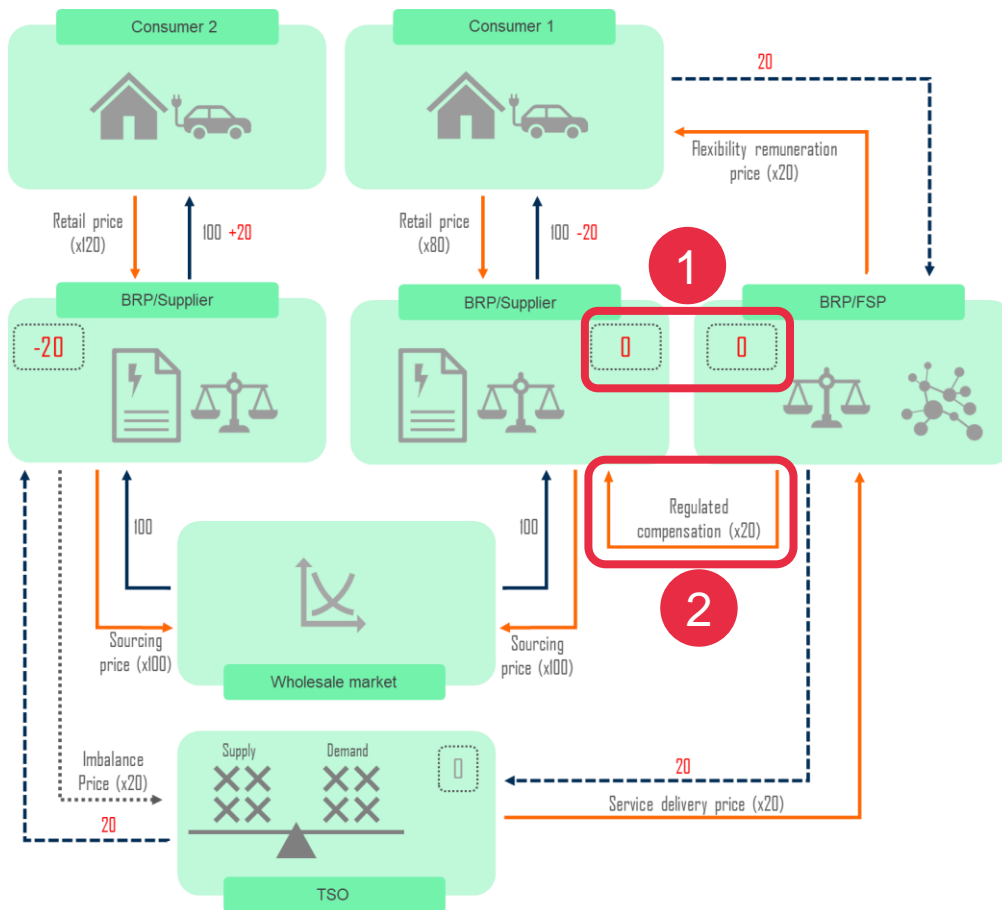
The position of independent FSPs has improved and flexibility provision is now more attractive, but the absence of financial compensation adversely affects suppliers, leading to an unequal playing field between suppliers and FSPs.

# Qualitative impact assessment

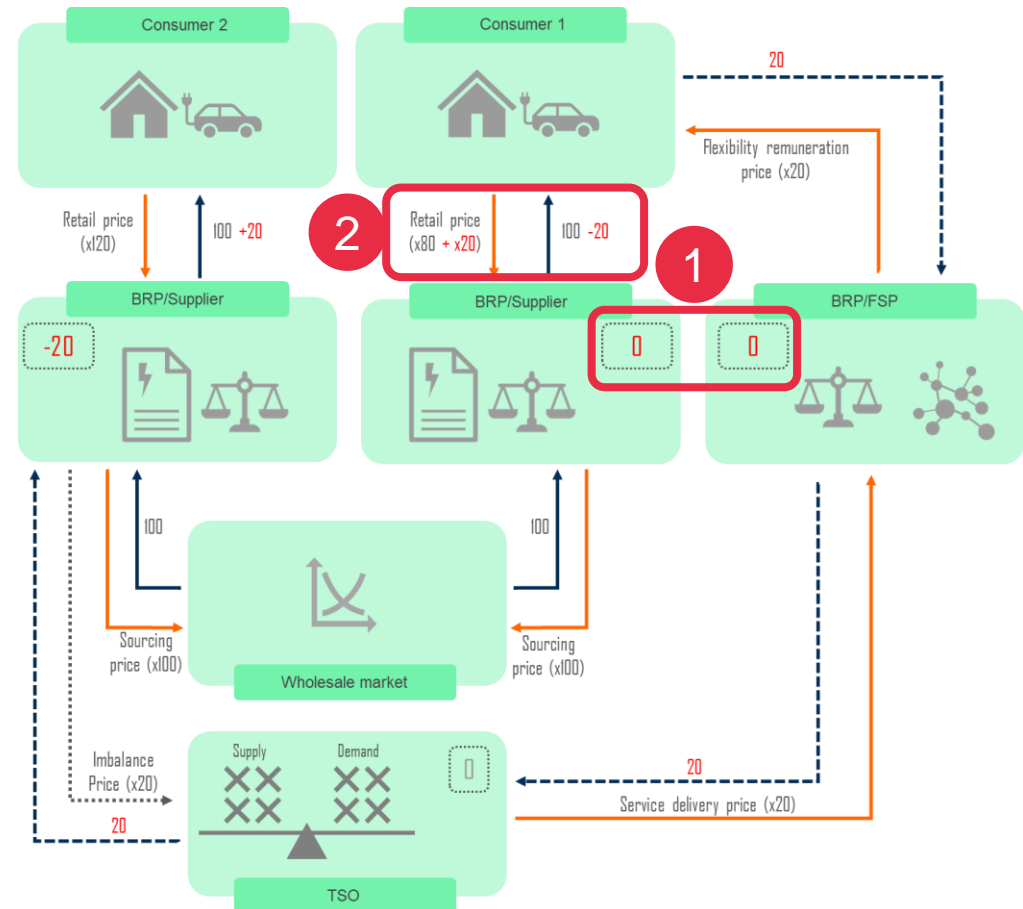
## Full correction models

- 1 Perimeter correction to neutralize imbalances
- 2 Loss of revenue compensated by FSP (centr. Sett)  
Loss of revenue compensated via invoice (correct.)

### Central settlement model



### Corrected model



# Qualitative impact assessment

## Full correction models

- Both models result in a relatively equal competitive position for the FSP and the BRP/supplier
- The advantages and disadvantages of the two models diverge significantly
- Variations in the implementation of these models exist

### Central settlement model

- Establishment of regulated compensation is complex exercise
- Loss of revenue and costs to procure electricity of the supplier for flexible customers might not be fully covered.
- Supplier does not obtain a fully equal competitive position as integrated FSP
- Commercial position of the FSP is safeguarded as there is a limited to no insight in the FSP activities by the BRP/supplier.
- Data privacy and protection of the consumer is guaranteed due to the aggregation of data.

### Corrected model

- Financial compensation is not internalized by the FSP. The consumer has to make the economic assessment himself. The economic optimal decision is less transparent for the consumer.
- Transparency of information (e.g. value of flexibility) to the consumer is maximized.
- The need for individual corrections necessitates specific consumer data. Attention to data privacy and protection is imperative to ensure compliance with the GDPR legislation.
- No loss of revenue for the supplier and costs to procure electricity for flexible customers are fully covered.
- May reveal commercial sensitive information (of FSP) to the BRP/supplier.





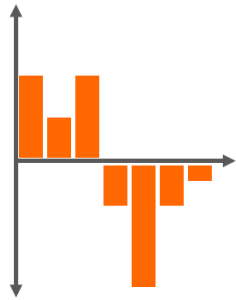
**QUANTITATIVE  
IMPACT  
ASSESSMENT**

# Quantitative impact assessment

## Origin of analysis

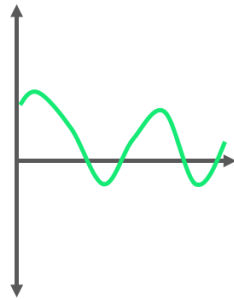
FLEXIBILITY DIRECTION

Consume more or less?



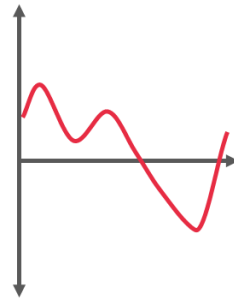
IMBALANCE PRICE

Pay Elia or get paid?



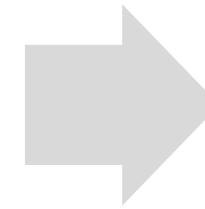
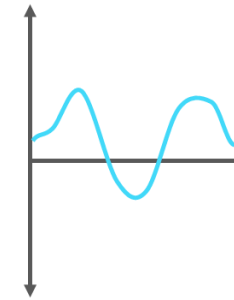
SERVICE DELIVERY PRICE

Pay Elia or get paid?

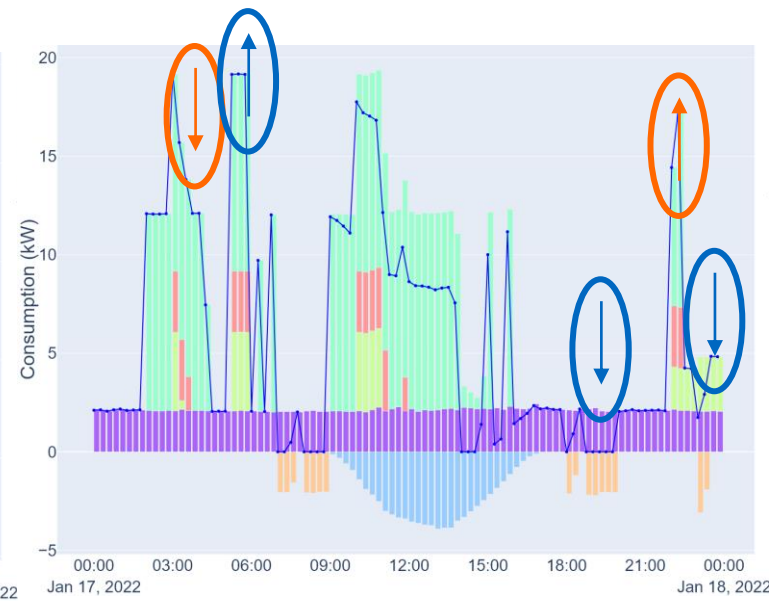
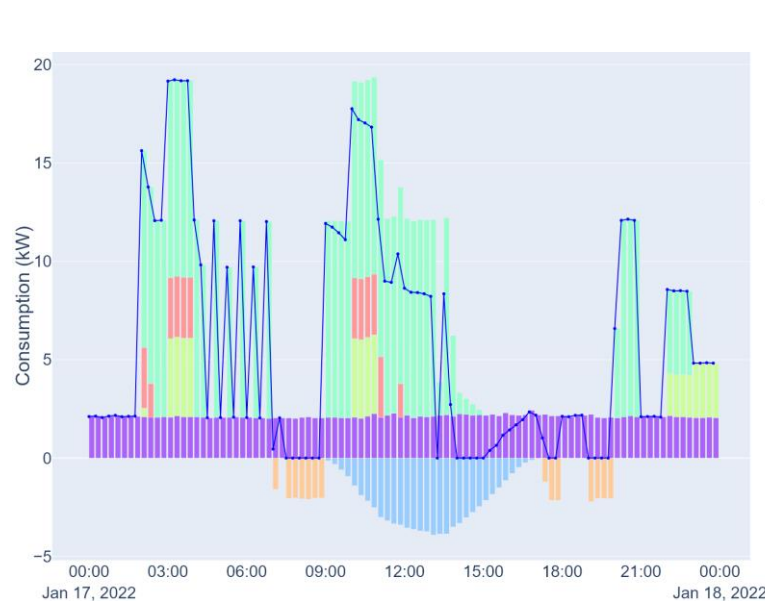


DA MARKET PRICE

How much does electricity cost?



Cummulative impact  
Case study: mFRR

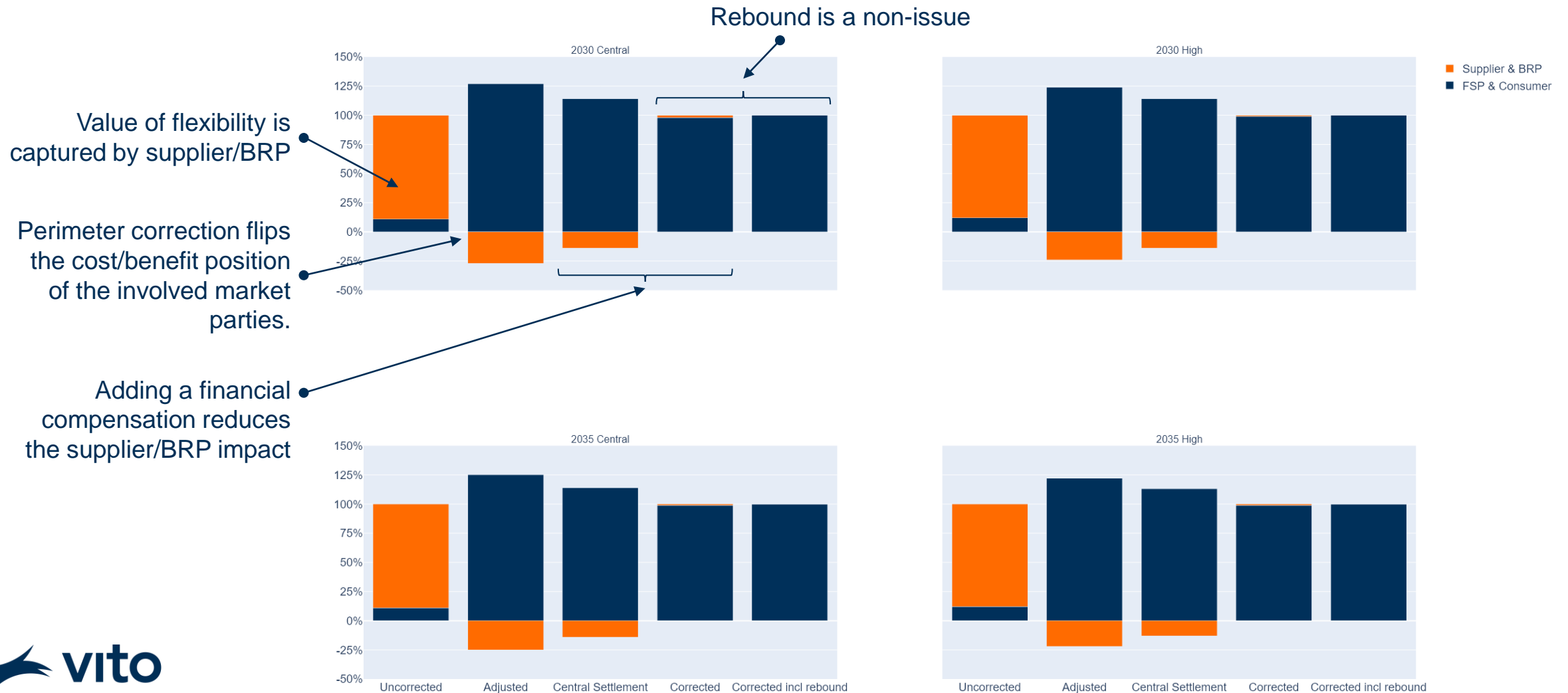


Flexibility request

Rebound

# Quantitative impact assessment

## Quantitative results





**CONCLUSIONS**



# Conclusions

- Limited Participation of LV Flexibility in EU - Reduced sense of urgency in EU countries.
- Complex interplay of economic factors and market dynamics significantly influencing economic transactions: flexibility direction (up or down), the signs, volumes, and rankings of prices (imbalance price, service delivery price, retail price, and regulated price) relative to each other
- What is however uniform: without implementation of correction/compensation mechanisms, flexibility will not be procured/provided by LV. Logical step: transition from uncorrected model to create a level playing field for FSPs, a perimeter correction becomes imperative.
- Financial compensation as measure to mitigate to some extent the negative impact on supplier's net position - central settlement and corrected model (model of choice for supplier)
- Both models (central settlement and corrected) tackle the imbalance issue and loss of revenue but entail diverging advantages and disadvantages. (e.g. complexity to establish a uniform financial compensation and the risk of complexity of billing for the consumer (i.f.o. verification))
- Contract-based aggregation models can still operate alongside independent aggregation models. However, they should no longer be regarded as the default option but rather as alternative or backup options.



**Annelies Delnooz**  
**Project Manager E-market**  
**Energy Technology**  
**EnergyVille | Thor Park 8310 | 3600 Genk**  
**VITO NV | Boeretang 200 | 2400 Mol**

[Annelies.delnooz@vito.be](mailto:Annelies.delnooz@vito.be)

# Thank you

**AREHIAL**  
Association des Réseaux Wallons

 elia

*fluvius.*

**ORES**   
OPÉRATEUR DES RÉSEAUX GAZ & ÉLECTRICITÉ



**RESA**



**Sibelga**  
energizing the city

 **Synergrid**  
*Voice of the networks*

