WS II – Consumer Centric MD

Supply Splits

Elia – 22nd June 2022

Objective of the presentation

- ❑ **CCMD roadmap**
- ❑ **Introduction** to supply split
- ❑ Outline a **practical example** of a supply split
- ❑ Demonstrate how the **exchange of energy blocks (EoEB)** facilitates a supply split
- ❑ **Conclusions**

CCMD roadmap

Consumer Centric Market Design: a lot has been done…

Q2 2021

CCMD Whitepaper
Making the CCMD vision public

Q3-Q4 2021

Demonstration projects
Demonstrate, test & learn

Involve stakeholders:

CCMD info session
Explain & Clarify

31/08 Info session

Hackathon
Involve market parties

13 - 15/10 Hackathon

CCMD round tables
Collect feedback

29/09 Round Table 1
29/10 Round Table 2
29/11 Round Table 3

Q3-Q4 2021

- Many stakeholders expressed interest for this upgraded market design enabling **flexibility behind the meter** and "**energy-as-a-service**" coupled to the valorization of **real-time price**

ELIA is now ready to define the next steps towards a phased implementation!

Consumer Centric Market Design: … but still a lot to do!

Q2-Q4 2022

Working Groups CCMD (4-5)
Design discussion & implementation roadmap

Q4 2022

Public Consultation
Design & implementation note

Q4 2023 Go-Live

TSO Grid Users
Multiple BRPs Solution for ToE in aFRR

Q2-Q4 2022

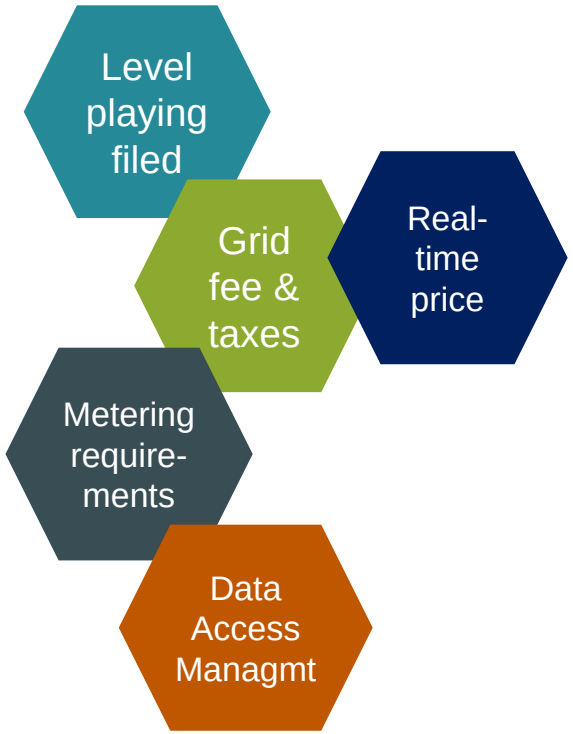
Demonstration projects
test & learn to feed design and implementation

Q1-Q2 2023

Discuss Stakeholders'
feedback & open points

Update
Design & implementation note

First Tests with stakeholders



Introduction to supply split

During the first workshop we focused on the valorization of flexibility via an independent FSP

Tomorrow

Exchanges between market parties

- P2P trades
- Sell solar consumption to local Supplier
- Local provision of green electricity
- PPAs

Physical reallocation between parties

- Supply splits (EV specific Supplier)
- Energy communities
- …

Valorization of flexibility via an independent FSP

- Balancing markets (aFRR, mFRR)
- Day-ahead / intraday

FSP only valorizes the flexible part of the load, while the energy supply remains with the head Supplier

5th of May – WS I

- Evolution of ToE
- EoEB as an enabler
- Opt-out under CCMD

Today, we will focus on the Supply Split enabling service providers to easily developed all-inclusive business models

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Physical reallocation between parties

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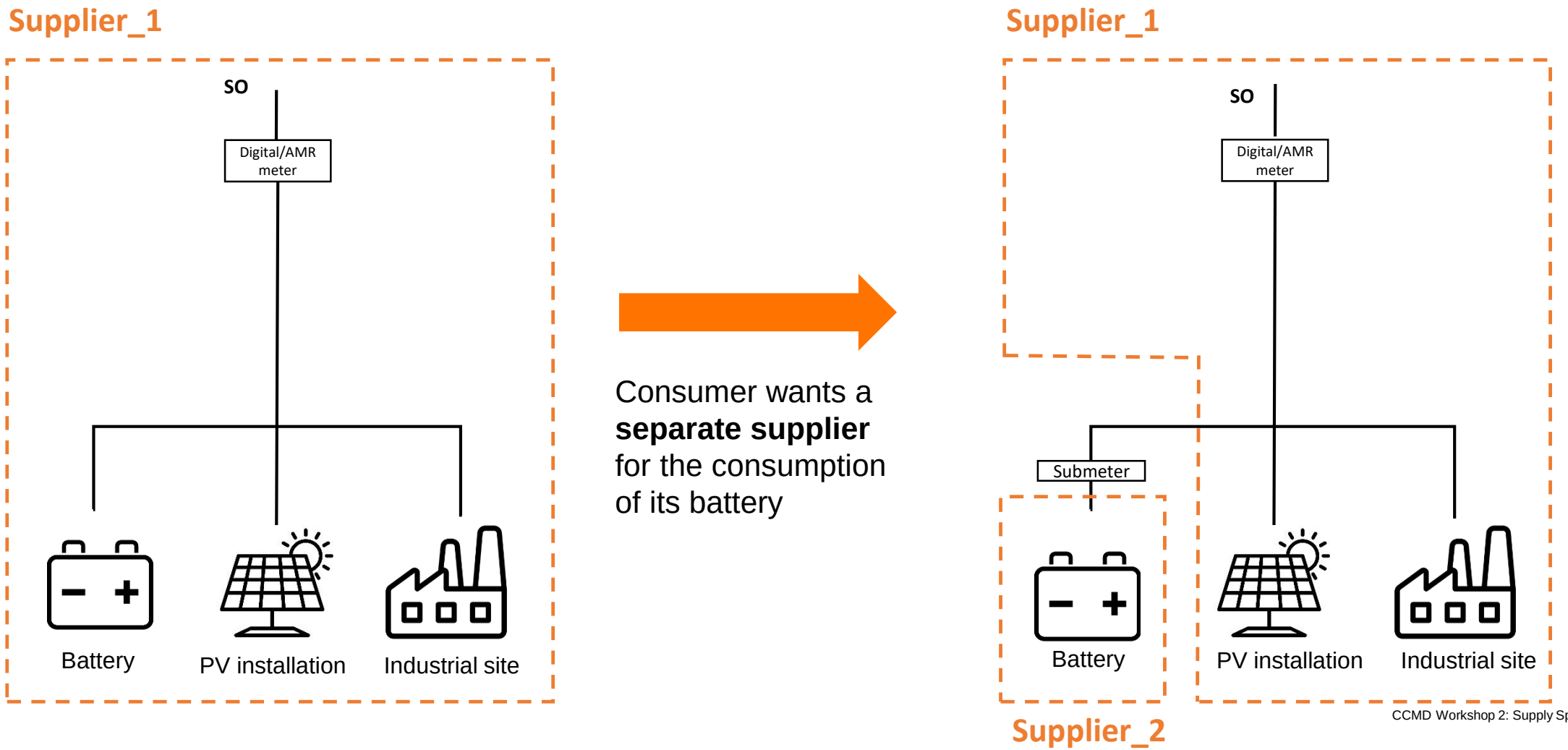
- Energy communities
- …

Another Supplier becomes supplier of the asset and can easily valorize the flexibility of it
(both implicitly and explicitly)

Today WS II

Service providers can easily develop all-inclusive business models per asset (ex. heat as a service) and valorize flexibility both implicitly and explicitly in the market

A supply split allows the consumer to choose a different supplier behind the access point



This allows the Supplier to valorize the flexibility both implicitly and explicitly

Explicit reaction

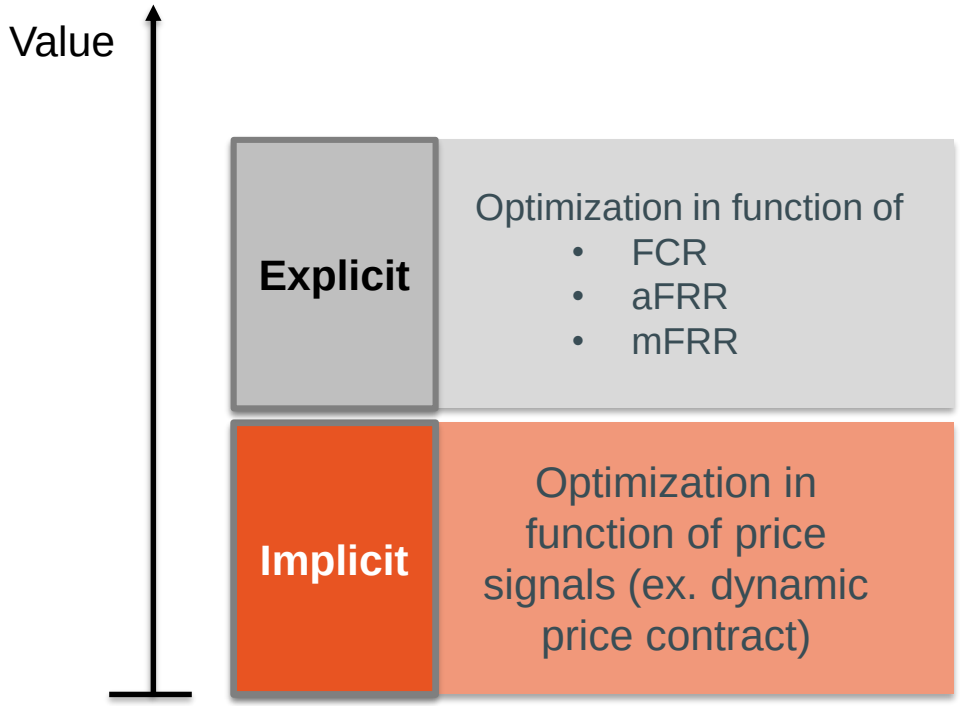
- Consumer reacts and adapts its behavior in function of **an external activation signal**
- Service provider only focusses on the **provision of flexibility services** and does not take over the retail contract of the battery

+

Implicit reaction

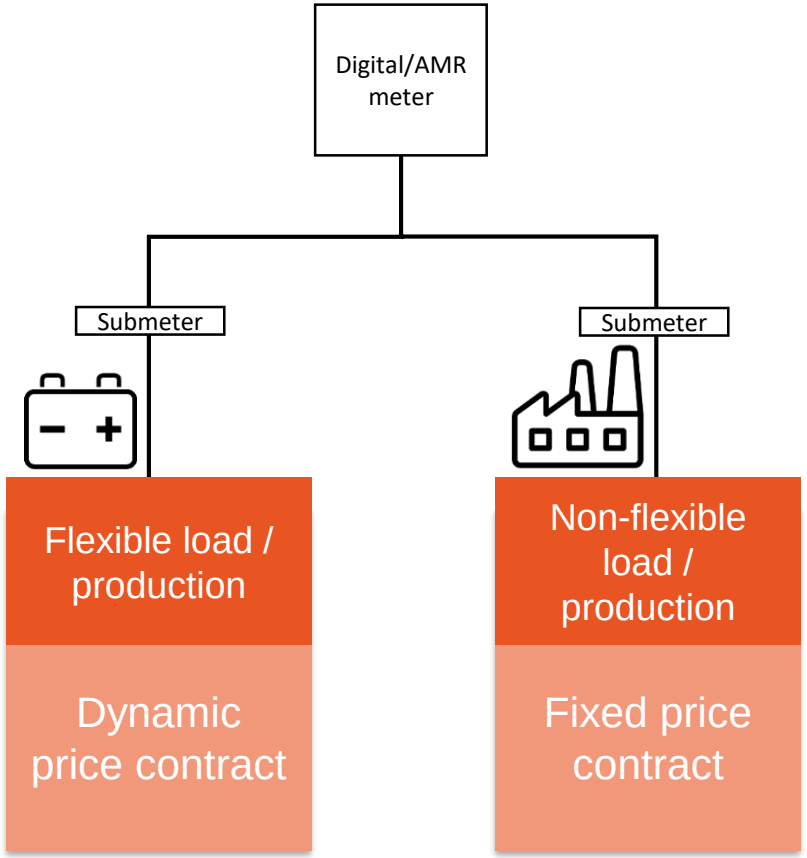
- Consumer reacts and adapts its behavior in function of **a price signal**
- Service provider becomes **supplier of the full submetered asset** (=supply split) and offers an all-inclusive value proposition

Ultimately enabling Service providers to stack value across multiple value streams



A Service Provider who takes over the supply contract of a submetered asset can easily stack value across **# value streams**, ultimately **maximizing** the value for the consumer

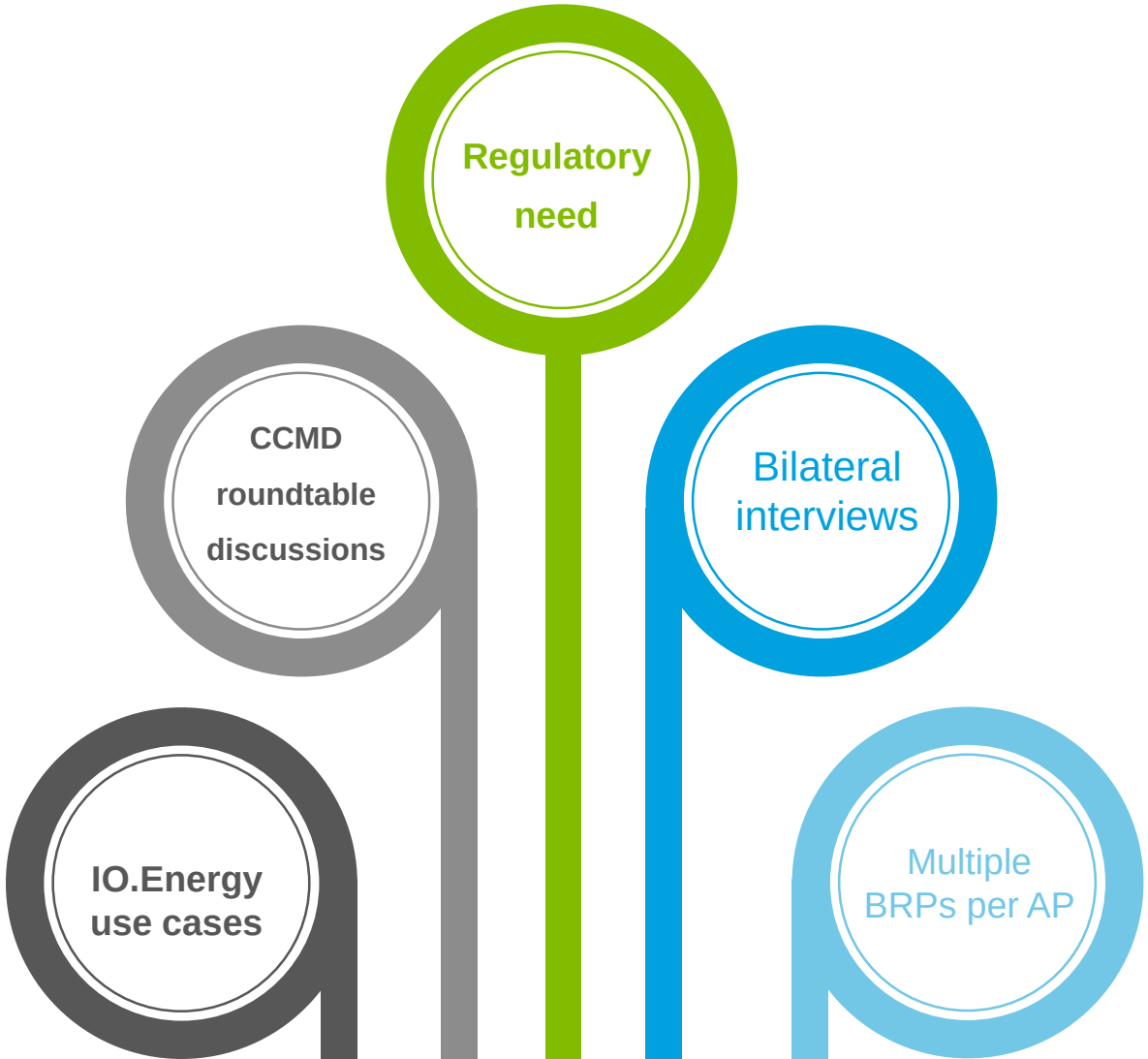
And mitigating price risk by allowing to split the flexible part of the load from the non-flexible part



Non-flexible load can be split from the flexible part, enabling market parties to build attractive value propositions in function of the characteristics of each submetered asset.

- *Note that this is just one example of a reason to perform a supply split –*
- *also the Supplier_AP could offer two different contracts in function of the load's characteristics -*

The need for such a Supply split comes from # sides



The need for a simple framework that facilitates a Supply Split at all voltage levels is widely recognized by # stakeholders

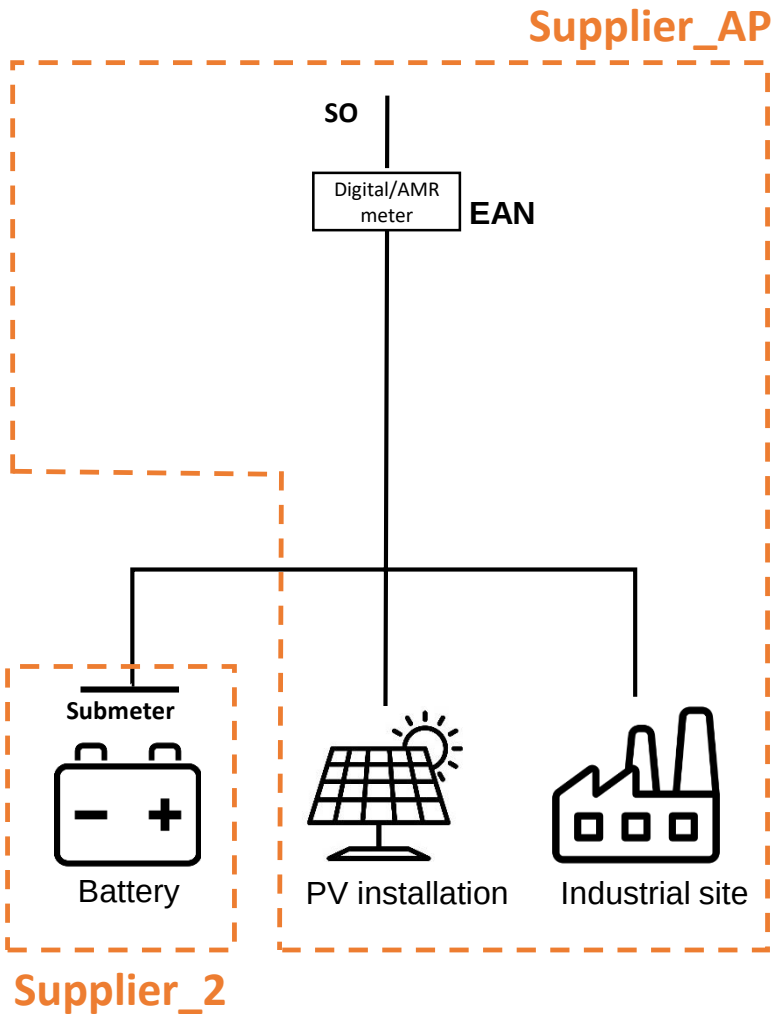
Scope and assumptions during this workshop

In scope	Out of scope *(subject of upcoming workshops)*
• All voltage levels • All technologies • Consumer equipped with a digital meter or AMR at the access point • The submetered load is equipped with a measurement device • Settlement of the commodity part • Supply split at level of the delivery point (downstream from the AP)	• Settlement of the grid tariffs, VAT, … • Participation of consumers with analog meter (without telecommunication) • Energy blocks based on declarative values

<u>Disclaimer:</u> note that this presentation refers to the general entity of System Operator ('SO'). The governance between DSO and TSO is not part of this presentation.

A practical example

Set-up of a supply split



At level of the Access Point

- ❑ The access-point is linked to an EAN[1]
- ❑ The access-point is equipped with a digital/AMR meter
- ❑ The access-point has one Supplier responsible for offtake and injection*

  - ➢ **Supplier_AP** in this example

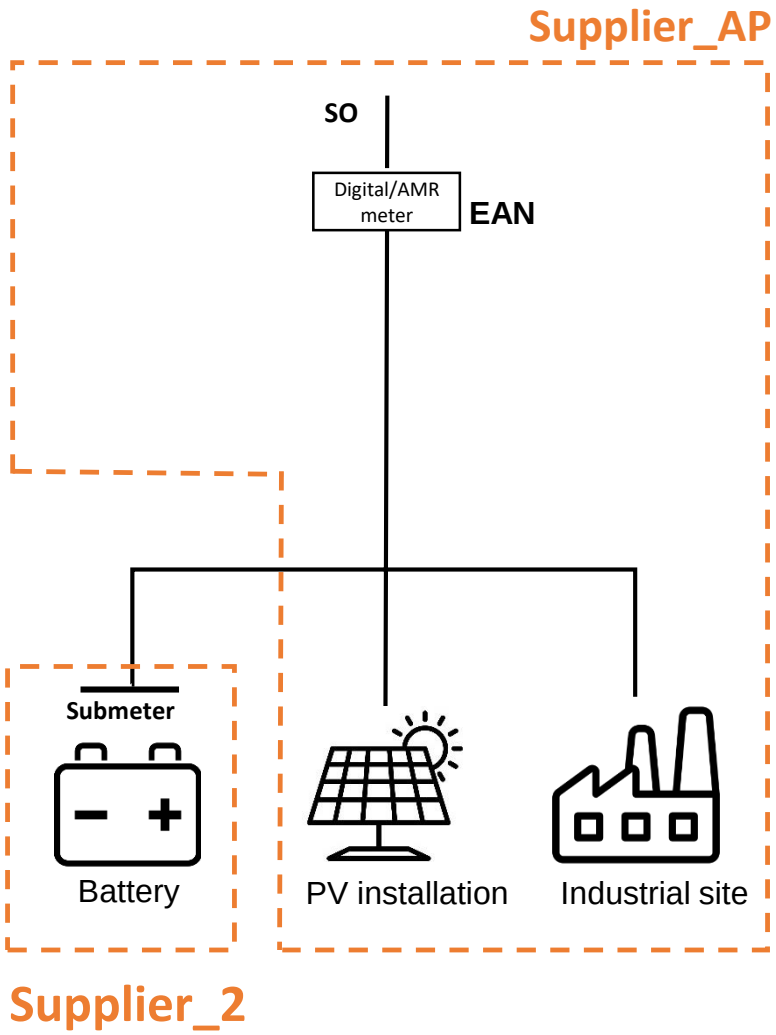
At level of the Delivery Point

- ❑ The consumer chooses a 2nd supplier at the delivery point
- ❑ A delivery point is identified behind the meter
- ❑ The delivery point is equipped with a submeter
- ❑ The delivery point has one Supplier_2 responsible for the full offtake and injection at the DP

  - ➢ **Supplier_2** in this example[2]

* Multiple Suppliers per AP are possible under the proposed design, but are not shown in this presentation in order not to overcomplexify things

Roles and responsibilities



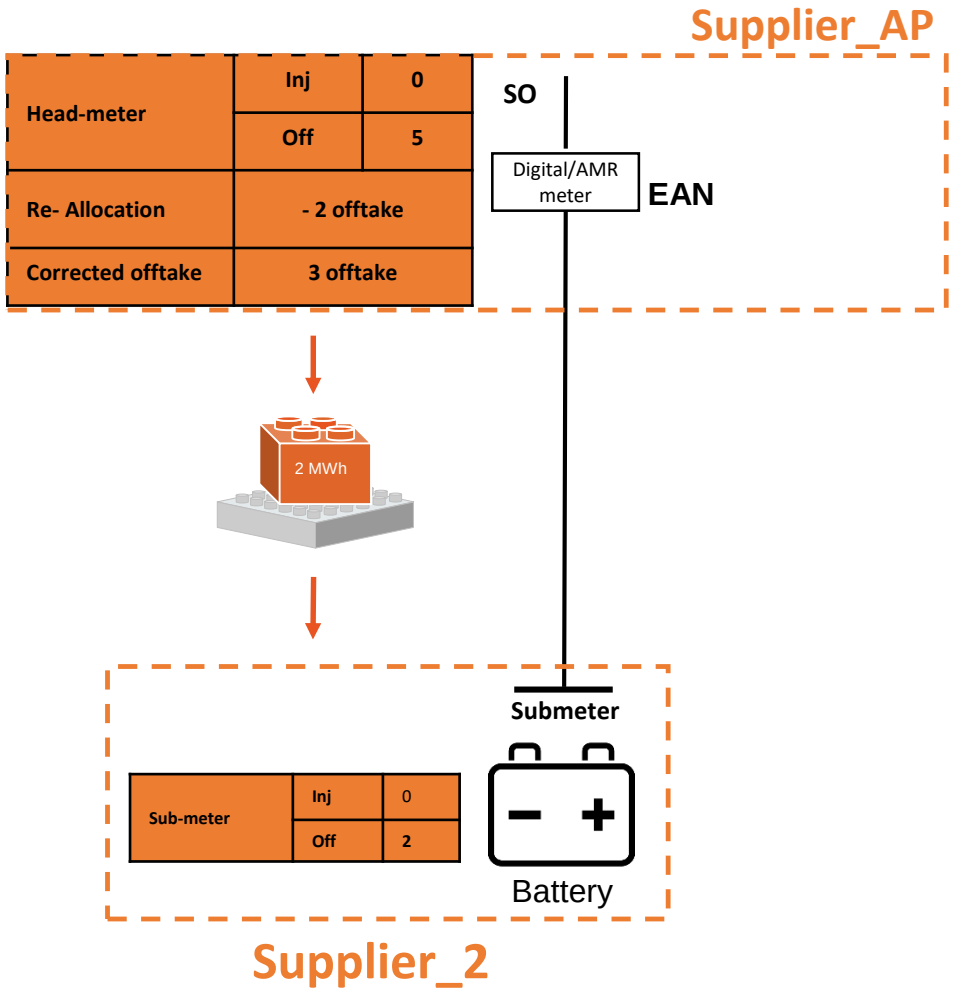
Supplier_AP

- Should have supply license & be associated with a BRP
- Responsible for the residual load (= head-meter reduced with the battery consumption)

Supplier_2

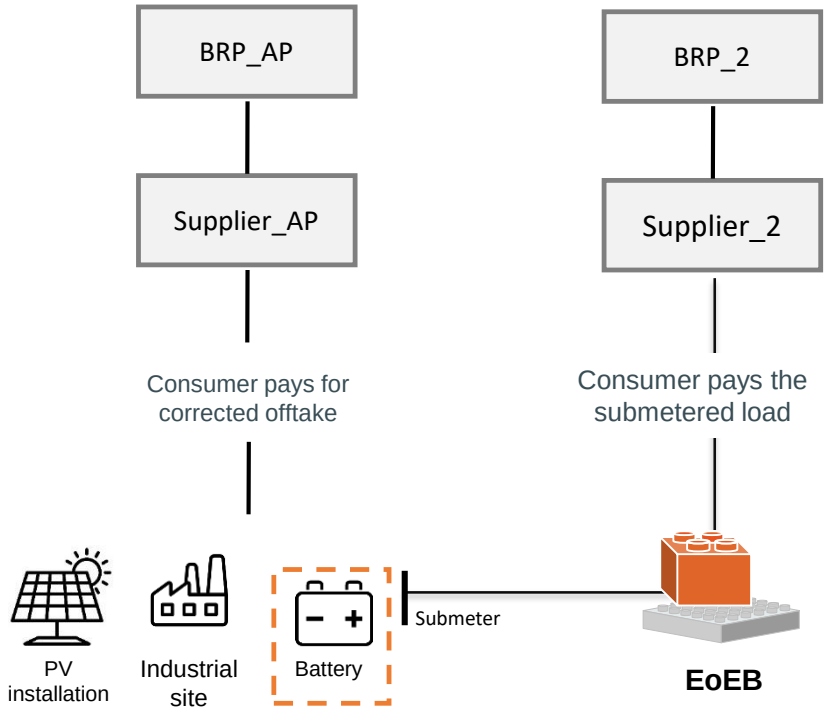
- Should have supply license & be associated with a BRP
- Responsible for the invoicing of the commodity of the submetered assets

A simple example: charging of a battery



- **Set-up:** we assume that Consumer A has a total consumption of 5MWh during a certain quarter-hour including his battery consumption. The battery consumption during this quarter-hour is 2MWh. As a result, for the quarter-hour in question he has the following metered values:
  - Metered at AP-level: 5 MWh
  - Metered at delivery point level: 2 MWh
- **In case of a Supply split:** the charged volume of 2 MWh is no longer invoiced by Supplier_AP but is simply transferred towards Supplier_2. As a result:
  - **Supplier_AP** invoices 3 MWh to consumer A (commodity)
  - **Supplier_2** invoices 2MWh to consumer A (commodity)

The local reallocation will be based on the submetered energy volume

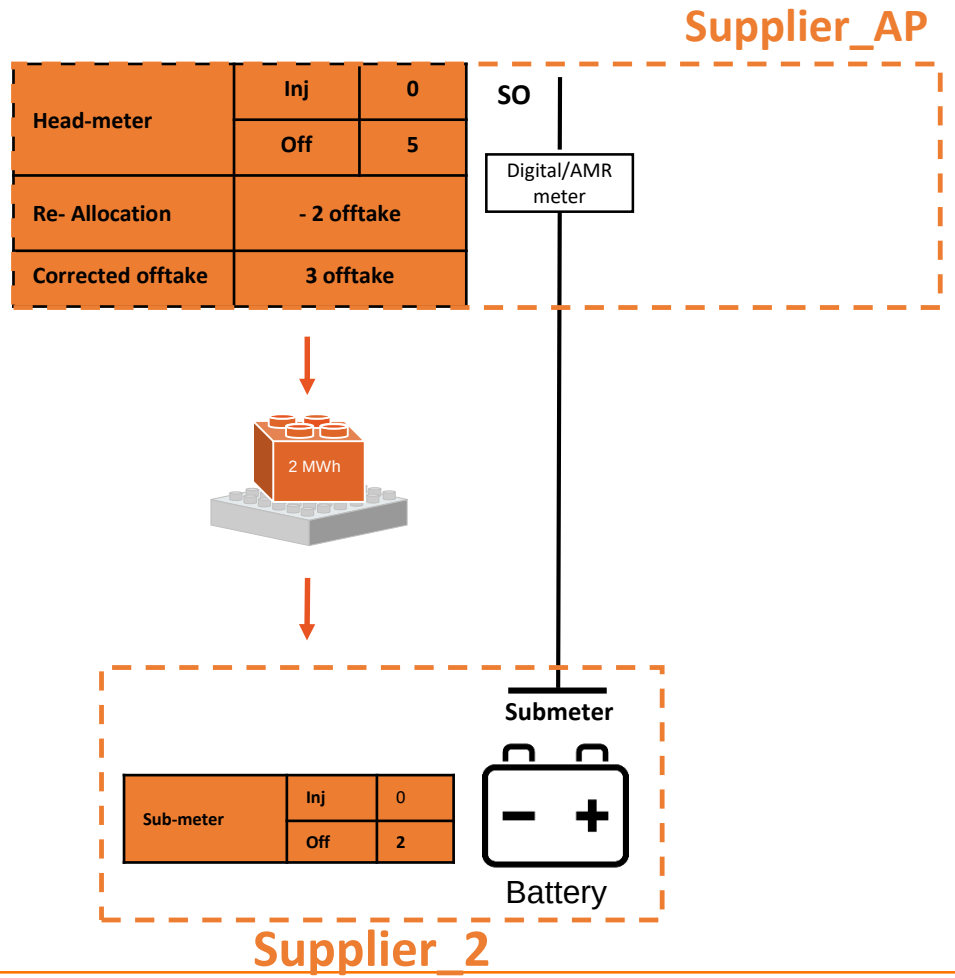


By correcting with the **submetered energy volume calculated by the SO**, CCMD ensures that the risk of gaming and manipulation is reduced

This way, a **trusted framework** is put in place while ensuring widespread market acceptance.

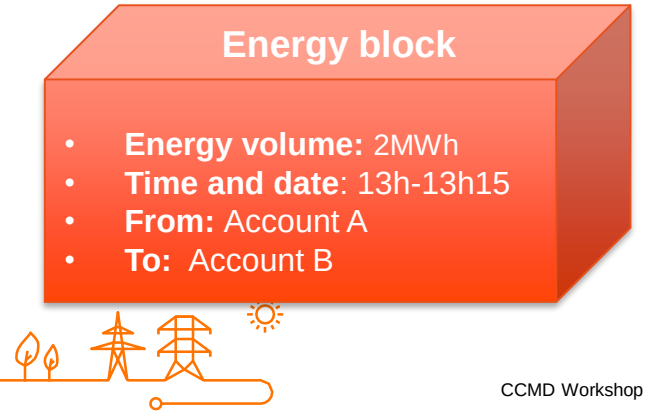
This is identical to the flexibility use-case that was discussed during WS I

How should we interpret an energy block?



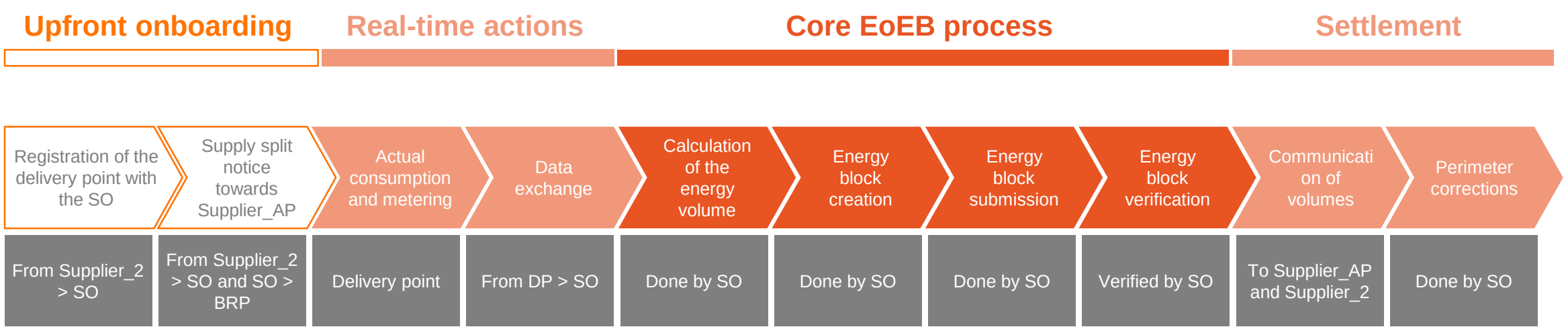
In essence, **an energy block** is an energy volume (in kWh/MWh) that is exchanged from one account to another account for a given quarter-hour. Such an exchange of energy volume(s) enables to **perform a local correction of the meter at the Access Point.**

- The example shows a consumer buying 2 MWh from a second Supplier_2



EoEB process

Overview of EoEB process



Upfront onboarding: Registration

Upfront onboarding

Registration of the delivery point with the SO

From Supplier_2 or a 3rd party > SO

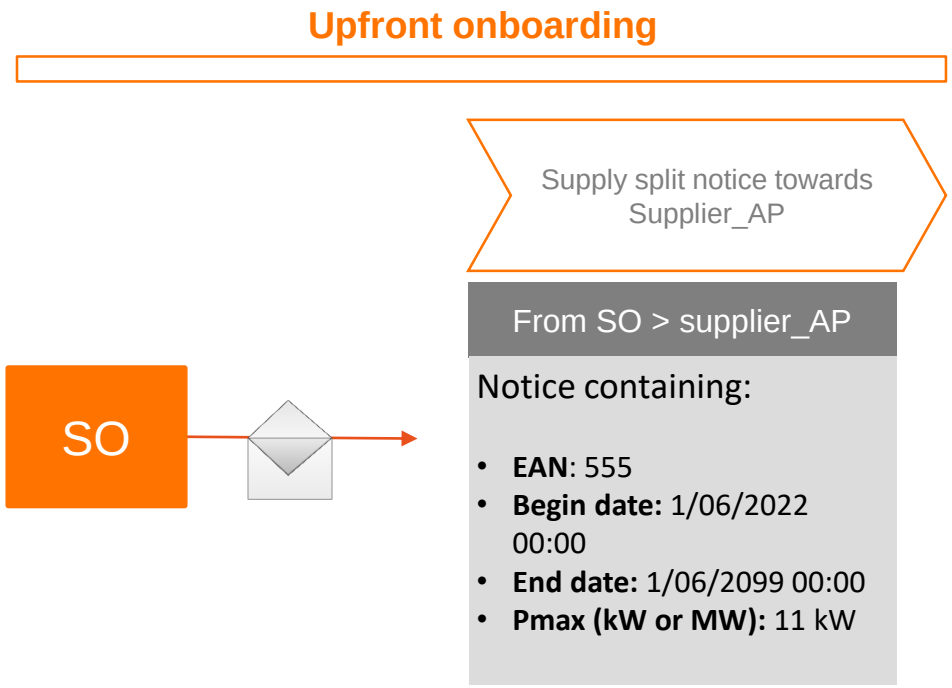
- Supplier_2 proofs to SO that it has a **supply contract with the owner of the battery**.
- SO approves the **metering setup**
- Supplier_2 or a 3rd party provides at least following asset data**:**
  - **Serial number**: 758AB (ex. VIN)
  - **Technology**: Battery
  - **Pmax**: 11 kW (2 directions)
- Supplier_2 provides at least the following contract data:
  - **EAN_AP:** 555
  - **Supplier_2**: XX
  - **BRP_Supplier_2**: XX
  - **Service**: supply split
  - **Start date**: 01/06/2022 00:00
  - **End date**: 01/06/2099 00:00

Registration

- During onboarding, Supplier_2 & the consumer mutually agree that all **submetered consumption** at level of the delivery point lays at the basis for **reallocation** (EoEB)
- Supplier_2 provides the necessary contractual details to the SO, while considering a set of predefined conditions (non-exhaustive list):
  - One Supplier per DP
  - Supplier_2 takes over 100% of the submeasured load*
  - Asset in question is submetered
- The contractual data includes serial number, technology and Pmax to verify the authenticity of the energy block
- The metering set-up used for the supply split is approved by the SO
- The SO creates a delivery point (if not yet existing)

*precondition that can be assessed during a later stage

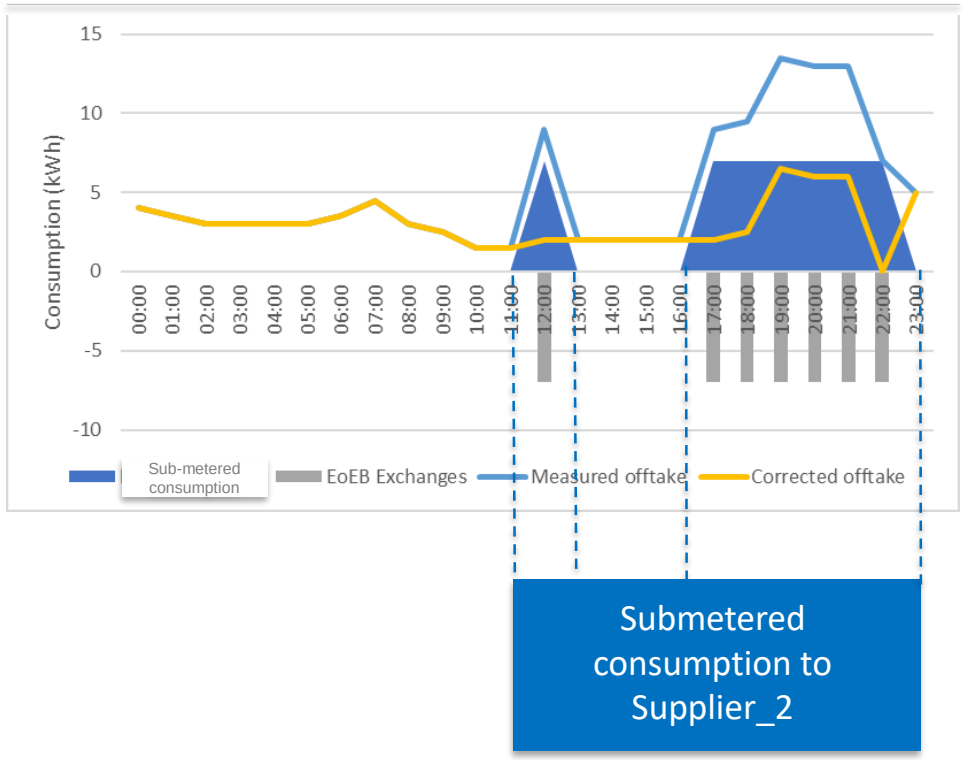
Upfront onboarding: supply split notice



Supply split notice

- When a contract is concluded between consumer and Supplier_2 a **notice is sent towards the Supplier_AP** to inform the latter that they is no longer responsible for a part of the consumption/production
  - To increase transparency
  - Not for validation purposes
- The notice contains at least the following information:
  - EAN (account at the AP)
  - Begin date
  - End date
  - Pmax (kW or MW) of the submetered load that will be allocated to another Supplier
- The notice is sent out by the SO, it received all the necessary information during the registration phase. Note that this notice can only be sent out with consent of the consumer.

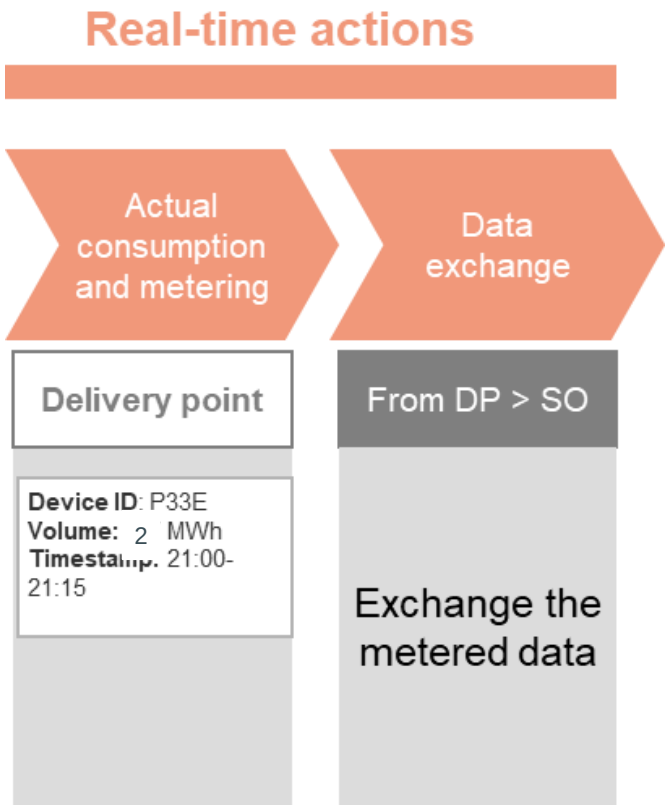
Why is a supply split notice sent to the supplier?



The Supplier_AP is notified about a change in his portfolio, to avoid any impact on his process. Hence, this way he is aware he does not need to source and charge the submetered load

Supply split notice is for **information** purposes only

Real-time actions: from actual consumption to data exchange



Actual metering and consumption:

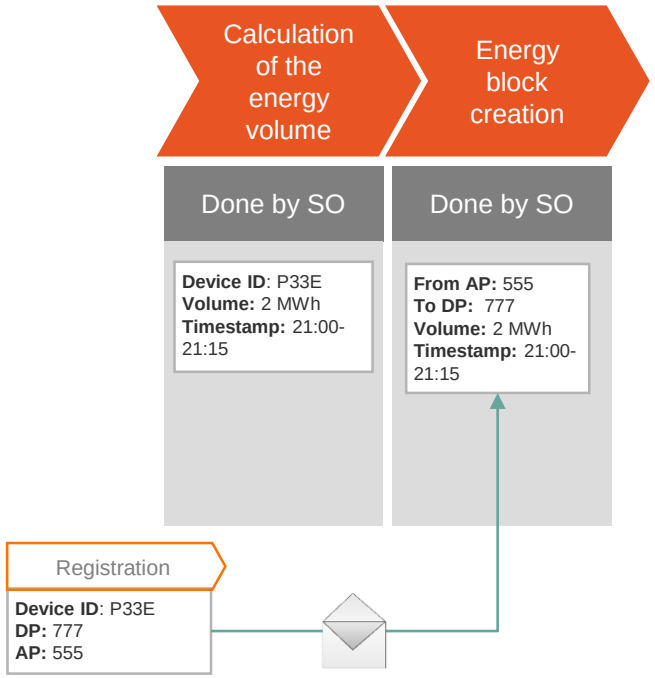
- Sub-metered consumption or production of the asset for which a supply split is done

Data exchange:

- Metering data is sent per DP to the SO

Core EoEB process: Energy block calculation & creation

Core EoEB process



Calculation of the energy volume:

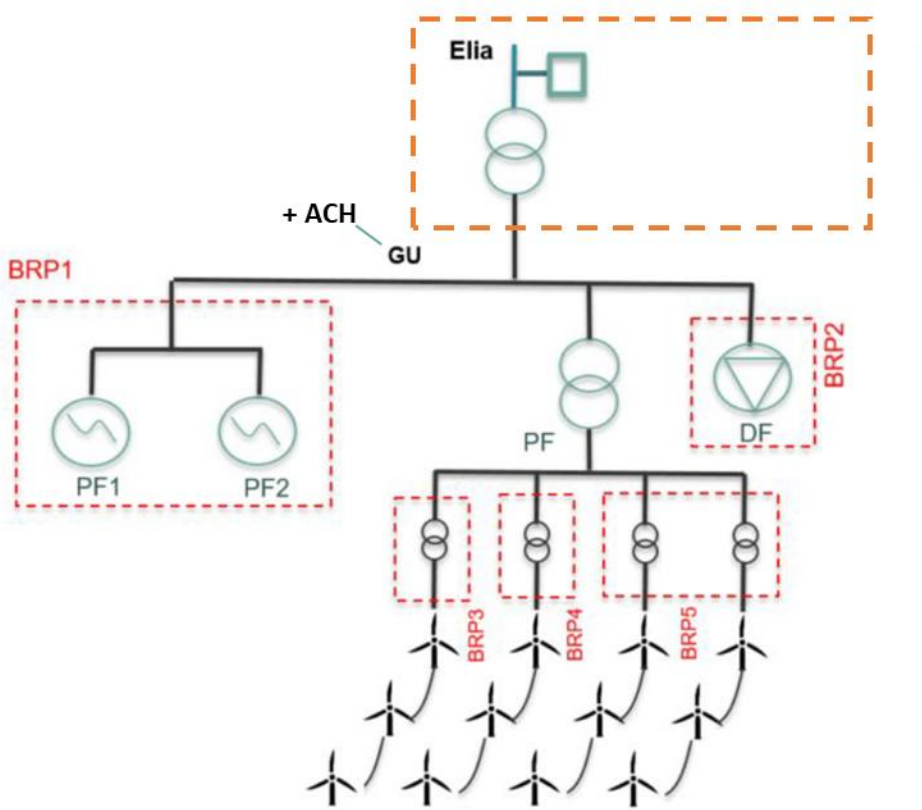
- The volume of the energy block is calculated in MWh on a quarter-hourly basis based on trusted data.

Energy block creation

- The required data for the energy block is combined. This data includes the information of the accounts from and to whom an energy block is exchanged, the volume of the energy block and a timestamp.
- The SO can create this energy block from the data it received in the registration phase.

* Comparable to the flexibility use case

How does BRPs per AP design (consulted 2021) fit into the EoEB vision ?

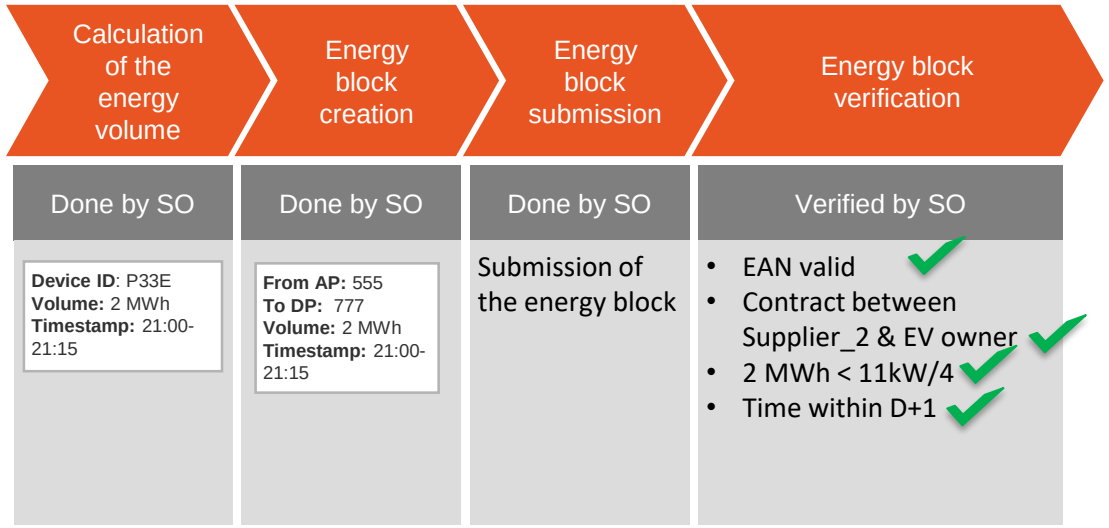


- In the study of 2021 Elia proposed to receive the allocations per BRP by the ACH(=GU) . The latter had direct access to the necessary metering devices and was not one of the invoiced parties. This design was inspired by the procedures applied for CDS
- The same approach (letting the GU make the allocations) is by default not applicable to MV and LV level due to different context. Indeed, at MV and LV level the ACH = Supplier_AP.
- Besides Elia aims as much as possible a generic design for all voltage levels.
- Letting the SO determine the allocation has some clear benefits:
  - It is more user friendly
  - Limited verification of energy block is needed
  - Enhanced trust since SO is neutral market party

Therefore Elia proposes to start with the SO taking care of the allocations per BRP, and, if requested by market parties, to analyze how and at what conditions the approach of 2021 could be possible.

Core EoEB process: Submission and verification

Core EoEB process

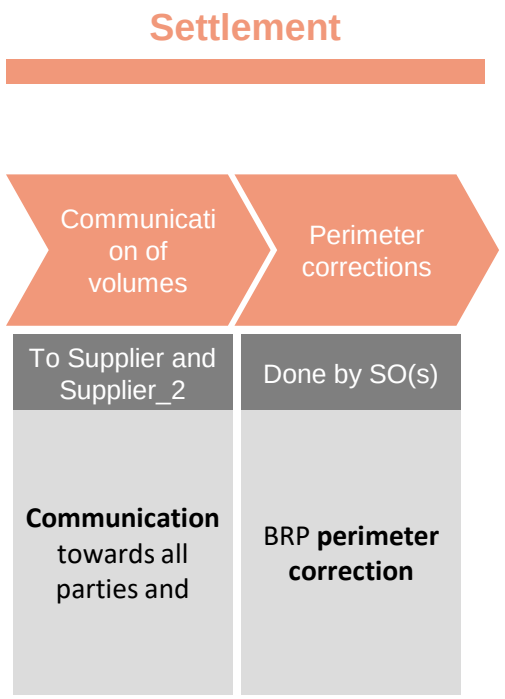


Energy block submission and verification: The SO verifies whether the created energy block is in line with the verification rules.

Verification rules (non-exhaustive):

- Check if valid EAN
- Check if energy block can be exchanged between both accounts (a valid supply split contract should be available)
- The volume of the energy block is a possible volume corresponding to the given technical characteristics during the registration phase
- The energy block is submitted within the predefined timezone (e.g. D+1)

Settlement



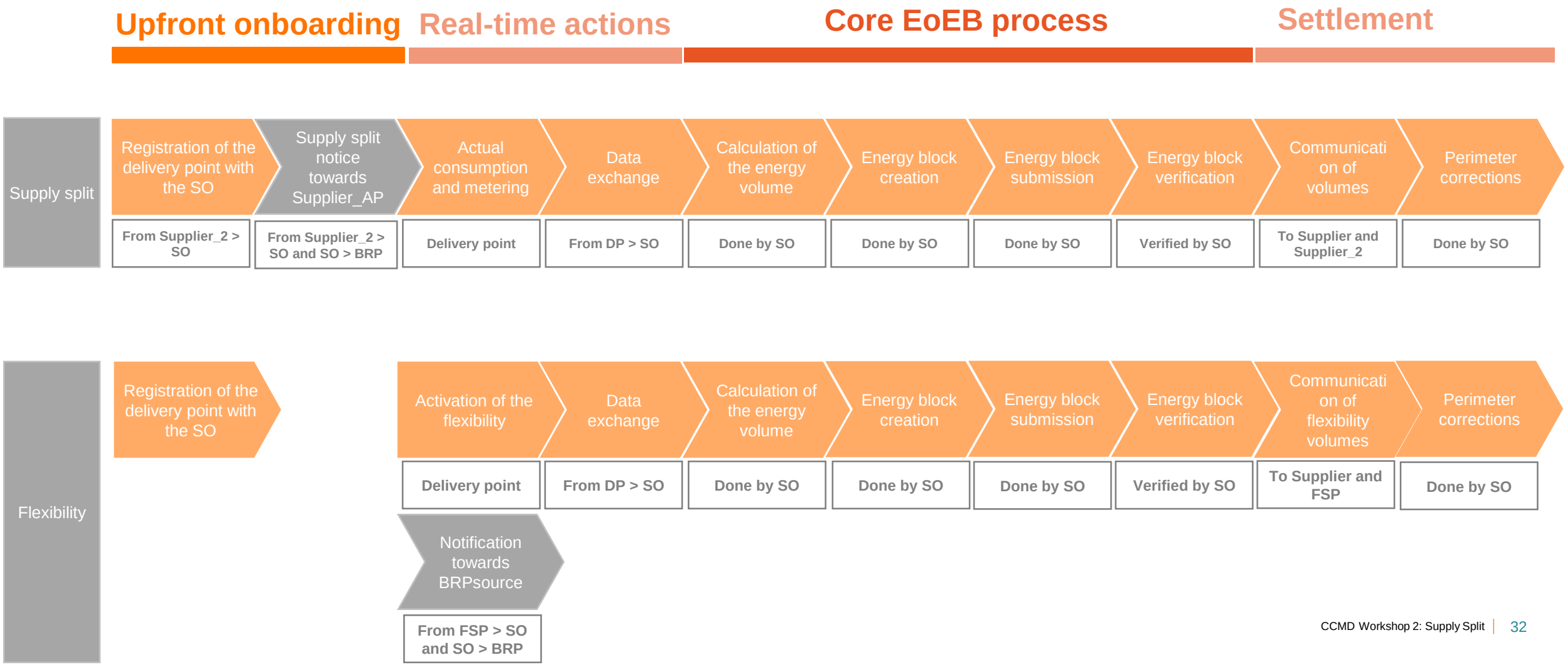
Communication
The purpose of the communication is to be transparent towards the supplier_AP and the Supplier_2 so they can correctly invoice their customers.

- The individual consumption per DP is sent to the Supplier_2
- The corrected consumption at level of the AP is sent to the Supplier_AP

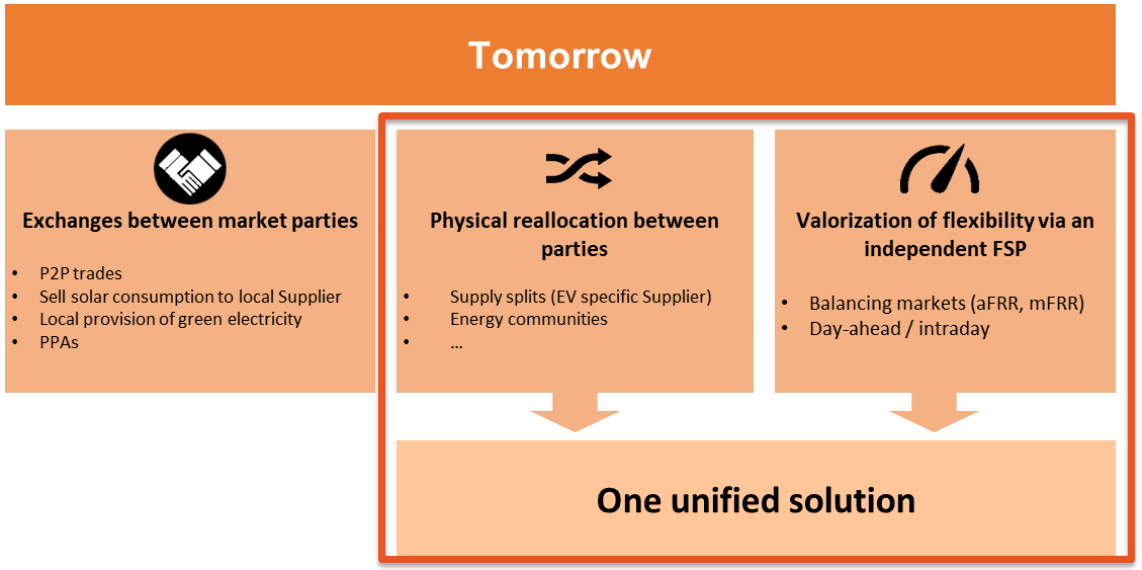
Perimeter correction or allocation

- BRP_Supplier_2 is corrected with +Edel
- BPR_AP is corrected with –Edel
- Edel corresponds to the volume in the energy block (=submetered value at DP)

Generic process for supply split and flexibility



Hence CCMD provides a unified solution facilitated by EoEB



- The same underlying process and mechanism lie at the basis of both a Supply split and Flexibility use case
- In future workshops we will illustrate how this unified solution can be extended to P2P exchanges as well

Conclusions

What will we tackle during upcoming workshops?

EoEB

Tomorrow

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P2P design

Physical reallocation between parties

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Valorization of flexibility via an independent FSP

- Balancing markets (aFRR, mFRR)
- Day-ahead / intraday

Open questions

- Data access management
- Metering and data exchange requirements
- Grid fees, taxes and levies

RTP

Conclusion & next steps