4th Working Group
Consumer Centric Market Design

Elia – 9th December 2022

Wifi Access

Username: **usersgroup@elia.be**

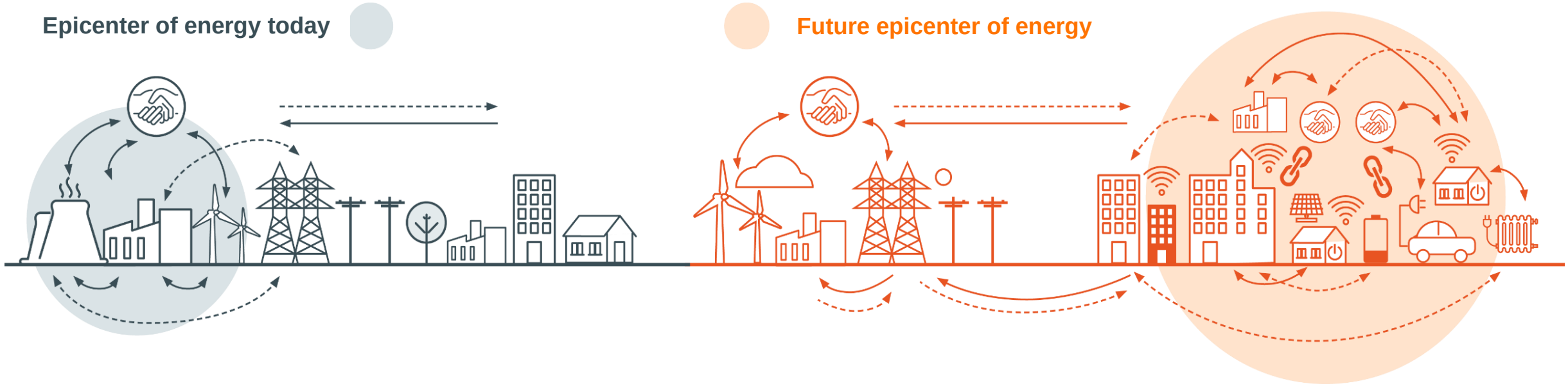
Password: **hsnG3G5b**

Agenda

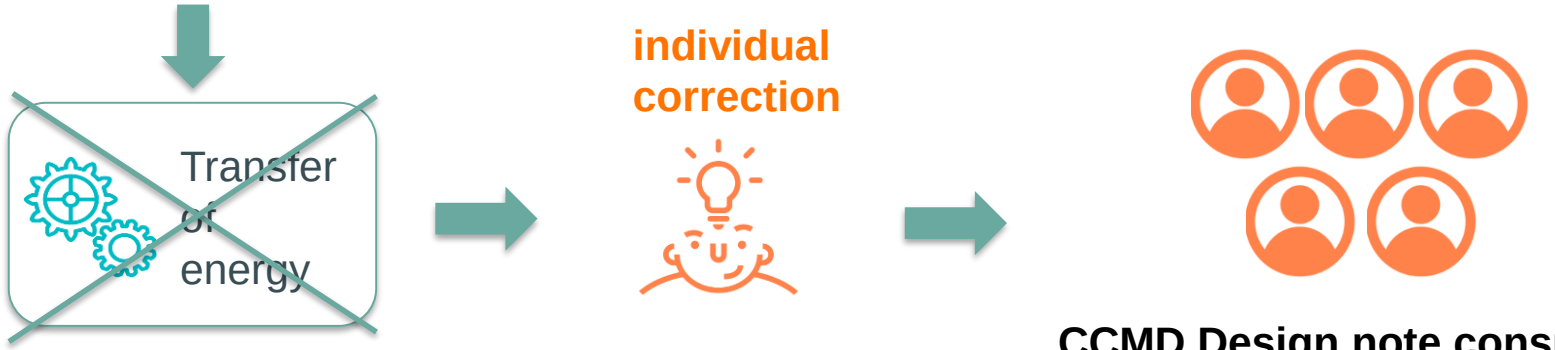
- Introduction to the public consultation on the **CCMD Design Note**
- **traXes:** Providing seamless access to the EoEB Hub and other Elia digital resources
- **Data Access Management**: supporting the development of EoEB Hub
- **Data Access Management**: mutualizing data infrastructure to support the energy services market
- First reflections on **metering requirements**

Public consultation on the CCMD Design Note

Context



Active consumer participation **cannot influence the Supplier and BRP** responsible at Access Point. Its impact must therefore be **neutralized**.

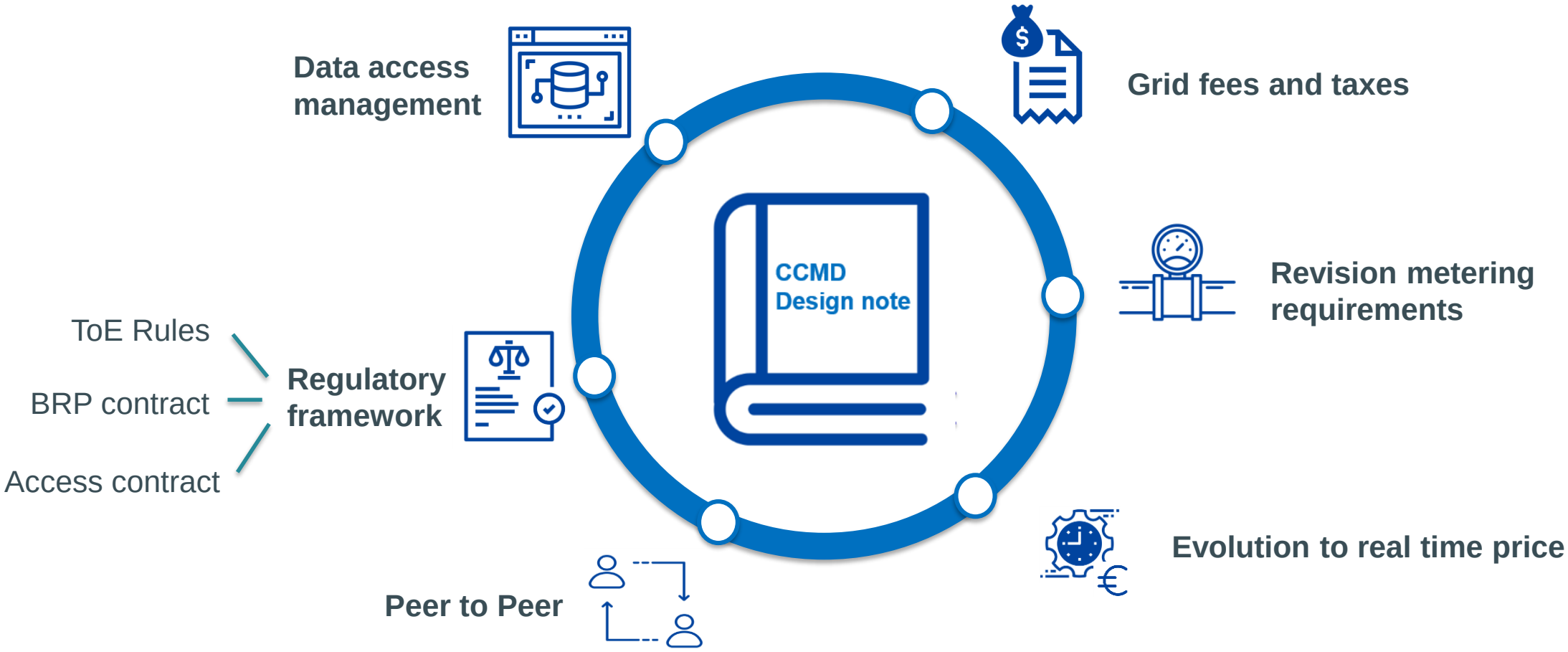


CCMD Design note consultation

Scope of CCMD design note

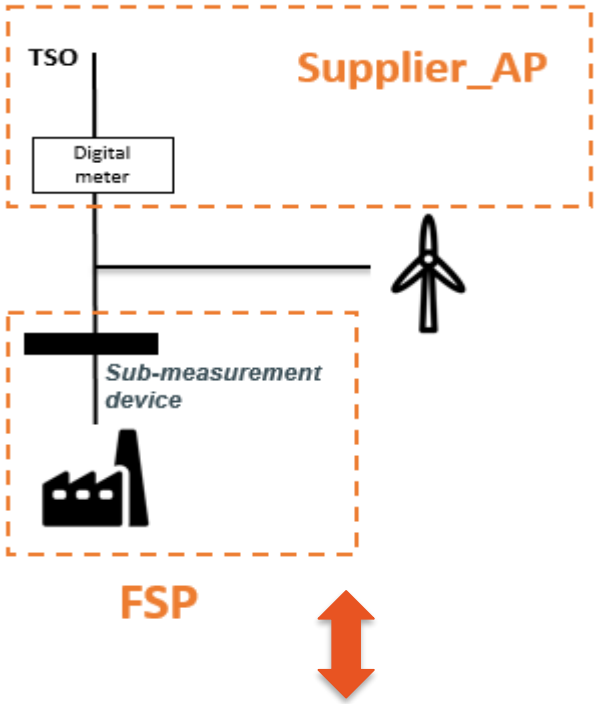
1. CCMD services
2. Key design assumptions
3. Why is the current Transfer of Energy mechanism not fit for purpose?
4. Towards a market model with individual correction
5. Concrete application of the proposed market model to the 3 CCMD services – 5 step process

Out of scope of CCMD Design note, but under 'CCMD' radar…
All requiring close DSO/TSO collaboration

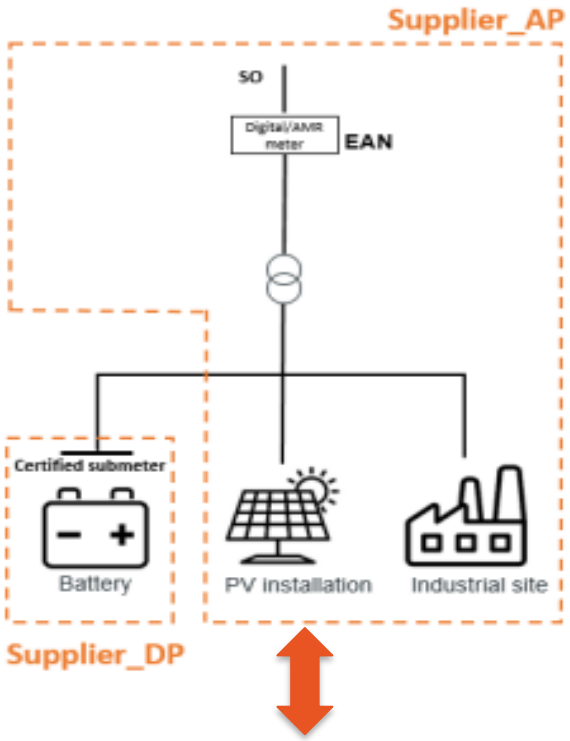


CCMD services*

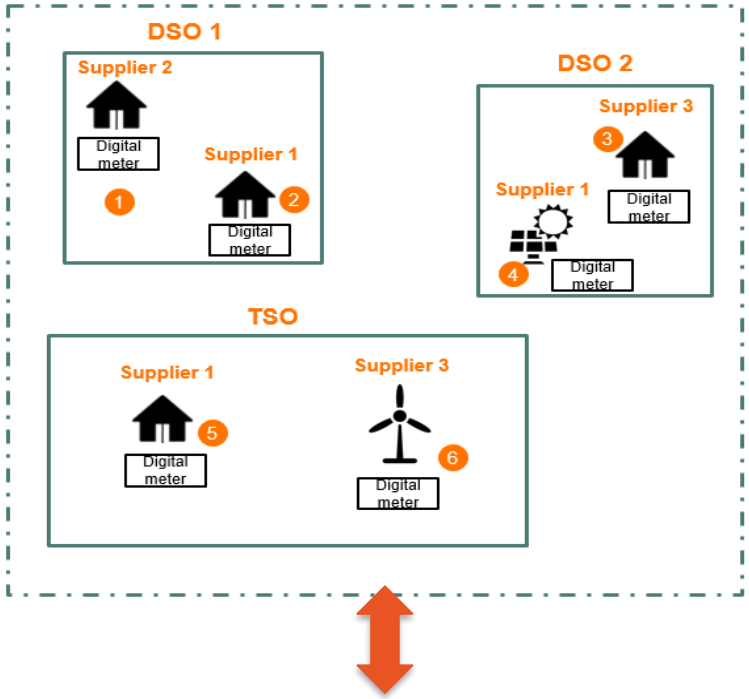
Explicit flexibility



Supply Split



Energy communities



Consumer Centric Market Design

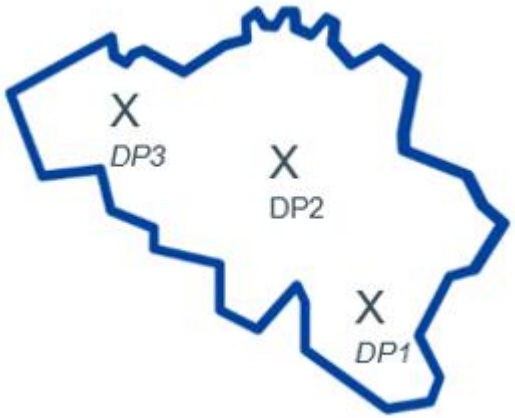
**The terminology 'CCMD Services' used in this presentation refers to the possibilities offered to an Energy Service Provider to valorize its flexibility, with the system operator playing a role of facilitator.*

Key design assumptions

High voltage *Medium voltage* *Low voltage*

Unique solution independent of the voltage level to which tomorrow's flexibility sources are connected.

Unique solution independent of the system operator to which the flexibility sources are connected



Unique & future proof solution independent of the flexibility source finality (balancing, electricity markets, energy communities…)

Why is Transfer of Energy mechanism not fit for active consumer participation ?

Current Transfer of Energy mechanism

Confidentiality is at the core of the Transfer of Energy mechanism

Aggregated communication & financial settlement

Supplier Access Point

Flexibility Service Provider (FSP)

Lessons learned on ToE

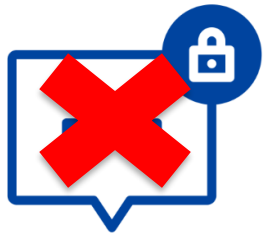
1. **Administrative complexity** to negotiate with Supplier and BRP (entry barrier to new FSPs)

2. **Transfer price approximates** the supply price. It becomes more complex in tomorrow's energy market with increased diversity and volatility

3. **Limited flexibility** (negotiations at pool level) and natural lock-in effect (to avoid renegotiations with newcomer)

Towards an individual correction

2022 - …



Confidentiality is not the core of the correction mechanism anymore (increased number of flexible assets and limited investments required to access it)

Feedback required

New market model based on individual correction

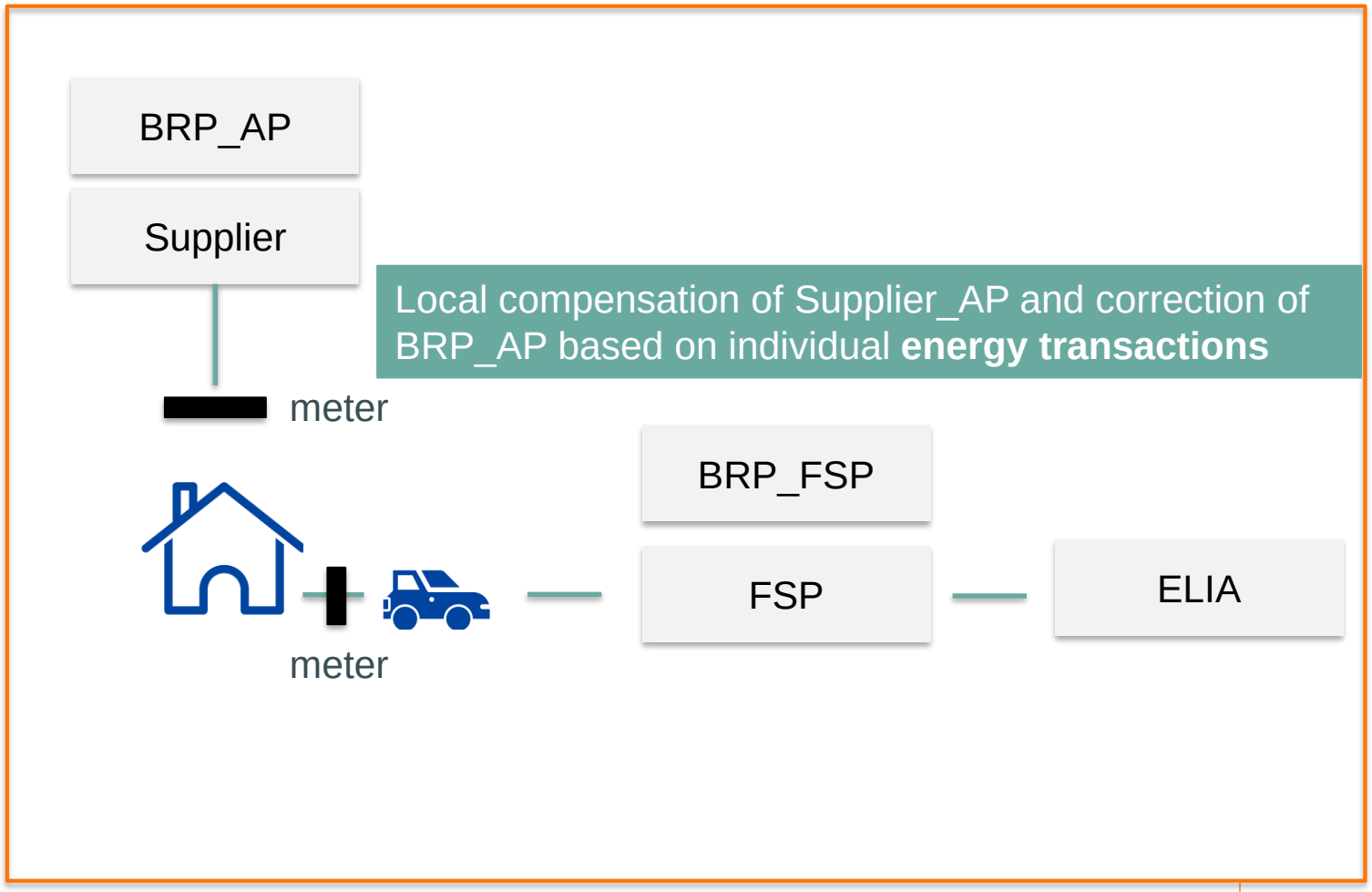
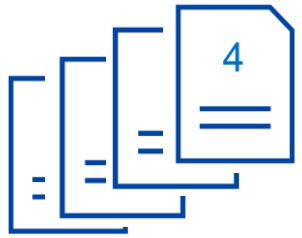
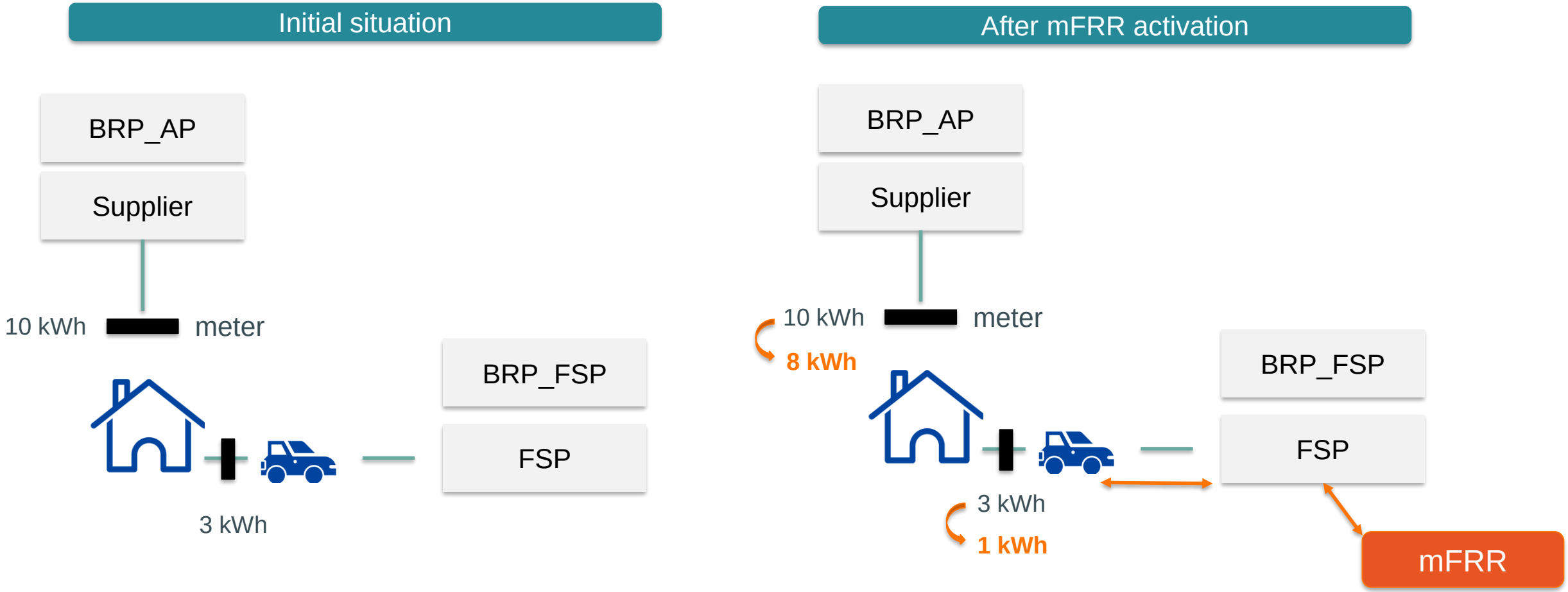


Illustration of individual correction market model with explicit flexibility



elia group
Elia | 50Hertz | EGI

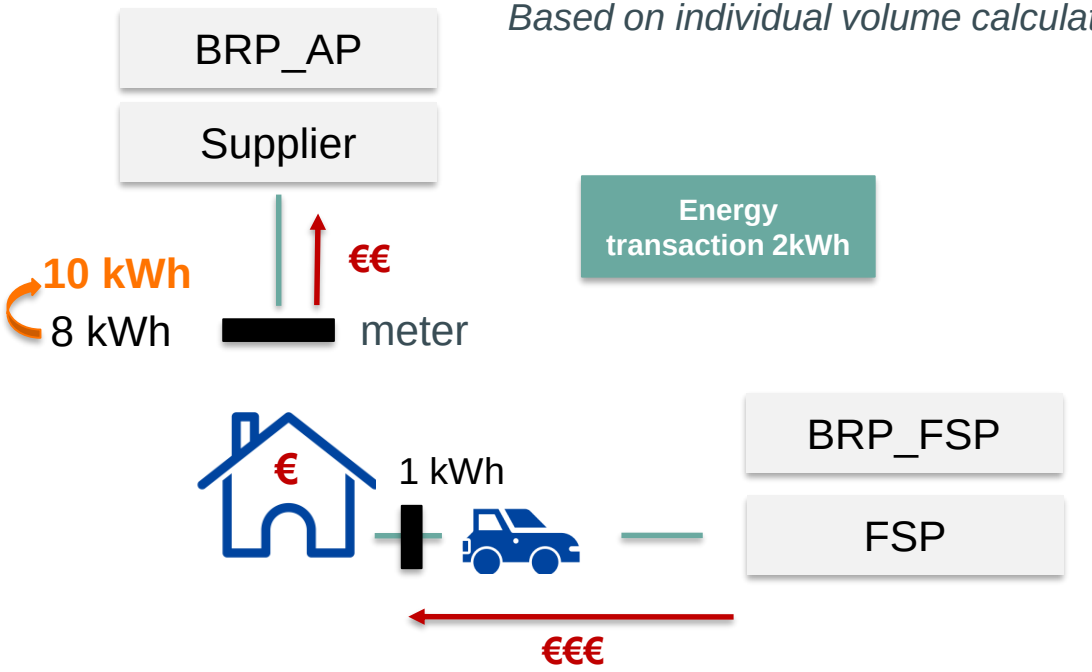


…with two possible settlement approach

Feedback required

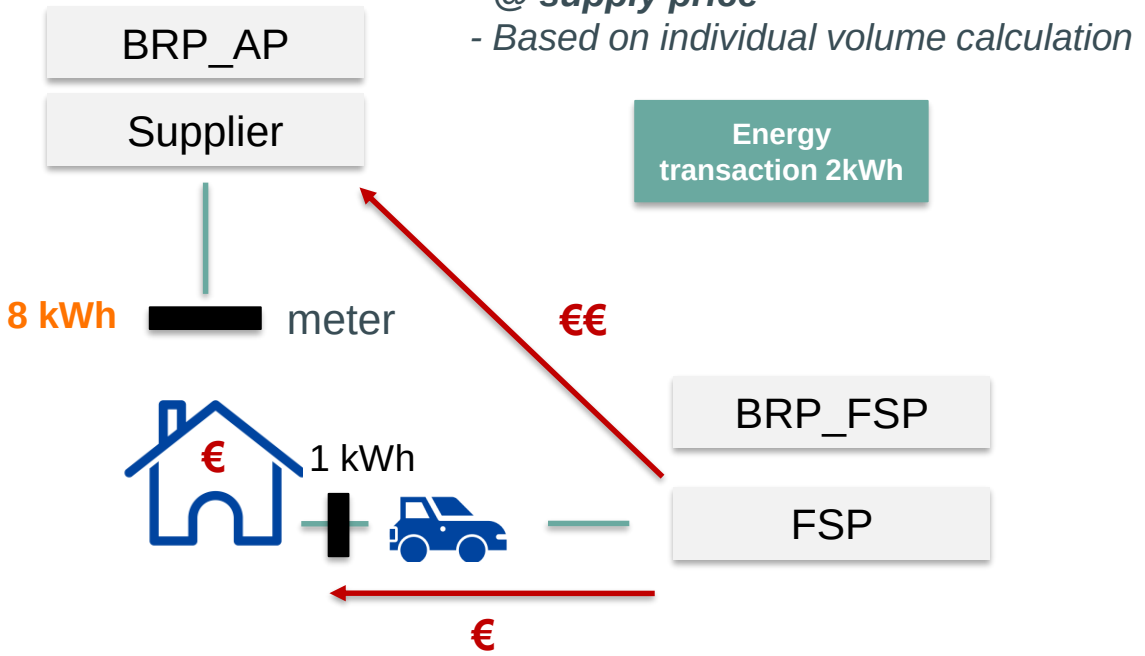
Individual correction of the offtake to include transferred energy

Based on individual volume calculation



Alternative agreement FSP – supplier

- @ ***supply price***
- *Based on individual volume calculation*



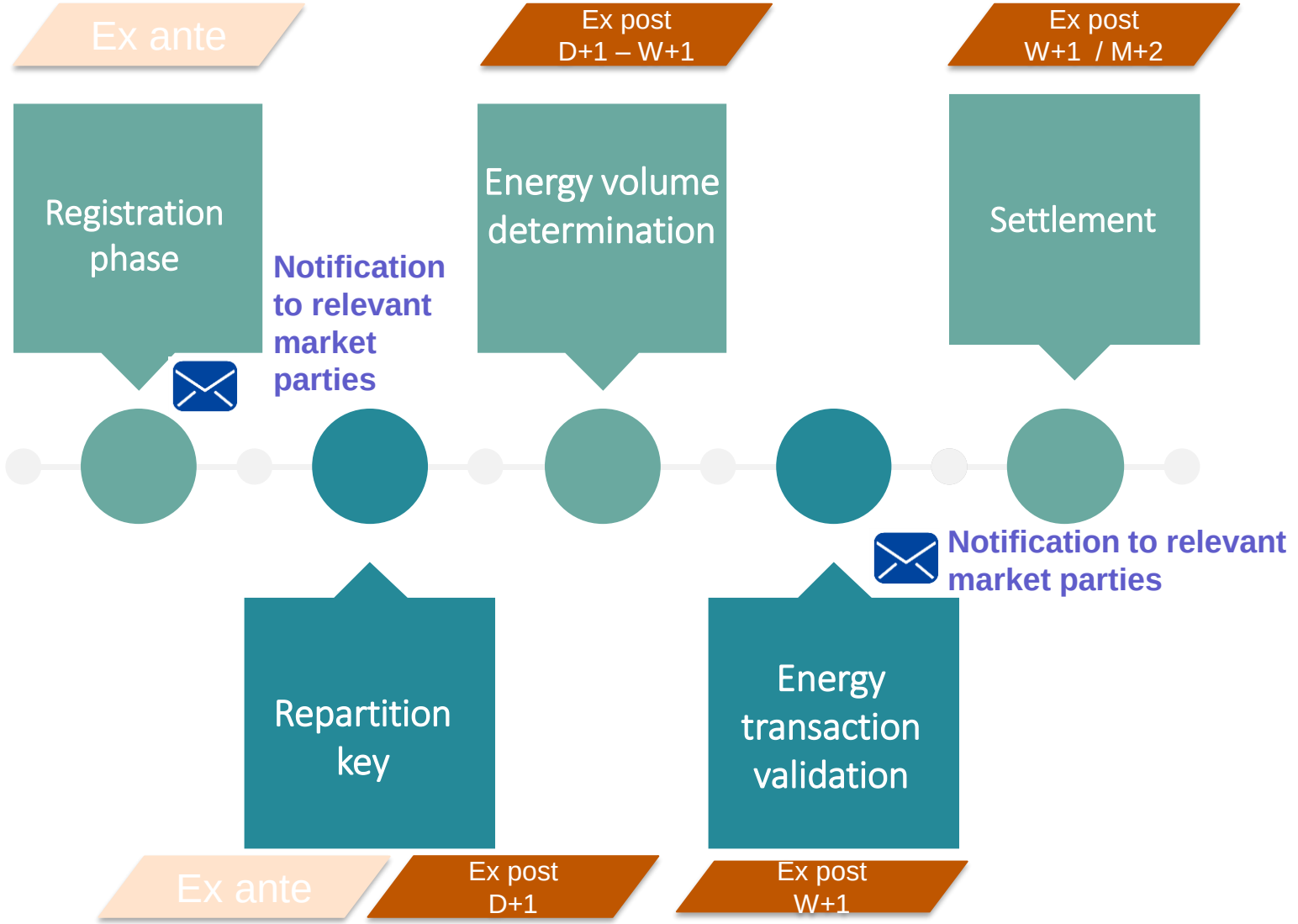
Additional consumer protection measures might be needed to ensure he gets fair remuneration

Integration into ATRIAS possible

This methodology facilitates consumer protection by limiting his financial exposure

Separate invoicing process between FSP and Supplier (outside ATRIAS)

Exchange of Energy block process



Next steps

Q2-Q4 2022

Working Groups CCMD
Design discussion & implementation roadmap

Q2-Q4 2022

Demonstration projects
test & learn to feed design and implementation

Public consultation
6th December – 20th January 2023

Q4 2022

Public Consultation
Design & implementation note

Q1-Q2 2023

Discuss Stakeholders'
feedback & open points

Update
Design & implementation note

First Tests with stakeholders

Start regulatory framework modifications

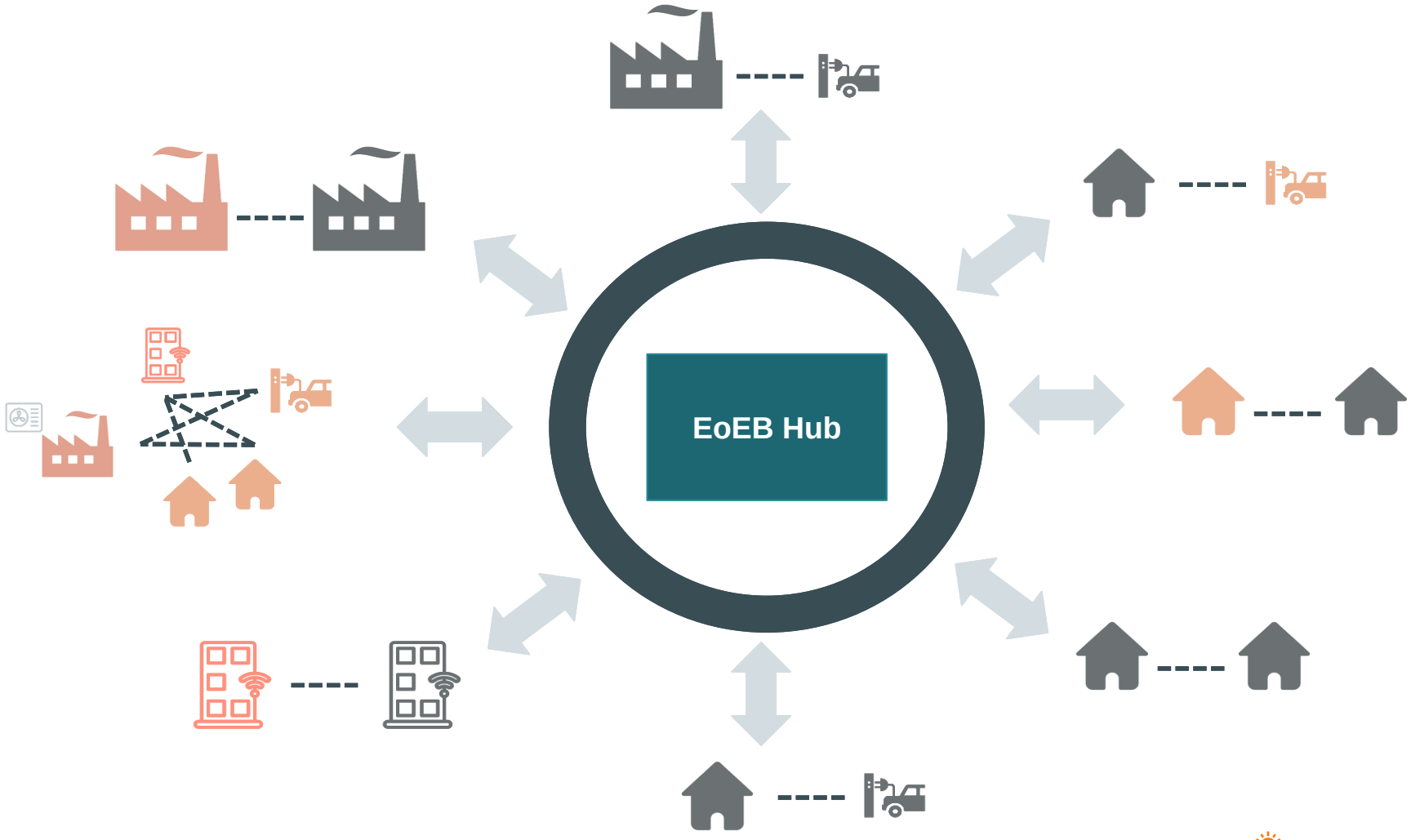
Q4 2023 Go-Live

TSO Grid Users
- ✓ *Multiple BRPs*
- ✓ *Explicit Flexibility based on local correction model*
- ✓ *Energy Communities*

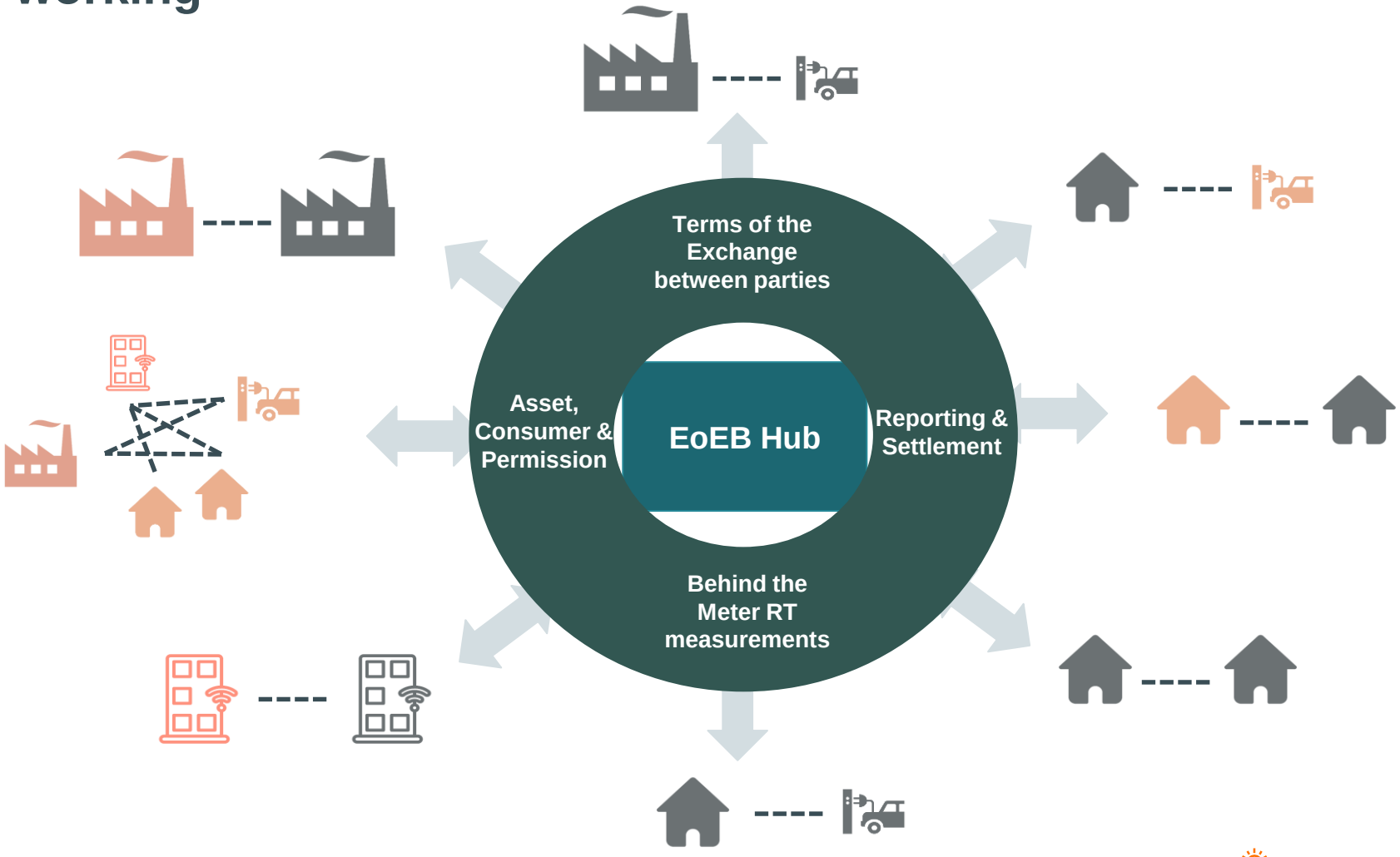
Including elements listed as out of scope of the design note, but within the CCMD constellation (e.g: grid fees)

traXes: Providing seamless access to the EoEB Hub and other Elia digital resources

Making EoEB Hub available and workable for a set of CCMD services



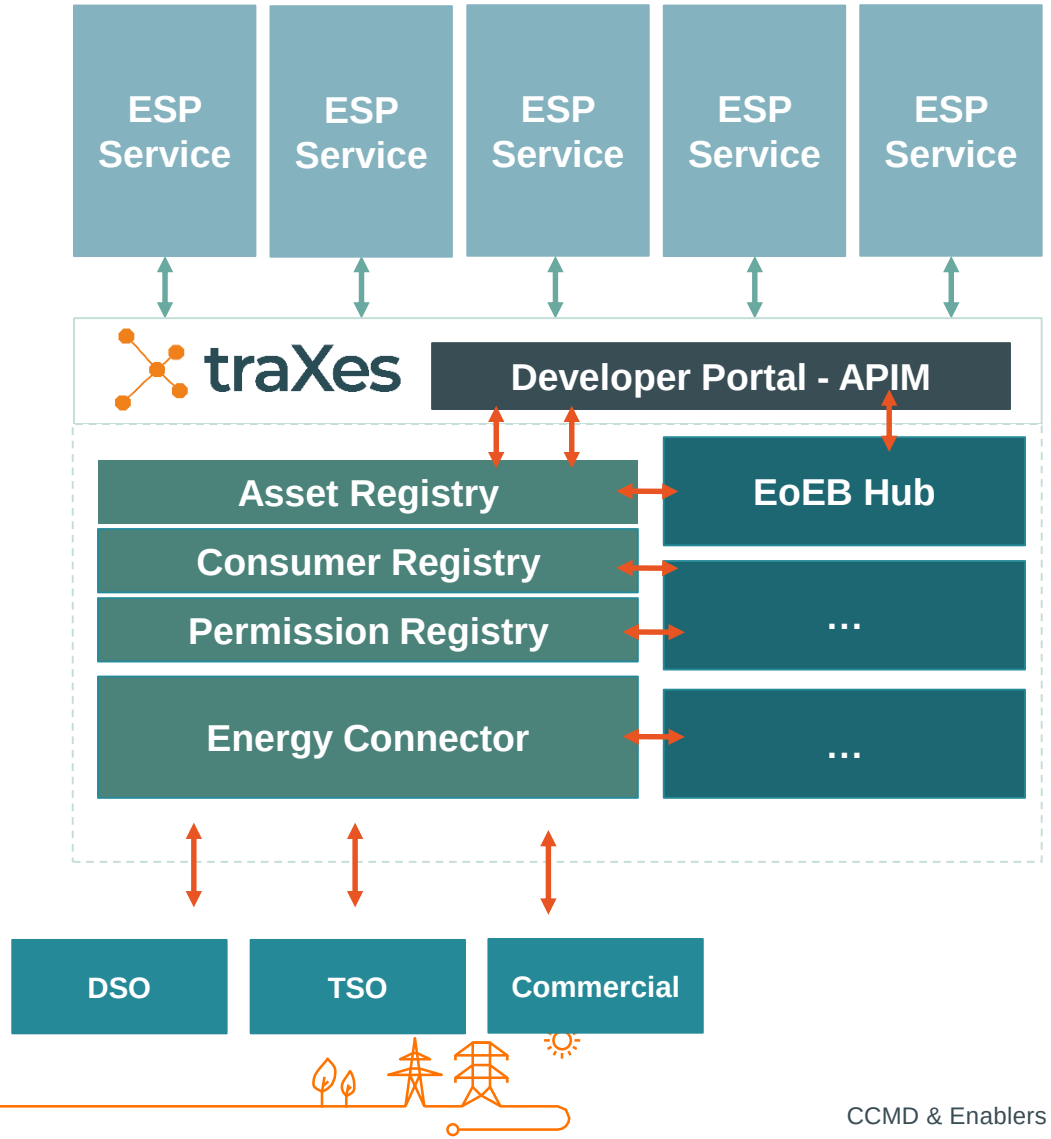
Beside the EoEB Hub, other components are required to enable the service working



For testing the implementation of CCMD's EoEB hub, Elia Group has built a set of enabling services.

These enabling services are bundled on the MVP of our traXes platform, including a the interface towards the ESP.

traXes



DEV THE ENERGY TRANSITION ON traXes

Power data & services

traXes
Power data & services

Get Started Services Use Cases

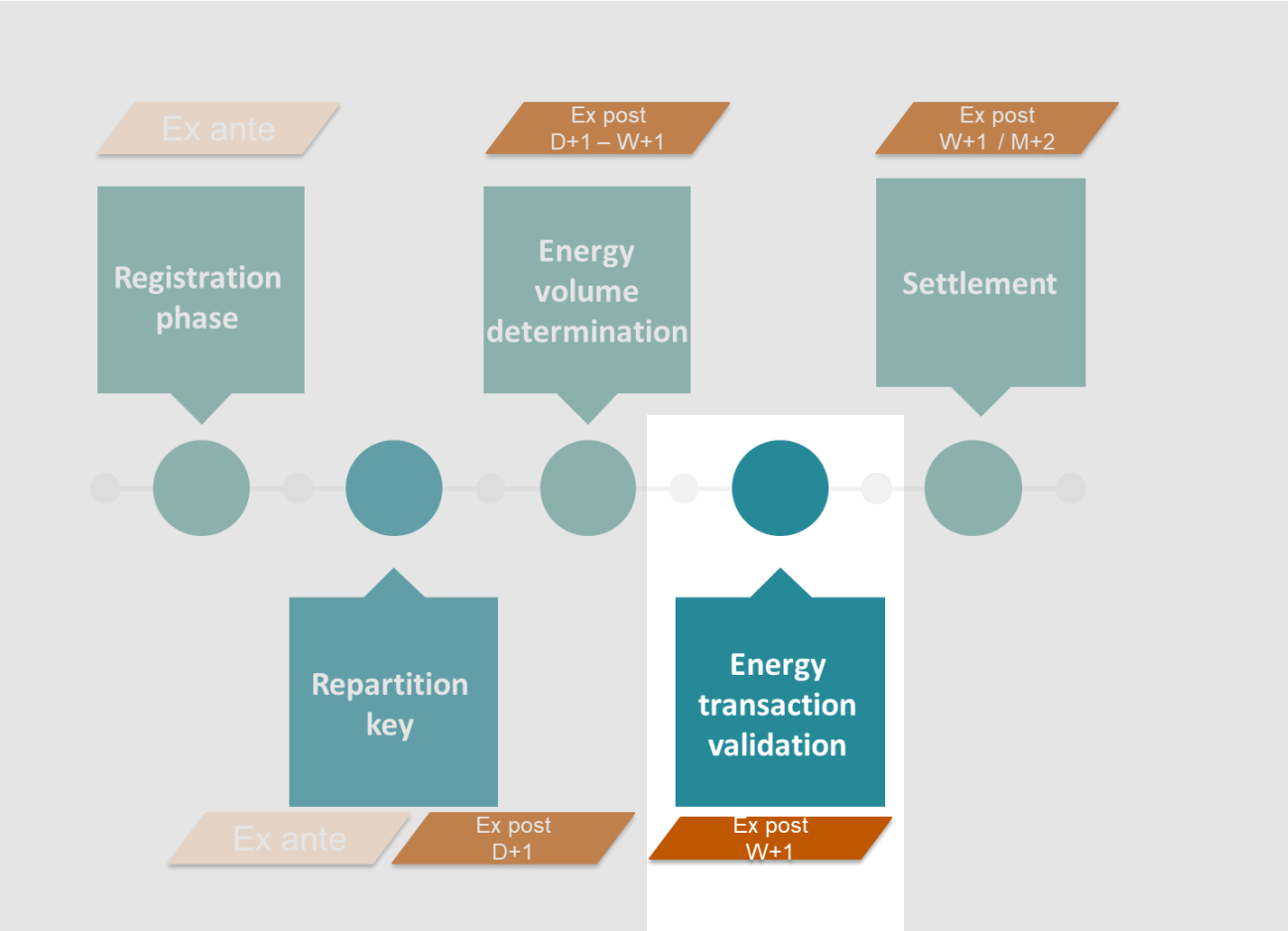
Login Register

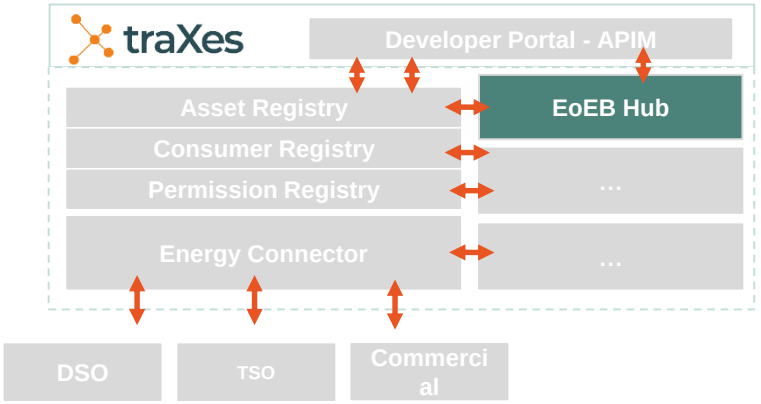
Empowering developers of the energy transition

Integrate the APIs from Elia Group directly into your product offering and get the highest value out of the energy system

Data Access Management: supporting the development of EoEB Hub

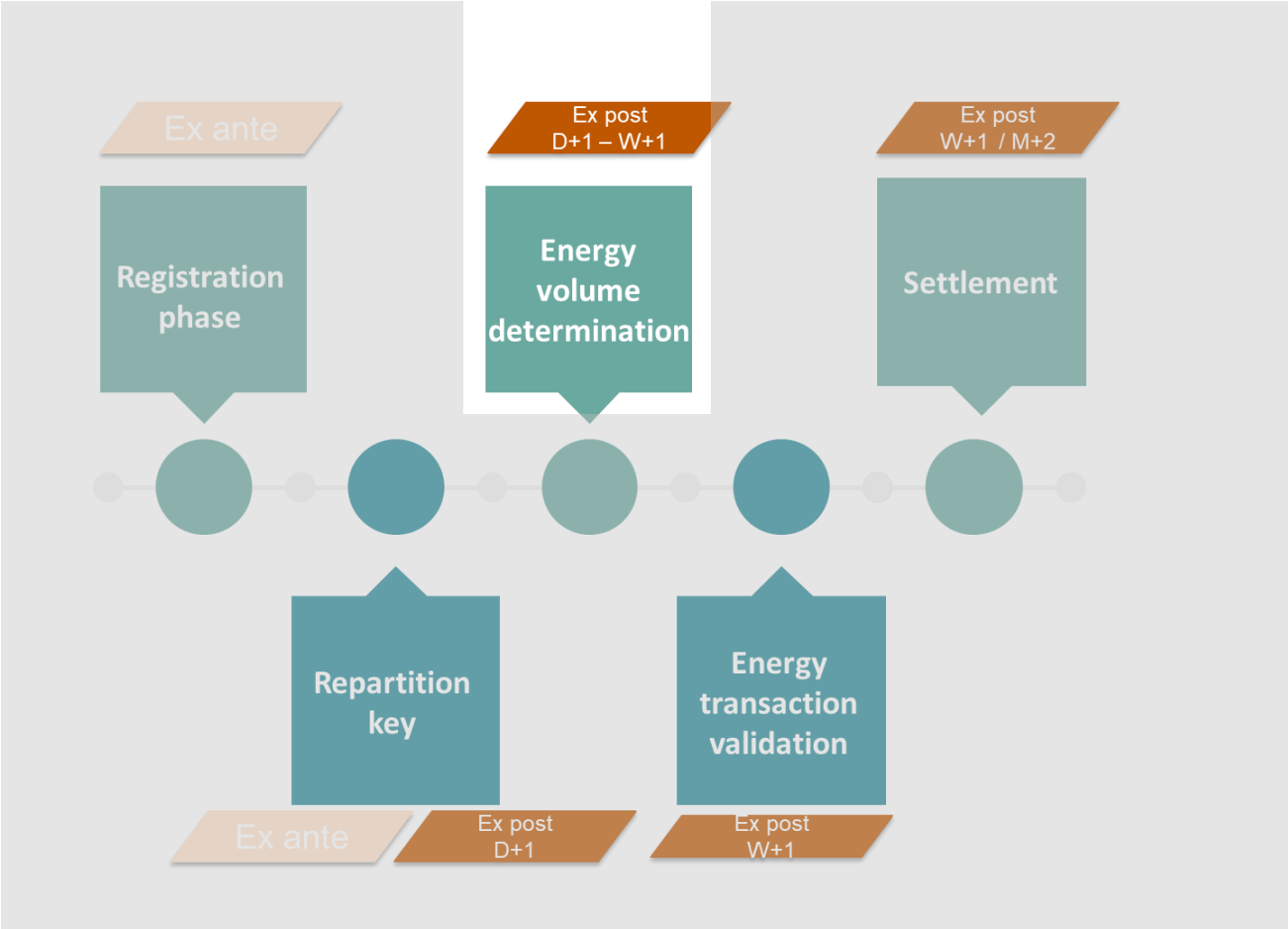
We built enablers to allow EoEB Hub to realize its ambitions

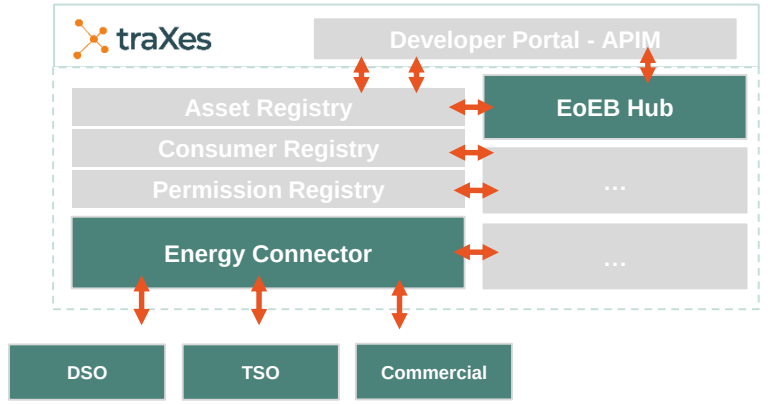




- No specific data exchange
- Actions performed by the SO
  - Transactions between two delivery points are registered
  - Registering volume defined by the services type and the measurements
- These transactions are validated and stored **in the EoEB Hub**

We built enablers to allow EoEB Hub to realize its ambitions



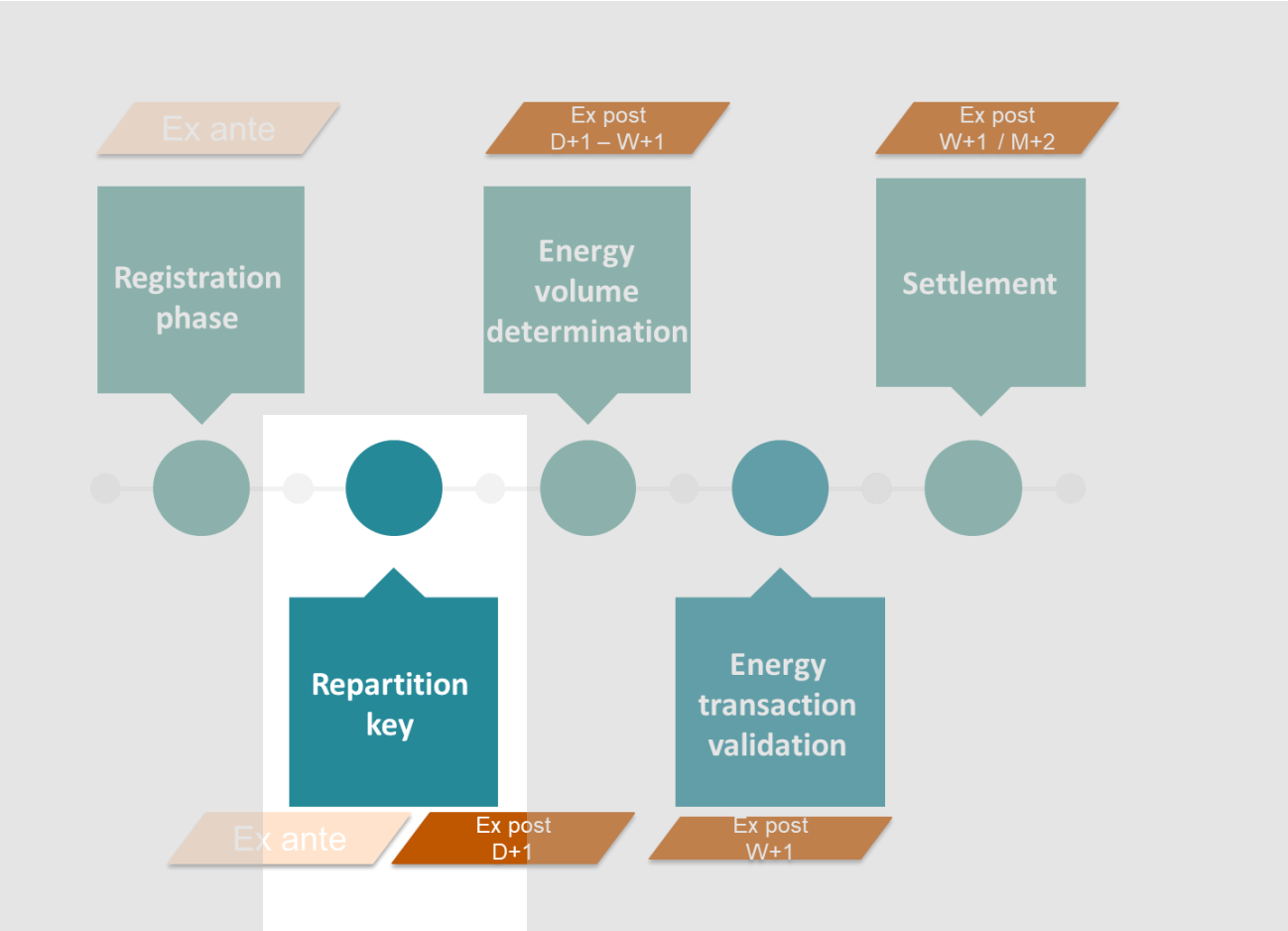


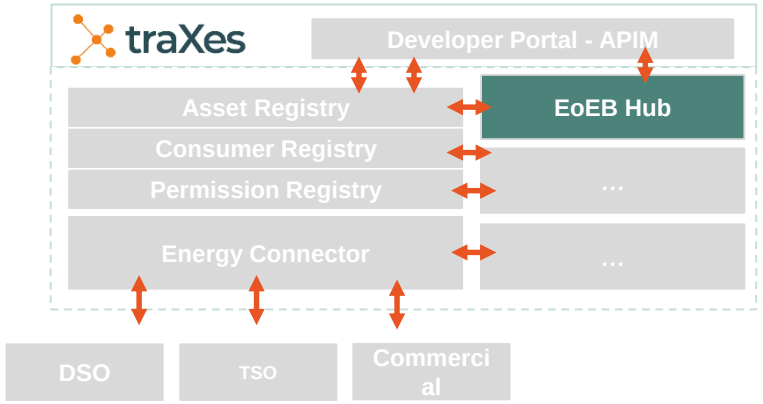
Measurements:
Energy volume is determined based **on the measurements** at the delivery point and (if relevant) the repartition key defined by the service

Measurements are being ingested **by the energy connector**.

Measurements can be at HV, LV, at the meter or behind the meter.

We built enablers to allow EoEB Hub to realize its ambitions



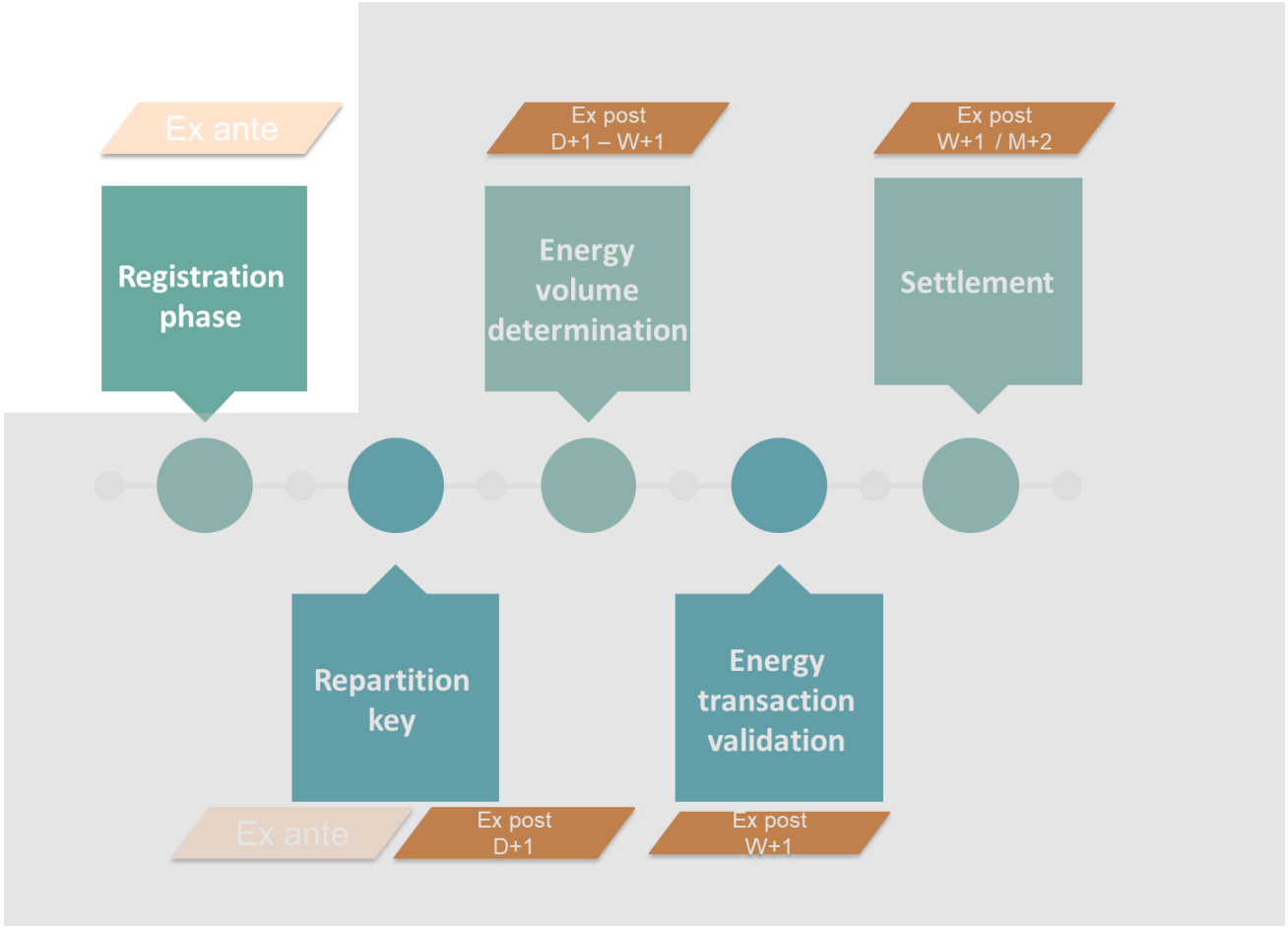


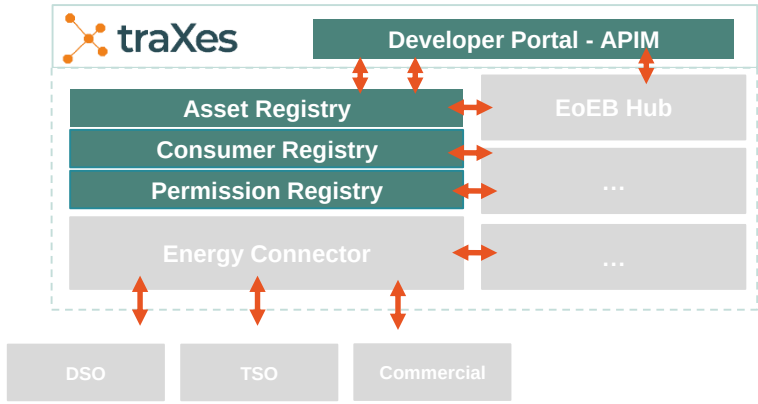
Service registration

The registration of the service (representing the repartition key of the exchanged volume) is **executed by the EoEB Hub**.

*this specific capability of the EoEB Hub might be isolated and mutualized in the future to enable other non-EoEB Hub related services

We built enablers to allow EoEB Hub to realize its ambitions



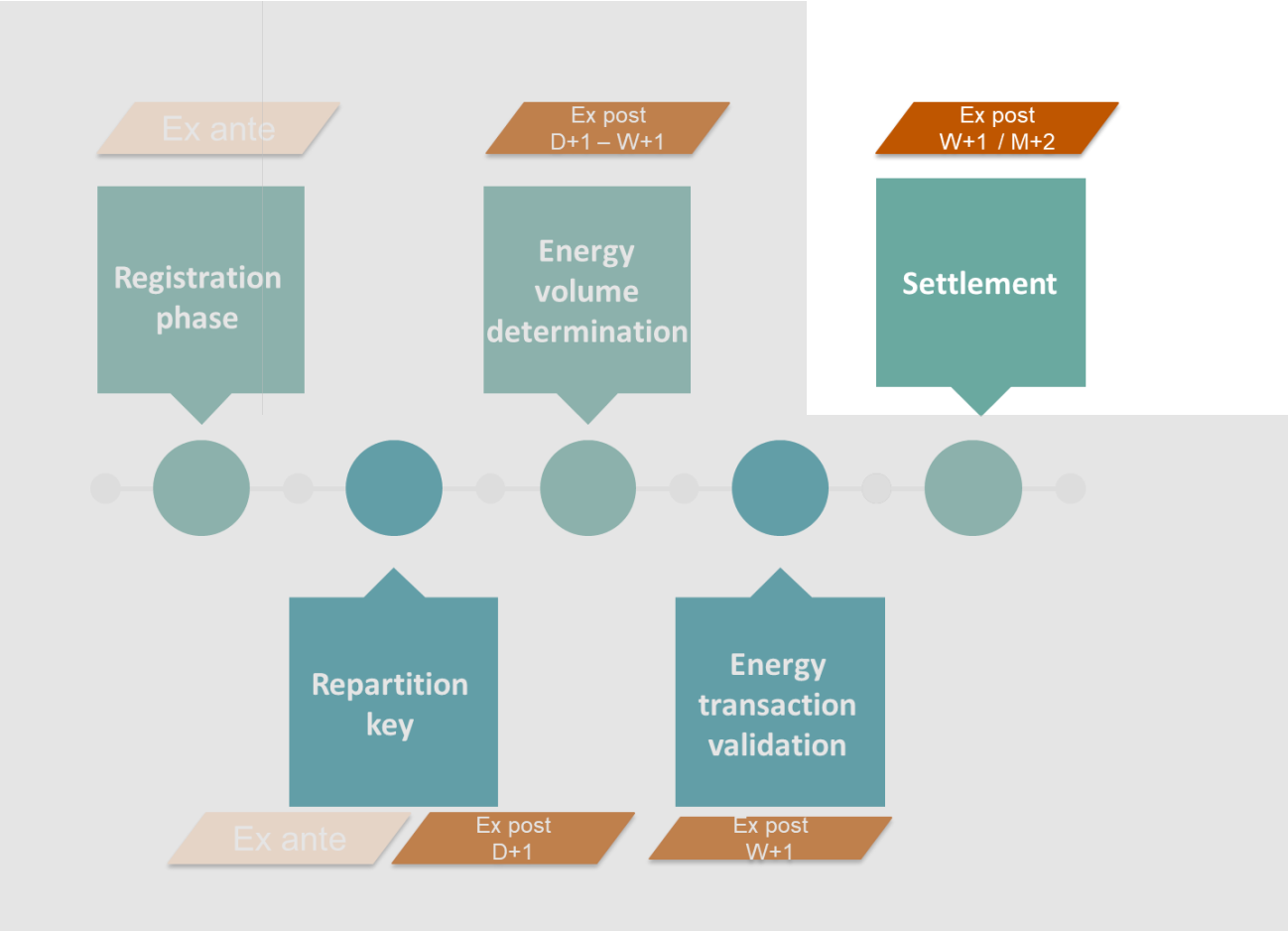


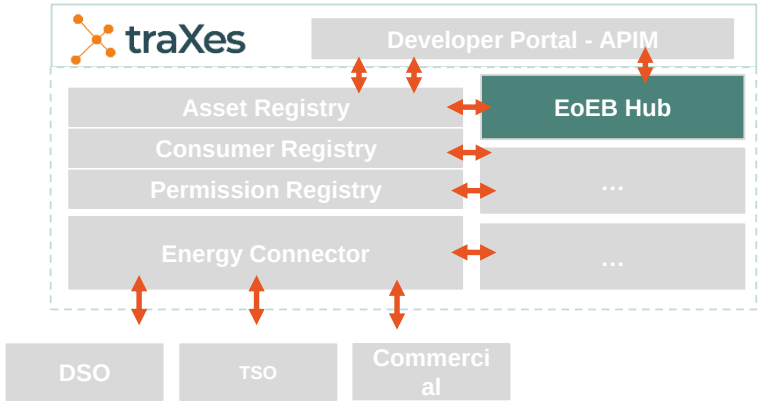
Registering Asset, Permission, Consumer

The registration of delivery points, including the permission and the related consumer (grid user) is handled by different platform registries.

For the TSO Grid User we ingest data from Elia Asset Registry (back-end CC, Flex Hub), for the DSO Grid User we would connect to existing asset registries (DSO, Supplier, Flex Hub …)

We built enablers to allow EoEB Hub to realize its ambitions





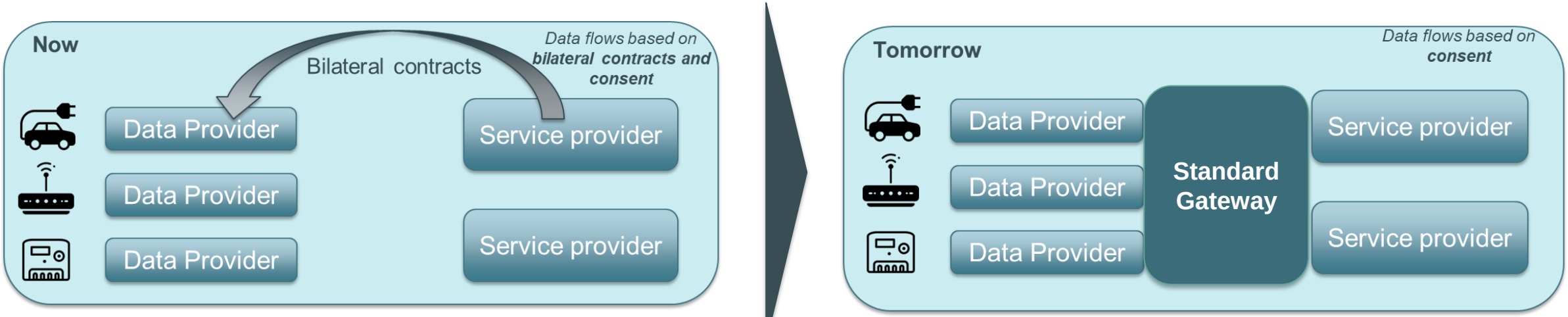
Settlement: reporting towards market actors and correction of BRP

Correction of the BRP perimeter ex-post in the Elia tools (MTR).

Integration of energy transactions into supplier allocation process (a.o. CMS)

Data Access Management: mutualizing data infrastructure to support the energy services market

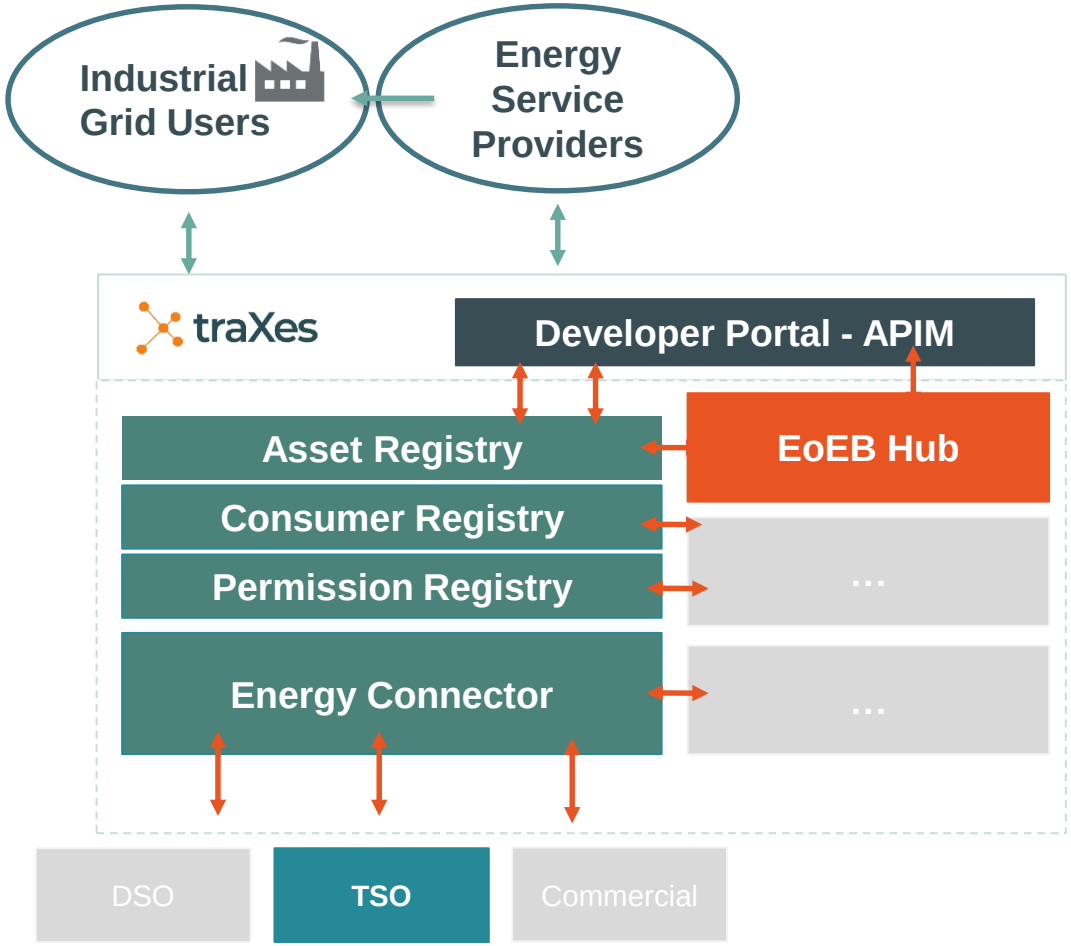
From locked-in data to secure and transparent access to consumer data



CURRENTLY CONSUMER DATA, ESPECIALLY BEHIND THE METER, ARE LOCKED IN

TO CREATE COMPETITION OF SERVICES BEHIND THE ELECTRICITY METER, ELIA WISHES TO ENABLE ACCESS TO CONSUMER DATA

Elia Group has built a set of building blocks to provide CCMD-services to TSO grid users…

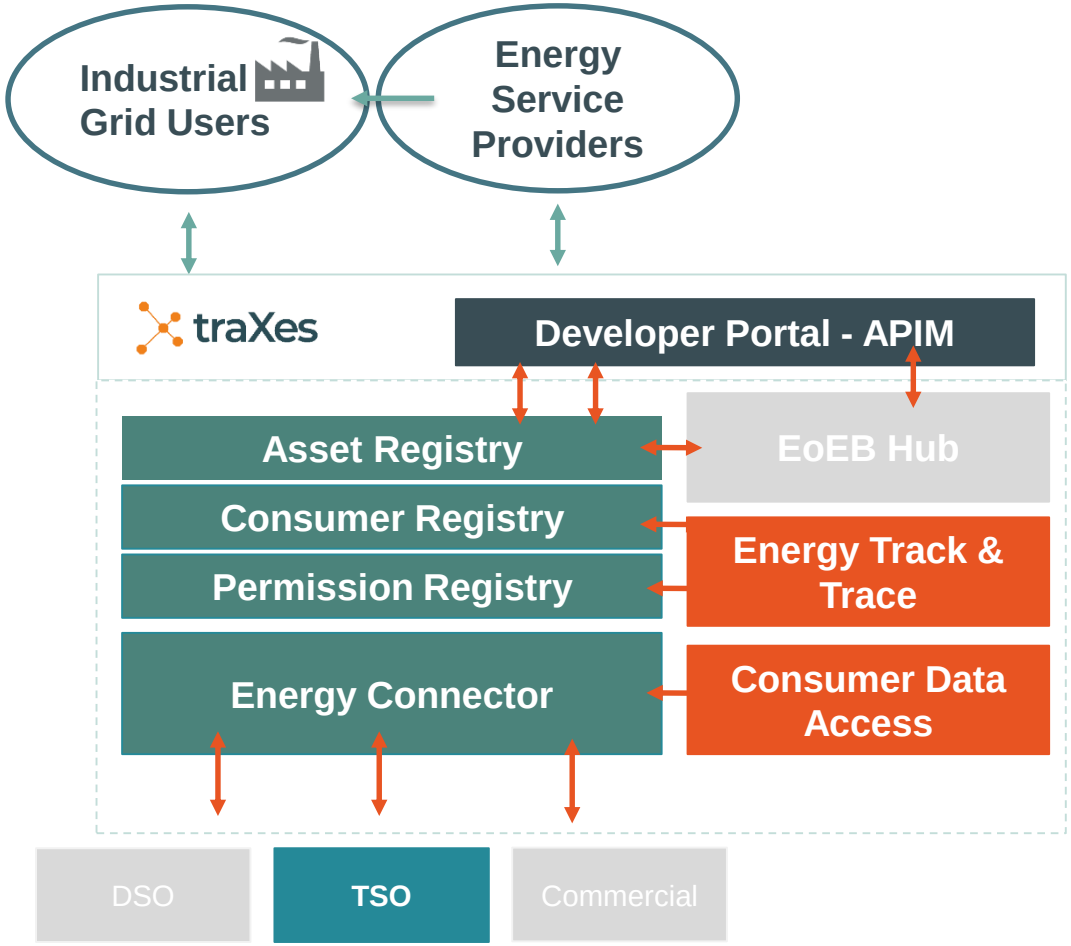


By end of 2023, Elia will facilitate CCMD services to its own grid users.

For his purpose, Elia is developing a set of capabilities in support of the EoEB Hub:

- **Energy Connector** for retrieving data from a set of data sources.
- **Permission registries** to ensure Elia records the agreements of the grid users for exchanging data and services
- **Consumer and asset registries** to be expanded from the existing applications of Elia.

…which can be re-used by other services

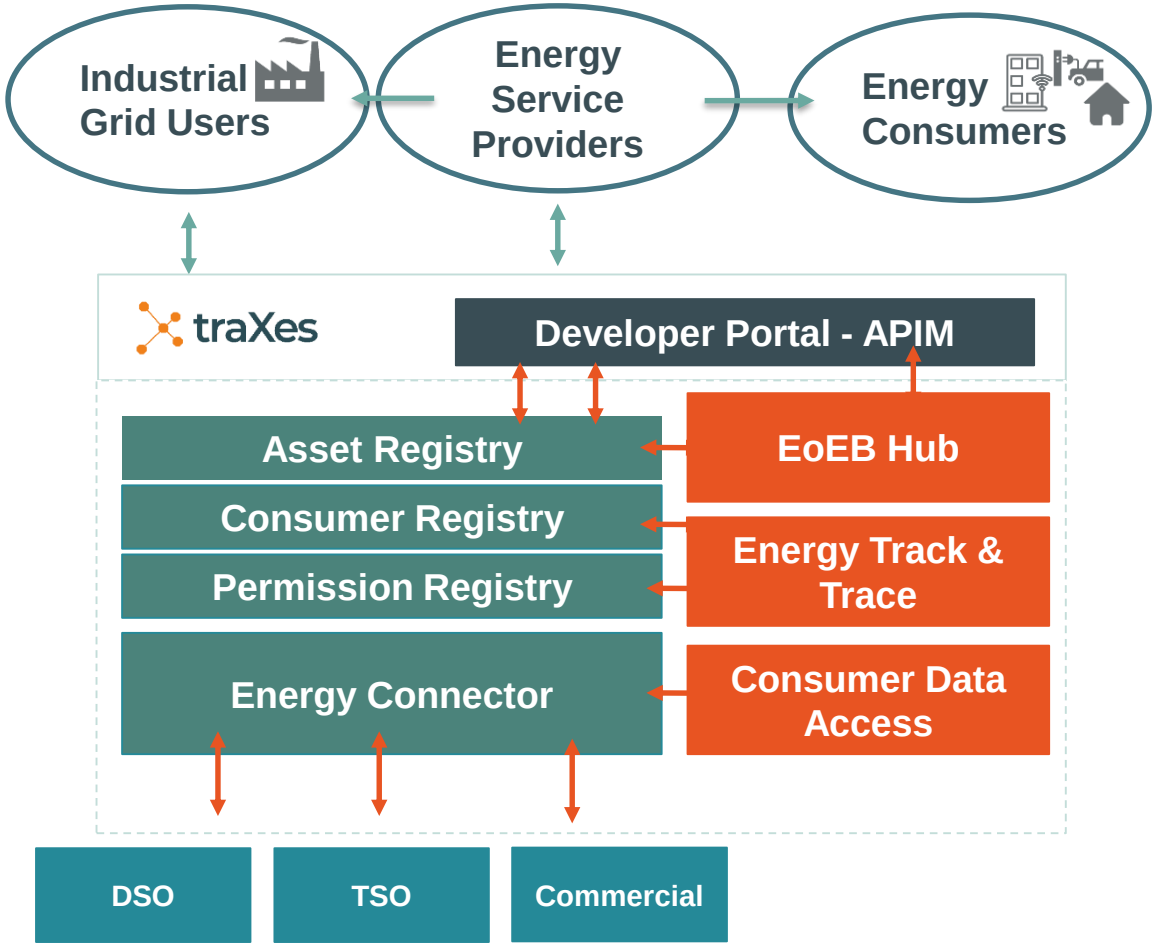


The enabling data infrastructure that is being developed by Elia can serve other purposes than CCMD and EoEB Hub.

Different **services** are under development with regards to the **sharing of data** for our own grid users, or **granular certification** of green energy volumes.

These services are enabled by the **same platform building blocks** as the CCMD services.

…also enabling data access and energy transactions at different voltage levels.



These enabling blocks are, by design, also being reflected upon to allow use cases that provide energy services at other voltage levels.

Why do we see a role for the system operators in data access management?

Testimony from a **consumer** “I would not like to have the exchange or transport of my data being taken care of by a commercial actor, rather by a regulated and trusted party.”

Testimony from **a Data Provider** “I would not like to have the data I am holding for my consumer, and which is a value stream for me to transit over a platform developed and managed by a competing commercial actor.”

- Consumers and Data Providers have a preference to share data over a platform managed by a non-commercial entity.
- SO(s) can become a trustworthy party to facilitate the data exchange.
- SO(s) should ensure the non-discriminatory open access to data (ensuring inclusivity)
- SO(s) should encourage data standardization and interoperability in the energy sector
- In the long term, the role of the SO(s) in the Data Access Management vision could evolve (once appropriate regulations and standardization are shared among the actors of the energy data market)

First reflections on metering requirements

How are Metering requirements defined?

- The TSO determines, in the Connection Contract or Ancillary Services Contract, the location of meters in the following cases :
  - All connections , and production unit when it is necessary to determine the active and/or reactive energy taken off and/or injected by said installation
  - All connections of a Transmission Grid User when its installation is used as a whole to deliver ancillary services to the TSO
  - On any installation of a Transmission Grid User when the TSO believes its exploitation can impact the grid from a security, reliability or efficiency perspective.
  - Within the Transmission Grid User installations when part of its installation delivers ancillary services to the TSO

- The TSO determines the technical requirements to which the measuring equipment referred to here-above, must comply, in particular:
  - the applicable standards;
  - the quantities to be measured and the units used;
  - the periodicity of the measurements;
  - the accuracy of the measurements;
  - where applicable, duplication of measuring equipment.

These criteria's must be approved by the regulators and specified in the Connection Contract or Ancillary Service Contract.

Besides mFRR submetering requirements, there is no submetering requirements defined yet for other CCMD use cases such as a Supply Split. These must thus be defined.

Roles and Responsibilities applicable for mFRR Submeters today

Topic	Roles & Responsibilities
Standards Definition	Elia defines the standards to which metering installation must uphold to. Elia defines the communication standards in case of 3rd party devices that Elia must retrieve data from without using a 4G router.
Device Compliance Certification	Device Owned by Elia : Elia is responsible Device Owned by 3rd party : 3rd party is responsible to demonstrate the compliance
Device Installation & Maintenance	Device Owned By Elia : Elia is responsible Device Owned By 3rd party : 3rd Party is responsible.
Data Collection	Elia is responsible to retrieve the data from its devices linked to TSO AP Submeters CDSO are responsible to retrieve the data of CDSO AP Submeters
Data Validation & Estimation	TSO AP Submeter : Metering Data is verified by Elia and deemed validated after 5WD unless otherwise demonstrated by the BSP. CDSO AP Submeter : The CDSO is responsible for the validation of the metering data.
Data Transfer to the market	Elia is responsible to transfer the data at its disposal to the relevant market parties

Elia intends to extend the submetering requirements applicable to mFRR to the other use cases in the CCMD Framework.

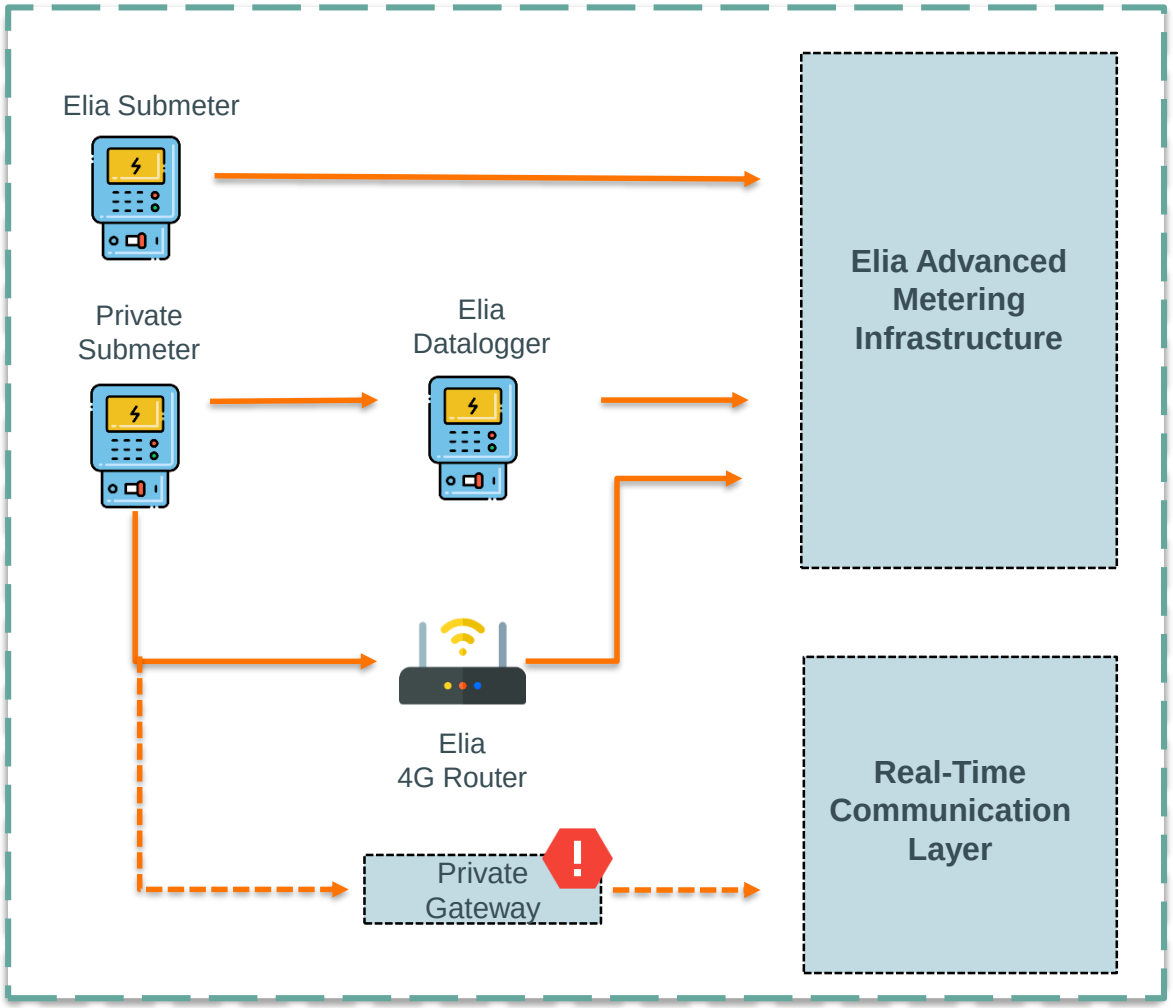
TSO Submetering requirements applicable today (for mFRR)

- **Periodicity :** Interval length must be 15’.
- **Precision :** Values must be registered in kWh , with at least 3 decimals.
- **Time Synchronization :** The device clock must be synchronized each 15’ via NTP. In case synchronization is lost, the device may not deviate by more than 1s daily
- **Timeliness :** Data must be retrieved each 15’ for the elapsed quarter hour.
- **Autonomy :** The meter must store at least 30 days of data locally
- **Accuracy :** Accuracy must comply with the following table :

Accuracy Class	TP	TI	Meter
>=20 MVA	0.2	0.2s	0.2s
>= 5MVA	0.2	0.2	0.2
>= 1MVA	0.2	0.2	0.5
>= 250kVA	0.2	0.5	1

The full list of submetering requirements is available on the Elia Website

Submetering Communication Architecture for CCMD



- Elia intends to repurpose the options available for mFRR submeters in terms of communication architecture for the other CCMD use cases.

- In addition, Elia is investigating the possibility to integrate private submeters used in conjunction to private gateways in CCMD in a similar fashion to what is available today for aFRR DP_PG.

Disclaimer:
In such a setup, the SO would not be involved in the installation of the device, nor in the data collection chain.

Specific safeguards and verifications would thus need to be put in place to guarantee a sufficient degree of data trustworthiness in such a setup. These remain to be defined.

As for classical submeters, the SO would be entitled to perform or request a conformity audit in case of doubt expressed by SO or any other impacted party

Architecture in framework of CCMD services