Independent Aggregation Remuneration

Eurelectric policy brief

July 2023

Eurelectric represents the interests of the electricity industry in Europe. Our work covers all major issues affecting our sector. Our members represent the electricity industry in over 30 European countries.

We cover the entire industry from electricity generation and markets to distribution networks and customer issues. We also have affiliates active on several other continents and business associates from a wide variety of sectors with a direct interest in the electricity industry.

We stand for

The vision of the European power sector is to enable and sustain:
- A vibrant competitive European economy, reliably powered by clean, carbon-neutral energy
- A smart, energy efficient and truly sustainable society for all citizens of Europe

We are committed to lead a cost-effective energy transition by:

investing in clean power generation and transition-enabling solutions, to reduce emissions and actively pursue efforts to become carbon-neutral well before mid-century, taking into account different starting points and commercial availability of key transition technologies;

transforming the energy system to make it more responsive, resilient and efficient. This includes increased use of renewable energy, digitalisation, demand side response and reinforcement of grids so they can function as platforms and enablers for customers, cities and communities;

accelerating the energy transition in other economic sectors by offering competitive electricity as a transformation tool for transport, heating and industry;

embedding sustainability in all parts of our value chain and take measures to support the transformation of existing assets towards a zero carbon society;

innovating to discover the cutting-edge business models and develop the breakthrough technologies that are indispensable to allow our industry to lead this transition.

Dépôt légal: D/2023/12.105/29

WG Retail Market Design
WG Market Integration & Network Codes
WG Regulation & Network Customers
Customers & Retail Services Committee
Markets & Investments Committee
Distribution & Market Facilitation Committee

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Introduction

Demand Response will be a major facilitator for the energy transition. As we move our system away from the centralised, fossil-fuel-dependent model to a more decentralised and renewables-forward version, the role of flexibility services like demand response contracted through aggregation will be critical to maintaining the system balance and ensuring the most efficient use of energy from renewable sources.

A key vehicle we see for bringing together significant enough loads to have such an impact on the system is through independent aggregation. In this paper, using the USEF framework[1], we intend to outline the major existing compensation models for independent aggregation, provide an assessment of their efficiency in the market, and highlight additional elements which could be considered for an EU-level model. In the Annex we will provide some additional context provided by our members on how these models are applied in their countries and any barriers that may need to be considered when developing a European framework.

Before we dive into the compensation models, it is important to outline the attributes of the aggregator-supplier relationship which we will use to describe the different models. The USEF framework[2] identifies four key aspects of this relationship:

- **Contractual relationship** – determining the need for a contractual relationship between the supplier and the aggregator. While the details of a contractual arrangement can be negotiated bilaterally, requiring a contract can affect the playing field for aggregators, so it is necessary to assess this aspect when implementing the aggregator's role.

- **Balance position / balance responsibility** – How and if the aggregator assumes or assigns balance responsibility. As a party trading flexibility in the market, aggregators can cause system imbalance by not delivering the agreed-upon level of flexibility. To mitigate this, the aggregator may need to assign a balance responsible party (BRP). Beyond this, if an aggregator and a BRP_{SUP} are active in the same connection, the aggregator's activity can cause a deviation from the projected behaviour of the prosumer, which if not properly communicated to the BRP_{SUP} can impact their balance position. The aggregator's balance responsibility and the BRP_{SUP}'s balance position must be considered in the aggregator remuneration model.

- **Sourcing position** – The balance between electricity sold to final customers and electricity sourced in the market. The sourcing position of the supplier will be affected when an aggregator initiates flexibility from a customer, either by reducing the amount

[1] The Universal Smart Energy Framework (USEF) has been established to drive the fastest, most cost-effective route to an integrated smart energy future. It delivers one common standard on which to build all smart energy products and services. It unlocks the value of flexible energy use by making it a tradeable commodity and by delivering the market structure and associated rules and tools required to make it work effectively. USEF fits on top of most energy market models, extending existing processes, to offer the integration of both new and existing energy markets. It is designed to offer fair market access and benefits to all stakeholders. As well as delivering a common standard, USEF intends to set guidelines for the harmonization and development of distributed flexibility mechanisms.

[2] https://www.usef.energy/app/uploads/2021/05/USEF-The-Framework-Explained-update-2021.pdf

of already sourced energy being sold or by driving up demand when energy hasn't been sourced. This can also apply to the aggregator, if they want to sell energy (particularly in the wholesale market) they must source it intentionally, and this is generally done through the supplier. This sourcing and selling of electricity between suppliers and aggregators is called "transfer of energy" (TOE)[3] The remuneration model must define the mechanism to correct the sourcing position, its price, and the settlement mechanism.

- **Information exchange and confidentiality** – the information requirements for the processes of the different market roles, their required aggregation level, and what information is considered confidential. For confidentiality, we must identify what aggregation level is considered commercially sensitive.

It is worth noting that this paper is focusing on remuneration models where the supplier and aggregator are operating independently from one another. But there are a few instances in the current European energy market where aggregation is not independent from the supplier. These include the **integrated model** and the **broker model.** For more information on these models, we refer the reader to the Nordic Energy Research and Nordic Council of Ministers report on the regulation of independent aggregators.[4]

How do we compensate aggregation?

Uncorrected model

The uncorrected model does not require a contractual relationship between the aggregator and the supplier. The balance responsibility for the connection point remains exclusively with BRP_{SUP} and the impact of the flexibility activation in the BRP_{SUP}'s balance position is not corrected. This model relies on implicit remuneration to the supplier for the transfer of energy or imbalance caused.

Pros:

- This model is simpler and very often leaves a positive financial position for both the supplier BRP and the aggregator if the imbalance single price is applied[5]

- It is more applicable in cases where activations are scarce, since the energy volume is small compared to total balancing volumes

Cons:

- The issue of checking if real response has been activated by provider is not solved.

- There is difficulty in establishing the proper price to be paid by the independent aggregator to the supplier since all supply contracts are different

[3] French exception - https://www.conseil-constitutionnel.fr/en/decision/2013/2013666DC.htm
[4] https://www.norden.org/en/publication/regulation-independent-aggregators
[5] Some Member States are applying exceptions to imbalance single pricing, applying dual or hybrid methodologies according to EBGL, which can negatively impact the BRP's financial position.

- It is difficult to establish how the independent aggregator became the owner of power before offering it to the market. From a system point of view, energy is valued twice (additional question from a legal point of view of the energy property).

- Supplier and Aggregator compensations can be overpaid, and customers could pay twice for the same service through the imbalance price.

- This model does not offer adequate transparency to allow for the most cost-efficient offer to be selected, we find it incompliant with existing European regulation and that it should be excluded from the Network Code.

In Greece, the TSO debits/credits to the aggregator the amounts which occur from clearing balancing power and energy and deviations. Additionally, the TSO charges the aggregator Non-Compliance-Charges (NCC) for significant deviations in their provision of up/down balancing energy. For suppliers, the TSO debits/credits with the imbalance price the whole deviation between the market volume purchased by the supplier and the activated volumes, even if the deviation is a result of a demand response event. However, no NCCs are applied to the supplier during demand response events.

Central Settlement Model

The central settlement model does not require a contractual relationship between the aggregator and the supplier. The balance responsibility is with the BRP_{AGR} for the activated flexibility, and the imbalance settlement responsible (ISR) corrects the perimeter of BRP_{AGR} and BRP_{SUP}. The supplier's sourcing position is compensated through ToE administered by the ISR. In terms of information exchange, the aggregator does not need to inform the BRP_{SUP} nor the supplier of the prosumer about the new flexibility contract. To maintain the confidentiality of the prosumer and the aggregator, the BRP_{SUP} should receive information on the activated flexibility in its portfolio on aggregated level per imbalance settlement period. The difference between the corrected and central settlement model lies in the correction of the customer´s bill – under the central model, the bill is automatically corrected to account for provided flexibility, in the central settlement model, this is done via the aggregator.

Pros:

- This model requires rules for paying compensation to suppliers, which are set by a central authority, in a non-discriminatory way.

- Both parties have clear responsibilities for imbalances as BRPs.

- Switching of supplier or aggregator can be easily managed through the ISR.

Cons:

- Any central settlement system doesn't have direct access to the real-time retail price. Appropriate price-setting regulation is the key for the success of this model.

- Maintaining the confidentiality of the prosumer and the aggregator could depend on the number of customers activated or the size of the customer. When dealing with only a few customers the prices can be implicitly disclosed.

- This model usually contains some elements from the corrected model and is thus more complicated.

As a variation of the Central Settlement model, a contractual agreement can exist between the aggregator and the supplier to settle the price and the financial flows between them (providing they both consent to such relationship).

In Finland, the legislative amendments have been adopted and will enter into force on 1 June 2023. Provisions on market access for an independent aggregator were added to the Electricity Market Act. The operating model is based on a model in which the direct costs of activating the flexibility caused by the operation of an independent aggregator are compensated to the BRP_{SUP}. In addition, the electrical balances of the aggregator and the customer's main supplier are corrected. The TSO is entrusted with the task of defining the method of calculating compensation and it is approved by the regulator. The law now defines only the main principles of the aggregation model, and the practical operating models will be defined in later regulations.

In France, the supply of all services is always neutral for the BRP because the TSO establishes the energy provided. For the regulated mechanism, the volume of energy sold by the service provider through its portfolio is compensated to the BRP_{SUP} as a whole. There is also a financial compensation, representing the cost of energy sourced by the supplier, based on past forward products (e.g., average calendar baseload price).

The German solution to this is to require the retailer to bill the customer for this DR energy at the normal retail price. But this requires changes to retail billing systems, so would be expensive to implement.

In Italy, in the pilot projects' framework, the neutrality of the BRP is ensured by adjusting the reference programme of a given unit (it is used as the basis for the imbalance settlement) taking into account the energy activated by the BSP on that unit. Both in the UVAM (Virtual Mixed Aggregated Unit)[6] pilot project and in the capacity mechanism (UCMC Regulation), the BSPs are required to communicate to TERNA (the Italian TSO) the subdivision of the energy moved during a balancing order between the dispatching points (which include the points associated with the UVAM). In this way, TERNA can modify the programs of the dispatching points in order to sterilize the BRPs affected by any imbalances. The compensation model envisages that BSP retrocedes to BRP (indirectly through TERNA) the equivalent value of the energy handled during the balancing orders.

[6] UVAM (Mixed Enabled Virtual Units) are groups of electricity production units classed as not significant (programmable or non-programmable), and demand units that act through an aggregator (BSP or Balancing Services Provider) as a virtual generation and consumption system. (source: https://www.energyteam.it/en/demand-response-solutions/uvam/)

Corrected Model

The corrected model does not require a contractual relationship between the aggregator and the supplier. The balance responsibility is with the BRP_{AGR} during periods of activation and the ISR corrects the balancing position of the BRP_{AGR}. The BRP_{SUP} is typically corrected in one of two ways: 1) the meter data responsible (MDR) corrects the prosumer's consumption profile, based on the activated flexibility or 2) the ISR corrects the BRP_{SUP} perimeter. In terms of remuneration, the Aggregator compensates the sourced energy through the prosumer. The supplier bills the prosumer without taking into consideration the activated flexibility in one of two ways: 1) The supplier receives the corrected values from the MDR; or 2) the ISR informs the supplier of the activated flexibility and the supplier corrects the prosumer's bill, and the aggregator compensates the prosumer for their activated flexibility (both the sourcing and the service). For information exchange, the aggregator does not need to inform the BRP_{SUP} nor the supplier of the prosumer about the new flexibility contract. Where the ISR is involved, they should communicate with the supplier about the activated flexibility in its portfolio on the prosumer level per imbalance settlement period.

Pros:

- The supplier does not suffer an imbalance when it goes against the system, however, the system does not pay twice for the same service (to the aggregator for the service provided and to the supplier for the imbalance in case it went in the favour of the system).
- Certified sub-meter or dedicated measurement device readings correction could be a possible alternative. A key characteristic is the ability of aggregators to participate in balancing services, as well as in wholesale trading, through sourcing their activated volumes.
- The corrected model allows for fair allocation of energy and imbalances to each party and guarantees that no double compensation is debited for the same amount of energy in the balancing market.
- If DR activations increase, the corrected model is the one ensuring the maximization of consumer welfare.
- Fairness towards both the aggregator and the original BRP
    - From this perspective, most probably we will need certified submetering on the specific device providing demand response (if there are more devices installed in the connection point), otherwise, results may be imprecise.

Cons:

- Correctly incentivises both service provider and supplier, but it is complex and costly to put in place for residential customers (requires a lot of IT to be developed by both DSOs and TSOs to make it work).

- The calculation of taxes and network charges should be based on the actual consumption, not on the corrected values, so it has to be calculated *ex-ante*.

- There is a risk that an aggregator would choose only customers with the more competitive offers instead of focusing on unlocking the potential flexibility of the maximum range of consumers. Hence, this incentivised niche business and cannibalisation instead of a kind of universal service provided by independent aggregators for the whole consumers, specifically those less familiar with this activity. If a supplier offers a fixed tariff (single or multiple periods) open to arbitrage by aggregators (expected to promote flexibility at competitive prices), suppliers should be enabled to respond through more dynamic tariffs.

In France, the supply of all services is always neutral for the BRP because the ISP establishes the energy provided. For the corrected mechanism, the energy is calculated for each consumption site, and then the ISP corrects the actual consumption load curve, thus enabling the supplier to invoice its customer as if there had been no demand response.

Lessons learned and recommendations for the Network Code on Demand Response

The following set of recommendations is based on the opinion of experts active in the Eurelectric structure of expertise, and should, from our point of view, be considered in the upcoming network code.

- The framework should be flexible to allow different models which fit in different markets. The development of this framework can drive the proper implementation of the existing articles on aggregation.

- A prerequisite in any model used is to have in place a robust baselining methodology, which would develop in time (taking into account real experience from demand response activation). This may be calculated per balancing (metering) point, or in clusters. Simplified approaches such as X out of Y may not always be the most precise and may lead to suboptimal results.

- As we understand most countries will opt for both corrected and compensated models (i.e. correcting imbalances caused), having as precise as possible baselining methodology in place is crucial. New rules could identify how often the baseline needs to be tested (i.e. after a few activations, once in 3 months, once in 6 months at the latest) and how the results of testing should be incorporated into the methodology.

- Transfer of energy needs to be considered in any model – clear rules on how this is taken care of (in the original supplier bill, aggregator bill) should be identified for each model.

- In any model, we need a description of roles, and which role is responsible for what: supplier role, responsibilities and rights, aggregator role, metering data administrator role, imbalance settlement administrator, etc.

- Financial neutrality of the parties involved in independent aggregation shall be ensured – for instance, suppliers should not bear the risks related to different consumption patterns of consumers engaged in independent aggregation. In this regard, the network

code should set clear rules for information exchange on when the aggregation provision will start (sufficiently in advance, let´s say at least 1 month), which model will apply, etc.

- The rebound effect[7] needs to be taken into account in all models, especially for thermic appliances or electric vehicles. The imbalance adjustment of the BRP to take into account activations made by the BSP should be based on a proper methodology for the baseline set-up, which must take into account several variables such as the rebound effect.

- A compensation mechanism for the transfer of energy / rebound effect shall be based on actual market prices, clearly set by a methodology approved by the NRA. This methodology must be known in advance.

- The compensation mechanism shall shield passive consumers from the negative effects (cross-subsidy effect).

- This NC is not the right place to deal with multi-supplier issues and shall not pre-empt the outcome of the debates on these topics ultimately subject to the market design revision.

- In aggregation models, smart metering should be favoured if possible before the use of submetering. Where submetering is deemed appropriate, a sunset clause should be enacted which sets a clear threshold of smart meter penetration at which point submeters may be phased out.

Conclusion

At Eurelectric we welcome the move to create an EU-level harmonisation of aggregation and see it as a step in the right direction to facilitate the fuller participation of aggregation products in all electricity and balancing markets. Such a harmonisation will allow for a clearer identification of the objectives of the aggregation business, quash the impulse to fragment the market through national regulation in favour of EU rules and avoid distortions in common power markets (e.g., the day-ahead, intraday, and balancing markets).

While we are in favour of this harmonisation at EU-level, we would stress the need for this framework to be flexible enough to allow different models to be applied in the markets where they make sense, but with enough structure to keep the European view and preserve market integration. If well-developed, such a framework can drive the proper implementation of the existing articles on aggregation (Articles 15, 17, and 32 of the Electricity Directive) and correct improper implementation where it exists in some European markets. To be effective, we think the framework must include clear guidance on the correction model, baseline calculation, imbalance responsibilities and adjustments, compensation mechanisms, the minimum bid size for aggregation, and flexibility payments.

Other elements for an EU-level set of guidance

Aggregation as a service should be provided with all the guarantees for consumers. For this reason, it is essential that the independent aggregators have the same rights and obligations,

[7] The rebound effect results in part from an increased consumption of energy services following an improvement in the technical efficiency of delivering those services. This increased consumption offsets the energy savings that may otherwise be achieved. (source: https://www.sciencedirect.com/science/article/abs/pii/S0921800907004405)

including the sanctioning regime and an administrative procedure for their disqualification, as suppliers do, and that a register of aggregators is created in a consistent manner, establishing prior compliance with the requirements for carrying out the activity.

The independent aggregator will have to assume many of the obligations that suppliers currently share (contributing to the financing of the system operator and the market operator, being transparent vis-à-vis customers, providing guarantees to operate in the markets, etc.). We draw particular attention to the system of penalties for contract termination that may be applicable by aggregators, which should follow the same criteria as for supplier switching, as established in Article 12.3 of Directive (EU) 2019/944.

And to promote the deployment of the figure of the independent aggregator, and for it to be on equal terms, it would be necessary to eliminate the barriers to representation (i.e., physical route-to-market activities) still enforced in Spain[8], in a manner equivalent to self-consumption. This could delay the development of aggregation and it is not a level playing field for suppliers that could impact consumers. The ban affects the day ahead and intraday markets and the activities of BRP and BSP.

Besides, DSO(s) must be informed of all those actions that may generate variations in the energy flows in the grid, such as demand reductions or generator connections.

[8] Spain maintains historical limits to the representation of generation to the main operators based on a market structure that is not the current one.

Annex I – State of Play in Some Member States

Table 1: Which Markets Aggregation Can Participate In[9]:

Country	Markets
Austria*	• Since 2019, Austria is part of the EU FCR Cooperation platform opening the market to participation of demand-side assets. • The Austrian aFRR market is open to DSF and the recent go-live of the PICASSO platform expands the market, facilitating cross-border trading of balancing energy. • The tertiary reserve, mFRR is open to aggregated generation and demand-side resources.
Belgium*	• Belgium procures FCR through the common European market of the EU FCR Cooperation. • aFRR is procured through daily tenders open to all market players. The upcoming connection with the PICASSO platform is accelerating positive changes such as the reduction of the full activation time. • The Belgian mFRR market is open to all resources and ensures a level playing field for generation and demand assets. The contracted volume will increase to tackle adequacy issues for the 2022/2023 winter. • The Belgian market is one of the few cases in which the provision of reactive power for voltage control is not mandatory but procured through tenders.
Czech Republic	• Balancing capacity market • Balancing energy market
Denmark*	• The Fast Frequency Response (FFR) product has technical requirements very well suited for demand-side assets like EV batteries, making it one of the most accessible products in the Danish market. • Denmark procures different FCR products in its two synchronous areas; conditions for DSF technologies are more favourable in the Eastern Denmark area (DK2). • Denmark procures aFRR through monthly auctions. The requirement for demand and generation assets to be within the same BRP's balancing perimeter does not attract demand-side resources. • mFRR is procured through market-based mechanisms but requirements such as the high minimum bid size hinder participation of DSF.
Estonia*	• mFRR balancing energy is the only ancillary service procured in Estonia. It is open to aggregated demand and generation but

[9] Where denoted with a *, information retrieved from https://smarten.eu/mapping-the-markets/

	participation of DSF is very low.
Finland	• Frequency controlled reserves (FCR-N, FCR-D, and FFR) • Pilot 2020-2021 in the balancing market (where the offering of balancing bids with aggregation of flexible resources by a party outside the chain of open deliveries of electricity was tested)
France	• FCR • aFRR • mFRR/RR (French MA) • RR/RC, Spot (NEBEF) • Capacity mechanism & congestion management services for the main DSO
Germany*	• Germany procures FCR through the EU FCR Cooperation, which allows equal access to demand and generation assets. • The aFRR capacity and energy markets are open to all resources. The German TSOs have already successfully connected and traded energy through the European PICASSO platform. • Germany procures mFRR capacity and energy through a market-based mechanism open to all resources.
Greece	• Balancing market only (FCR, mFRR)
Hungary*	• Hungary procures FCR capacity through yearly and monthly tenders open to all market parties. • The Hungarian aFRR market guarantees access on equal footing to all resources from 1 MW of capacity onwards. • mFRR capacity and energy are procured through competitive process open to all resources.
Ireland*	• All ancillary services are procured through a tendering process open to Demand Side Units (DSUs) and Aggregated Generation Units (AGUs) but from a minimum portfolio capacity of 4 MW and minimum delivery of 2 hours.
Italy[10]	• Pilot project (UVAM) allows participation in TSO ancillary service market • Capacity mechanism (UCMC)[11]

[10] With regard to flexibility services for DSOs, the NRA (ARERA) started to implement the provisions of the EU Directive 944/2019 establishing, through resolution 352/2021, the launch of pilot projects aimed at testing the procurement of flexibility by the DSO and the related remuneration. At the end of 2022, two projects were placed in public consultation by the DSOs, which are now awaiting approval by ARERA

[11] As for UCMC, even if the rules theoretically allow demand participation, no capacity has been awarded in 2022/2023/2024 auctions. This is due to the structure of rules, that are not flexible enough and does not prescribe an explicit payment to participants.

Latvia	• All markets[12]
Netherlands*	• The Dutch FCR market is accessible and open to all market parties thanks to harmonised rules of the EU Cooperation. • The requirements for the aFRR market guarantee access to demand and generation. • The mFRR market is open to all resources, but due to a high minimum bid size, from the demand-side only industrial consumers participate.
Poland*	• Balancing energy for primary control is procured through a market in which generators with capacity above 100 MW are obliged to participate. (FCR) • Balancing energy for secondary control is procured through a market in which generators with capacity above 100 MW are obliged to bid. (aFRR)
Portugal*	• FCR is not procured through a market but a mandatory provision for generators. • Balancing energy for secondary reserve is procured through a market, which remains closed to demand-side units. • mFRR and RR are procured through a market mechanism but without the possibility of aggregation, the only demand participation comes from industrial consumers.
Romania*	• The provision of FCR capacity is currently mandatory for generators. • aFRR is procured through a market mechanism but the market design excludes DSF providers. • mFRR and RR are procured from a market open to all resources but there is no participation of DSF providers in the market.
Slovenia*	• FCR is open to all market participants and Slovenia is part of the EU FCR Cooperation, which guarantees equal conditions for demand and generation units. • aFRR is open to all providers and procured through different auctions with different timeframes. • mFRR is open to all providers and procured through different auctions with different timeframes.
Spain[13]	• FCR is mandatory and not paid

[12] "The aggregator has the right to provide the demand response service (hereinafter - the service) to the beneficiary of the service or to sell it in an exchange, agreeing with the beneficiary of the service on the provisions for the provision of the service or conforming to the requirements of the exchange." [https://likumi.lv/ta/id/313461-agregatoru-noteikumi]

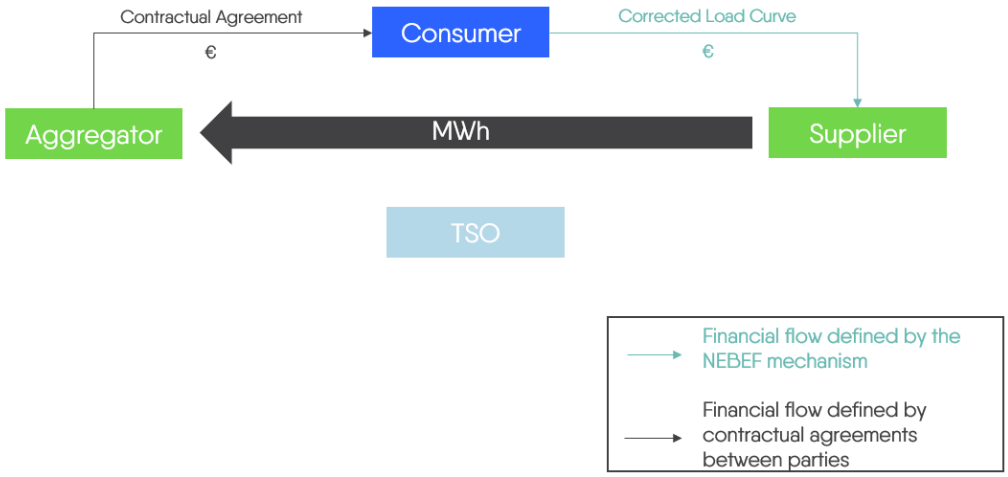
[13] In the context of emergency measures, a new specific balancing service on aggregated demand reduction by suppliers is in force since 1 Nov 2022. Adaptation of current regulation regarding congestion

	• aFRR is open to all providers and capacity is procured through daily auctions. • mFRR and RR are open to all providers and procured through different auctions with different timeframes
Sweden*	• FFR is currently the most accessible product to demand-side resources in Sweden. • FCR is an interesting product, requirements-wise, for demand-side resources but collaboration with a BRP is needed in order to access the market. • The participation in the Swedish aFRR market would be feasible for demand-side resources but the lack of an independent aggregator framework and the short contracts do not attract DSF providers. • mFRR is the least accessible product for demand-side resources in Sweden due to high minimum bid size of 10 MW, the impossibility of aggregation and the lack of an independent aggregator framework.

management and non-frequency ancillary services is on-going. Expected approval: 2023. Demand aggregation can also participate in the DA and ID markets.

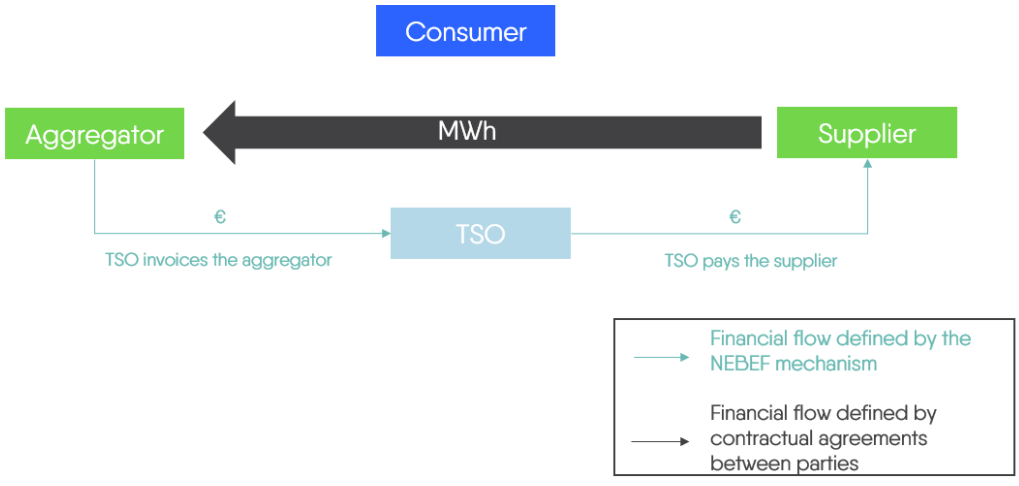
Annex II: Flow Models for Aggregation Models (Examples from NEBEF & UVAM)

Corrected Model Flows



Source: RTE

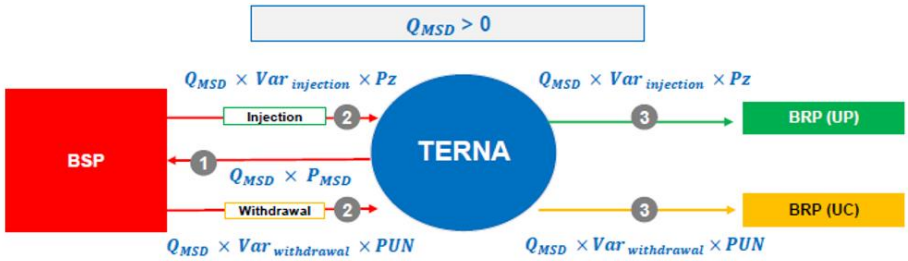
Central Settlement Flows



Source: RTE

UVAM pilot project

Compensation scheme



1. Terna pays the BSP the quantity sold (Q_{MSD}) at the offered price (P_{MSD})
2. The BSP defines the «distribution factor» between UP and UC ($Var_{withdrawal}$ and $Var_{injection}$) and pays Terna:
   - The injection increase of its UP at DAM price (PUN)
   - The withdrawal reduction of its UC at the zonal DAM price (Pz)
3. Terna returns the amount received by BSP to the BRP that is responsible for the imbalance of the UC and UP

Where:

- ***Pz**: Zonal price is the wholesale price that all the production units (UPs) receive in the day-ahead market (DAM)*
- ***PUN**: National Single Price is the wholesale price that all the consumption units (UCs) pay in the DAM and it is calculated as the average of zonal prices weighted for the total purchases in DAM*
- *Q_{MSD}: in this case, refers to the total quantity provided by BSP in MSD*

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Dépôt Légal: D/2023/12.105/29

Eurelectric pursues in all its activities the application of the following sustainable development values:

Economic Development

- Growth, added-value, efficiency

Environmental Leadership

- Commitment, innovation, pro-activeness

Social Responsibility

- Transparency, ethics, accountability

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