



Settle 2.0

Proposed model changes

December 2024

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1. Background

The rollout of the digital meter, is putting increasing pressure on the existing allocation dynamics, which means that there is a need for a redesign of the existing settlement and allocation processes.

There is also a need to integrate regulatory requirements which have been enacted recently:

- Systematic 15' data capture in Flanders with digital meter (including SMR1)
- Tariff Wallonia

The DSOs, united in Synergrid, have therefore set-up a “Settle 2.0 PDG (product design group)” to further analyse the improvements that could be implemented on the settlement-related market process.

The goal is to keep - as much as possible - one generally applicable model for all regions that is based on maximum use of quarter-hourly values (when available), that handles the infeed in a better way, with a limited residue and rest term, and providing a faster allocation output.

2. List of topics & priorities

A list of potential improvements on the current model was identified by the PDG and, based on an “Impact vs Complexity” criteria matrix, prioritisation of each topic has been made.

It quickly became apparent that certain modifications, which were more structural, were clearly part of a long-term vision (setting the target to be achieved but difficult to implement immediately) and other elements were of the order of the short to medium term (“must do” items).

2.1. Long term vision

There is consensus that the use of the most granular information is the end-goal. For electricity this means the use of the 15' data. We could then envisage a model which no longer requires reconciliation (in the current sense of the term) but which evolves towards a successive allocation - (re)allocation process.

During the alignment meetings with the stakeholders, the concern is raised that consistency between the “settle” and “measure” domain is and remains very important to avoid (financial) risks for market parties involved (cfr. Infra).

The ambition is also expressed to develop and implement one harmonised model for imbalance and commodity settlement.

We are however not quite there yet. There is a need for further roll-out of digital meters (at least for electricity) of which the timelines are regional. This also necessitates a significant model change, of which the implementation by Atrias is out of scope of this product design group but is an important condition.

It is clear that “Settle 2.0” is a transitional model with subsequent milestones and deliverables.

2.2. Settle 2.0 high level principles

During the discussions on the various proposed topics, certain basic principles for the evolution of the settlement process emerged:

- 15' values will be the new normal.

More granularity, possible thanks to the advanced roll-out of digital meters, is clearly beneficial (data quality, reduction in reconciliation volumes, etc.).

- One joint model for all regions, but flexibility to adjust to different regional realities.

Even if each DSO might have its own context and constraints, we should try to keep a federal model in place. The implementation pace could be different by region, but the methodology applied should follow a common vision.

- Settle 2.0 (which can be split in several phases having a first implementation with a deadline in 2026) is a starting point.

The settlement process improvements proposed for 2026 will probably be followed by other features and functionalities (still to be analysed and prioritised).

2.3. Market consultation

The topics considered as a priority 1 (detailed further on this document) have been presented to market players and stakeholders during 2 consultations meeting held on 10/10/2024 and 10/12/2024.

The goal of these meetings, organised jointly by Synergrid and Atrias, was to have a first discussion with market parties on both proposed model changes, discussed within Synergrid, as well as the implementation/project track managed by Atrias.

Detailed meeting minutes of these sessions capturing the exchange of information and discussions that took place, as well as the presentation used to structure the discussion, are available on Synergrid's website¹.

¹ <https://www.synergrid.be/nl/marktoverleg/pdg-settlement> and/or <https://www.synergrid.be/fr/concertation-du-marche/pdg-settlement>

3. Priority 1 topics

This section aims to detail the proposed improvement considered by the PDG as PRIO1 (target implementation date in 2026).

3.1. Tariff Wallonia

The implementation of Tariff Wallonia will have 2 impacts on settlement process:

- There will be a **new measure calendar HI/LO** for all customers (except for customer > 56KVA ~AMR). DSO will then need to:
 - Adapt the Settlement Calendar for Walloon DSOs (AIEG, AIESH, ORES, REW, RESA).
 - Update all ExV to shift volumes for Settlement (in scope of project Tariff Wallonia, not in Settle 2.0) to avoid having too high ExV for HI and too low for LO.

- The **mapping between incentive ToU measure and settle ToU is not possible anymore** if we want to keep a federal model on settlement processes (mainly relevant for reconciliation).
 A proposal was therefore made and presented during the consultation of 10/10/24 to aggregate the settle ToU on TH for all non-profiled customers. Knowing that these meters will be allocated based on 15' data, the reconciliation volume should be very limited (limited to rectifications or switches in the past). As such, even with specific ToU measures by region, reconciliation could remain federal.

As rightly raised by suppliers, this proposal has an impact on all volumes related to the ToU Settle, notably the VIs volumes. These volumes are also used by the bill split process and by suppliers for invoicing.

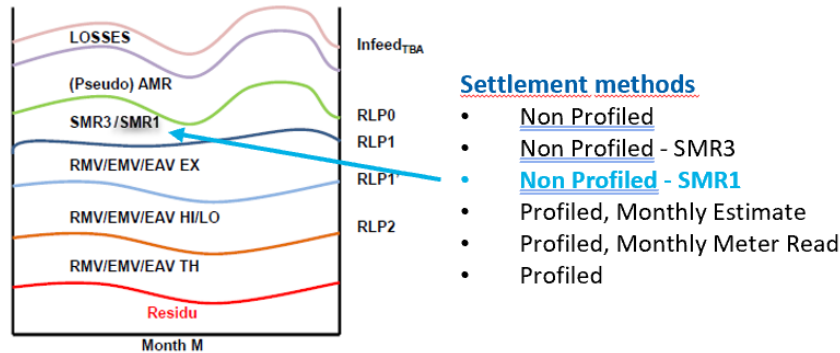
It has then been decided that, for the implementation of tariff Wallonia, we will keep the Settle TOU aligned with Measure ToU for Non- Profiled customer (DAV's, MAV's & VI's are calculated per Measure/Settle ToU) and the volumes are summed up to TH during the reconciliation process .

Sector	SettlementMethod	TimeOfUse Measure	TimeOfUse Settlement	Reconciliation
Electricity	Non-Profiled (AMR, SMR3 & SMR1)	ToU HI (High)	ToUS HI (High)	Total Hour
		ToU LO (Low)	ToUS LO (Low)	
		ToU TH (Total Hours)	ToUS TH (Total Hours)	Total Hour
		ToU EX (Exclusive Night)	ToUSEX (Exclusive Night)	Total Hour
		ToU Vert	ToUS Vert	Total Hour
		ToU Orange	ToUS Orange	
		ToU Rouge	ToUS Rouge	
	<i>New ToU x</i>	<i>New ToUS x</i>	<i>Total Hour</i>	
	Profiled (EAV, EMV & RMV)	ToU HI (High)	ToUS HI (High)	ToUS HI (High)
		ToU NPH (Non Peak High)		
		ToU PH (Peak High)		
		ToU PE (Peak)		
		ToU EX (Exclusive Night)	ToUS EX (Exclusive Night)	ToUS EX (Exclusive Night)
		ToU NPK (Non Peak)	ToUS TH (Total Hours)	ToUS TH (Total Hours)
ToU TH (Total Hours)				
ToU LO (Low)	ToUS LO (Low)	ToUS LO (Low)		
ToU NPL (Non Peak Low)				
ToU PL (Peak Low)				

3.2. Use of 15 minutes data

The use of the SMR1 15' data in the allocation process is not only a prerequisite for the new tariff structure but above all a regulatory requirement in Flanders (cf. valorisation of all digital meters – including SMR1 - 15' data by 2026).

In order to implement this modification, a new settlement method will be created: Non-Profiled, SMR1.



Settlement method	(Daily) Photo		
	Offtake/Consumption	Injection	Production
Non Profiled	1/4h validated > 1/4h unvalidated	1/4h validated > 1/4h unvalidated	N/A
Non profiled - SMR3	1/4h validated > 1/4h unvalidated	1/4h validated > 1/4h unvalidated	N/A
Non profiled - SMR1	1/4h validated > 1/4h unvalidated	1/4h validated > 1/4h unvalidated	N/A
Profiled, Monthly Estimate	EMV Y > EMV Y-1 > EMVDef	EMV Y > EMV Y-1 > EMVDef	Power*SPPex-post
Profiled, Monthly Meter Read	RMV > EMV Y-1 > EMVDef	RMV > EMV Y-1 > EMVDef	Power*SPPex-post
Profiled	EAV > EAVDef	EAV > EAVDef	Power*SPPex-post

This settlement method will not be systematically applied by all regions. The Use of the SMR1 15' in the allocation calculation:

- Will be activated for all HeadPoint's with communicating Digital Meters (as of 2026) in Flanders.
- Will first only be activated for customers with incentive tariff (as of 2026) in Wallonia, and will be gradually activated in the coming years for all HeadPoint's with communicating Digital Meters.
- Is not considered for the moment in Brussels (new tariffs not expected before 2028).

Remark:

This proposition of activating the 15' data from SMR1 is only for the allocation process (settlement). The measure process will not be impacted. Meaning that an EAN in SMR1 will be allocated on 15' data but measure data sent to the market will be based on aggregated volumes per ToU.

3.3. Provisional allocation

The provisional allocation will be calculated on a daily photo, which implies:

- Daily update of the TMD/RMD data (also for the non-AMR Headpoints);
- Daily update of the measure data;
- Use of SMR3 15' and SMR1 15' (Elec) from the start of the provisional allocation;

The timeline stays as it is; it starts at M+5CD and ends (M+1)+10WD.

3.4. Residue and net losses management

The rollout of digital meters and the use of IMV (informative monthly volumes) / RMV (Real monthly volumes) means that the current method of residue distribution can no longer be practically applied. We know that the residue is influenced by the increase in the number of digital meters ('non-profiled' customers in the allocation). The residue decreases, but the residue factor increases. The current way of distributing this residue is no longer sustainable with a very low number of profiled customers.

Although the settlement model is federal in nature, there are some regional differences in the speed of smart meter roll-out which will require a phased approach, depending on the region and their respective level of roll-out.

The more digital meters there are, the more the remaining residue will come from model errors (in terms of losses, correction factors, fraud, etc.) and not from errors in (volume) estimations for profiled customers. It therefore no longer makes sense to assign these 'deltas' only to profiled customers.

The proposition for electricity is, to calculate the netlosses as the difference between infeed and the bottom-up allocation.

The approach for natural gas is different. After all, there are no grid losses in the allocation process. If the residue can no longer be allocated to the profiled customers due to the further rollout of digital meters / IMV, the option to 'net' the grid loss is therefore not an option. And additionally, the 'metrology' effect (due to the conversion of m³ to kWh via agreed standard temperature and pressure values) is reflected in the fact that the total final measured volume (in kWh) at end users is not equal to the infeed measured by Fluxys. The proposal for gas would then be to cover the Fluxys infeed by spreading the residue over all settlement methods excluding AMR (given the VHI – 'volumeherleidingsinstrument'), hence also for digital meters and MMRs.

The implementation of the proposed options to redistribute the residue is depending on the threshold (to be defined) of digital meters rollout, and will therefore not be implemented by all regions at the same time.

It is also important to indicate that the focus on the future settlement process in the medium and long term is and remains crucial. However, the proposed short-term improvement points are necessary, given the impact of the rollout of the digital meter and the informative monthly volumes.

Introduction

We know that the residue is influenced by the increase in the number of digital meters (not profiled in the allocation). We therefore want to better anticipate this development, estimate the impact and identify possible improvements in the settlement process and implement them in a timely manner.

Potential areas for improvement should be analysed:

- The impact on all stakeholders: Shipper, TSO, supplier, end customers, ...
- The impact on other market processes: allocation, reconciliation, imbalance settlement (cf. prediction and nomination), grid fee (DSO, TSO), metering and invoicing.

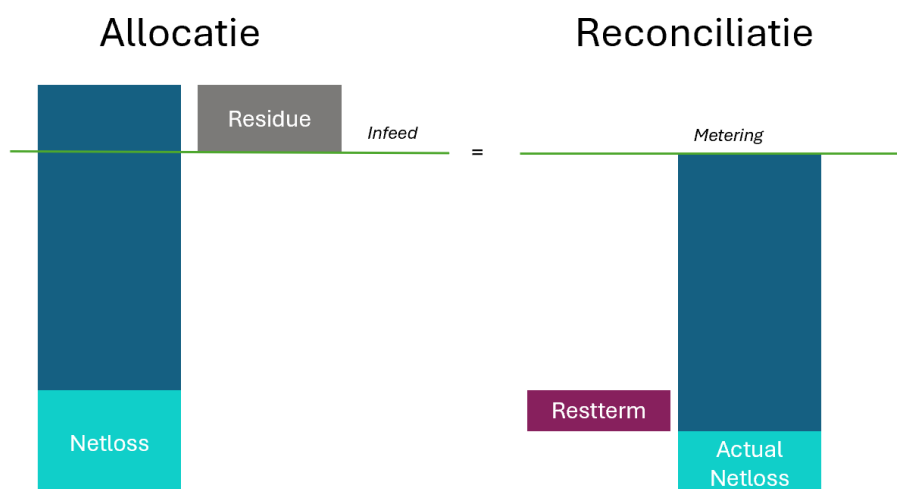
Currently, the residue is spread across (a decreasing number of) profiled customers. We are looking for recommendations for a federal proposal with regional accents (rollout of digital meters / use of IMV...).

Electricity

The grid losses for electricity are determined as a fixed percentage of the infeed. The residue shows seasonal effects, possibly partly explained by the fact that the actual grid losses are not completely linear. A negative residue means that the 'bottom up' allocation is greater than the infeed. A positive rest term means that the network operators sell a volume to the supplier(s) in the financial reconciliation. For Flanders we see a clear trend, with the residue becoming structurally smaller from mid-2023, thanks to the implementation in the allocation of the informative monthly volumes (IMV) for the digital meters.

Figure 1 shows a simplified example. The allocation is shown on the left, whereby the DSO is allocated the grid losses as a fixed percentage of the infeed and purchases them on the market. The 'bottom up' allocation is systematically larger than the infeed, which leads to a negative residue. During the reconciliation process, the DSO participates via the rest term, as the difference between the energy allocated to suppliers and the actual meter readings

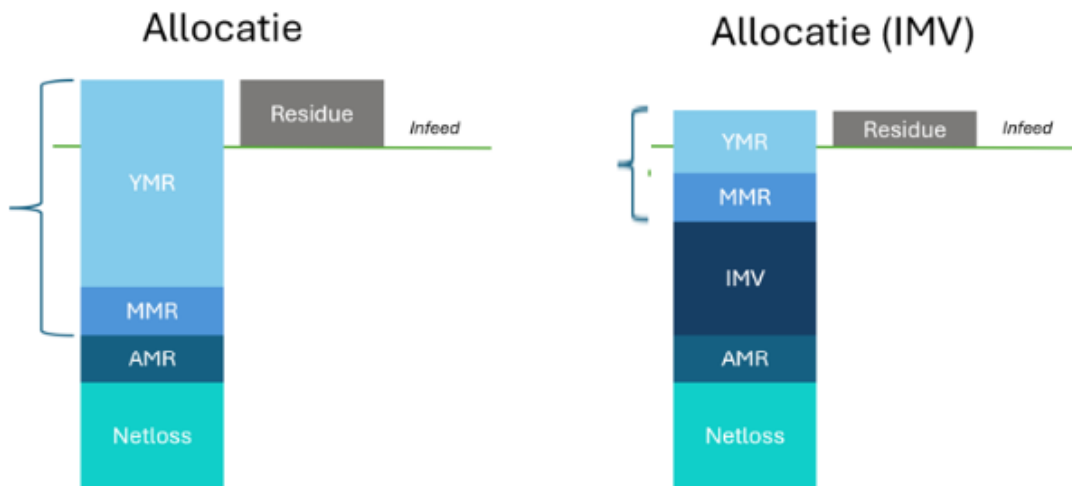
Figure 1: theoretical settlement example electricity "As is"



There is a decrease in the residue associated with using the IMV for the digital meters. This is as expected, because the IMV are actual monthly volumes, and this removes the volume estimation 'error' of the EAV (Estimated Annual Volumes). On the other hand, this means that, without adjustment to

current market rules, the remaining residue must be distributed over an increasingly smaller volume of profiled customers (in this case YMR and MMR). The figure below shows this effect on the allocation before implementation of IMV and after.

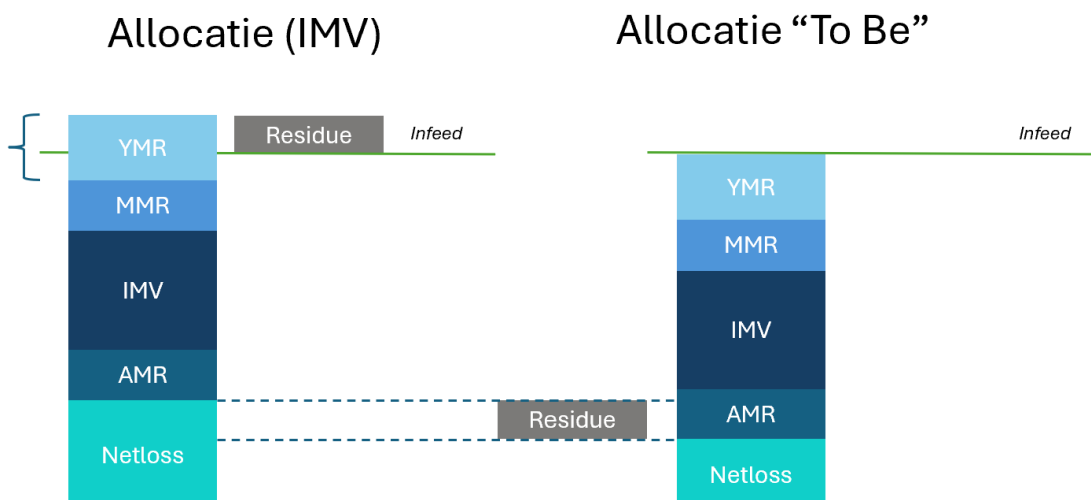
Figuur 2: Allocatie voor en na implementatie IMV (theoretisch voorbeeld)



A smaller residue is a positive consequence. However, the fact that this residue would then be distributed over the remaining profiled volumes of MMR and YMR can no longer be justified. This creates a double risk for the suppliers involved, both volume and price risk.

We recommend calculating the net losses as the difference between infeed and offtake (i.e. the residue) instead of a theoretical % of infeed. We expect that this adjustment will lead to lower reconciliation for suppliers and better control of the rest term for grid operators. In the following paragraphs we will explain this using a practical example.

Figure 3: Allocation before and after implementation IMV (theoretical example)



New distribution of residue (for Elec)

In this section we explain the concept of the new residue distribution using a simplified example:

- The infeed of an example period is 100 and the “bottom-up” allocation is 104. The calculated grid losses represent a volume of 10.

INFEED 100

BOTTOM UP ALLOCATION

	AMR	IMV	MMR	Profiled	sum
Supplier 1	12	20	4	7	43
Supplier 2	9	34	2	6	51
Netloss	10				10
					104

RESIDUE 4

- As-Is:

Based on the current settlement logic, a residue of 4 is assigned to the MMR and YMR (profiled customers). After all, the residue is not distributed over actually measured points (AMR and IMV).

AS-IS ALLOCATION

	AMR	IMV	MMR	Profiled	sum
Supplier 1	12	20	3,16	5,53	40,68
Supplier 2	9	34	1,58	4,74	49,32
Netloss	10				10
					100

Once the metering has been received – totalling a volume of 105 – the reconciliation will look like this:

METERING (VIA)						RECONCILIATION	
	AMR	IMV	MMR	Profiled	sum		
Supplier 1	12,00	20,00	3,50	8,00	43,50		2,82
Supplier 2	9,00	34,00	2,50	6,00	51,50		2,18
Netloss	10,00				10,00		0,00
Restterm							-5,00

Supplier 1 must purchase 2.82 units from the grid operator via the rest term, supplier 2 in turn 2.18. In this theoretical example, the grid losses are overestimated for a volume of 5.

- To-Be (proposal):

In our proposal, the residue is included as a correction to the grid loss at the time of allocation and is no longer divided over the MMR and YMR profiled volumes.

TO-BE ALLOCATION

	AMR	IMV	MMR	Profiled	sum
Supplier 1	12	20	4	7	43
Supplier 2	9	34	2	6	51
Netloss	6				6
					100

In this way, the allocation is more predictable for suppliers with profiled customers, and MMRs are no longer corrected for the residue.

The reconciliation then looks like this:

METERING (VIA)						RECONCILIATION	
	AMR	IMV	MMR	Profiled	sum		
Supplier 1	12	20	3,50	8,00	43,50		-0,50
Supplier 2	9	34	2,50	6,00	51,50		-0,50
Netloss	6				6,00		0,00
Restterm	-1,00				-1,00		1,00
					100		0,00

The proposed model ensures lower reconciliation for suppliers (and better control of the residue term for grid operators). A possible disadvantage is that grid losses become less predictable (currently a fixed percentage of the infeed).

Natural gas

The situation is different for natural gas. After all, there are no grid losses in the allocation process. If the residue can no longer be allocated to the profiled customers due to the further rollout of digital meters / IMV, the option to 'net' the grid loss is therefore not an option.

The specific challenges are also different. It appears that the aggregated metering is not corresponding to the infeed. The explanation for this is that the conversion factors are not comparable in every phase of the process. The actual temperature and pressure at Fluxys measuring stations differ from the standard temperature (and pressure) used when converting m³ to kWh by the distribution system operators.

There is therefore a resulting residue, whereby the bottom-up allocation of the profiled customers is impact.

A detailed simulation was carried out for natural gas, using data provided by Fluvius, to evaluate the impact of an 80% rollout of smart meters. The simulation indicates that a substantial rollout of digital meters has a positive impact on lowering the residue (in absolute terms). The remaining residue also appears to correlate with the rest term (limited data).

If the residue is no longer allocated to profiled customers, the DSOs could sell volumes to the BRPs (in case of a negative residue), which is not the expectation.

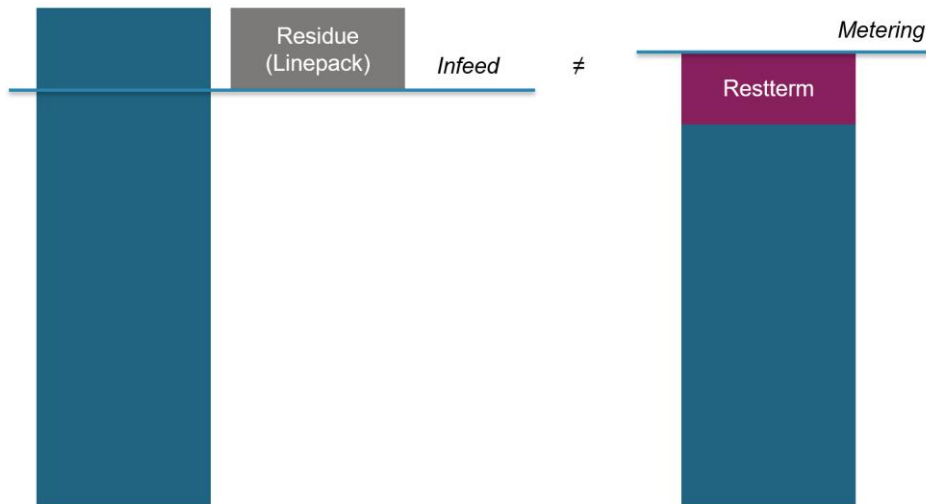
Metering vs infeed

A challenge in the settlement process for natural gas can be found in the so-called 'metrology'. In fact, the total final measured volume (in kWh) at end users is not equal to the infeed measured by Fluxys. The main cause of this can be attributed to the conversion of m³ to kWh via agreed standard temperature and pressure values. An adjustment has already been made for this in the past.

Based on recent allocation and reconciliation data, it seems appropriate to reconsider such a correction. The total natural gas volume measured at end users (after conversion to kWh) is structurally higher than measured by Fluxys.

A possible explanation why the infeed does not match the metering 100% can be found in the so-called 'line pack'. However, this does not explain a deviation across the seasons, at least not structurally in one particular direction (where the metering volume is larger than the infeed).

Figure 4: theoretical settlement example natural gas



In practice this comes down to shippers (BRPs) purchasing a volume for the suppliers in their portfolio based on the allocation of the Fluxys infeed (equal to 100 kWh in the example below). At final meter reading, the difference with the allocated volumes is settled in the financial reconciliation between suppliers and grid operators, facilitated by FeReSO.

New distribution of residue (for Gas)

Unlike electricity, it is not possible to deduct the residue from grid losses with natural gas. On the other hand, the need remains to allocate the infeed measured by the TSO to close the settlement process on the wholesale market (imbalance between nomination and allocation).

Our proposal is not to change the total volume of the infeed allocated to the BRP/shipper (BRP allocation), but to redistribute the residue on all settlement methods excluding AMR (which have their own temperature conversion factor). This way:

1. The total BRP allocation remains unchanged (still based on the infeed). The distribution of residue would however be done on all settlement methods (excluding AMR). This seems counter-intuitive, as some settlement methods are actually measured when used in the allocation (digital meters, MMR on RMV). The metrology issue also applies to them, as the temperature and pressure conversion is based on assumptions and not the actual conditions.
2. An accelerated financial reconciliation could be considered to avoid that the applied residue on all settlement methods remains until the first financial reconciliation (approximately 2 years after consumption). This however is not part of the scope of the PDG Settlement, but will be put on the agenda of the FeReSO working group.

In this section we explain the concept of the new residue distribution using a simplified example.

- The infeed for an example period is 100 and the “bottom-up allocation” is 110.

3.5. Compensation with digital meters

Currently (as-is), the allocation methodology is defined by the service component and the data to be used by the meter type & regime.

- Service component:
 - Allocation MIG6 is done on the 2 directions separately, per 15'
 - Classical Compensated (reversing) meters only have 1 compensated net position at moment M.
- ⇒ For Compensation, Allocation calculates the gross production and consumption per '15

Headpoint service	Service Component	Production Allocation	Consumption Allocation
Compensation	SC_COMPOFF	P	C
Valorisation	SC_COMPOFI	P	C
Constraint Commercialisation of injection	SC_OFFINJE	A ⁻	A ⁺
Commercialisation of injection	SC_COMMOFF		A ⁺
	SC_COMMINJ	A ⁻	
Constraint Commercialisation of production	SC_CONPROD	P	C
Commercialisation of production	SC_CONSUMP		C
	SC_PRODUCT	P	

- Meter type & regime:
 - The meter type & regime define which metering is used in Allocation.
 - The goal is to always use to most granular and correct value (= '15) possible.

Head Meter Configuration Type	Photo (M+1)+20jo
Smart Meter Regime 3 - Monthly	1/4h _{validated} > 1/4h _{unvalidated}
Smart Meter Regime 3 - Yearly	1/4h _{validated} > 1/4h _{unvalidated}
Smart Meter Regime 1 - Monthly	RMV > EMV _Y > EMV _{Y-1} > EMV _{Def}
Smart Meter Regime 1 - Yearly	EAV > EAV _{Def}
Classic Meter Non-Continu – Monthly Remote Reading	RMV > EMV _Y > EMV _{Y-1} > EMV _{Def}
Classic Meter Non-Continu - Monthly	EMV _Y > EMV _{Y-1} > EMV _{Def}
Classic Meter Non-Continu - Yearly	EAV > EAV _{Def}

Note : In Settle 2.0, '15 values will also be used for some SMR1 configurations (not visible on the current screenshot)

We then have a conflict if we want to activate 15' data on SMR1 when combining "Compensation" with "Smart Metering". The Service wants to allocate on gross positions BUT the metering regime wants to allocate on measured intervals or RMVs. But the meter, providing 15' data, only measures the net positions.

A concrete example of such complication is the compensation with "Tariff Wallonia". As mentioned previously, for the incentive tariff in Wallonia the vision is to activate the 15' data in the allocation. Meaning that clients opting for new Time-of-Uses (implying 15' data) and keeping their Compensation (suggesting a gross position calculation) would enter in the "conflicting scenario".

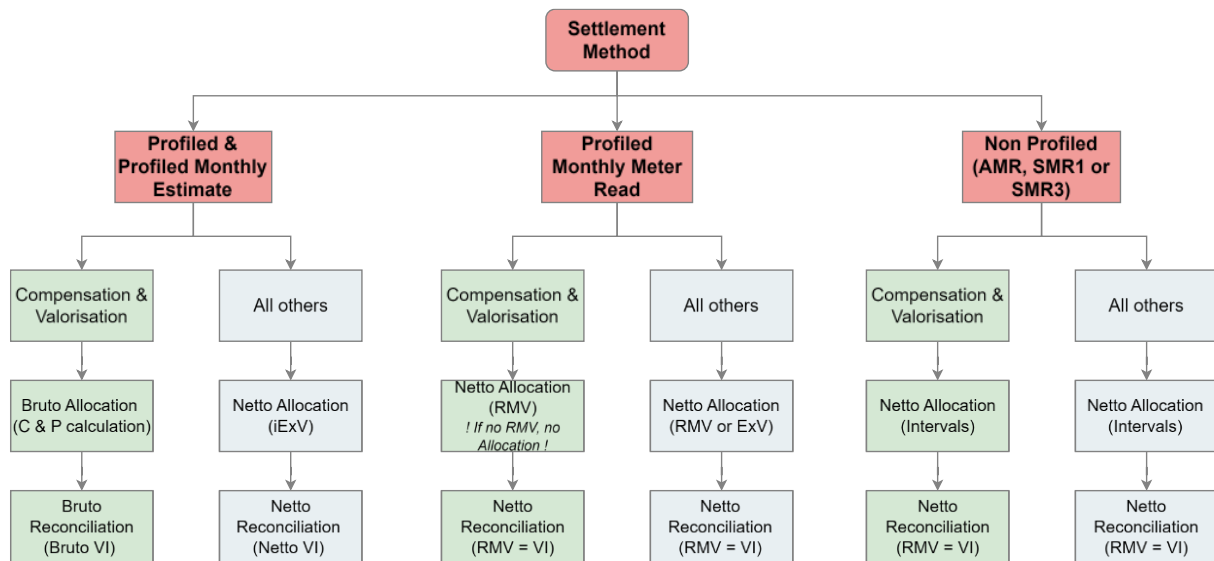
Headpoint service	Service Component	Production Allocation	Consumption Allocation
Compensation	SC_COMPOFF	P	C
Valorisation	SC_COMPOFI	P	C
Constraint Commercialisation of injection	SC_OFFINJE	A ⁺	A ⁺
Commercialisation of injection	SC_COMMOFF		A ⁺
Constraint Commercialisation of production	SC_CONPROD	P	C
Commercialisation of production	SC_CONSUMP		C
	SC_PRODUCT	P	

Head Meter Configuration Type	Photo (M+1)+20jo
Smart Meter Regime 3 - Monthly	$1/4h_{\text{validated}} > 1/4h_{\text{unvalidated}}$
Smart Meter Regime 3 - Yearly	$1/4h_{\text{validated}} > 1/4h_{\text{unvalidated}}$
Smart Meter Regime 1 - Monthly	$RMV > EMV_Y > EMV_{Y-1} > EMV_{\text{Def}}$
Smart Meter Regime 1 - Yearly	$EAV > EAV_{\text{Def}}$
Classic Meter Non-Continu – Monthly Remote Reading	$RMV > EMV_Y > EMV_{Y-1} > EMV_{\text{Def}}$
Classic Meter Non-Continu - Monthly	$EMV_Y > EMV_{Y-1} > EMV_{\text{Def}}$
Classic Meter Non-Continu - Yearly	$EAV > EAV_{\text{Def}}$

Proposed solution

In order to be able to manage compensation with a smart meter, we need to adapt the methodology. The proposition for smart meters in Compensation is to use net '15 and/or net IMV's, per direction in the allocation. The meter configuration becomes crucial and gets the priority to the service component to define the right allocation calculation methodology.

Here is then an overview of all possible scenario for a customer with a smart meter and the way the allocation will be defined:



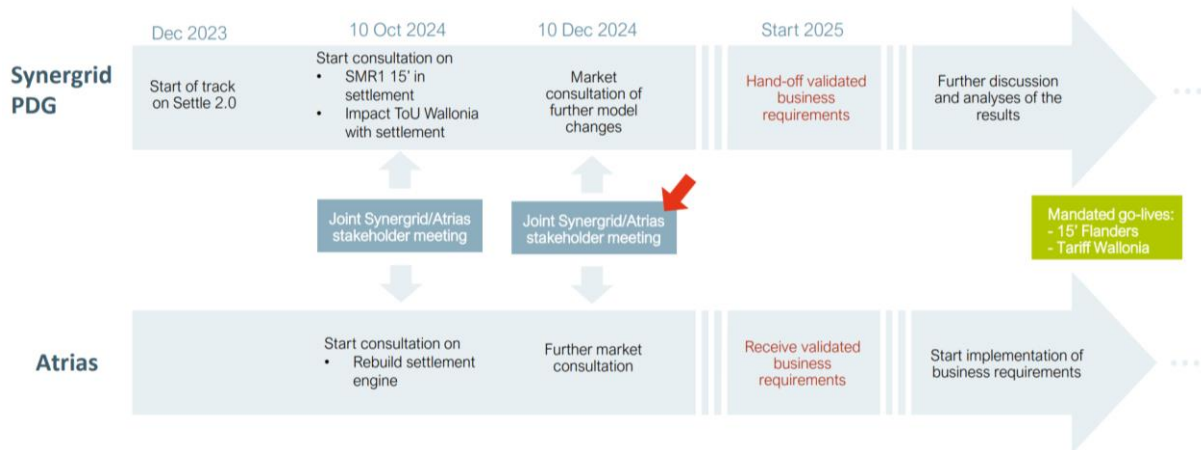
For customers with compensation, it means:

- Profiled (incl. Profiled Monthly estimates) are following the same methodology than AS-IS (no changes).
- For the profiled monthly meter read, as mentioned before we will treat the compensated customer differently: based on RMV (for allocation & reconciliation).
- For the non-profiled (including then customer with incentive tariff) we will also use the proposed methodology: 15' data (allocation) and RMV (reconciliation).

4. Transition practicalities

4.1. Settle 2.0 Timeline

Here is an overview of the timeline that has been proposed for the PDG Settle 2.0 and its dependencies with the Atrias track.



4.2. Data availability

To ensure market stakeholders can anticipate the potential impacts of Settle 2.0 and to allow proper testing of implemented changes, analytical data will be provided by the DSOs, including:

- 15' data from a representative portfolio
- Simulation on the impact of
 - Residue & net losses management modification
 - Incentive tariff
 - Smart in compensation
 - ...

Analyses are underway to see what can be provided by the project team during 2025.