INFORMATION

Global Settlement and Market Reconciliation

AEMC makes rule to move to global settlements

The Australian Energy Market Commission (AEMC) has made a rule to move settlements of the demand side of the wholesale electricity market from the current 'settlements by difference' framework to a 'global settlements' framework.

The final rule, which is a more preferable rule, is in response to a rule change request submitted by the Australian Energy Market Operator (AEMO) on 16 March 2018. The final rule is generally consistent with AEMO's rule change request, but varies in some specific design elements of global settlements.

What are settlements by difference and global settlements?

The current market settlement framework, known as settlement by difference, has been in place since the start of the national electricity market (NEM). It was designed at a time when local retailers supplied electricity to all small customers. Under this approach, electricity within a distribution area is billed to the local retailer except for the loss-adjusted metered electricity that is consumed by the customers of independent retailers within their local area. This means that the local retailer for an area bears the risk of all residual electricity losses in that area — known as unaccounted for energy (UFE). UFE includes unaccounted for technical losses, commercial losses and meter profiling errors.

Under a global settlement framework every retailer is billed for the loss-adjusted metered electricity that is consumed by their customers within the area. The UFE is then allocated to market customers (mainly retailers) in the local area, pro-rated based on their 'accounted-for' energy.

Why move to a global settlement framework?

The three key reasons why the Commission has made a final rule to move to a global settlement framework are:

1. *Improved transparency, leading to fewer settlement disputes and lower levels of UFE over time.* Under global settlements AEMO will be able to fully reconcile energy within each distribution network because it will receive data from all retailers in the area. Full reconciliation will allow for better and timelier identification, mitigation and prevention of settlement errors. This will reduce costs of resolving settlement disputes, which are currently substantial. Increased transparency of UFE will also allow for AEMO to report on UFE levels and actions to reduce UFE.

2. *Competition on equal terms.* No matter how well-designed, there will always be some UFE in the NEM. To facilitate effective retail competition in the long term, it is important that where there are shared market inefficiencies, they are shared in a manner which does not distort competition. The final rule does this by allocating UFE to all retailers based on their accounted-for energy within each local area.

3. *Improved risk allocation driving enhanced incentives.* Under the Commission's preferred global settlements design, UFE is allocated to all retailers in the local area, pro-rated based on their 'accounted-for' energy. By allocating UFE to retailers, they will face the risk of UFE, and therefore, will be provided with improved incentives to reduce UFE (for example, by installing smart meters and reconfiguring meters to record five minute data). Through this process, it is expected that UFE levels will be lower under global settlement.

Key detailed design elements of global settlement under the final rule

The key design features of global settlements within the final rule are:

- *The level at which UFE is allocated*: UFE will be calculated and allocated at the local area (i.e. distribution network) level.
- *Who and how to allocate UFE*: UFE will be allocated across all market customers (i.e. retailers) in each local area, pro-rated based on their accounted-for energy.
- *Transparency framework*: A reporting obligation will be introduced for AEMO to publish annual reports which provide information and analysis of UFE in each local area. These reports will include recommendations to improve visibility of, and actions to reduce, UFE.
- *Accounting for energy associated with unmetered loads*: AEMO to include guidance in the metrology procedures and unmetered load guidelines on how to incorporate non-type 7 unmetered loads in settlement.
- *Networks responsible for inter-network metering*: Instead of the local retailer being the metering coordinator at the relevant network connection point, the relevant network is, or can appoint, the metering coordinator for that connection point.

Implementation

The soft start for global settlements, and the full commencement of *five minute settlement*, both begin on 1 July 2021. This aligns the development of systems and procedures for both changes, reducing implementation costs. Global settlement will fully commence on 6 February 2022.

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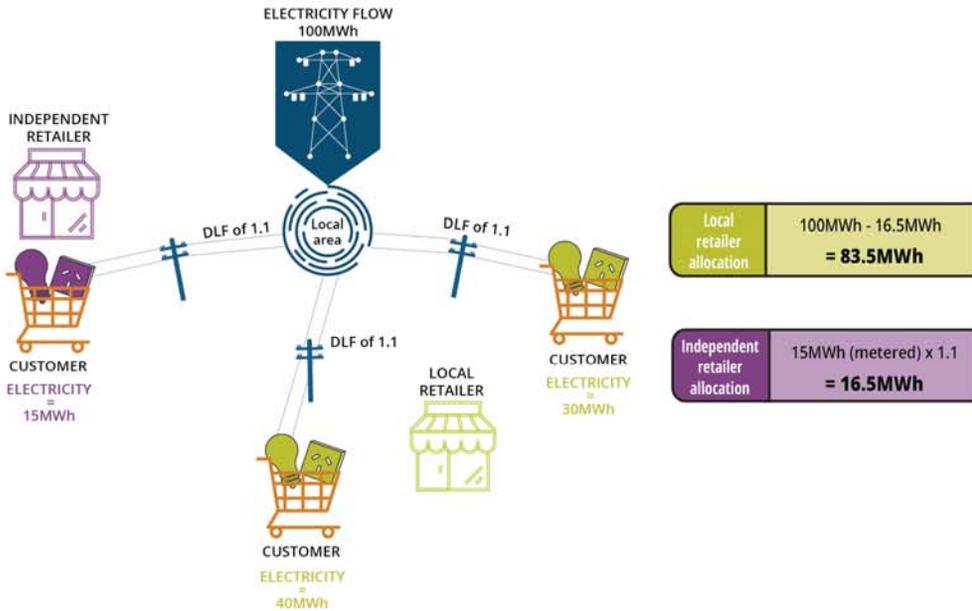
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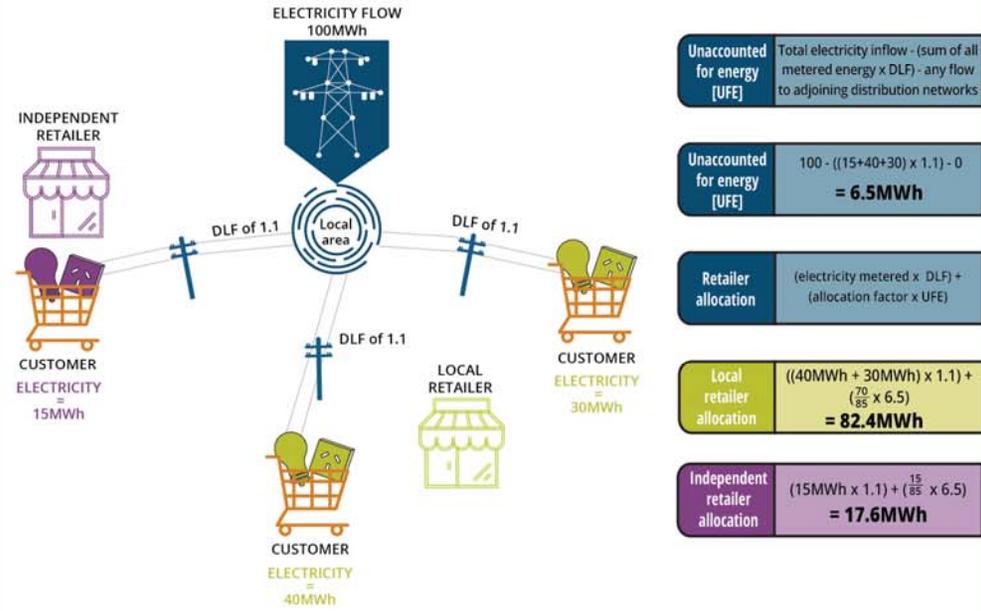
6 December 2018

Settlement by difference

vs

Global settlements

ELECTRICITY FLOW 100MWh

INDEPENDENT RETAILER

DLF of 1.1 — Local area — DLF of 1.1

DLF of 1.1

CUSTOMER
ELECTRICITY = 15MWh

LOCAL RETAILER

CUSTOMER
ELECTRICITY = 30MWh

CUSTOMER
ELECTRICITY = 40MWh

Local retailer allocation	100MWh - 16.5MWh = **83.5MWh**
Independent retailer allocation	15MWh (metered) x 1.1 = **16.5MWh**

Source: Adapted from AEMO, High level design, p. 6

ELECTRICITY FLOW 100MWh

INDEPENDENT RETAILER

DLF of 1.1 — Local area — DLF of 1.1

DLF of 1.1

CUSTOMER
ELECTRICITY = 15MWh

LOCAL RETAILER

CUSTOMER
ELECTRICITY = 30MWh

CUSTOMER
ELECTRICITY = 40MWh

Unaccounted for energy [UFE]	Total electricity inflow - (sum of all metered energy x DLF) - any flow to adjoining distribution networks
Unaccounted for energy [UFE]	$100 - ((15+40+30) \times 1.1) - 0$ = **6.5MWh**
Retailer allocation	(electricity metered x DLF) + (allocation factor x UFE)
Local retailer allocation	$((40\text{MWh} + 30\text{MWh}) \times 1.1) + (\frac{70}{85} \times 6.5)$ = **82.4MWh**
Independent retailer allocation	$(15\text{MWh} \times 1.1) + (\frac{15}{85} \times 6.5)$ = **17.6MWh**

Source: Adapted from AEMO, High level design, p. 10

Stylised calculation of settlement by difference

1. Establish total amount of electricity that flows into the distribution network
2. Sum the metered electricity for each independent retailer and adjust for distribution losses
3. Charge each respective independent retailer their distribution loss-adjusted metered consumption
4. The local retailer pays for the remainder of the electricity in the local area, including any UFE

UFE is made up of errors in the distributed loss factor (DLF), commercial losses (e.g. electricity theft, inaccurate meters, estimation errors for unmetered devices) and estimation errors from profiling meters

Stylised calculation of global settlements:

1. Establish total amount of electricity that flows into the distribution network
2. Sum the metered electricity for all retailers and adjust for distribution losses
3. Calculate UFE as the difference between DLF-adjusted metered energy and the total energy inflow into the distribution network
4. Apportion UFE to each retailer based on their proportion of total metered consumption
5. Charge each retailer their distribution loss-adjusted metered energy and their proportion of UFE