

Baselining guidance

Flexibility



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What is baselining and how does it work?

Baselining is a way in which we can measure the impact of utilising flexibility services on the electricity grid.

The 'baseline' establishes an expected energy-generated or consumed profile – or level - for a Distributed Energy Resource (DER). This level is then used to measure the change (delta) in the amount of energy generated once flexibility services are activated.

Our baselining methodology fully aligns with the Energy Networks Associations (ENA) standard and is consistent with the approach used by all Distribution System Operations (DSOs) across the UK to ensure consistency. We use Default Baselining Methodologies (DBM) for both domestic and industrial/commercial assets.

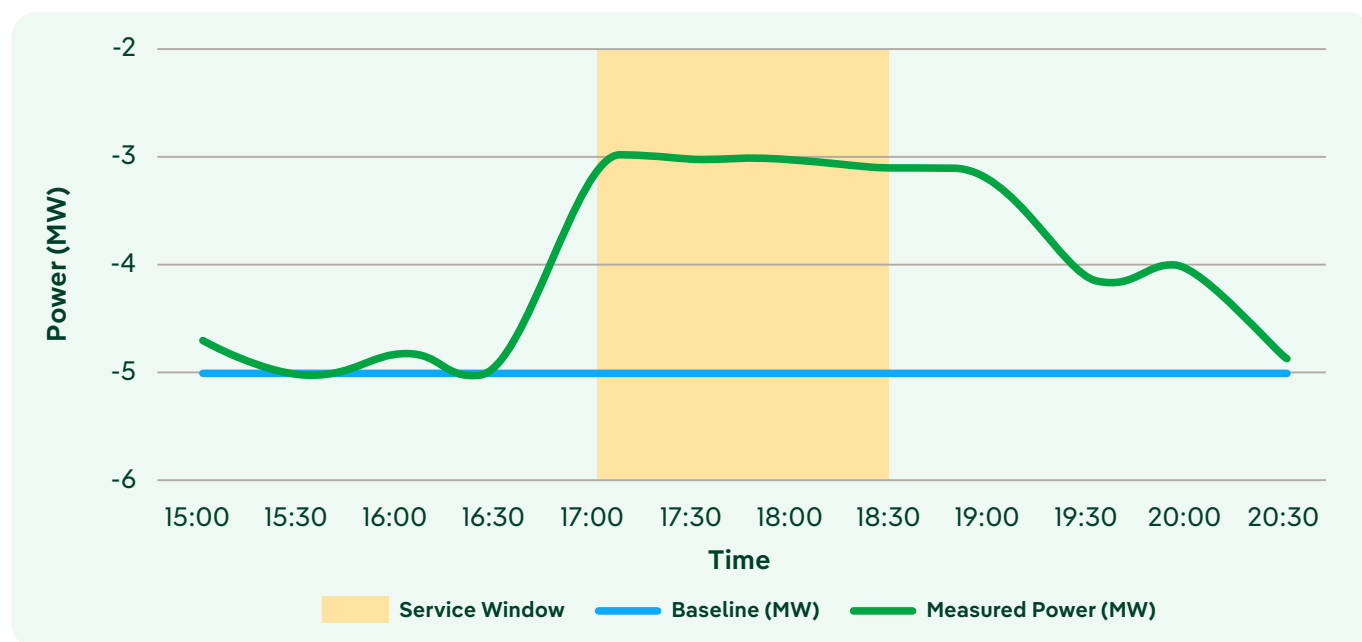
Default Baselining Methodologies (DBM)

Name	Definition
Asset Capacity (no de-rating)	Assumes the participating DER operates at its full rated capacity during the flexibility event, irrespective of actual operational conditions. (There is also Asset Capacity (with de-rating) which is based on the expected capacity rather than full-rated capacity.)
Zero	The baseline energy consumption or generation is set to zero, meaning no energy usage or production is assumed in the absence of the utilisation event.
Fixed Reference	Uses a fixed daily profile derived from the observed energy behaviour of a representative group of DERs that represents normal operating behaviour or a DNO's planning scenarios.
Nomination	Uses an estimated/expected set of meter values, provided by the flexibility services provider (FSP), based on the expected or normal operation of the site/DER without any flexibility event, for a future availability window that then becomes a utilisation event.

Default Baseline Methodologies (DBM) explained

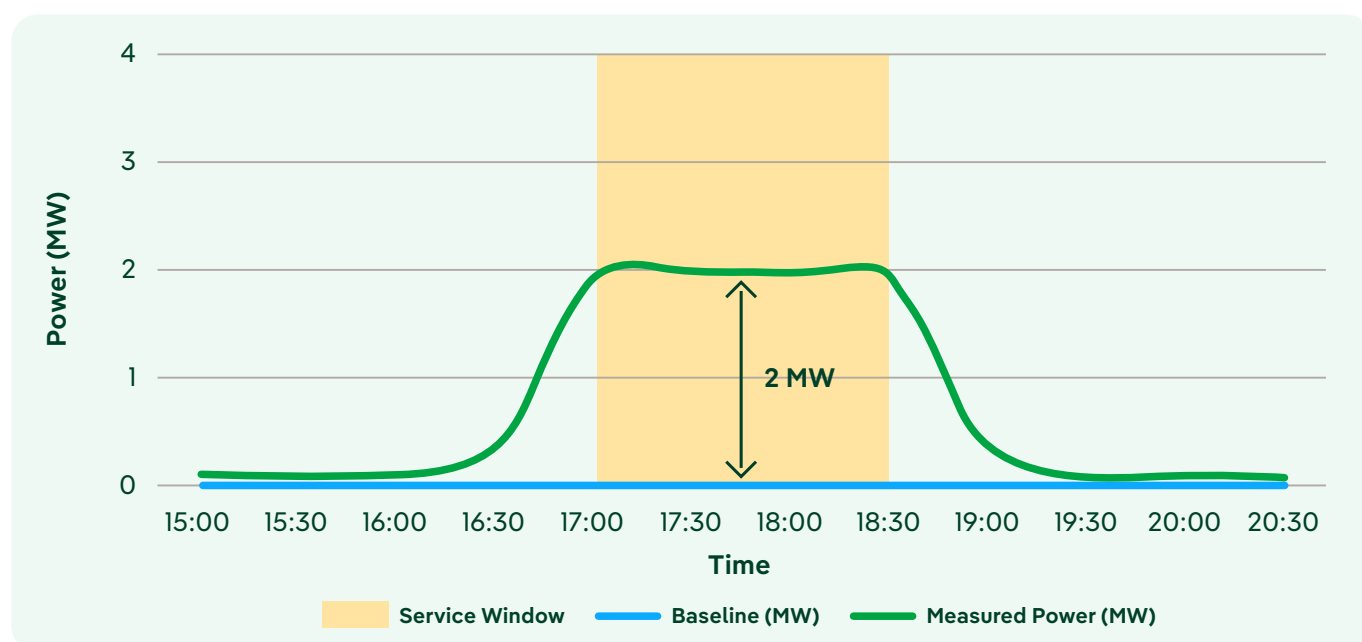
Asset Capacity

An example of Asset Capacity (no de-rating) shows a Schedulable Generation DER which has a full rated export capacity of 5 MW. The Generation DER has a Generation Turn Down contract for 2 MW.



Zero

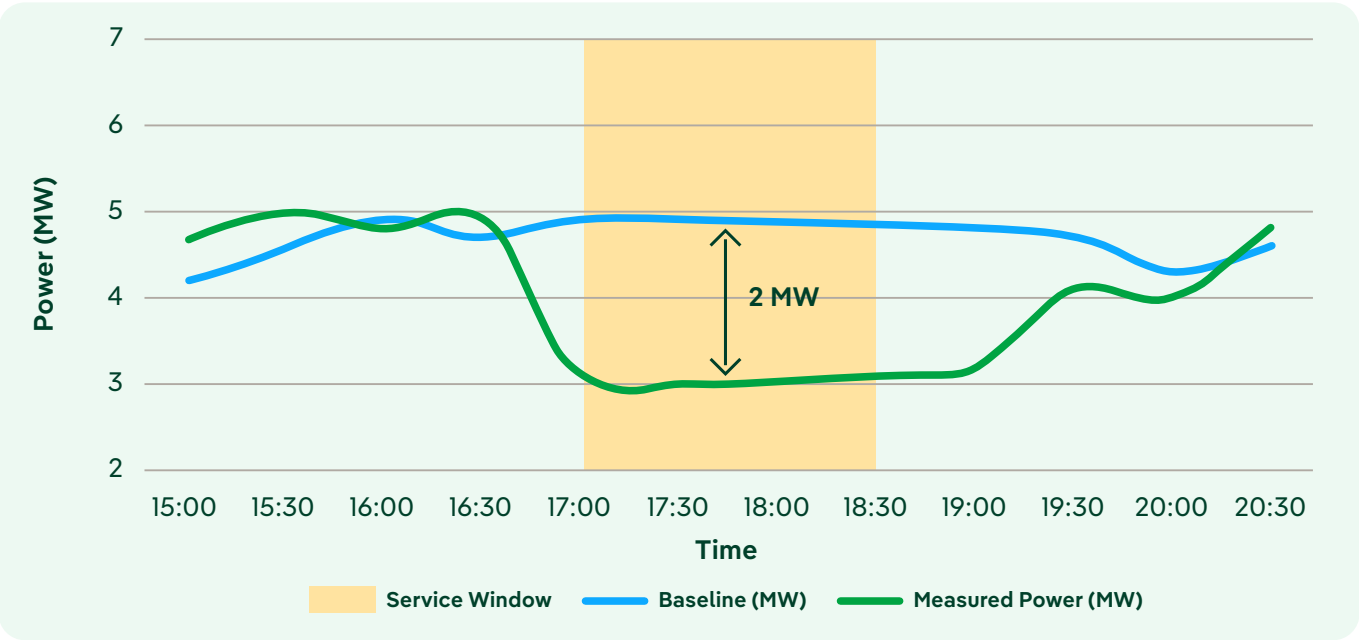
As the baseline energy consumption or generation for this generation is set to zero, in the example shown below, the DER is deemed to have provided a 2 MW Demand Turn Up service as the measured output during the service window.



Fixed Reference

The reference is fixed because it's set and published ahead of time so flexible service providers (FSPs) can understand what baseline they will be assessed against.

In the example shown below, the baseline value represents a reference, non-smart charging behaviour for a large group of domestic electric vehicle (EV) charging points. This example behaviour sets the baseline at 5 MW to assess the level of Demand Turn Down provided by the DER. The measured output during the service window is 3 MW, therefore it is deemed to have delivered 2 MW.



Notes

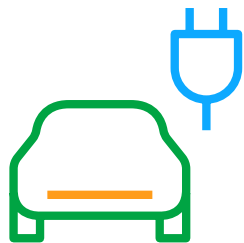
(Asset Level) Fixed Reference is used where a system operator provides a reference baseline for a specific type of DER. For example, this could be a specific EV charger or heat pump profile.

(Flexible Site Demand) Fixed Reference is the same as (Asset Level) Fixed Reference, but this is based on a reference value for a site (typically a domestic household).

This category is also used from domestic generation and storage technologies where the metering is a point of connection because the asset level baseline for generation and storage Generation Turn Up is zero but the boundary meter will also pick up the general domestic load, so this approach helps account for this.

(Asset Level) Fixed Reference + (Flexible Site Demand) Fixed Reference is used where the metering arrangement is at the point of connection for a domestic property, but this property may have several different DERs (e.g., EV chargers and heat pumps) behind the boundary meter. By adding together the Flexible Site Demand (i.e. household) reference and any asset level references this helps create a more accurate baseline.

Fixed Reference Value	KWs
Heat Pump	3.68
EV Charger	1.28
Flexible Site Demand	0.78

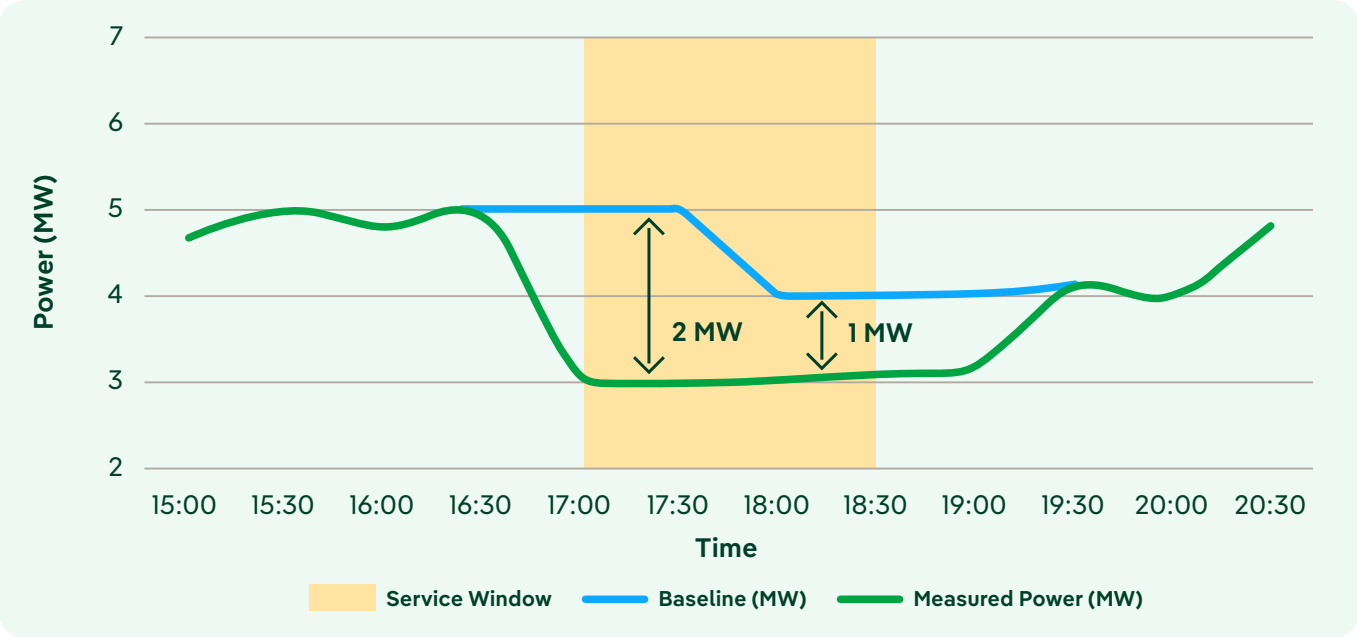


Nomination

Nomination baselining values may differ or be a single value that is applied for the whole service window. These rely on FSPs to propose the values used, therefore we, as the system operator, require the FSPs' nomination(s) to ensure that the nominated values accurately reflect normal operating behaviour.

FSPs are also required to summarise the methodology they use to create this value which is then used by the system operator to assess if the FSP is adhering to good industry practice.

In the example shown below, a variable nomination value has been proposed by the FSP (5 MW for earlier part of the service window and 4 MW for the later part). In this scenario, the DER is paid for 2 MW of Demand Turn Down for the first part of the service window and 1 MW for the later part.



Default Baseline Methodologies (DBM) – domestic & industrial / commercial

Domestic

Asset Scale	Metering Arrangement	Technology Type	DTD / GTU	DTU / GTD
Domestic	Asset Level	Schedulable Generation	Zero	Asset Capacity (no de-rating)
		Intermittent Generation		
		Storage		
		Heat Pump	(Asset Level) Fixed Reference	
		EV Charger DSR		
		EV Charger V2G		
		Flexible Site Demand		
	Point of Connection	Schedulable Generation	(Flexible Site Demand) Fixed Reference	Asset Capacity (no de-rating)
		Intermittent Generation		
		Storage		
		Heat Pump	(Asset Level) Fixed Reference + (Flexible Site Demand) Fixed Reference	
		EV Charger DSR		
		EV Charger V2G		
		Flexible Site Demand		

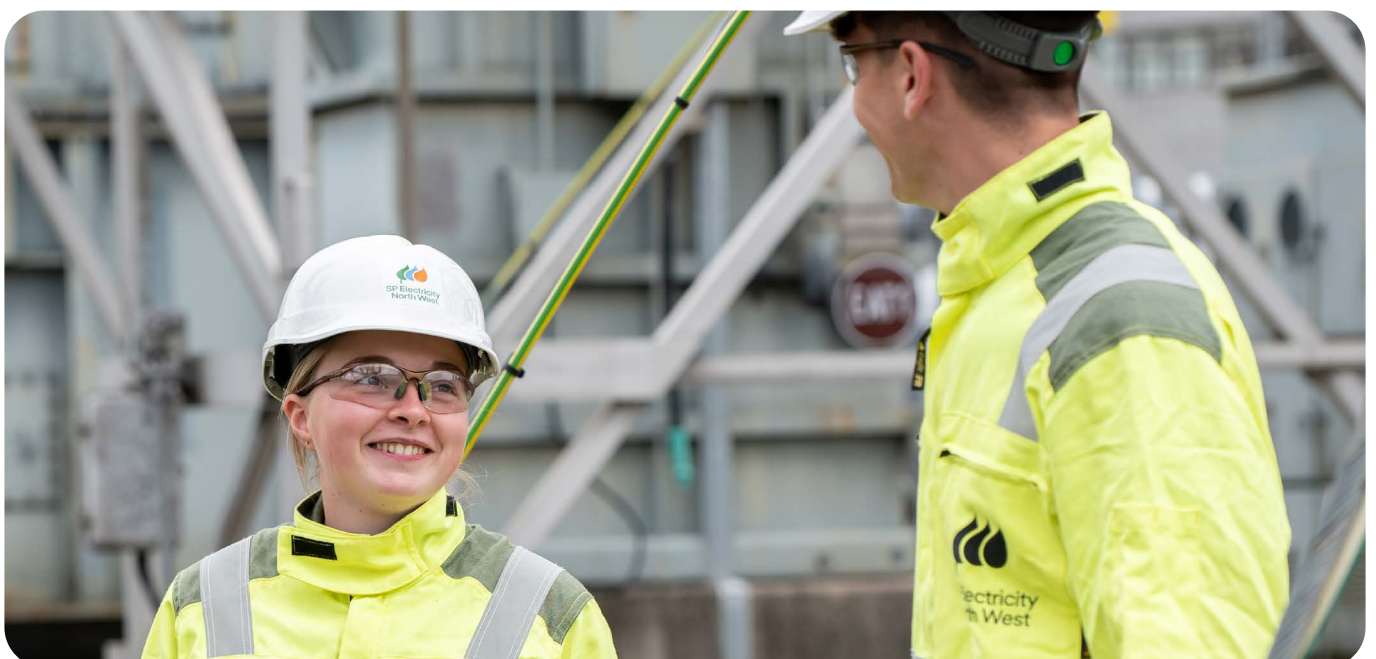
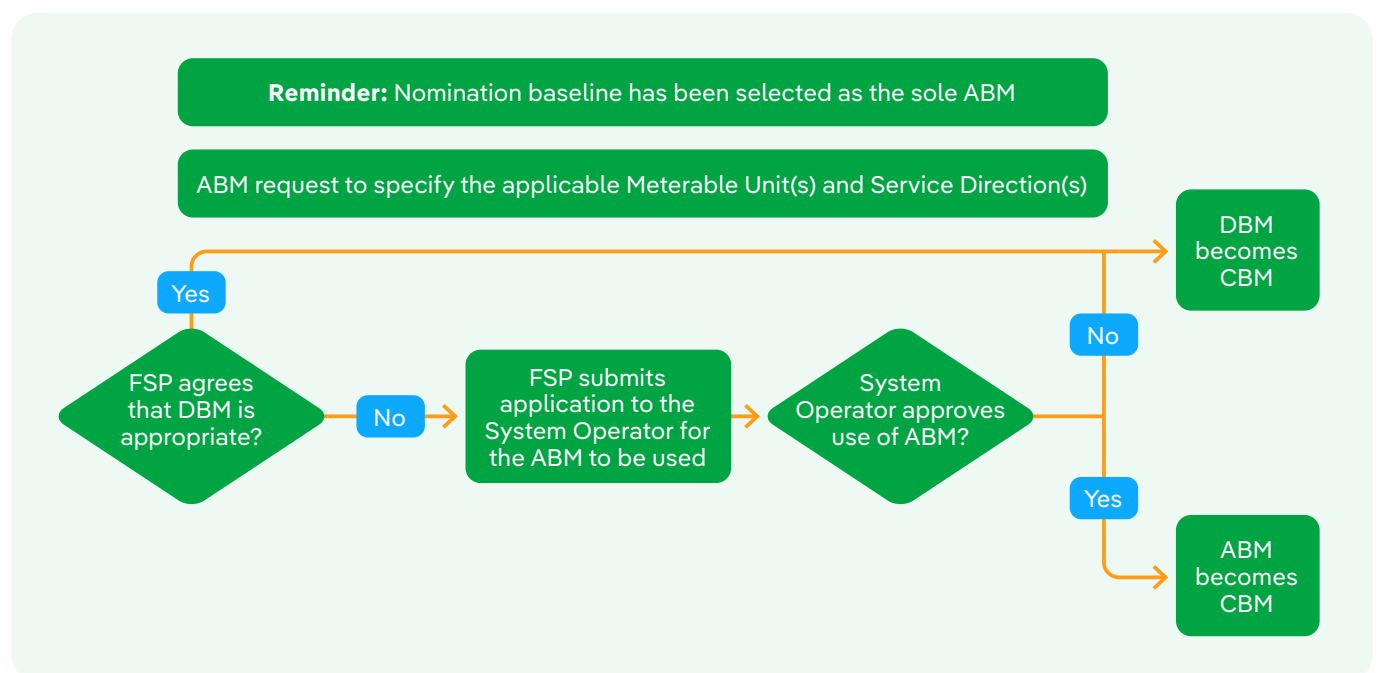
Industrial/commercial

Asset Scale	Metering Arrangement	Technology Type	DTD / GTU	DTU / GTD
Industrial/ commercial	Asset Level	Schedulable Generation	Zero	Asset Capacity (no de-rating)
		Intermittent Generation		
		Storage		
		Heat Pump	Nomination	
		EV Charger DSR		
		EV Charger V2G		
		Flexible Site Demand		
	Point of Connection	Schedulable Generation	Zero	Asset Capacity (no de-rating)
		Intermittent Generation		
		Storage		
		Heat Pump	Nomination	
		EV Charger DSR		
		EV Charger V2G		
		Flexible Site Demand		

Alternative Baselining Methodology (ABM)

The Alternative Baselining Methodology (ABM) is a secondary methodology that an FSP may request in place of the default methodology (DBM) from the tables shown on pages 2-5, where the default is not considered appropriate by the FSP. Use of an ABM is subject to approval by us as the system operator, based on the justification provided.

The ABM methodology requested can be a Nomination when the FSP believes that the primary methodology does not correctly align to the actual behaviour of their assets. Below is the process required to request the ABM:



Settlement process

All FSPs are required to fill out each half-hourly (HH) settlement period for both their actual and baseline readings in the settlement process. For example, if the asset requires a Zero baseline, complete the sheet with 0 in each HH period.

For Fixed Reference baselines, please visit www.enwl.co.uk/flexdocs

If you require any further support, please visit us at www.enwl.co.uk/flex or email us at Flexible.Contracts@enwl.co.uk



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