

# Output Measures for ED1

## Load Priority index

3 May 2012

# UK Sustainability measure: Load Priority Index

**Objective:** to define an output measure that captures the ability of UKPN to facilitate the low carbon economy, that is able to drive and track investments as is required for a Primary Output measure and that will stay valid for the duration of ED1 (and ED2).

UKPN proposed the following output measure:

*Load Priority Index – a measure of the ability to connect and manage new generation and demand in a cost efficient and timely manner by ensuring sufficient anticipatory headroom*

*The planning insight provided by this measure will allow UKPN to upgrade the network so that it can respond in the time available to meet customers' expectations (inclusive of hotspots). Load in this context is interchangeable with headroom and reflects:*

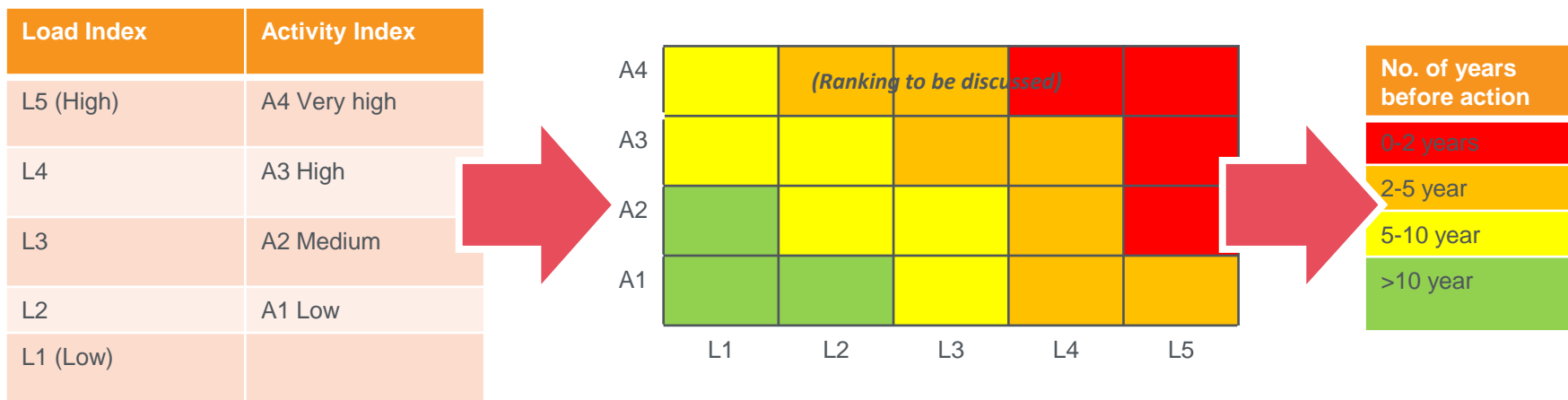
- *Future network growth*
- *Distributed generation growth*
- *Demand connection growth*
- *Fault level constraints*



# The Load Priority Index has a strong anticipatory and geographical element

The Load Priority Index is a weighting of the established Load Indices with an Activity Index. The Activity Index seeks to provide a measure of where headroom will be used up more quickly on the network based on the anticipated (regional) activity on the network.

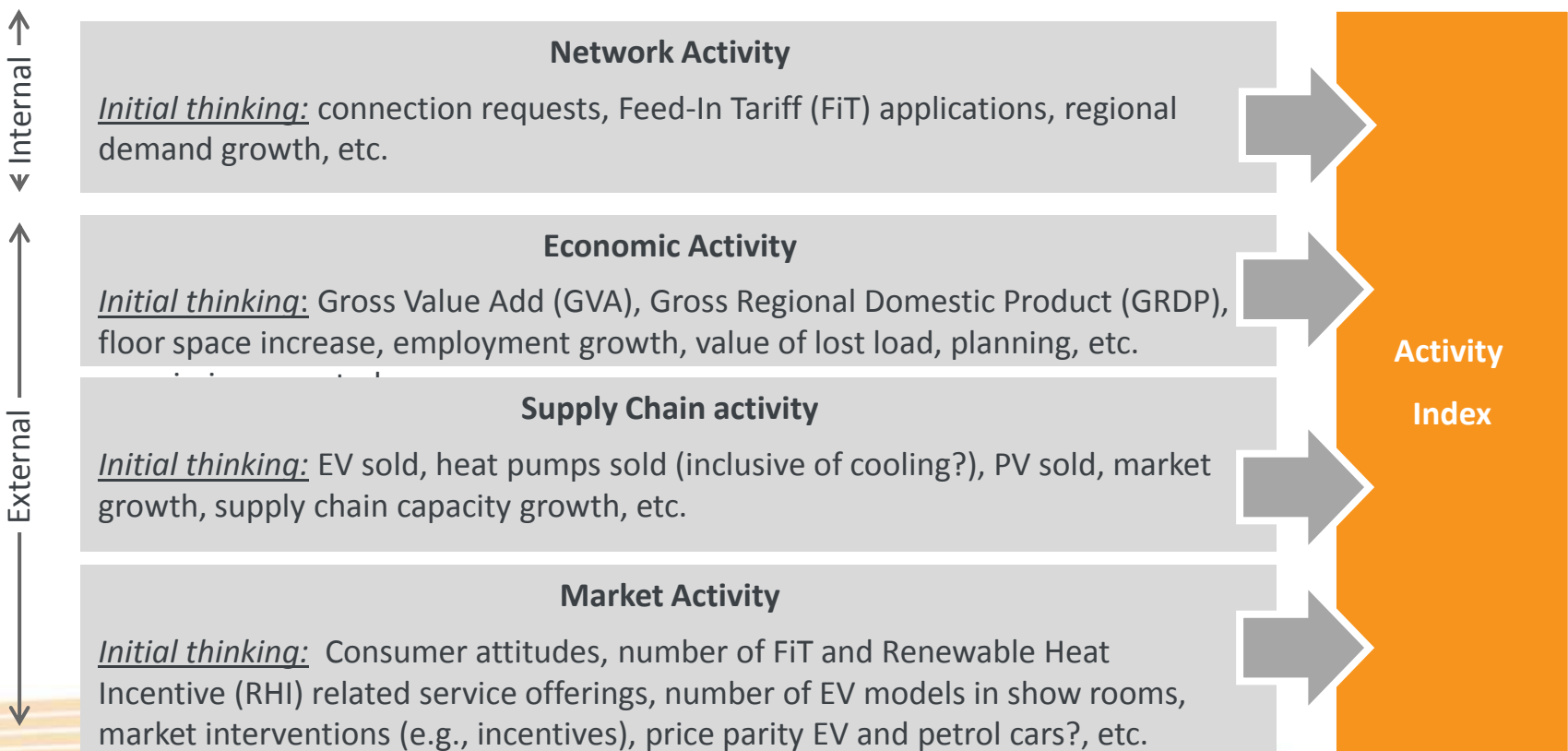
**Load Priority Index (anticipated need) = asset loading x anticipated activity**



- The Activity Index is a reflection of both speed of change as well as predictability of change
- The Measure will reflect ability to deliver new capacity (adds to uncertainty)
- This measure complements the new Load Related Model, developed with Asset Management and Imperial College, which has the ability to forecast network activity down to Local Authority level.

# Capturing anticipated activity in reliable metrics

The activity Index will be based on internal and external metrics, such as network connection activity, regional economic activity, related supply chain and customer activity.



# Example of building up the Activity Index

More forward looking  
Increased uncertainty

Category	Metric (all per Local Authority)	Rating (A1 to A5)	Source	Weight
Network	Load growth per primary	-5% 0% ..... >15%	Asset Management	25%
	Growth connection requests	-2% 0% ..... >5%	Connections	25%
	...			
Economic	Growth regional Gross Value Add	-2% 0% ..... >5%	Government	15%
	Growth housing stock	-2% 0% ..... >10%	Councils	
	...			
Supply Chain	% Electric Vehicles (EV) sales forecast for next 2 years by large car manufacturers	0% 0.5% ..... >10%	Third parties	10%
	% Heat pump sales forecast in comparison to conventional heat	0% 0.5% ..... >10%		5%
	...			
Market	% EVs of models currently in showroom	0% 1% ..... >10%		5%
	% consumers responding 'likely to highly likely' to consider an EV	0% 10% ..... >10%		5%
	...			

As metrics become less 'hard' or certain, the impact on the Activity Index is less through the individual weighting

National forecasts need to be disaggregated to local authority; need to consider demographics, wealth, etc. External parties such as Experion can provide this service.

- Activity Index metrics will have to be disaggregated to a sufficient level, e.g. Local Authority or Primary station

# Discussion and Next Steps (for a later refinement)

- How much headroom needs to be created?
- Who pays for anticipatory headroom?
  - Socialised vs. connected parties
  - Need to understand the delta between use of system and contributions
  - Willingness to Pay and Stakeholder Engagement
- Headroom has to cover both generation and demand dominated networks
- Timing of index assessment - Index is a snapshot, can develop over time?
- To which level can we sensibly disaggregate – Local Authority, Primary, asset?
- Acceptable complexity of measure – what is manageable and realistic?
- Understand impact on security of supply

