LI Usage

Paul Bircham & Steve Cox

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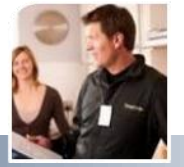


Components of an LI

- Provides a methodology for comparing capacity to demand
  - At a given point on the network
  - For a defined configuration
- Capacity definitions are not yet defined
  - Interconnection above P2/6
  - Storage technologies and their resilience – how long does it last
  - DG resilience – observed / average / theoretical
  - Load curve
- Demand defined in P2/6
  - Accounting for DG
  - Treatment of DSR
  - Treatment of storage and managed demands
- LI = Capacity ≈ Demand

Types of LI

- Traditional – Thermal L_t
- Emerging
  - Voltage L_v
  - Harmonic L_h
- For all the LI = Capacity ≈ Demand
- LIs can move in the same or different directions

  eg DG may reduce L_t but increase L_v and L_h

  but resolving one usually improves the others ?

Uses of LI

- Can be used to establish a demand v capacity risk profile across the asset base.
  - Expresses % of time that demand exceeds capacity
  - Allows the benefit of a given investment program to be demonstrated
  - Allows disaggregation of demand reductions versus capacity creation.

- Cost to resolve a given LI is highly location specific
  - Not easy at Grid and Primary to establish a unit cost per MW, much like Non Load HI resolution.
  - Should be easier at secondary levels.

  BUT . . . . Required work can be converted to unit outputs and hence priced on a benchmark cost basis.

- So LI analysis leads to a ‘contracted risk delta’ for a given benchmark cost

Augmentation of benefit of LIs

- Can be compared against the non load program to identify
  - Efficiency opportunities ie double counts
  - No regrets efficiency opportunities for future capacity projections
- Are LIs a measure of customer or demand risk ?
  - Demand risk is complex in a DSR world.
  - Customer risk seems more representative of the risk as observed by existing and new customers requiring capacity.
- What does good look like ?
  - High LI levels tend to suggest high utilisation ?
  - Low LIs could be seen as inefficient, but what about DG ?

Conclusions & Outputs Proposals

- LIs are here to stay - further work needed on definitions, augmentation and expenditure linkage techniques.
- DPCR5 Output focussed on achieving a change from forecast risk, measured by LIs (i.e. by addressing an agreed number of LI=5 by DPCR5 exit)
- For RIIO-ED1 main Output should be the timely delivery of efficient level of network capacity
  - Target is the delivery of required change in Load Index across the network (132kV to LV)
  - Measure is to ensure exit RIIO-ED1 with no groups at LI=5 constraining connections, change in LI=4 as leading indicator
  - This requires comparable LIs across DNOs
- As with DPCR5, DNOs to manage risk of changes in population of circuits at LI=5 within an ex-ante allowance