International Energy Agency
Secure Sustainable Together

Roles and Responsibilities in Smart Networks

Setting the scene

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New IEA project on smart, system-friendly DERs

- **2016-18**
  - IEA electricity markets, renewables, and technology roadmap teams
- **Key questions:**
  - Updating our definition of (smart, system-friendly) DERs
  - Understanding the maximum potential scenarios for DERs (PV + storage), micro-grid and off-grid deployment, and the potential impact on electricity system security
  - Policy drivers and barriers for DER deployment and DER system-friendliness?
  - New roles and responsibilities in smart networks?
  - Implications for DERs for electricity pricing and charging
  - Big data in smart networks
  - Case studies in technologies and regulatory best practice

- **Upcoming workshops:**
  - June 2016, date tbd: Pricing and charging
  - Autumn 2016, date tbd: Big data

Proposed updated definition

- ***Distributed electricity resources are typically modular and/or small scale, connected to a local network, providing (or facilitating) energy related services, including support to distribution grids.***

(Outdated definition)

- ***Distributed generation is a modular electricity resource connected to the grid serving a customer on-site, or providing support to a distribution network.***

i. DER is, in general, not power or voltage dependent.
ii. The technology used for DER is not relevant. The DER technologies can be categorised as renewable and non-renewable. DER is not synonym for renewable source.
iii. The mode of operation of distributed power generation is not relevant
iv. The ownership of DER is not relevant
v. The power delivery area is not relevant (urban/suburban/rural).
vi. Geographical location is not a relevant parameter to distinguish DER from central generation.
vii. The penetration of distributed generation of DER is not relevant