Mapping narratives and assumptions in LTES

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26 March 2020 – 2nd LTES International Forum
Narratives and Assumptions in Long-term Energy Scenarios

Main parts of a scenario

- Qualitative – “Storyline”
- Structured determinants – e.g. political, economic, social,
- Specific to the system
- Framework that gives the quantitative assumptions meaning
- Formed through stakeholder consultation at varying levels.

- Quantitative variables - the evolution defined beforehand
- Only meaningful in the context of the narrative.
- Assumptions driving energy demand – population and economic growth.
- Assumptions driving energy supply – availability of energy resources and the costs of energy conversion technologies.
Narratives – What is driving the ongoing energy transformation?

- **Policy imperatives**
  - Sustainable Development and Economic Growth (SDGs)
  - Climate and Environmental agenda (Paris Agreement)

- **RE Strong Business case**
  - Policy frameworks, business and technology innovation
  - Dramatic cost reduction

Source: IRENA (2019). Innovation landscape for a renewable-powered future: Solutions to integrate variable renewables
Assumptions – Energy System Innovation: scoping cost and time?

Cost

Technology and infrastructure cost

- Hydrogen, PtX
- Storage
- Electrification of end use sectors
- Massive expansion of interconnections and supergrids
- Flexibility, pricing that supports DSM/DSR
- Decentralised system and Distributed generation
- Aggregators-VPP
- EVs and smart charging
- Platform business model
- Artificial Intelligence
- Value complementarities in VRE
- Blockchain
- Digitalisation-IoT

Certainty of estimations of year of massive deployment/full commercial availability

- Certain and low cost

Certainty of date

Best assumptions

- Enabling technology
- Business models
- System operation
- Market design
“Exchanging experience on long-term energy scenario comparison”

Global final energy demand

Focus

- What can we learn from *scenarios comparison studies*?

- What are the *key interests* and what are the *main divergences* when comparing scenarios?

- Can we facilitate *systematic reviews* on scenario comparison and the *assumptions* behind them?
Thank you.

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