

Scalability, Replicability and Cost-Benefit-Analysis.

Ilaria Losa | RSE

General concepts

Scalability

Ability of a system, network or process to increase its size/scope/range in order to adequately meet a growth in demand

Replicability

Ability of a system, network or process to be duplicated in another location or time

Objectives and scope

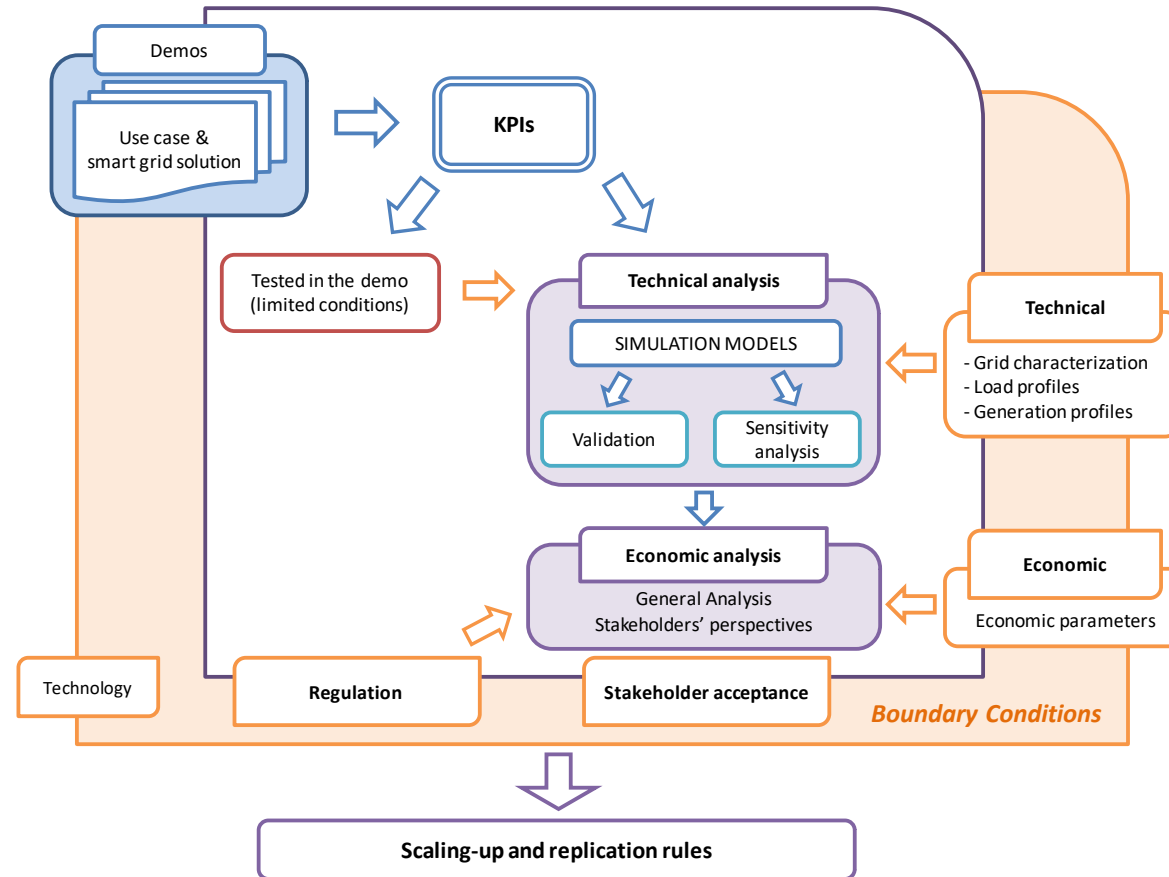
Analyse SCALABILITY and REPLICABILITY potential of smart grid solution

- Expected impact of smart grid solutions across EU27 (Scaling-up and replication rules)
- Technical impact
- Regulation
- Economic implications
- Stakeholders perspectives

Example of questions addressed

- Where should a specific use case be implemented?
- Under what conditions could it be more beneficial?
- What are the most relevant conditions for the success of each use case?

General methodology of SRA



General methodology

- Technical scalability and replicability analysis
- Introductory elements to CBA

Technical scalability and replicability analysis

- Introductory elements to CBA

Technical SRA – General concepts

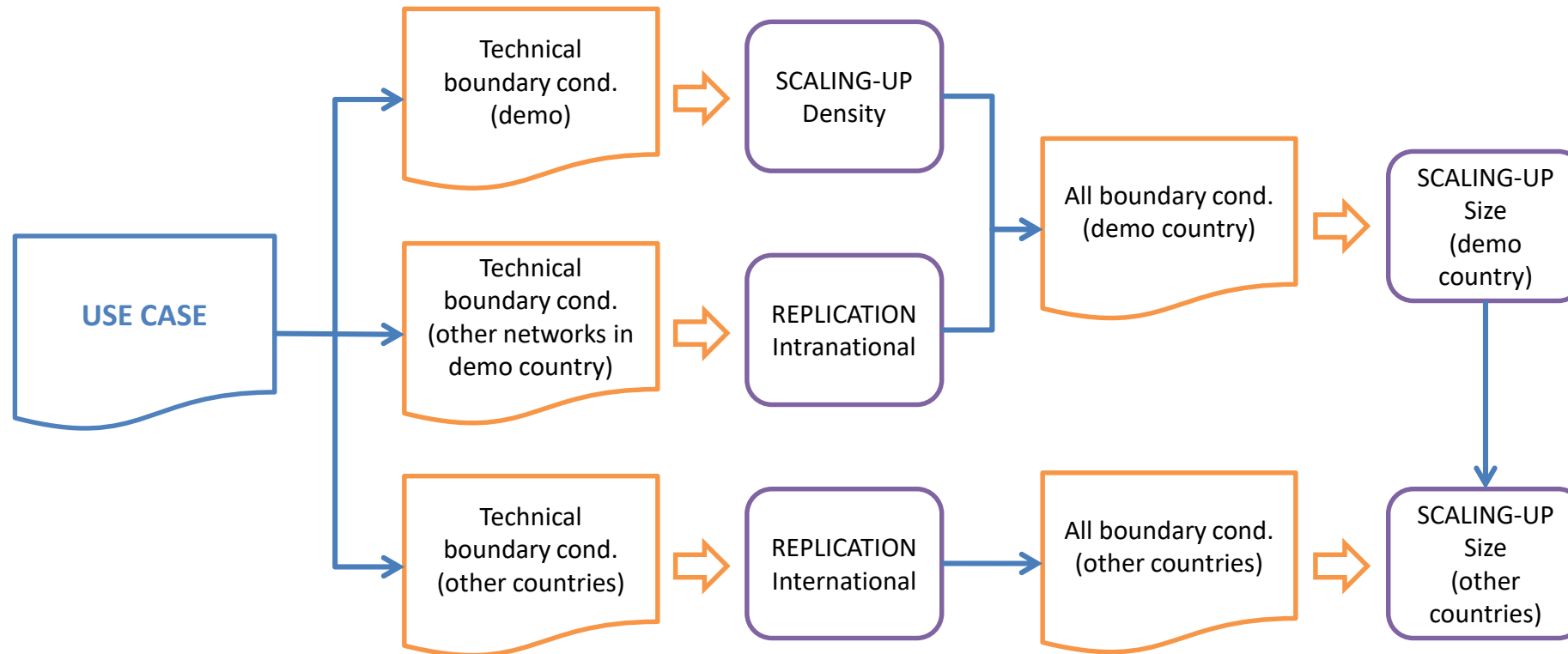
Scalability: same boundary conditions, wider scope

- **Scaling-up in density:** larger scale in demo region (increasing penetration degree of the solutions, etc.)
- **Scaling-up in terms of size:** larger area with different types of networks but shared boundary conditions (regulatory framework, stakeholders' perspective, etc.)

Replicability: different boundary conditions

- **Domain of validity:** range of boundary conditions that ensure validity of replication.
- **Intra-national replicability:** implementation in the same country (different types of distribution areas, network configuration, etc.)
- **International replicability:** implementation in different countries (different voltage level, regulation, etc.)

Technical SRA - Methodology



Technical SRA – Methodology and data needed

1. Design specific methodology for technical SRA of each use case
2. Characterization of distribution networks using data from Demo leaders
3. Characterization of consumers, DG and other RES profiles of generation and demand
4. Modeling of the use case
5. Simulation to compute KPIs under different boundary conditions

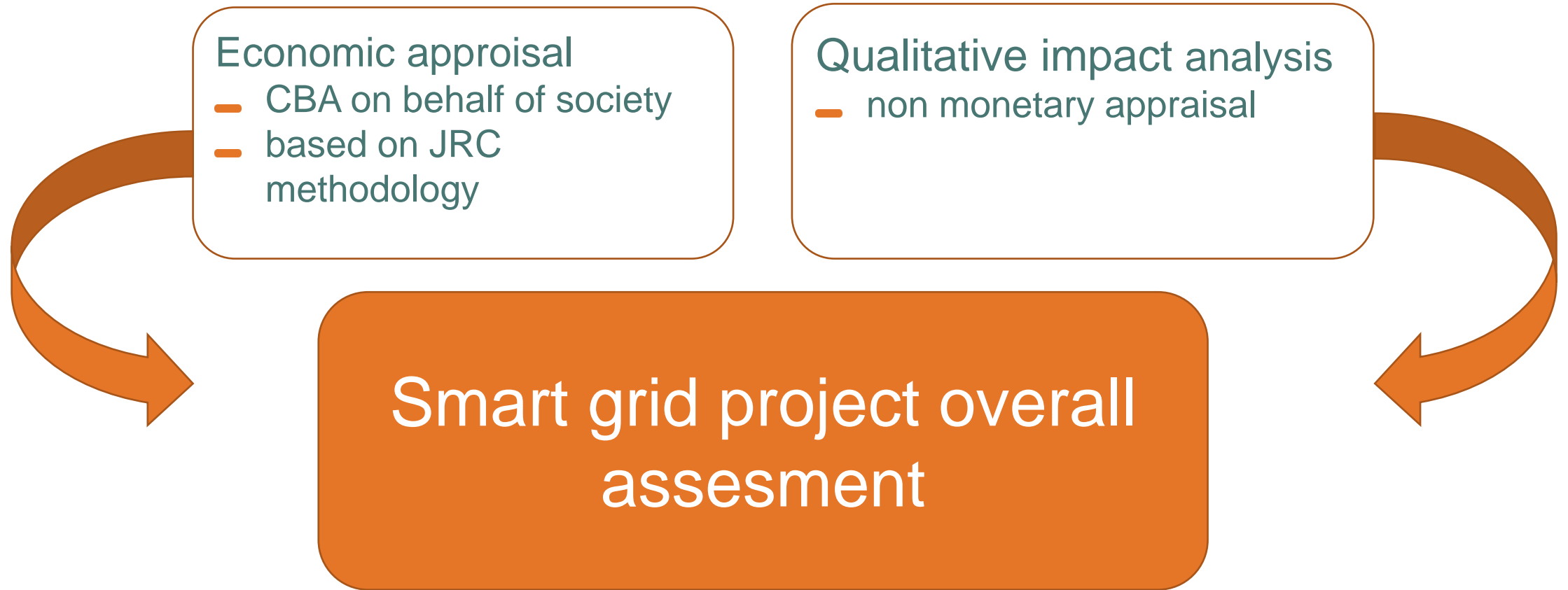


Representative networks

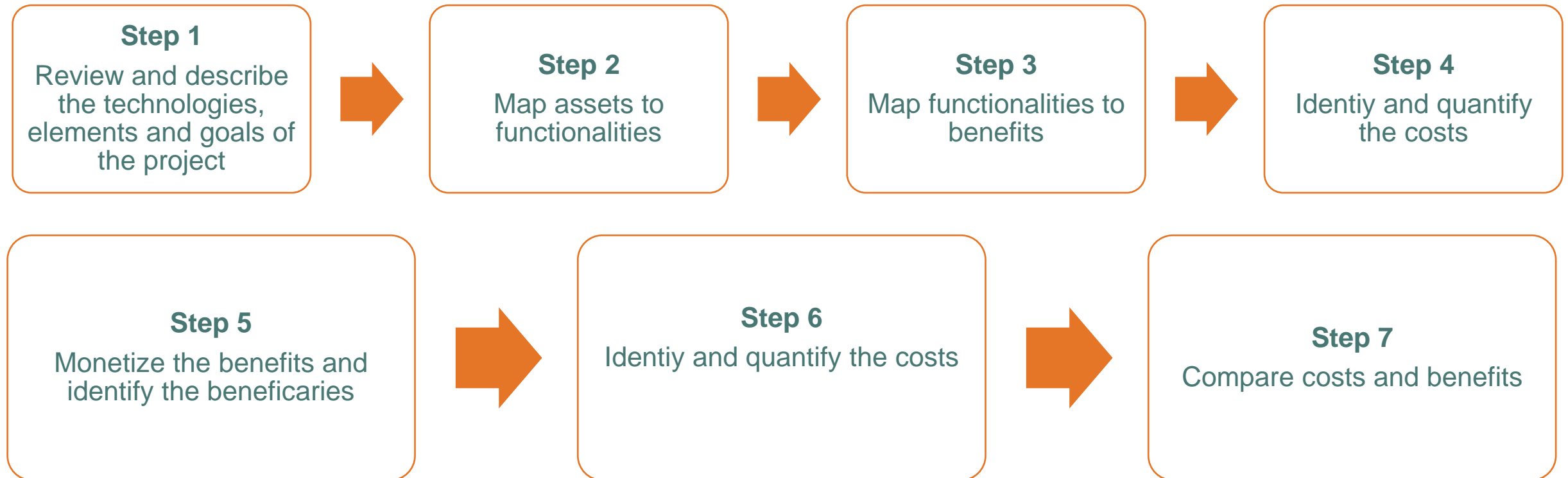


Generation and demand profiles

CBA approach in Platone – Introductory elements



JRC CBA steps





Thank you!

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Agenda

- 09h30 Welcome - Antonello Monti
 - Introduction of Platone Advisory Board
 - Introduction to Platone project
- 10h10 Platone's platform architecture - Ferdinando Bosco
- 10h30 Use cases and Key Performance Indicators in the Platone demonstration sites - Kirsten Glennung
- 10h45 *10 min break*
- 10h55 Scaling-up and Replication and Cost-Benefit Analysis - Ilaria Losa
- **11h10 Communication and Dissemination of project results - Ludwig Karg**
- 11h25 *10 min break*
- 11h35 Discussion between Platone Advisory members
- 11h55 Feedback from Platone Advisory Board members
- 12h30 End of the Meeting