



Ministry of Industry and Trade



Hợp tác
Đức

DEUTSCHE ZUSAMMENARBEIT

Implemented by

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für Internationale
Zusammenarbeit (GIZ) GmbH



Introduction to the scope and goals of the assignment & evaluation methodology

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Thursday, March 10, 2022

Agenda

- ▮ Project Structure
- ▮ Methodology
 - ▮ Smart Grid Index
 - ▮ Evaluation methodology per index

Project Structure

- ▀ Task 1: Assessment of Viet Nam's Smart Grids Road Map legal frameworks and its' implementing progress
 - ▀ Sub-Task 1.1: Proposing assessment procedures and methodology
 - ▀ Sub-Task 1.2: Comprehensive assessment of Viet Nam's Smart Grids Road Map
- ▀ Task 2: International best practices and Recommendations for Vietnam's improvement
 - ▀ Sub-Task 2.1: International best practices on Smart Grids Road Map and Smart Grid dimensions for evaluation of development progress
 - ▀ Sub-Task 2.2: Recommendation for improvement of Smart Grids Road Map with integration of dimensions/indicator set for evaluating the progress of Smart Grids development

8 Smart Grid Index

Monitoring &
Control

Data Analytics

Supply Reliability

DER Integration

Green Energy

Cybersecurity

Customer
Empowerment &
Satisfaction

Energy Market

8 Smart Grid Index

Monitoring & Control

Monitoring &
Control

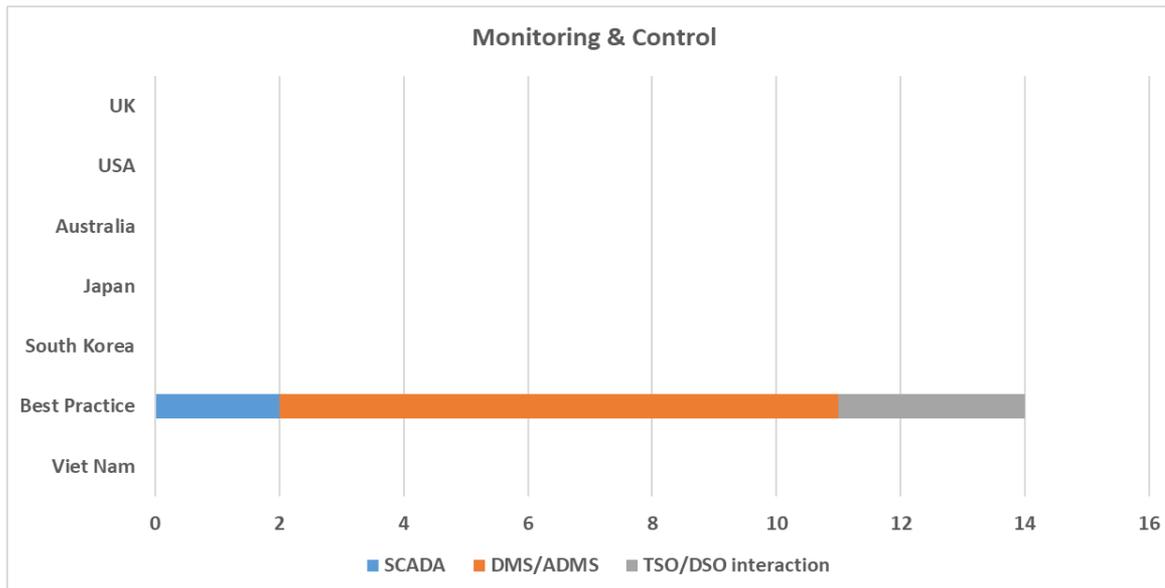
- Data acquisition, monitoring and control of the entire transmission and distribution network
- Real-time network view and dynamic decision-making
- Decision support mechanism assisting the control room and field operating personnel
- Automatic fault location, isolation and supply restoration capabilities and an integrated outage management system in the event of network failure

Methodology

8 Smart Grid Index

Monitoring & Control

Monitoring & Control



- 2 points: SCADA System
 - TSO level
 - DSO level
- 9 points: DMS/ADMS
- 3 points: TSO/DSO interaction
 - Congestion management
 - Voltage support
 - Ancillary services

8 Smart Grid Index

Data Analytics

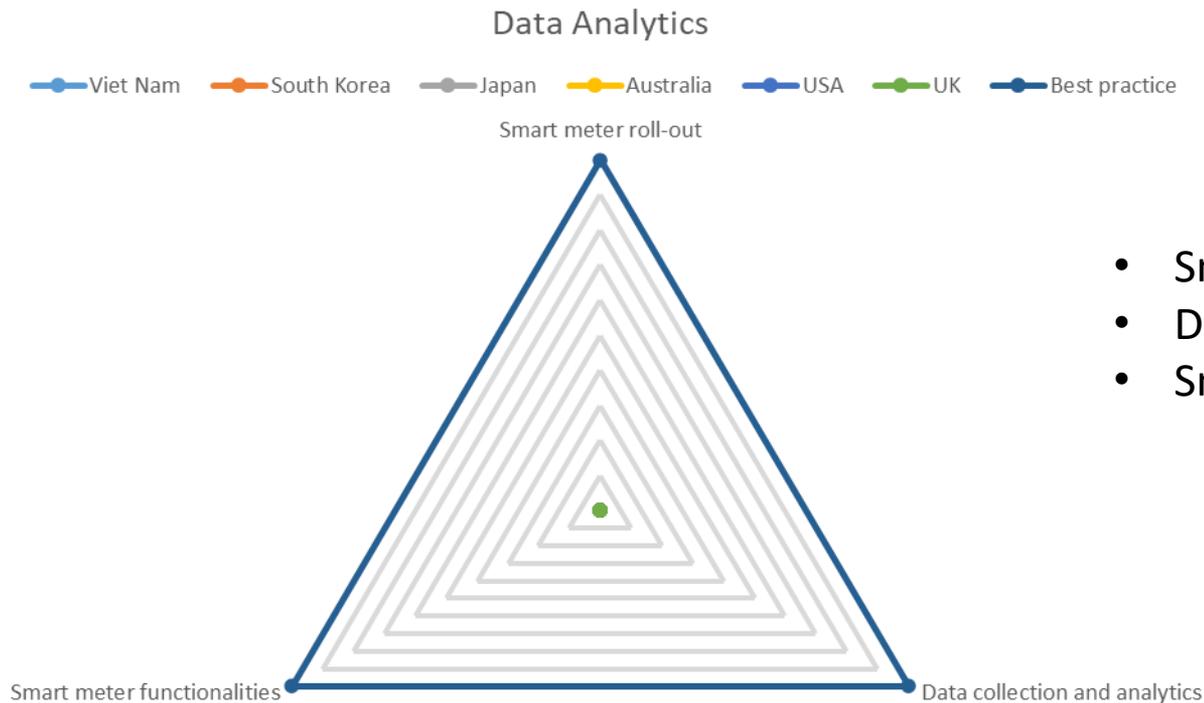
Data Analytics

- Improve operation, maintenance and asset management
- Advanced Metering Infrastructure: smart meters, communications networks and meter data management systems
- Smart devices to enable grid operators to monitor status of low voltage networks
- Advanced data analytics and its add value e.g. better understand customer behaviour, consumption patterns, network reinforcement and asset renewal needs.

8 Smart Grid Index

Data Analytics

Data Analytics



- Smart Meter Roll-out
- Data Collection & Analytics
- Smart Meter Functionalities

8 Smart Grid Index

Supply Reliability

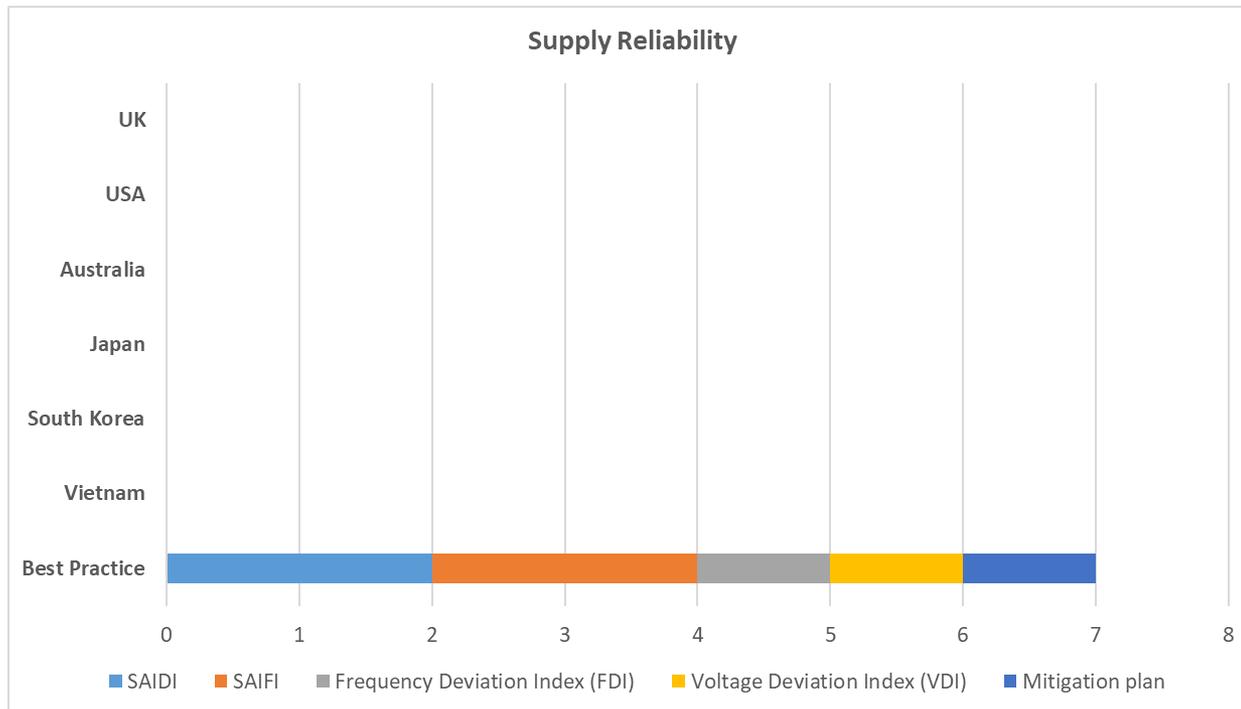
Supply Reliability

- ▀ Analysis of the SAIDI and SAIFI and how to improve them
- ▀ Improve supply reliability
- ▀ Power outage prevention
- ▀ Power quality (e.g. Frequency, voltage)

Methodology

8 Smart Grid Index Supply Reliability

Supply Reliability



- 2 points: SAIDI
- 2 points: SAIFI
- 1 point: FDI
- 1 point: VDI
- 1 point: Mitigation plan

8 Smart Grid Index

DER Integration

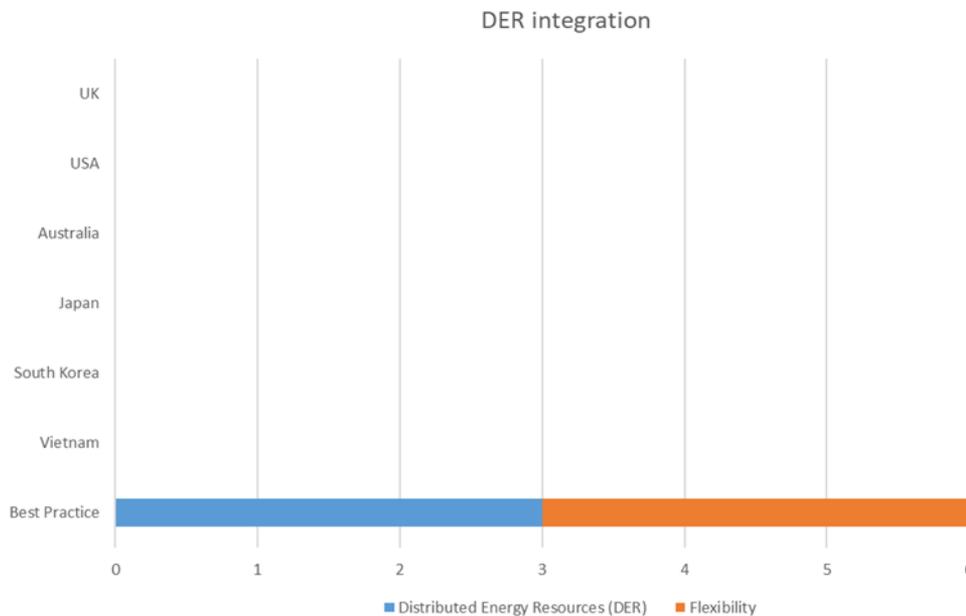
DER Integration

- Analysis the management of PVs, wind turbines, Bio energy and energy storage connected to grid
- Green Hydrogen
- Flexible loads to support the variability of renewable energy sources

8 Smart Grid Index

DER Integration

DER Integration



- 3 points: Distributed Energy Resources
 - DER Feed-in-grid
 - Grid code for DER
 - DER provide ancillary services
- 3 points: Flexibility
 - Battery storage
 - Power2Gas
 - Flexible loads

8 Smart Grid Index

Green Energy

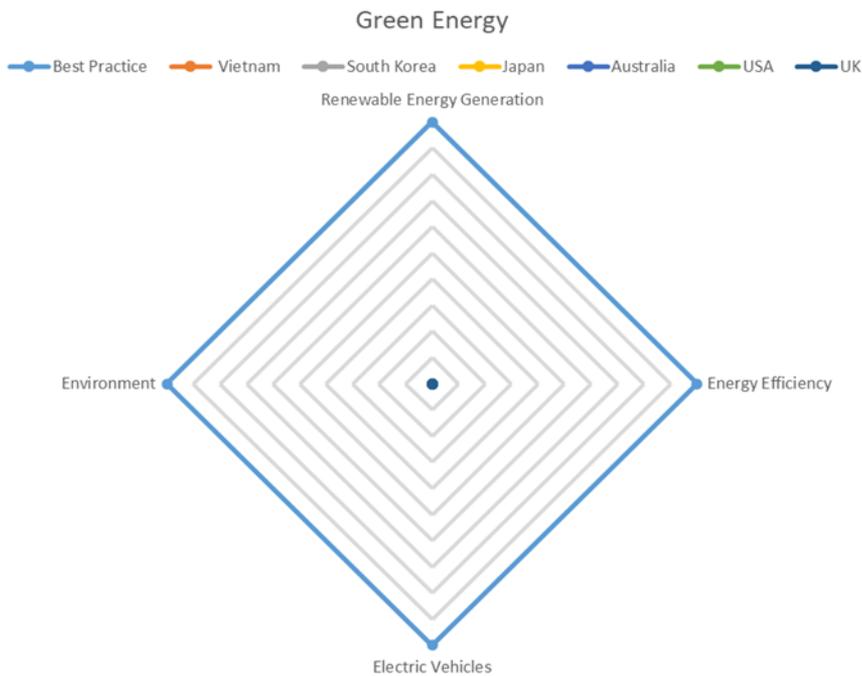
Green Energy

- Renewable Energy penetration and its impact on reducing greenhouse gas emissions
- Energy programs (e.g. energy efficiency)
- Electric vehicles and its infrastructure (i.e. Smart charging, Vehicle-to-Grid solutions)

Methodology

8 Smart Grid Index Green Energy

Green Energy



- Renewable Energy Generation
- Energy Efficiency
- Electric Vehicles
- Environment

8 Smart Grid Index

Cybersecurity

Cybersecurity

- ▀ Cybersecurity measures and management to safeguard the energy system against attacks
- ▀ Compliance with cybersecurity standards

8 Smart Grid Index

Customer Empowerment & Satisfaction

Customer
Empowerment &
Satisfaction

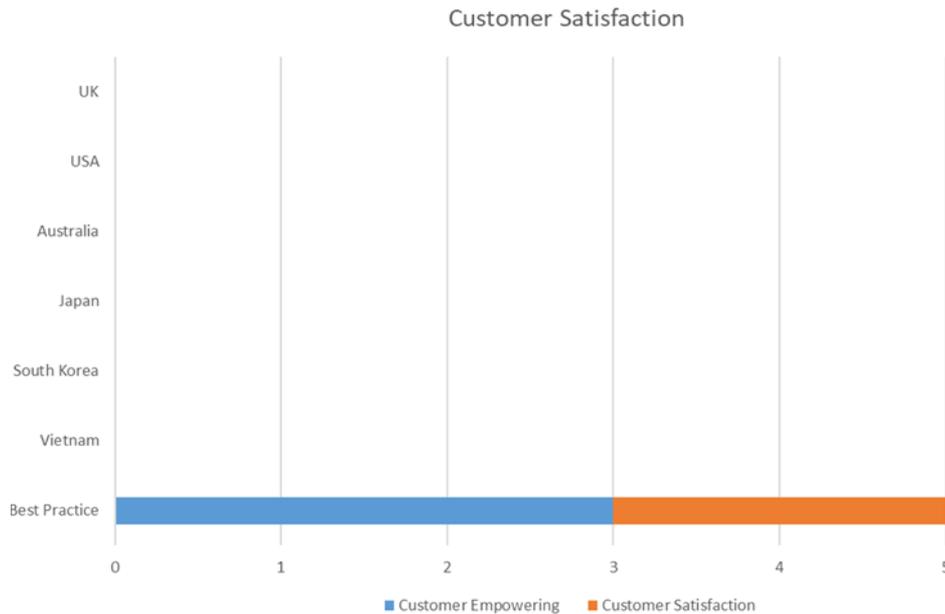
- Real-time energy consumption data and pricing information
- Awareness for customers about their energy usage and enable them to manage their consumption and lower energy costs

Methodology

8 Smart Grid Index

Customer Empowerment & Satisfaction

Customer
Empowerment &
Satisfaction



- 3 points: Customer Empowering
- 2 points: Customer Satisfaction

8 Smart Grid Index

Energy Market

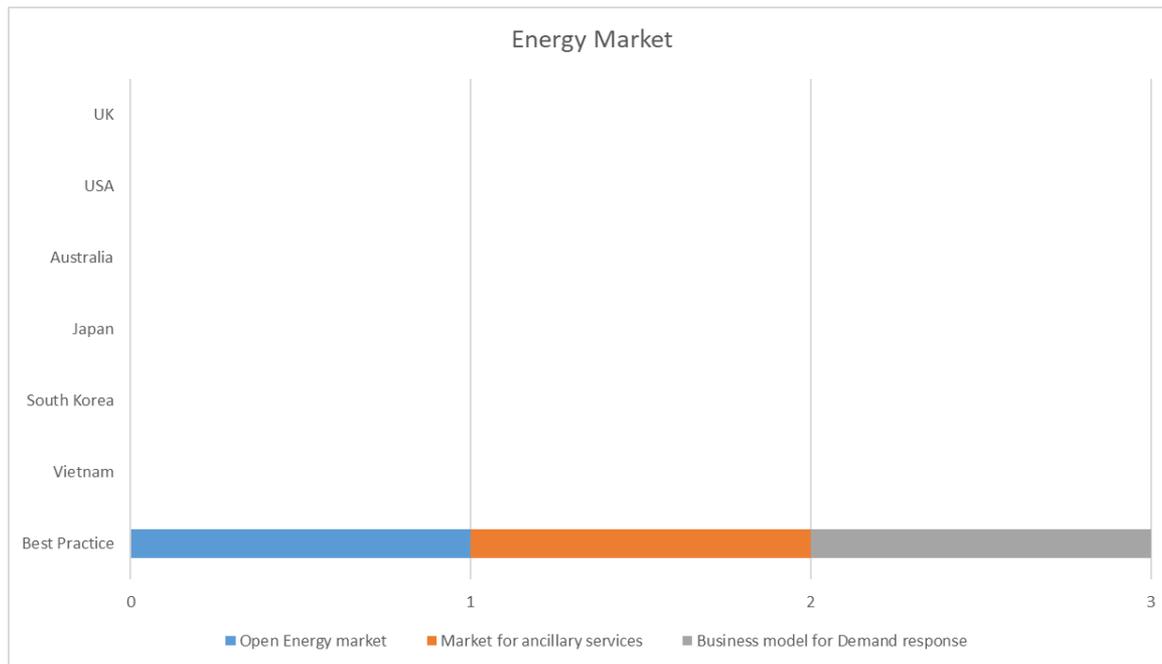
Energy Market

- Support Viet Nam from shifting wholesale energy market to retail market.
- Flexibility and ancillary service energy market
- Business models for Demand Response

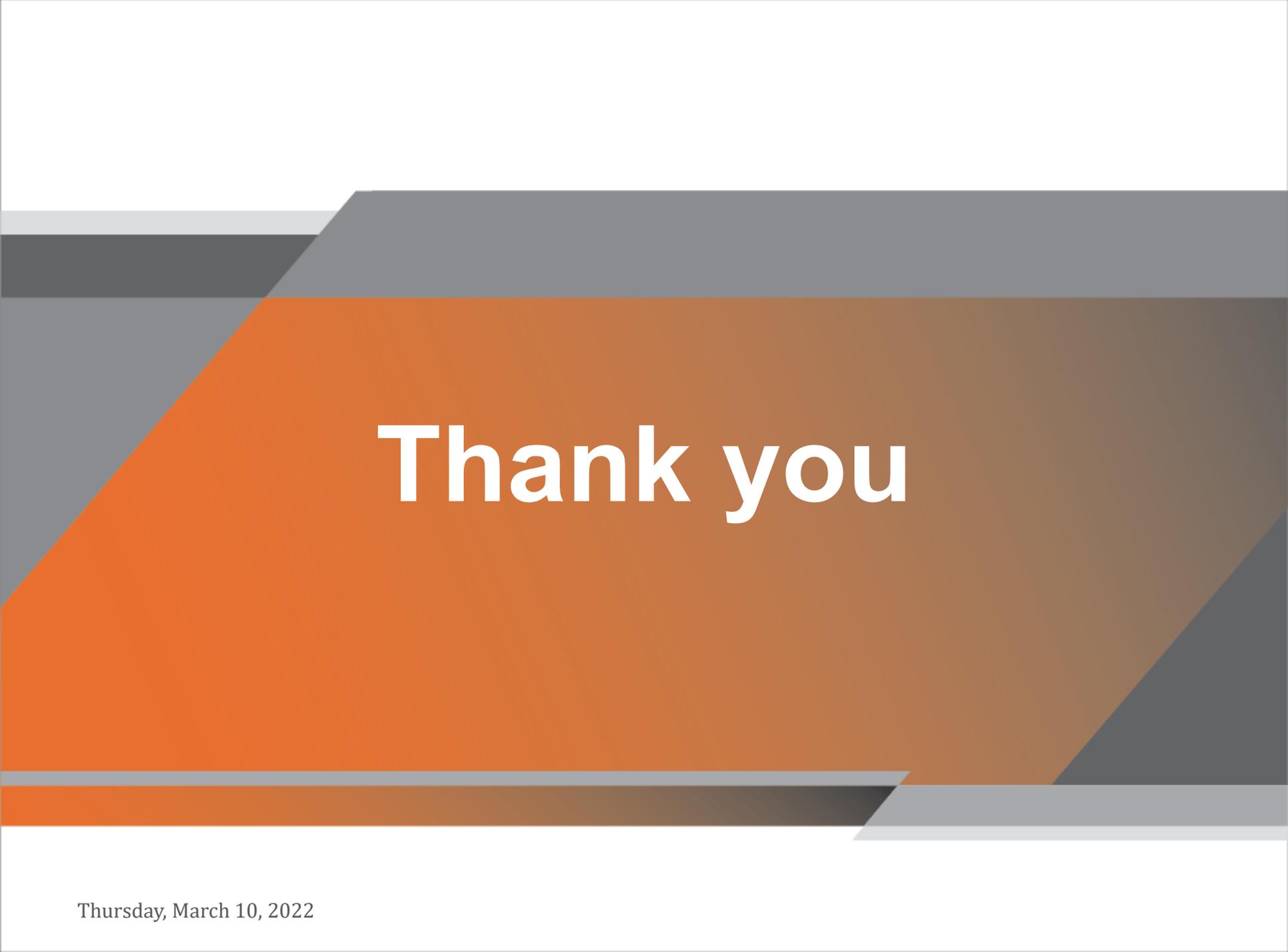
Methodology

8 Smart Grid Index Energy Market

Energy Market



- 1 point: Open Energy Market
- 1 point: Market for ancillary services
- 1 point: Business model for demand response



Thank you

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