

Enhancing Renewable Energy Integration in Oman

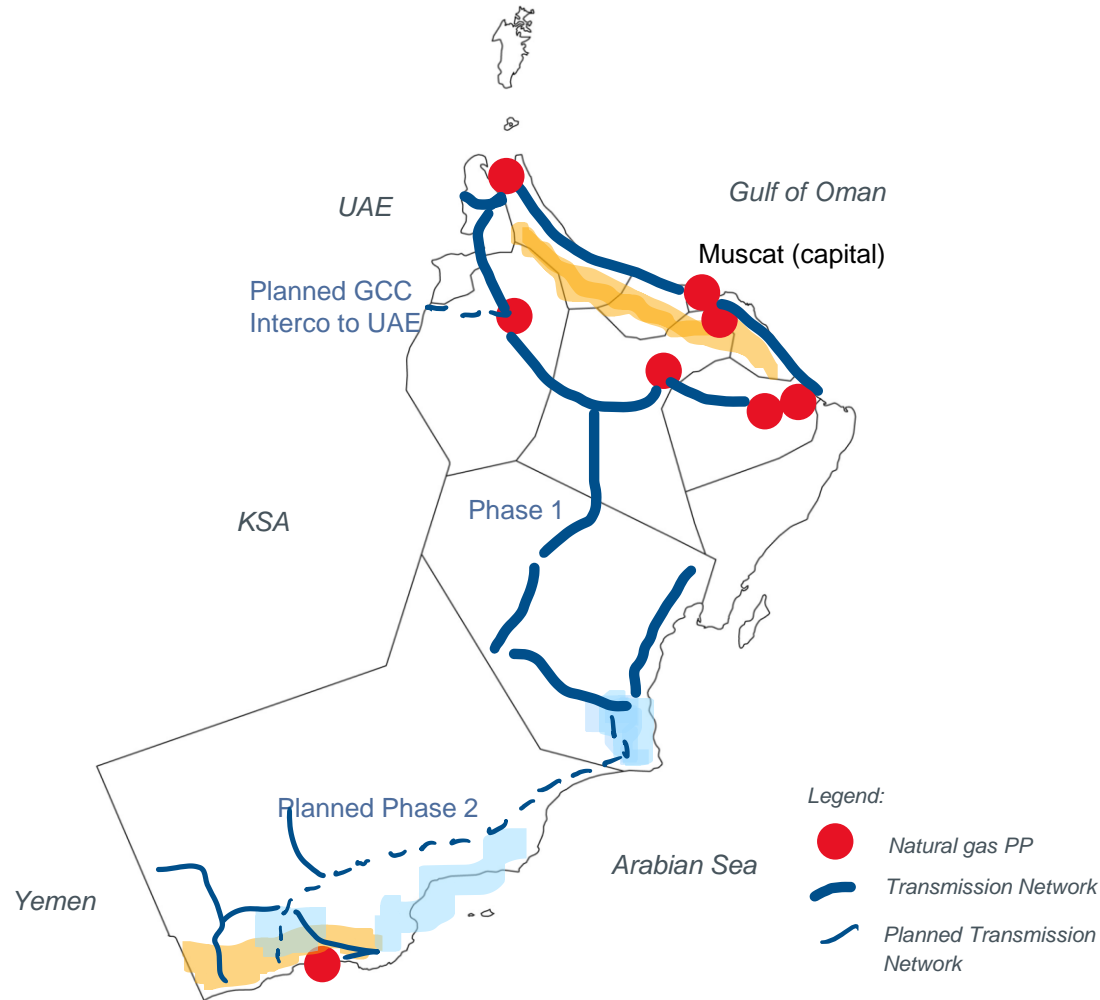
Challenges and Opportunities

Elia Grid International

IEEE Power Talks, Muscat, Oman

16 September 2024

Omani Energy Transition Journey Necessitates Infrastructure Growth

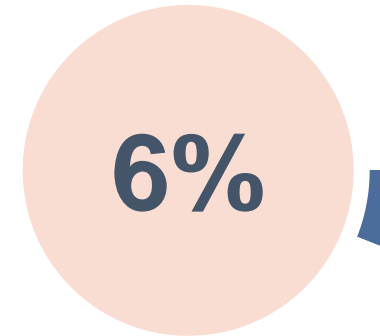


Source: Author, adapted from aenert.com and MEES

Note: The map is for representational purposes only and is not comprehensive and does not show exact geographical accuracy

OMAN'S TRANSITION GOALS

- 4 GW renewable capacity by 2030
- 40% electricity from renewables by 2040
- Part of broader net-zero carbon emissions goal by 2050

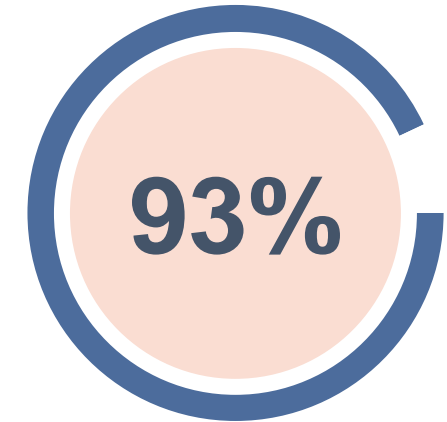


RES SHARE 2023

6% renewables installed capacity

(< 1 GW)

- Solar
- Wind
- Biomass

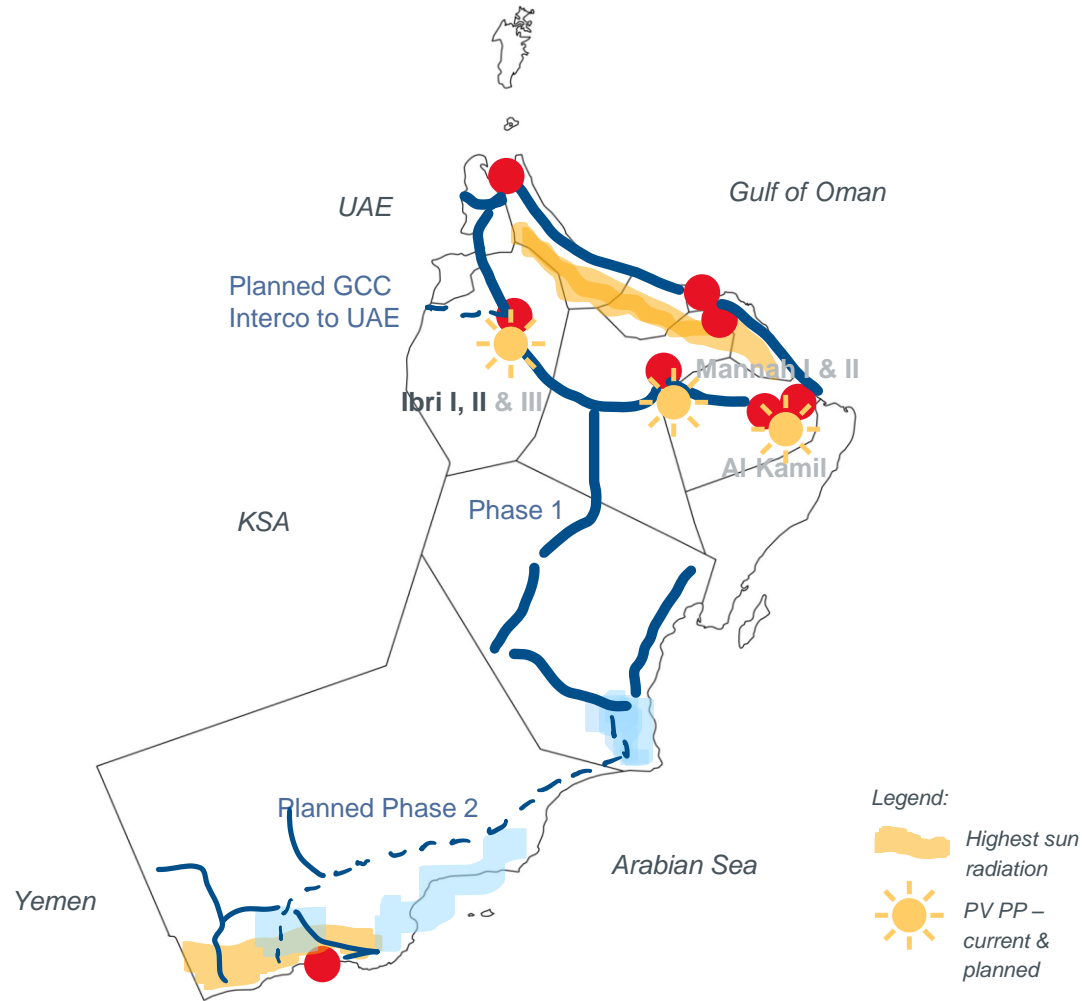


RES ENERGY MIX 2023

- Mainly from Solar Photovoltaic (PV)
- Oman's plans to expand renewables: Solar and Onshore Wind Projects

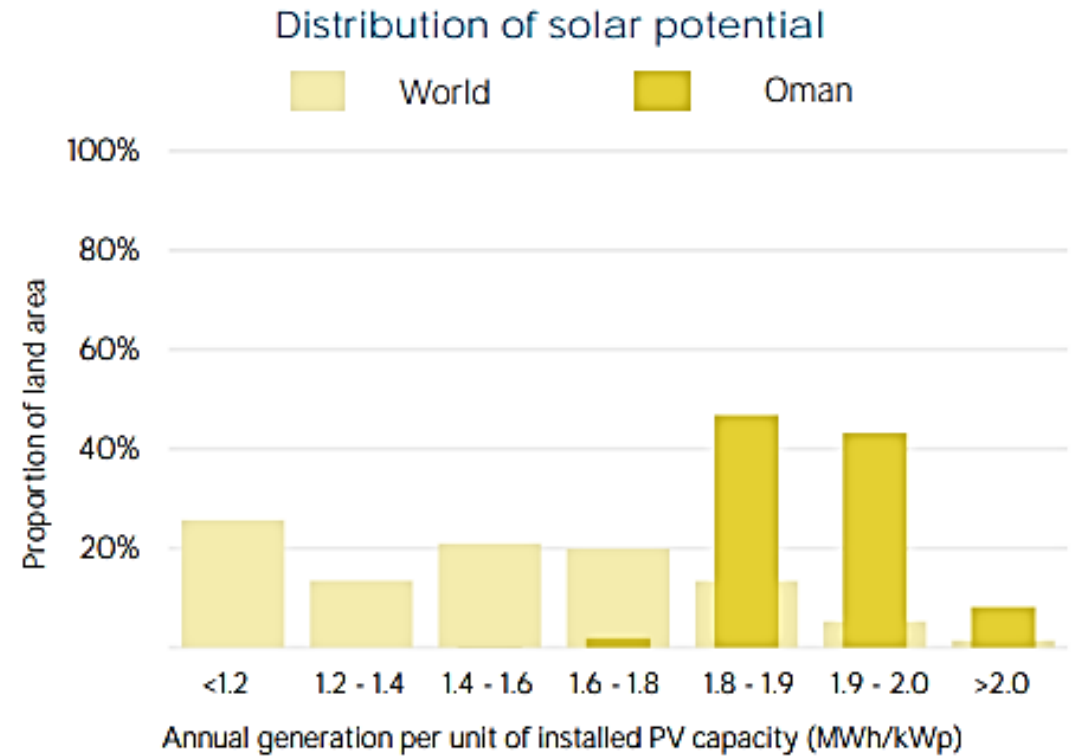
Source: IRENA, 2024

Harnessing Omani Solar Potential to Decrease Fossil Fuel Dependence



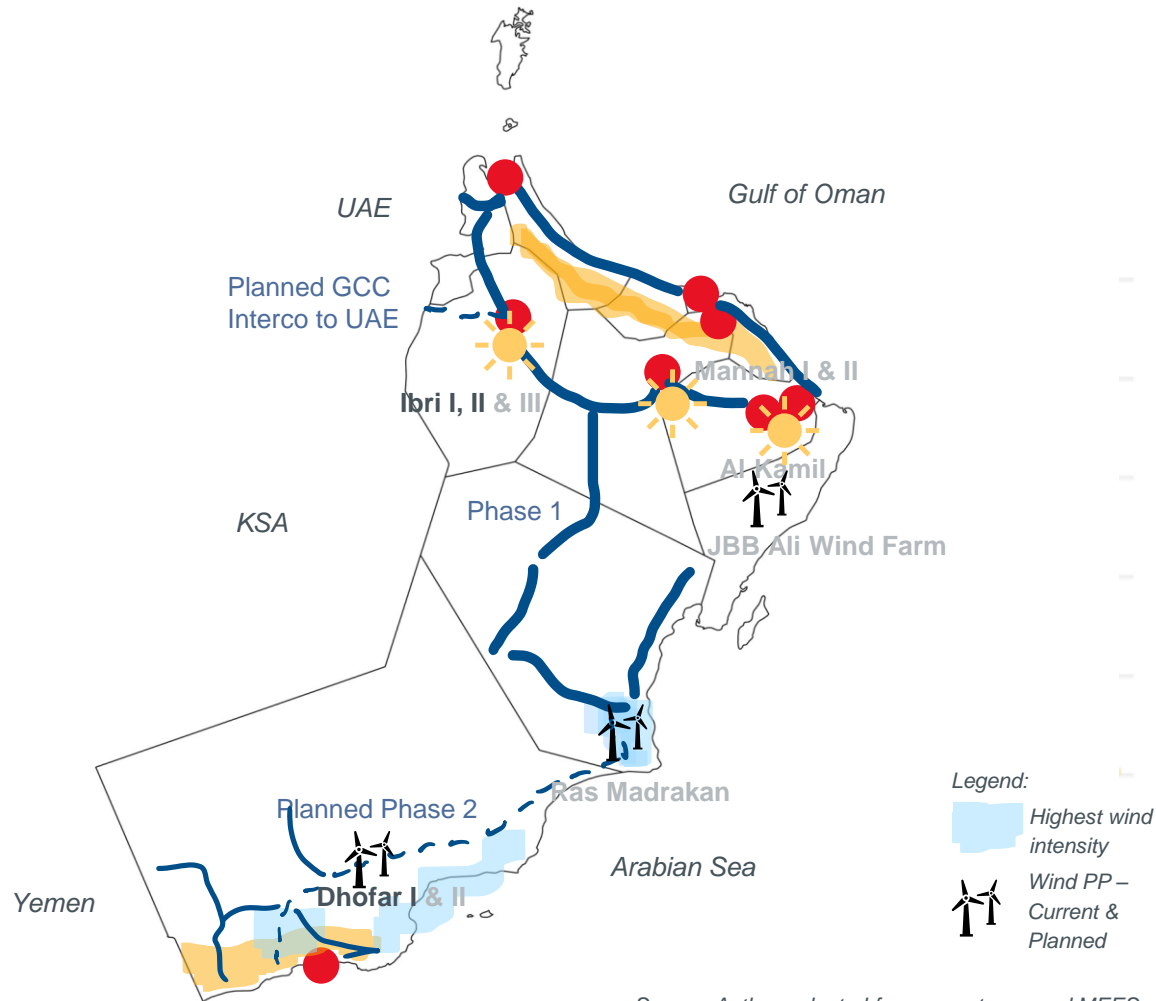
Source: Author, adapted from aenert.com and MEES

Note: The map is for representational purposes only and is not comprehensive and does not show exact geographical accuracy



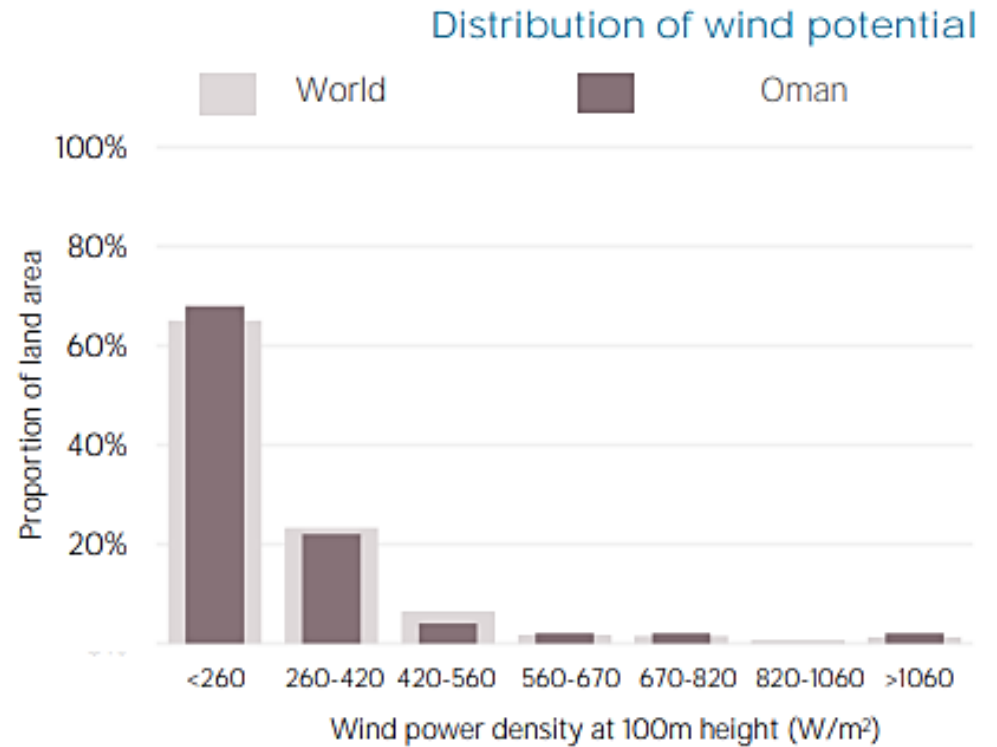
Source: IRENA, 2024

Harnessing Omani Wind Potential to Decrease Fossil Fuel Dependence



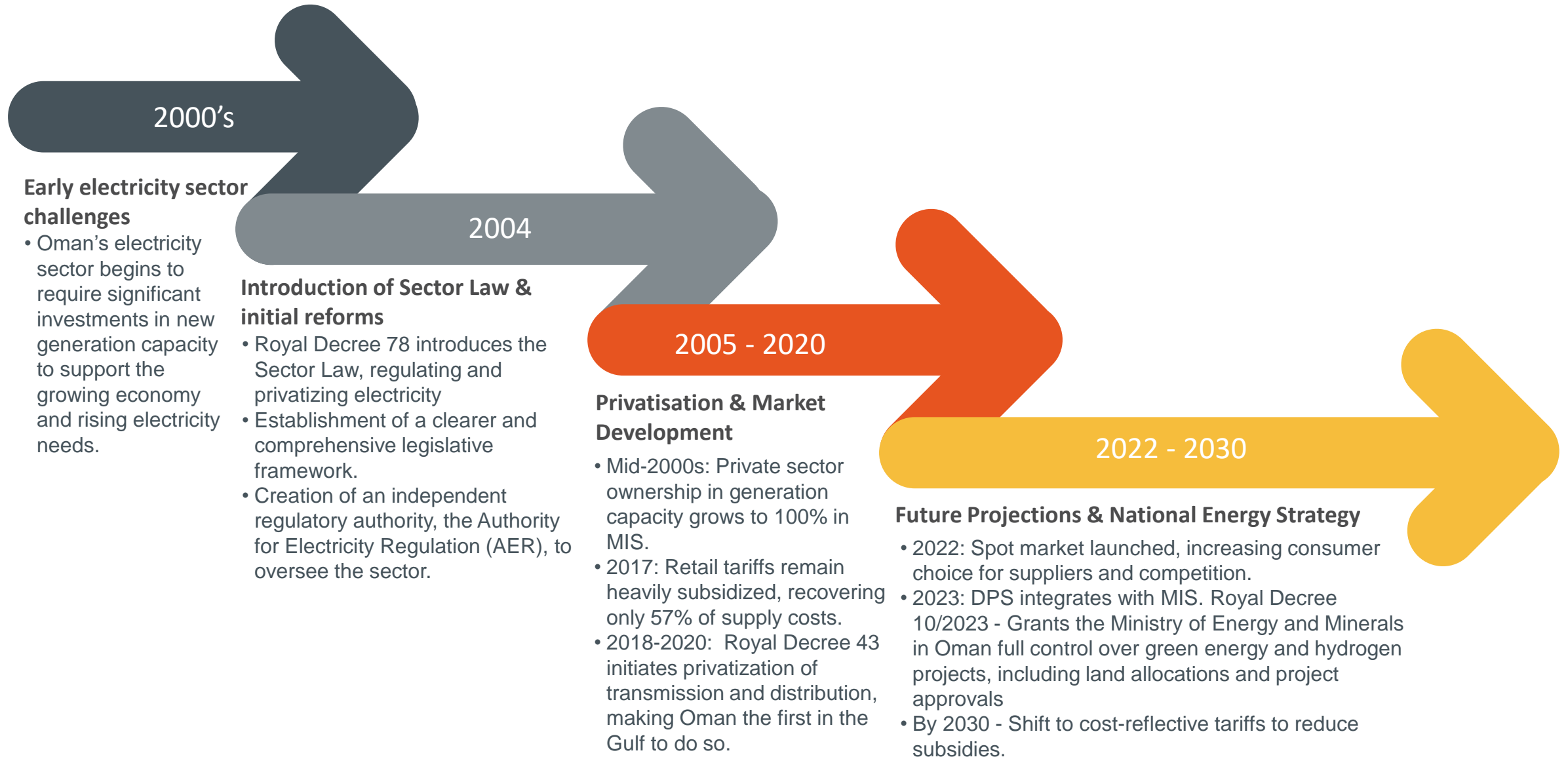
Source: Author, adapted from aenert.com and MEES

Note: The map is for representational purposes only and is not comprehensive and does not show exact geographical accuracy

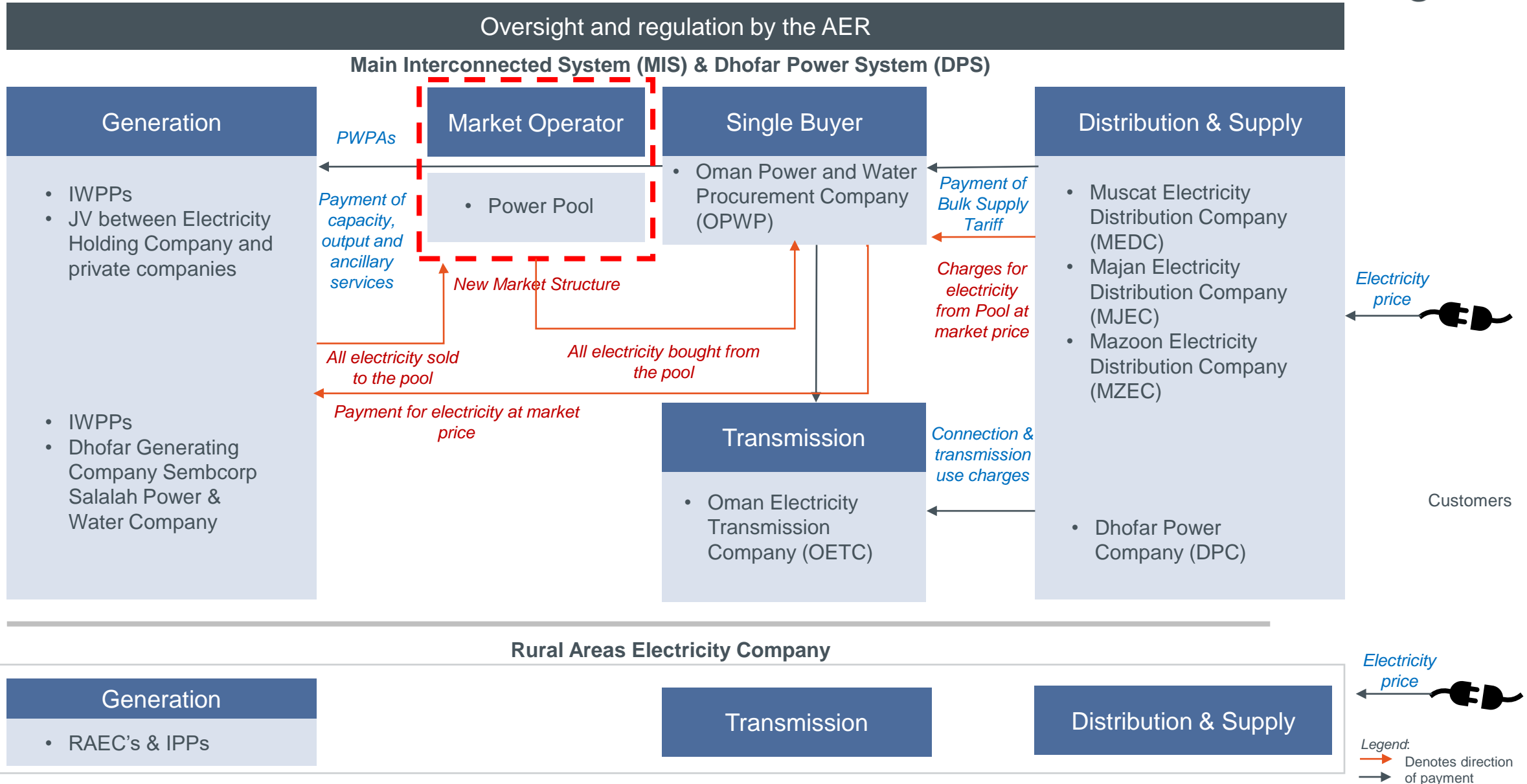


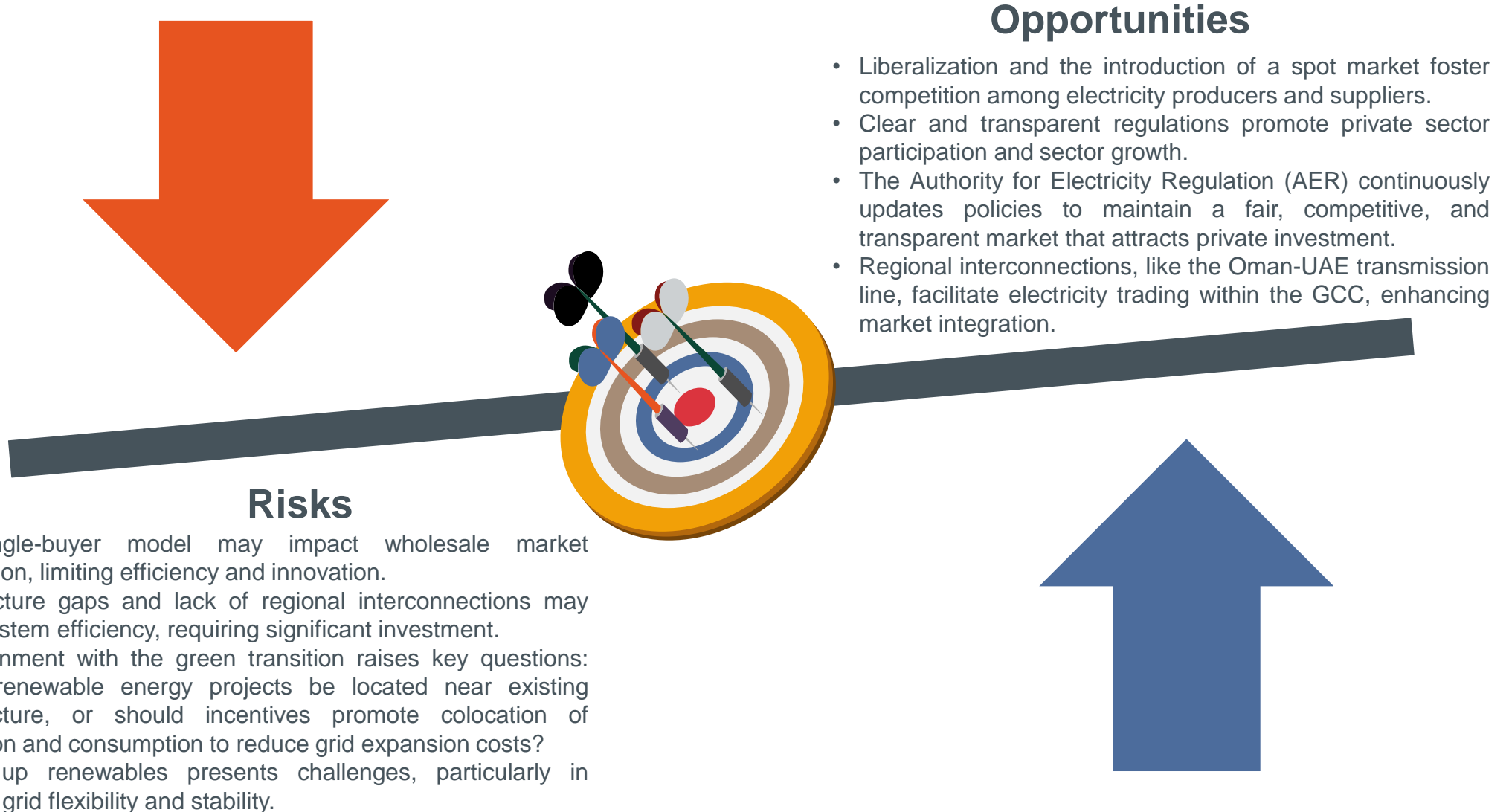
Source: IRENA, 2024

Overview of Omani Electricity Policies and Regulations



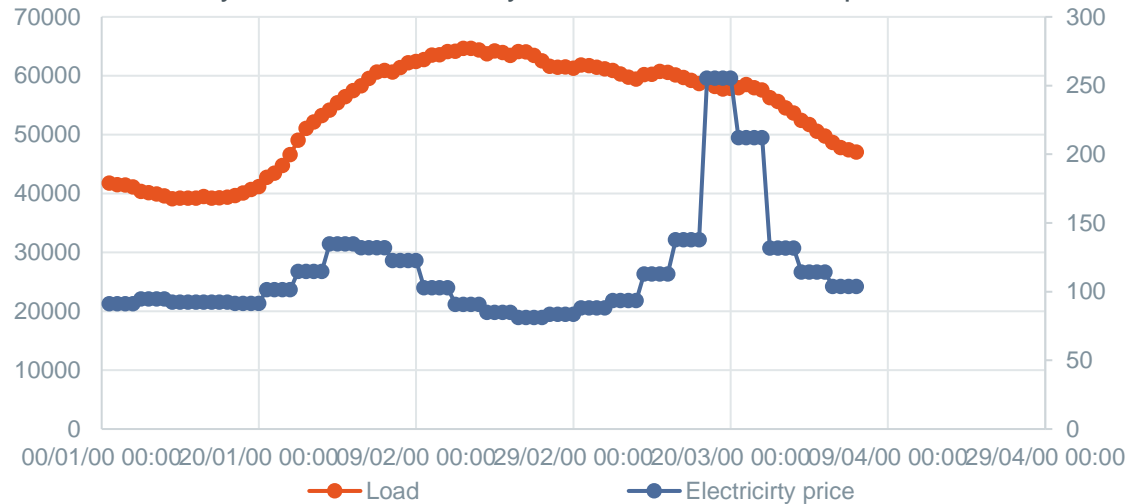
Stakeholder Mapping - Actors in Power Sector Oman





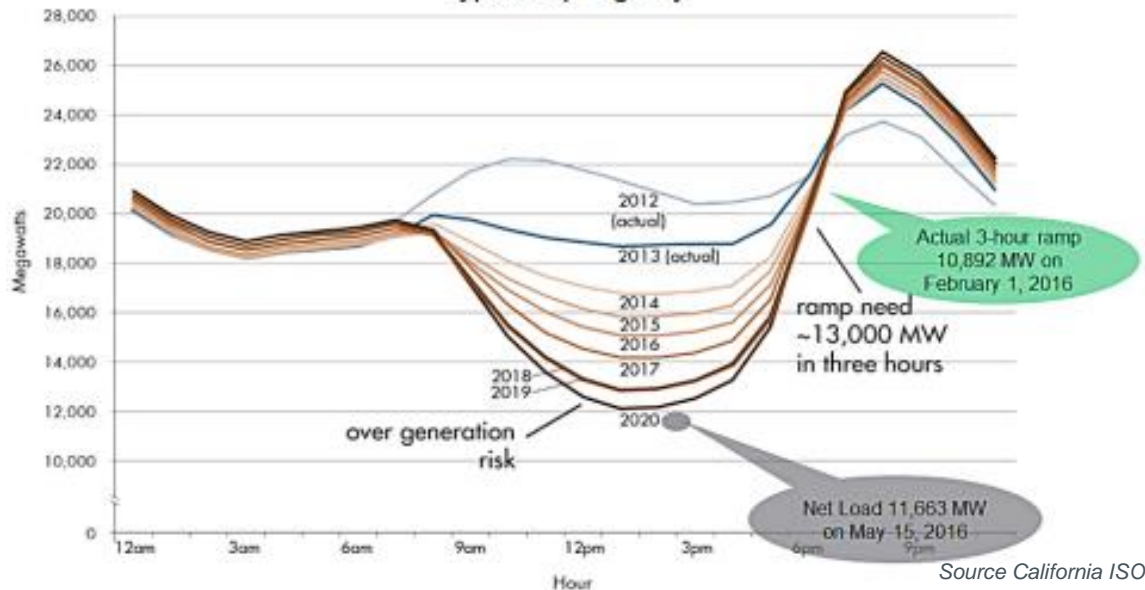
What the Duck Curve Tells Us About Managing a Green Grid

Germany Load and Electricity Price Curve for 2nd September 2024



Source Author, based on live data Energy Charts & Agora

Typical Spring Day



Source California ISO

- Increased RES and environmental goals create new operational challenges.
- The grid needs resources that can quickly ramp up or down to meet sudden changes in demand and supply.
- RES can lead to oversupply during low demand periods, requiring market and policy interventions.
- Reduced conventional generation risks grid stability, highlighting the need for automated frequency response capabilities.
- Flexibility in resources and policies is crucial to manage a reliable, green grid.

EGI can offer advanced expertise, leveraging our global experience to help Oman overcome power system challenges & accelerate its energy transition



CAPEX, OPEX & REPEX Optimization



Safe Operation of Large & Complex Systems



Integration of Renewable Energy Sources



Market Design & Investment Advisory



Digitalization & Artificial Intelligence



Interconnectors, HVDC & FACTS



Project Development & Project Management



Offshore Applications

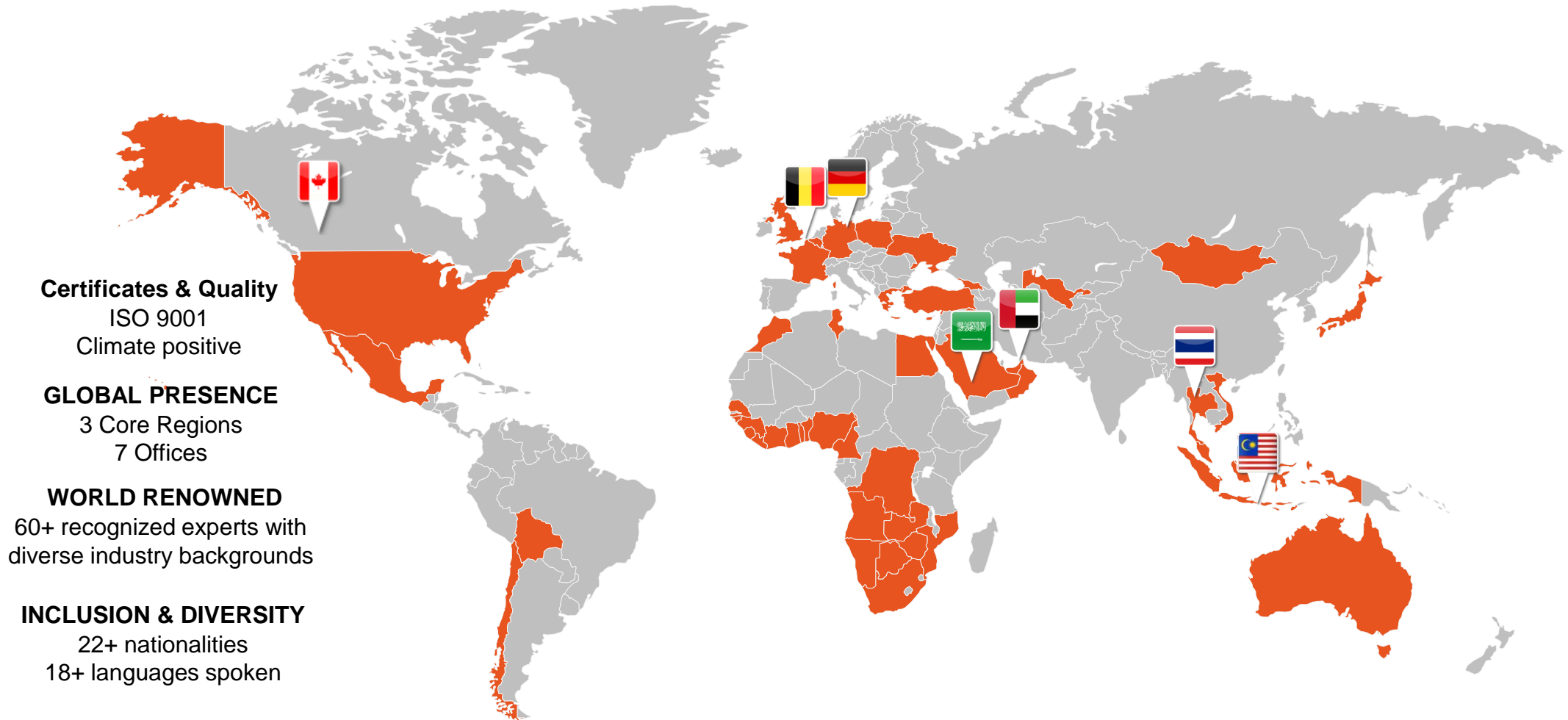
GET IN TOUCH

+49(0)16094751301

siti.aziz@eliagrid-int.com
isabelle.gerkens@eliagrid-int.com

Elia Grid International GmbH
Heidestr. 41, 10557 Berlin, Germany

EGI Global Presence and Contacts



GET IN TOUCH

+49(0)16094751301

siti.aziz@eliagrid-int.com
isabelle.gerkens@eliagrid-int.com

Elia Grid International GmbH
Heidestr. 41, 10557 Berlin, Germany



Disclaimer

Liability and copyright of Elia Grid International (EGI)

This PowerPoint presentation has been prepared by Elia Grid International (EGI). The content of the presentation – including all texts, images and audio fragments – is protected by copyright laws.

No part of the content of the PowerPoint presentation may be copied, unless EGI has expressly offered possibilities to do so, and no changes whatsoever may be made to the content. EGI endeavors to ensure the provision of correct and up-to-date information, but makes no representations regarding correctness, accuracy or completeness.

EGI declines any and all liability for any (alleged) damage arising from this PowerPoint presentation and for any consequences of activities undertaken on the strength of data or information contained therein.