



UNEZA
UTILITIES FOR NET ZERO ALLIANCE

Plan of Action 2025

Note: subject to annual review and updates

March 2025



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1 Mission

Utilities for Net Zero Alliance (UNEZA) aims to create a new, meaningful and deliberate international platform for cooperation among entities operating within the power utilities ecosystem, to address and overcome common barriers to the realisation of net zero ambitions and more near-term emissions reduction targets. Through it, shaping dynamic new partnerships, and forging effective channels for dialogue with key public and private stakeholders.

2 UNEZA principles

- Acknowledge the key role of utilities in advancing the transition towards Net Zero
- Recognise the need to accelerate power sector transitions through stronger international collaboration
- Collectively commit to tripling renewable power and doubling energy efficiency by 2030
- Commit to achieving Net Zero emissions by 2050 at the latest.

3 Power system transition

The power system is at the heart of the global energy transition and essential for economy-wide decarbonization. By 2030, the low-carbon transition must align with Net Zero by 2050. However, progress remains uneven, with most efforts concentrated in a few countries while key regions, particularly in the Global South, still lack sufficient investments.

Expanding and modernizing grids, integrating renewables, and increasing energy storage are critical to triple renewable capacity by 2030, as pledged under the UAE Consensus at COP28. The Global Energy Storage and Grids aims to scale global energy storage sixfold to 1,500 GW by 2030 and refurbish or add over 80 million km of transmission lines by 2040 (IRENA et al., 2024).

To achieve these goals, power system capacity planning must go hand in hand with accelerated grid modernization and digitalization. As variable renewable energy (VRE) expands, enhancing grid flexibility will be key to ensuring reliability, efficiency, and cost-effective operations for a sustainable energy future (IRENA, 2024).

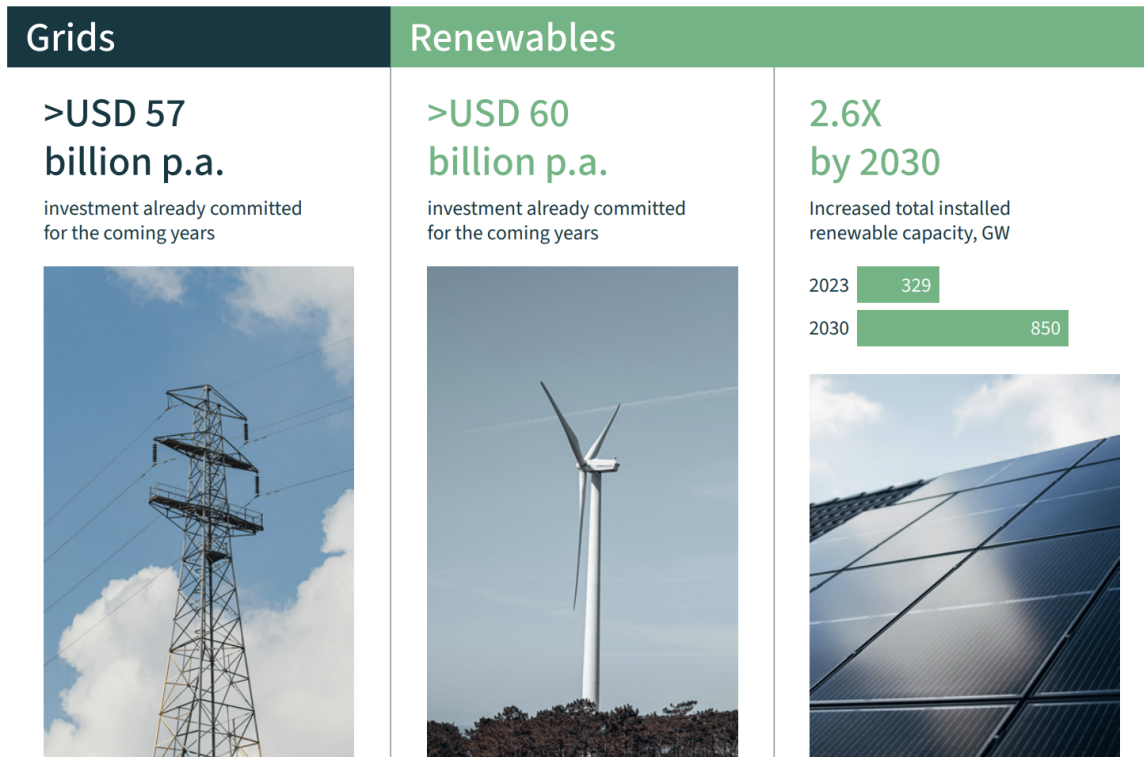
According to the UAE Consensus, actions must be taken today, to ensure by 2030 we are in line with tripling renewable energy capacity. Selected key indicators to track the tripling targets include (IRENA, 2024; IRENA et al., 2024):

1. **11.2 TW** Global renewable power capacity target by 2030, from 3.9 TW in 2023.
2. **1,044 GW/yr** Renewable power additions required (2024–2030), at a 16.4% Compound Annual Growth Rate (CAGR).
3. **80 million** km Transmission lines to be added or refurbished by 2040.
4. **1,500 GW** Energy storage capacity needed by 2030, a sixfold increase.
5. **4%/yr** Energy efficiency improvement target, from 2%/yr in 2023.
6. **\$31.5 trillion** Investment needed in renewables, grids, flexibility, efficiency, and conservation by 2030.
7. **\$1.5 trillion/yr** Investment needed in renewables (2024–2030), from \$570 billion/yr in 2023.
8. **68%** Renewables in electricity generation, from 28% today.
9. **35%** Renewables in primary energy supply, from 14% in 2022.

4 Progress tracking

UNEZA members and partners are committed to supporting the tripling agenda by 2030 and UNEZA will annually track the joint progress of members against select performance indicators, in accordance with the Roadmap.

The latest UNEZA joint target progress indicators:



Notes: GW = gigawatt; UNEZA = Utilities for Net Zero Alliance; the members of UNEZA have individual plans that, combined, represent a greater ambition than the joint UNEZA targets by 2030; individual company commitment timelines vary from 2025 to 2030; data aggregated from information provided by UNEZA members and collected from public sources, and information from subsidiary companies is included in the joint targets; joint targets are aggregated based on individual achievements and targets of the UNEZA members, as per different baseline years, and the targets will be updated annually to represent the Alliance's ambition.

Figure 1. UNEZA joint target progress indicators (UNEZA, 2025)

UNEZA will explore the establishment of additional joint target progress indicators on energy storage and grids.

5 Ambition framework and enablers

Priority challenges for 2024-25 across focus areas and pillars

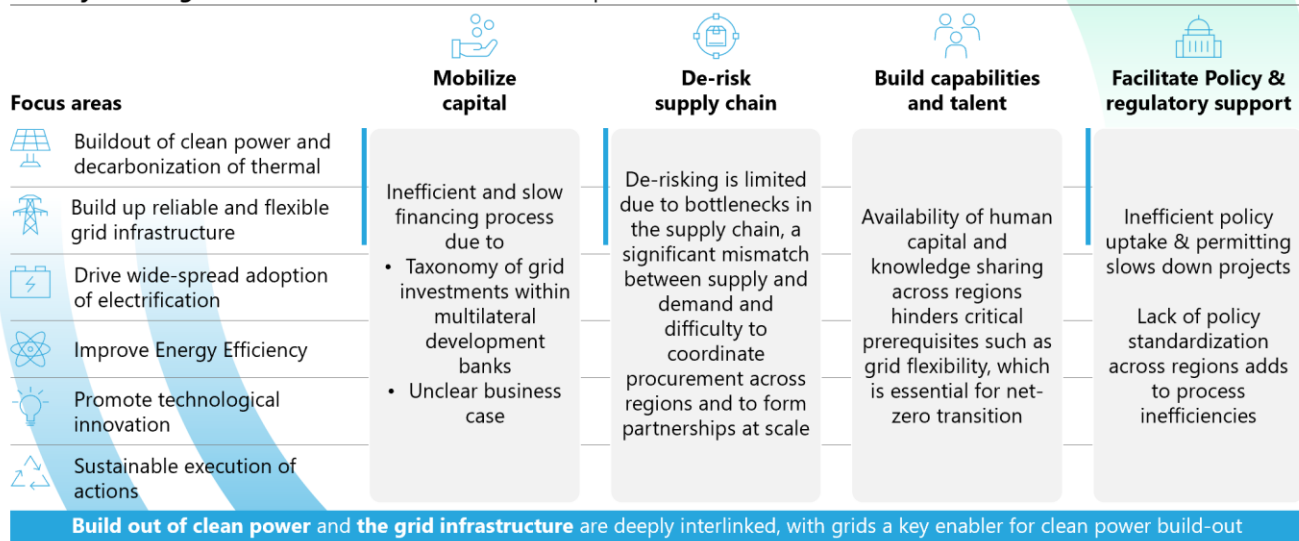


Figure 2. UNEZA Ambition framework (UNEZA, 2024)

Although UNEZA's founding Plan of Actions outlined 6 focus areas and 4 enabling pillars, members advanced progress in 2024 and continue prioritizing efforts on two key goals and three enablers over 2025:

- Goal 1: Buildout of clean power and decarbonization of thermal power generation**
- Goal 2: Build up reliable, resilient and flexible grid infrastructure**
 - Enabler 1: Mobilization of low-carbon capital and derisking instruments
 - Enabler 2: De-risking of the supply chain, materials availability and manufacturing capacity
 - Enabler 3: Facilitating policy and regulatory support

6 UNEZA Global Infrastructure Program 2030

In 2025, UNEZA members will continue to keep the focus area Buildup reliable, resilient, and flexible grid infrastructure as the main priority, also supporting priority two Buildout of clean power. Key reasons to double down efforts on grid buildout lays along for main topics, also see Figure 3 Overview of priorities, including scoring on key challenges:

Low existing efforts: To date, too little attention is paid to the (long term) sustainable build-out of grids, supporting the energy transition, to solve the challenges as listed below.

High complexity: Build-out of the grid, especially to support the take up of clean power, is a complex task, with challenging obstacles. The obstacles include, but are not limited to, long lead times for permitting and approvals, stretched global supply chains and a need to increase capital spending.

High urgency: Many renewable projects, and businesses, are waiting to be connected to the global grid. Currently, over 3 000 GW of renewable generation capacity is in 'grid ques', with many projects in advanced stages of development (IRENA et al., 2024). Investment in renewable power generation capacity requires 1 550 USD billion per year and investment for power grids and flexibility requires 720 USD billion per year on a global basis, to stay within 1.5°C Scenario by 2030 (IRENA et al., 2024).

High ecosystem impact: The flexible and resilient grids can be a catalyst for positive change. Improved grid infrastructure not only supports the build-out of clean power, but in turn will also drive electrification and thereby further emission reduction.

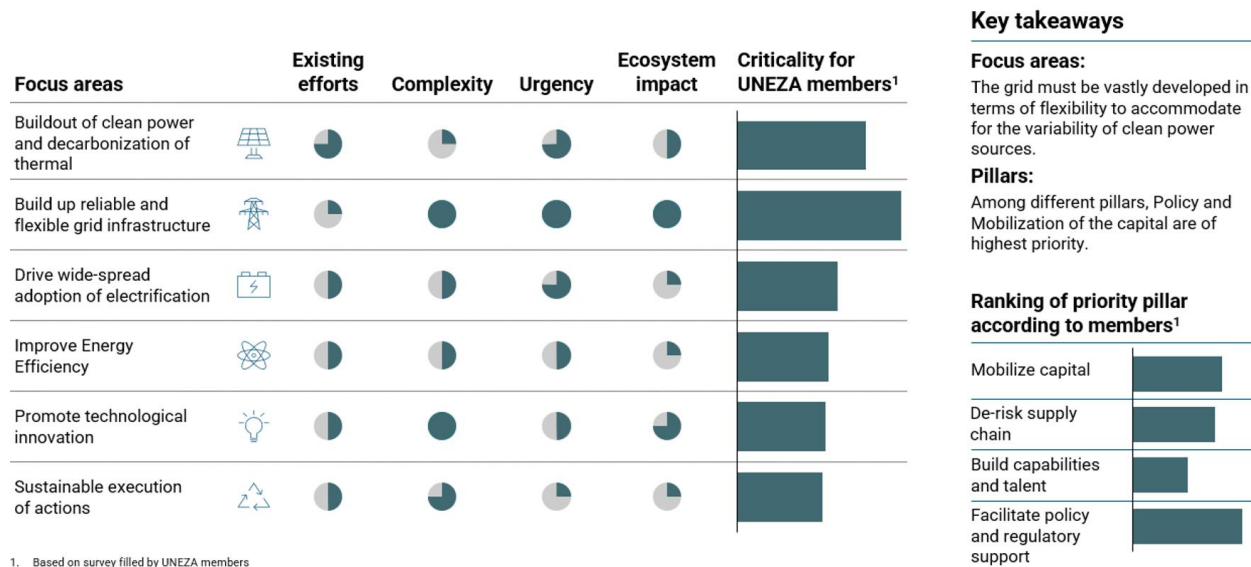


Figure 3. Overview of priorities, including scoring key challenges. For 2025 UNEZA priorities build up of reliable & flexible grids supporting the growth of clean power

Framing the priorities of the UNEZA members, the ‘Global Infrastructure Program’ strategy was developed, framing the key priorities around infrastructure upgrades and the actions of UNEZA for the coming years.

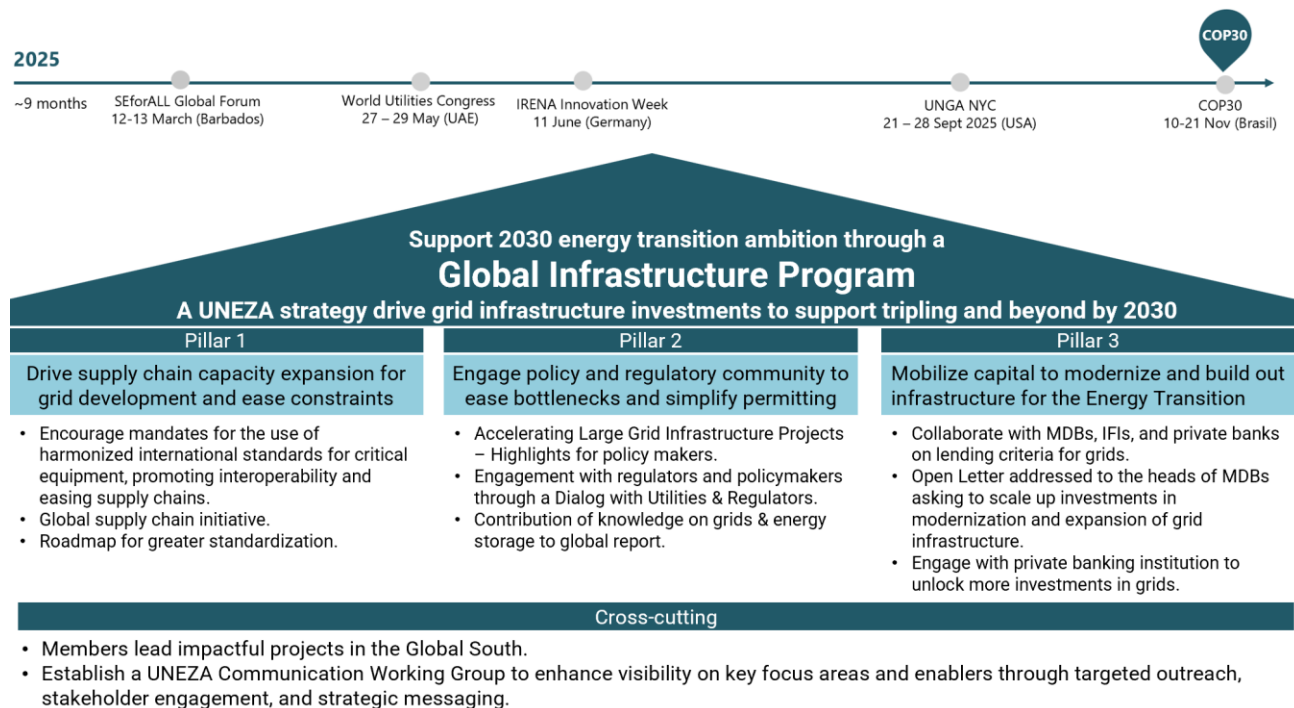


Figure 4 Strategy: Global Infrastructure Program

7 Action plan high-level overview for 2025

In 2025 six actions are central to the efforts of UNEZA, leading up to COP30 – focusing on Facilitate policy and regulatory Support; De-risk supply chain and Mobilize capital in the focus areas Buildout of clean power and decarbonization of thermal, Build up reliable and flexible grid infrastructure.

UNEZA's actions will be framed by key events: World Utilities Congress, UNGA NYC, COP30 and outreach sessions within SEforALL Global Forum, IRENA Innovation Week and other events.

Details on the action plan can be found in the following chapters.

8 Outreach events and experience sharing





Event type	Event	Description	Timeline	Involved members & partners
Outreach	SEforALL Global Forum	Facilitate partnerships and knowledge exchange among global power utilities, fostering collaboration towards the common goal of achieving zero emissions in the sector.	12-13 March	Members and partners
	World Utilities Congress	Identify barriers and propose tangible policy/regulatory solutions and incentives.	27 – 29 May 2025	
	IRENA Innovation Week		11-12 June 2025	
	UNGA NYC		21 – 28 Sept 2025	
	African Electrical High Level Engagement Forum		29 August – 5 September 2025	Members with APUA and MENALINKS IKI Project
	COP 30	Realization of UNEZA Roadmap, joint targets, progress on key actions, future strategy.	10 – 21 Nov 2025	Members and partners
	SADC Energy Week			
Experience sharing			February 2025	
	All members and partner's calls			Members and partners
	1st quarterly call	Priority actions and initiatives for 2025.	February 2025	
	2nd quarterly call	Roadmap implementation, Progress of the Actions, consultations and thematic discussion.	May 2025	
	3rd quarterly call		September 2025	

9 Actions and initiatives in 2025




Actions in 2025 will build on the foundations established in 2024, and drive them towards more tangible outcomes, staying mindful of UNEZA's founding principles and objectives around driving participation and action from utilities and the wider ecosystem on the global energy transition.




The ongoing work already established under the 2024 Plan of Action: Initiated study "Accelerating Large-Scale Grid Infrastructure Projects", and paper "Encourage mandates for the use of standards and certification" will continue into 2025. The actions and progress achieved under UNEZA in 2024 is detailed in the [UNEZA Annual Report 2024](#).

9.1. Impactful actions

Pillar(s)	 Name of the action	 Description	Involved members & partners 	Deliverable 
Focus area: Buildout of clean power x Buildup reliable, resilient, and flexible grid infrastructure				
Facilitate policy & regulatory support	Share knowledge on grids & energy storage	Contribute knowledge on grids & energy storage to global report "Delivering on the UAE Consensus: Tracking progress toward tripling renewable energy capacity and doubling energy efficiency by 2030".	IRENA (lead) Supported by Members and Partners: Accenture Masdar CTC Global KenGen E. ON Huawei Intertrust Technologies Husk Power GCCIA Ducab MCC Economics & Finance EDP Climate Collective Foundation Enel Ingrid Capacity Cemig Schneider Electric National Grid GRA Coordinador Electrico Nacional TAQA TII SSE plc Iberdrola EDF Group Edenor UNIVERS GGI McKinsey Review: IRENA	Inputs to report UNEZA's brochure Global Progress on Energy Storage and Grids Pledge COP29

Pillar(s)	 Name of the action	 Description	Involved members & partners 	Deliverable 
Focus area: Buildout of clean power x Buildup reliable, resilient, and flexible grid infrastructure				
De-risk supply chain	Global supply chain initiative	<p>Standardizing key energy transition equipment can unlock global supply chains, enhancing efficiency and scalability. UNEZA members and partners will collaborate on a roadmap for greater standardization. Thematic topics will include:</p> <ul style="list-style-type: none"> • Standardize roadmaps for efficient grid upgrades, leveraging collaboration and knowledge sharing. • Engage manufacturers while ensuring utilities benefit from shared knowledge. • Define key equipment types for standardization, considering regional differences. • Align with Greenhouse Gas (GHG) protocol updates, EU standards, and Environmental, Social, and Governance (ESG) norms to enhance collaboration. • Include technical, policy, and regulatory teams for better coordination. 	<p>Hitachi (lead)</p> <p>Supported by Members and Partners:</p> <p>Masdar</p> <p>Intertrust Technologies</p> <p>Husk Power</p> <p>MCC Economics & Finance</p> <p>Adani Green Energy Ltd.</p> <p>EDF Group</p> <p>National Grid</p> <p>Coordinador Electrico Nacional</p> <p>SSE plc</p> <p>GGI</p> <p>CTC Global</p> <p>Schneider Electric,</p> <p>TAQA</p> <p>Ducab</p> <p>Edenor</p> <p>EDP</p> <p>GRA</p> <p>Huawei</p> <p>McKinsey</p> <p>Accenture</p>	Roadmap
			UNEZA will collaborate with the Global Power Alliance on de-risking supply chain.	
			Review: IRENA	

Pillar(s)	 Name of the action	 Description	 Involved members & partners	 Deliverable
Focus area: Buildup reliable, resilient, and flexible grid infrastructure				
Mobilize capital	Collaborate with MDBs, IFIs, and private banks on lending criteria for grids	<p>Continued consultations on GGI (lead) Climate Finance Principles that contribute to accelerating grid investments. Encourage greater investments into grids from MDBs, IFIs, and private banks, with a focus on mobilizing capital for grid expansion and modernization.</p> <p>Thematic topics will include:</p> <ul style="list-style-type: none"> Criteria for Involvement in Grid Financing. Assessment of Distribution Grids for Investment Opportunities. Impact of Grid Investments on Financing Policies and risk mitigation options. Expert Insights on Energy Transition Investments. Potential Grid Development Announcement at NY Climate Week. 	<p>Supported by Members and Partners:</p> <p>CTC Global KenGen Huawei Husk Power Ducab MCC Economics & Finance Edenor E. ON Cemig Schneider Electric GRA TAQA TII SSE plc Climate Collective Foundation Coordinador Electrico Nacional Enel Masdar</p> <p>Review: IRENA</p>	<p>Open letter to major MDBs</p> <p>Meeting of Utilities and MDBs in New York (Climate Week)</p> <p>Agreement to expand initiative beyond MDBs to include utilities, commercial lenders etc.</p> <p>Critical mass of signatories to principals by New York Climate Week.</p>

Name of the Action		Description	Involved members & partners		Deliverable	
Raise visibility		<p>Enhance visibility on key focus areas and enablers through targeted outreach, stakeholder engagement, and strategic messaging.</p> <p>Topics will include:</p> <ul style="list-style-type: none"> • Tripling renewables & doubling efficiency, flexibility, affordability, and reducing bureaucracy. • De-risking the supply chain – materials availability, manufacturing capacity, grid expansion, refurbishment, and modernization. • Grid innovation – latest advancements in grid-forming technology, energy storage, PV inverters, string and PV plant monitoring, power cables, and decentralized infrastructure (including mini-grids). • Digital transformation & AI – applications for decarbonization, energy efficiency, digitization, and circularity. • Electrification & industrial decarbonization – grids, energy transition, climate change, technology, and startup-led solutions for net-zero utilities. • Energy access & emerging market trends – decentralized grids, AI, digital infrastructure, and Sustainable Development Goal (SDG7), with a focus on Africa. • Market design & corporate sourcing – corporate leadership in 24/7 Carbon-Free Energy (CFE), hourly certificates for Scope 2 accounting, green hydrogen, Energy Attribute Certificates (EACs), and regulatory and policy drivers. • Policy & regulation – renewables deployment, flexibility, and integration in Asia-Pacific region (APAC), EU, and America. 	<p>TAQA (lead)</p> <p>Ad hoc working group participated by Members and Partners:</p>		<p>UNEZA Visibility campaign.</p> <p>Communication materials</p> <p>Interviews with CEOs</p>	
			<p>Masdar</p> <p>CTC Global</p> <p>E. ON</p> <p>Huawei</p> <p>Intertrust Technologies</p> <p>Husk Power</p> <p>GCCIA</p> <p>Ducab</p> <p>Climate Collective Foundation</p> <p>EDF Group</p> <p>Cemig</p> <p>GRA</p> <p>Coordinador</p> <p>Electrico Nacional</p> <p>SSE plc</p> <p>UNIVERS</p> <p>Schneider Electric</p> <p>IRENA</p> <p>UN Climate</p> <p>Change High-Level Champions</p>			

9.2. The cross-cutting 2025 actions

 Name of the Action	 Description	Deliverable 
Engagement with regulators and policymakers	UNEZA engages formally with regulators and policymakers as key stakeholders, focusing on collective engagement. UNEZA members and partners have identified several priority topics for discussion to address key regulatory challenges and opportunities in the power sector.	Dialog Utilities – Regulators
<div>Involved members & partners </div>		
<div>IRENA (lead)</div> <div>Supported by Members and Partners:</div> <div>Adani Green Energy Ltd.</div> <div>Climate Collective Foundation</div> <div>Coordinador Electrico Nacional</div> <div>CTC Global</div> <div>Ducab</div> <div>E.ON</div>		
<div>EDP</div> <div>GCCIA</div> <div>GRA</div> <div>Hitachi Energy</div> <div>Huawei</div> <div>Husk Power</div> <div>Iberdrola</div> <div>Ingrid Capacity</div> <div>EDF Group</div>		
<div>Intertrust Technologies</div> <div>KenGen</div> <div>Masdar</div> <div>Schneider Electric</div> <div>SSE plc</div> <div>TAQA</div> <div>TII</div> <div>National Grid</div>		
<div>Engagement Topics </div>		
<ul style="list-style-type: none"> • Fast-Tracking Renewable Projects & Reducing Bureaucratic Barriers – Expedite approval processes through fast-track mechanisms, government guarantees, tax exemptions, and streamlined permitting and grid connection processes. Capacity building from Development Finance Institutions (DFIs) can support regulatory frameworks. • Corporate Renewable Procurement & Market Integration – Streamline policies to enable corporate procurement models like 24/7 carbon-free electricity, enhance cross-border interconnections, and harmonize market designs for efficiency and competitiveness. • Standardized Agreements, Policy Clarity & Adjudication – Standardize Power Purchase Agreement (PPA) and Public-Private Partnership (PPP) frameworks in Gulf Cooperation Council (GCC) and Africa, clarify policies, provide adjudication for disputes, and strengthen regulatory frameworks to support long-term planning and dispute resolution. • Decentralized Infrastructure & Grid Modernization – Prioritize decentralized energy solutions, particularly in the Global South, while accelerating grid expansion, modernization, and fair remuneration to enable renewable integration. 		
<i>continued in next page</i>		

- **Energy Storage, Digitalization & AI for Grid Optimization** – Establish clear policies for battery storage integration, covering tariffs, market mechanisms, and grid connection standards, while leveraging AI-driven grid management and digital standardization.
- **Electrification, Infrastructure & Deployment Acceleration** – Strengthen grid infrastructure to meet climate and industrial demands, while addressing permitting bottlenecks and shifting to multi-project approaches to accelerate renewable deployment.
- **Wholesale & Distribution Market Enhancements** – Improve market structures to enable efficient grid operations and support renewable energy integration.

Mobilize Capital

- **Facilitating access to financing and investment incentives** – Strengthen collaboration with export credit banks, Transmission System Operators (TSOs), and regulatory frameworks to improve bankability through PPAs, risk mitigation, and financial incentives for grid modernization and expansion.
- **Enhancing international and market-driven co-investment in grids** – Provide flexibility for international investors/developers in local partnerships while increasing grid interconnections and standardizing tax schemes to enhance investment attractiveness.
- **Supporting green industrialization and new business models** – Encourage investment and infrastructure policies aligned with the broader energy transition, including frame agreements and anticipatory investments that demonstrate medium- to long-term societal, environmental, economic, and energy system benefits.

De-risk Supply Chain

- **Standardization & Certification of Clean Energy Technologies** – Establish clear certification mechanisms for green hydrogen and other clean energy technologies to enhance investor confidence and accelerate deployment.
- **Supporting Sustainable Technology & Market Alignment** – Develop communication strategies to counter misinformation, enhance public understanding of climate action, and address financial misalignment between transmission system owners, operators, and market benefits to improve infrastructure investment incentives.
- **Expedited Approval & Long-Term Planning for Grid Technologies** – Establish cost-benefit analysis frameworks to fast-track novel grid technology deployment while shifting regulatory focus from immediate cost considerations to value-driven decision-making.
- **Enhancing Grid Flexibility & Resilience** – Expand hydro pumping, storage, and demand-side measures to create a more adaptive and resilient grid, ensuring long-term system stability.

12

Brazil, Southeast
Asia, MENA

Digital technologies & platforms:

- | | | |
|---|----------------------------------|---|
| <ul style="list-style-type: none"> • Digital technologies to accelerate decarbonization. Discuss and prioritize innovation and digitalization in the flexibility space to accelerate and drive the transition to a low-carbon economy, making energy systems more sustainable, resilient, and cost-effective. Key Actions: <ul style="list-style-type: none"> - Organize a virtual workshop with interested stakeholders. - Conduct a presentation, meeting, or fireside chat during the WUC. - Present findings and discussions at another relevant industry event. | Intertrust
technology | MENA |
| <ul style="list-style-type: none"> • UNEZA Open Innovation Platform to accelerate the adoption of cutting-edge solutions (with a focus on AI for power) • Peer-based demonstration through case studies showcases. | Climate Collective
Foundation | Global South -
South Asia,
Southeast Asia,
Latin America |
| <ul style="list-style-type: none"> • Collaborate under Digitalization of Utilities for Energy Transition (DUET). The Center of Excellence for Digitalization of Utilities to provide global visibility into the case studies and pilot projects that demonstrate the successful use of digitalization and AI in energy systems. | GEAPP (as external
partner) | Global South |
| <ul style="list-style-type: none"> • Creating a digital platform with accessible commercially neutral e-learning educational content that is designed for capacity building of utilities and public officials from the Global South. | Schneider Electric | Global South |

10 References

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