



UNEZA
UTILITIES FOR NET ZERO ALLIANCE

Plan of Action

Note: subject to annual review and updates

15 April 2024



Table of Contents

1	Mission.....	1
2	UNEZA principles.....	1
3	Power system transition	1
4	Progress tracking	2
5	Ambition framework and enablers.....	3
6	UNEZA Global Infrastructure Program 2030.....	3
7	Action plan high-level overview for 2024	5
8	Outreach events and experience sharing.....	6
9	Actions and initiatives in 2024	8
10	Actions and initiatives in 2025	11

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 contribute 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 sits at the heart of the global energy transition and is central to economy wide decarbonization strategies. By 2030, the low-carbon energy transition should be on track to align with a Net Zero by 2050. To date, most efforts have been limited to a few countries and missing in regions with key energy needs, e.g., in the Global South. Next to that, key barriers have been limiting progress. The World Energy Transitions Outlook envisages key topics that form the foundations for a way forward to Net Zero: Building the necessary infrastructure and investing at scale in grids, Advancing an evolved policy and regulatory architecture that can facilitate targeted investments and derisking supply chain; and strategically realigning institutional capacities to help ensure that skills and capabilities match the energy system we aspire to create. Thereby it is important that Multilateral financing institutions prioritise building the infrastructure that would underpin the new energy system (IRENA, 2023).

Action has to be taken today, to ensure by 2030 we're in line with 2050 Net Zero. Selected key indicators to track Net Zero alignment by 2030 are:

1. **68%** Renewables in electricity generation, from 28% today
2. **35%** Renewables in final energy consumption, from 17% today
3. **975 GW/yr** Renewable power capacity additions, from 295GW/yr today
4. **1300 USDbn/yr** Investment need for Renewable generation, from 486USDbn/yr today
5. **605 USDbn/ yr** Investment need for power grids and flexibility, from 274 USDbn/yr today
6. **3.3%/yr** Energy intensity improvement rate, from 1.7%/yr today.

4 Progress tracking

UNEZA will annually track progress of members against select performance indicators, in accordance with the Roadmap and short-term Plan of Action for 2024-2025 (as outlined in this document).

Members will collect data on the following key indicators:

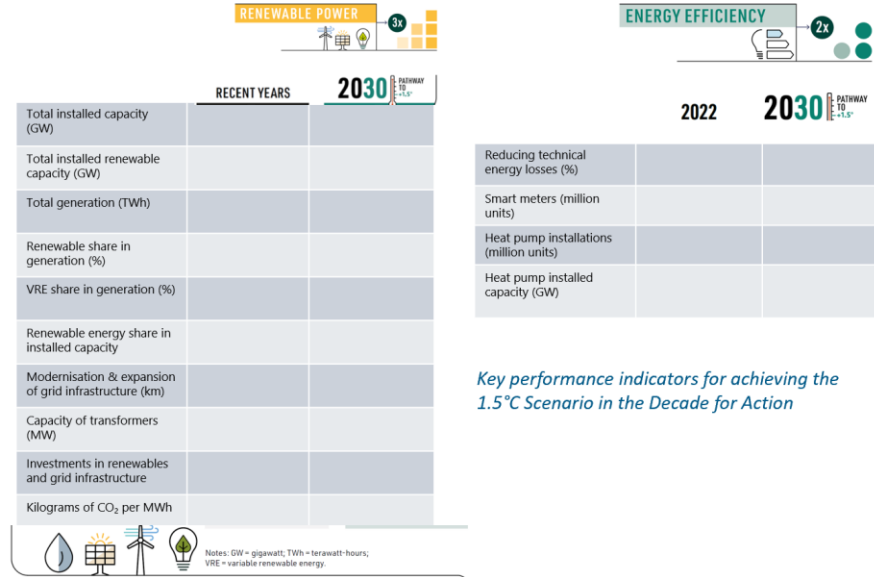


Figure 1 Key indicators to report on by UNEZA members

Member data will be aggregated, compared with the global average, and shared on an annual basis.

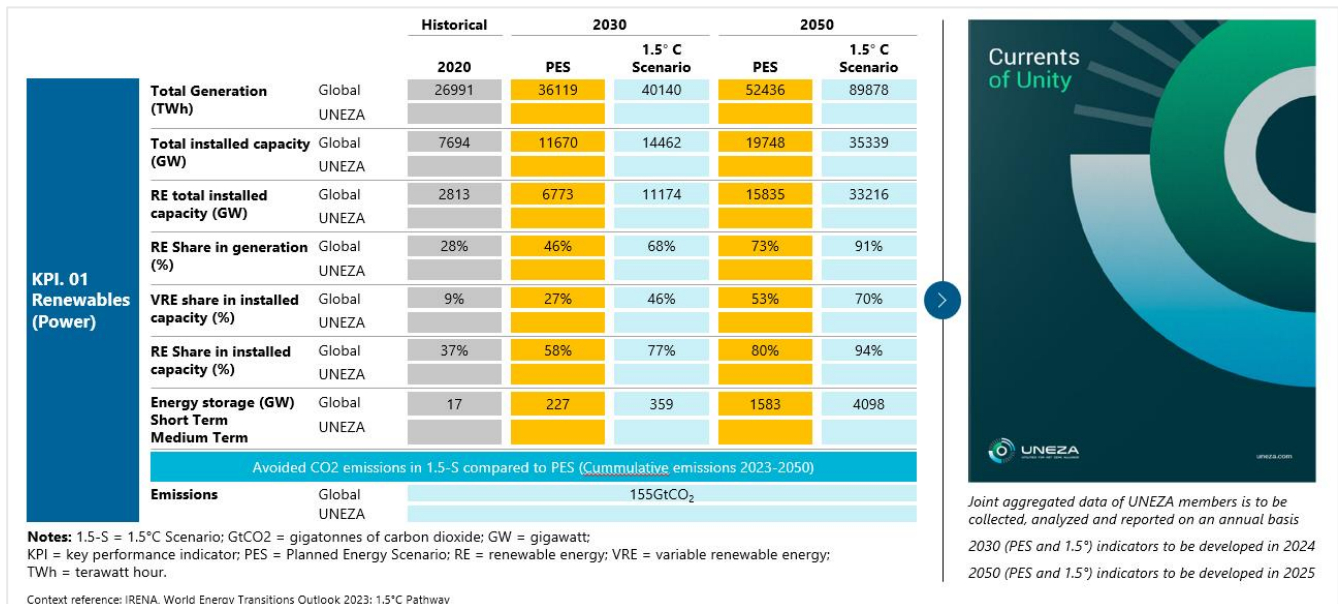


Figure 2 Aggregated UNEZA member data compared with global average

5 Ambition framework and enablers

To accelerate the energy transition, 6 focus areas are defined where action along 4 pillars can alleviate challenges in the ecosystem

Current challenges in the ecosystem

Priority 2024-2025

Priority challenges for 2024-25 across focus areas and pillars

Focus areas	Mobilize capital	De-risk supply chain	Build capabilities and talent	Facilitate Policy & regulatory support
Buildout of clean power and decarbonization of thermal	Inefficient and slow financing process due to <ul style="list-style-type: none"> Taxonomy of grid investments within multilateral development banks Unclear business case 	De-risking is limited due to bottlenecks in the supply chain, a significant mismatch between supply and demand and difficulty to coordinate procurement across regions and to form partnerships at scale	Availability of human capital and knowledge sharing across regions hinders critical prerequisites such as grid flexibility, which is essential for net-zero transition	Inefficient policy uptake & permitting slows down projects Lack of policy standardization across regions adds to process inefficiencies
Build up reliable and flexible grid infrastructure				
Drive wide-spread adoption of electrification				
Improve Energy Efficiency				
Promote technological innovation				
Sustainable execution of actions				

Build out of clean power and the grid infrastructure are deeply interlinked, with grids a key enabler for clean power build-out

Figure 3 UNEZA Ambition framework

The framework above represents a structured approach for UNEZA to achieving the net-zero target, with six focus areas encompassing various aspects of sustainability and clean energy transition, each further divided into four pillars driving change in the areas: focusing on capital, supply chain, capabilities/talent, and policy/regulatory support.

6 UNEZA Global Infrastructure Program 2030

For 2024 and 2025, UNEZA members have identified 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 four main topics, also see Figure 4 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 insufficient capital spending.

High urgency: Many renewable projects, and businesses, are waiting to be connected to the global grid. Currently, over 3000GW of renewable generation capacity is in ‘grid ques’, with many projects in advanced stages of development (IEA, 2023). 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, 2024).

High ecosystem impact: The grid 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.

To solve the main challenges in grid and clean power build-out, action in the coming years will focus on three of the four pillars, as prioritized by UNEZA members. The focus pillars are:

- Facilitate policy & regulatory support
- Mobilize capital
- De-risk supply chain

For '24 to '25 UNEZA prioritizes build up of reliable & flexible grids supporting the growth of clean power

INDICATIVE



Focus areas	Existing efforts	Complexity	Urgency	Ecosystem impact	Criticality for UNEZA members ¹
Buildout of clean power and decarbonization of thermal					
Build up reliable and flexible grid infrastructure					
Drive wide-spread adoption of electrification					
Improve Energy Efficiency					
Promote technological innovation					
Sustainable execution of actions					

1. Based on survey filled by UNEZA members

Key takeaways

Focus areas:

The grid must be vastly developed in terms of flexibility to accommodate for the variability of clean power sources.

Pillars:

Among different pillars, Policy and Mobilization of the capital are of highest priority.

Ranking of priority pillar according to members¹

Mobilize capital	
De-risk supply chain	
Build capabilities and talent	
Facilitate policy and regulatory support	

Figure 4 Overview of priorities, including scoring on key challenges

UNEZA has established a 'Supply Chains Working Group', in partnership with the Green Grids Initiative (GGI), to drive and coordinate action under the 'De-risk supply chain' pillar by convening UNEZA members and other actors (such as regional institutions and regulators) to address common challenges.

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.

Plan of Actions 2024-2025

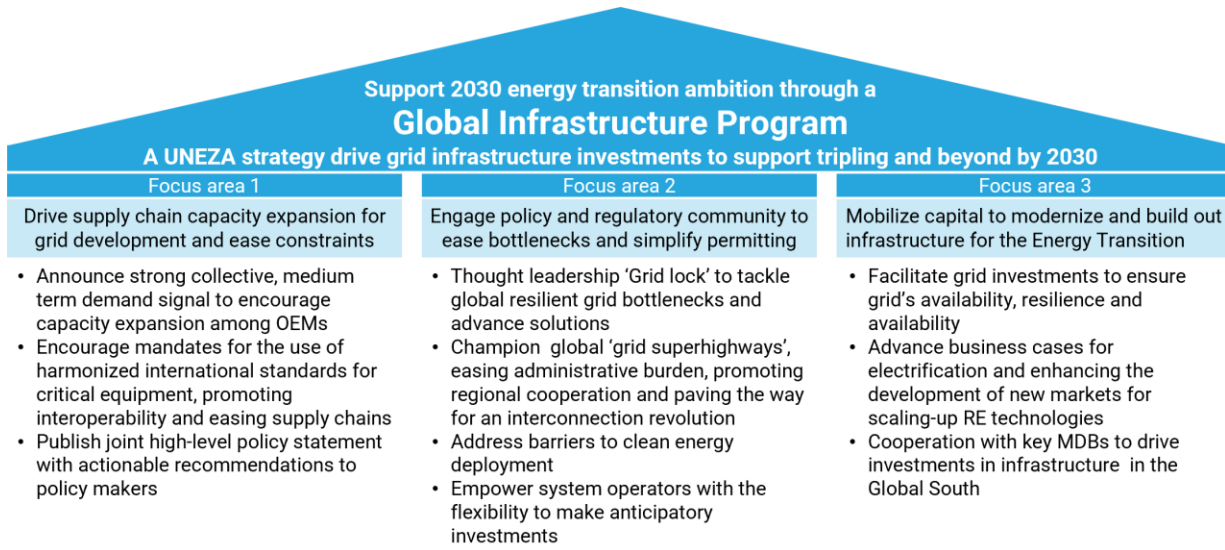


Figure 5 Strategy: Global Infrastructure Program

7 Action plan high-level overview for 2024

In 2024, five actions are central to the efforts of UNEZA, leading up to COP29 – focusing on Build up of a reliable and flexible grid, supporting clean power build-out.

UNEZA's actions will be framed by four additional outreach events: IRENA 14th Assembly, World Utilities Congress, UNGA NYC and CEM, MI & G20.

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

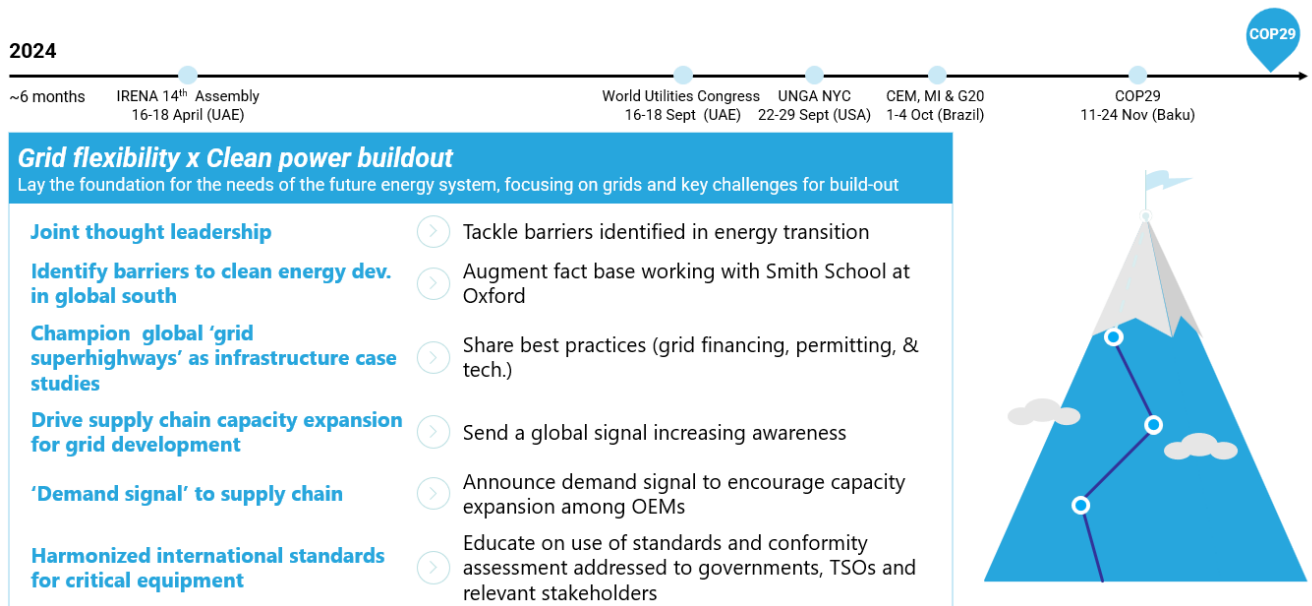













Figure 6 High level overview of priority actions and deliverables in 2024

8 Outreach events and experience sharing

Event type	Event		Description		Timeline		Involved members & partners	
Outreach	IRENA 14th Assembly		To adopt UNEZA’s Roadmap and Plan of Action at Ministerial Roundtable.		17 April 2024		Members and partners	
	World Utilities Congress		Facilitate partnerships and knowledge		16-18 Sept 2024			
	UNGA NYC		exchange among global power utilities, fostering collaboration towards the common goal of achieving zero emissions in the sector. As part of this initiative, the focus is on identifying and prioritizing at least three UNEZA deliverables.		22-29 Sept 2024			
	CEM, MI & G20 Min (Brazil) (tbc)		Establish a strategic platform designed to engage with key stakeholders, policymakers, and industry leaders. Its purpose is to advocate for policies and initiatives aligned with UNEZA' roadmap, ensuring their support and advancement.		1-4 Oct 2024			
	COP29		Showcase advancements in current actions and initiate key projects. Advocate for the utility industry within the framework climate commitments made by participating nations, aiming to expedite the shift towards sustainable energy and foster new collaborative frameworks.		11-24 Nov (Baku) 2024			

Event type	Event	 Description	 Timeline	 Involved members & partners
Experience sharing	1st quarterly call	Identify barriers and propose tangible policy/regulatory solutions and incentives. Identify supply chain challenges and de-risking solutions. Initiate the development of the main prioritized deliverables.	May 2024 All members and partners May 2024	Members and partners
	2nd quarterly call	Identify capital needs for a flexible grid infrastructure. Insights in supply chain risks across scenarios. Mid-term review on progress of the draft deliverables.	July 2024	
	3rd quarterly call	Discuss resilience of grids - regional power pool integration is scaled up to mitigate the potential negative impacts on supply and demand of hydropower due to increased precipitation variability, allowing for a growing complementarity of renewables sources. Review of the final deliverables, ensure alignment, coordinate on outreach events.	September 2024	






9 Actions and initiatives in 2024

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	Joint thought leadership ‘Grid lock’ to global grid	<p>Outlining strategies to overcome challenges in the energy transition, focusing on easing bottlenecks, speeding up permitting, and addressing capital and regulatory barriers</p> <p>Shed light on and provide recommendations for overcoming identified barriers in the energy transition. The focus is primarily on addressing bottlenecks such as capital and regulatory obstacles. while highlighting successful experiences in streamlining and expediting permitting processes.</p>	<p>TAQA (lead) / IBERDROLA / KenGen / E.ON / National Grid / Bui Power Authority</p> <p>Supported by Members and Partners Review: IRENA</p>	Report	
Focus area: Buildout of clean power					
Mobilize capital, Facilitate Policy & Regulatory support. De-risk Supply chain	Identify barriers to clean energy deployment in the Global South	<p>Cooperate with Smith School at Oxford University on a three-year programme seeking to identify barriers to clean energy deployment in the Global South from the developer's perspective (both locally and internationally), with a view to pinpointing specific actions and mitigations to be adopted. UNEZA members to engage in qualitative interviews as developers to paint a richer picture.</p>	<p>SSE (lead) / Bui Power Authority</p> <p>Supported by Members and Partners</p>	Interviews of selected members	





Pillar(s)	 Name of the action	 Description	 Involved members & partners	 Deliverable
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Focus area: Buildup reliable, resilient, and flexible grid infrastructure

Mobilize capital	Champion global ‘grid superhighways’ as infrastructure case studies	<p>Share experiences on infrastructure case studies related to transmission and distribution lines, utility-scale renewables, and technology demonstration; focusing on best practices and challenges in financing, permitting, and stakeholder engagement, while considering legal, technical, commercial, and sustainability aspects, especially in relation to net zero goals.</p> <p>Highlight best practices and challenges encountered from the financing stage with an opportunity for public as well as private financing, addressing permitting challenges and other elements to be discussed with governments and key stakeholders. Consider legal, technical and commercial perspective from a sustainability angle and net zero objectives.</p> <p>Focus on 3 technologies with recommendations on how to accelerate their deployment. Alternatively consider Reliable, Resilient and Flexible Grid Infra as report on the benefits of HVDC technology in building and operating a reliable and flexible grid infrastructure. Selected best case examples of HVDC interconnectors from around the world.</p>	<p>Hitachi Energy (lead) / GGI / KenGen / National Grid / Bui Power Authority</p> <p>Supported by Members and Partners</p>	Report
<i>Continued on next page</i>				

Pillar(s)	 Name of the action	 Description	 Involved members & partners	 Deliverable	
		Standards and design criteria for a resilient grid. Case studies to be applied to the Electricity Transitions Playbook or Interconnector Principles.			
De-risk supply chain	Drive supply chain capacity expansion for grid development and ease constraints	High level policy statement with recommendations by industry on Clean Energy Supply Chains, to send a global demand signal to encourage investment in new capacity, critical for taking forward the COP28 Renewables Pledge.	Supply Chains Working Group Supported by Members and Partners	Industry Recommendations and supporting Statement	
De-risk supply chain	Collective, medium term 'Demand signal' to supply chain	Announce collective, medium term demand signal to encourage capacity expansion among OEMs as a collective grid infrastructure capex plan to 2030 that will serve as a basis to equipment manufacturers to scale up production in support of grid development.	TAQA (lead) Supported by Members and Partners	UNEZA joint targets Indicators	
Facilitate Policy & regulatory support	Encourage mandates for the use of harmonized international standards for critical equipment, promoting interoperability and easing	Educate on use of standards and conformity assessment addressed to governments, TSOs and relevant stakeholders. Standards are important to supply chain in reducing bottle necks, as standardized devices/systems can be produced by more suppliers, that are generally more affordable and interoperable.	IEC (lead) / KenGen Supported by Members and Partners	Paper and workshop	

10 Actions and initiatives in 2025

Pillar(s)	 Initiative	 Description	 Deliverable 
Focus area: Buildup reliable, resilient, and flexible grid infrastructure			
Facilitate Policy and regulatory support	Promote best practices for regulatory and policy	Compiling insights from successful clean energy initiatives worldwide and presenting them as actionable suggestions to governments and policymakers.	White paper
Mobilize capital	Facilitate investments to ensure grid's availability	Assess the current state of power grid infrastructure and develop a strategic analysis on investment gaps and recommendations for promoting investments aimed at enhancing grid reliability, resilience and availability – focusing on addressing MDBs and their limited investment in grids.	Strategic grid investment analysis
	Advance business cases for electrification	<p>Building of an enabling infrastructure to ensure an adequate and reliable power evacuation in the grid and in turn enhance utilization of renewable energy.</p> <p>Identify potential industries suitable for electrification and facilitating the development of business cases outlining the economic and environmental benefits. Mapping of industries along with recommendations for implementation strategies.</p>	Guidelines to facilitate Grid Reliability and Resilience
		Enhancing the development of new markets for scaling-up RE technologies in other sectors such as E-Mobility, E-Cooking and others by having a policy incentive developed to catalyze RE demand in member countries.	Catalog of business cases Report
Focus area: Buildout of clean power			
De-risk supply chain	Grid Supply Chain Transparency Project	Explore opportunities to increase certainty and transparency for suppliers to enable a more strategic approach to procurement and help trigger investments in building supply chains and skills.	
	Drive investments in infrastructure	<p>Cooperation with key MDBs to drive investments in infrastructure in the Global South via study MDB grid investment taxonomy.</p> <p>Initiate consultation programme with key MDBs to advance amendments to drive grid investment particularly in the global south (where regulation allows).</p>	Position Paper and consultation workshops

Pillar(s)	 Initiative	 Description	 Deliverable	
		Engage with GGI on a dialog with GCF and World Bank to develop principles and methodologies to increase climate finance for grids.		



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Citation: UNEZA (2024), Plan of Actions, Utilities for Net Zero Alliance.

