

Call for Submissions 2024

Just Energy Transition

Submission from WMO

04 September 2024

Second Dialogue under the United Arab Emirates just transition work programme, 2-3 October 2024, Sharm el-Sheikh, Egypt

The Just Transition is a broad concept that encompasses energy, social, economic, and workforce aspects. The UNFCCC emphasizes that it requires inclusive dialogue and participation from all stakeholders. Within this framework, the WMO, in this context, focuses on the energy sector due to its sensitivity to climate, its significant role in global emissions, and its potential to reduce poverty and create jobs.

Renewable energy sources, such as solar, wind, and hydropower, are inherently dependent on weather and climate conditions, making the efficiency and reliability of these energy systems closely tied to the quality of weather, water, and climate services. Ensuring a holistic and inclusive approach to the availability of accurate, timely, and standardized meteorological and hydrological data is crucial for optimizing renewable energy generation.

- Advanced weather forecasting and climate modelling allow for better planning and operation of renewable energy systems by predicting resource availability, such as wind speeds for wind turbines, sunlight for solar panels, and water flow for hydropower.
- The WMO emphasizes the importance of closing observational gaps and enhancing data sharing among and within nations between public and private sectors, particularly between power plant operators and National Meteorological and Hydrological Services, to ensure that all regions have access to the critical information needed to harness more renewable energy effectively. This aligns with holistic approaches to inclusive workforce transition and the whole of society engagement strategy.
- By promoting global standards and facilitating data exchange, the WMO supports the integration of meteorological data into energy planning, ultimately contributing to enhance capacities of renewable energies.

The advancement and continuous improvement of science and technology in hydro-meteorological information and services are crucial for facilitating an effective and equitable just transition. Accelerating the transfer of these advancements is essential to ensure that the energy sector have access to the most accurate and up-to-date weather and climate information.

- High-resolution climate models, enhanced satellite observation systems, and the integration of artificial intelligence into forecasting processes are some of the key areas where the WMO is focusing its efforts.
- These technologies enable more precise predictions of weather patterns, which are critical for optimizing the performance and efficiency of renewable energy

systems. For instance, better forecasting of wind patterns can significantly enhance wind turbine operations, improved solar radiation models can optimize the output of solar power plants, and improved hydrological forecasting can inform hydropower operations.

- WMO enhances capacity building in National Hydrological and Meteorological Services through regional training courses and projects to develop and provide advanced services for the energy sector in their respective countries.
- By fostering international cooperation and partnerships with global research entities and investing in cutting-edge technologies, the WMO aims to provide high-quality, timely, and cost-effective meteorological and hydrological information and services. These efforts are crucial in supporting the expansion and efficiency of renewable energy, ensuring that the transition to a sustainable energy future is both equitable, just, and people-centric.