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RENEWABLE ENERGY

Wind power can deliver a sustainable future for Africa

We are in the middle of a global energy crisis and a climate change emergency. It is, therefore, more pressing than ever to seriously commit to action plans that will avoid long-term lock-in of fossil fuel-based energy generation. Instead, greater focus should be placed on increasing the renewable contributions within the global energy mix.

This is particularly important for Africa having been more severely hit by climate-change-related events than other regions, and where 43% of the total population lack access to electricity, most of them in sub-Saharan Africa. The continent is rich in renewable energy sources, particularly solar and wind, and decreasing costs are bringing renewables increasingly within reach, making energy independence achievable.

To attain a successful and just energy transition there needs to be an acceleration of the implementation process. This can happen if partnerships between public stakeholders, and public and private together, are further strengthened, and if steps are taken to safeguard the wind industry supply chain, among other proactive actions. If this prioritised, then there should be sufficient capacity to help the continent achieve its climate pledges through the implementation of sustainable, renewable green energy.

Climate change is putting Africa's energy systems at risk of disruption

According to the International Energy Agency's (IEA) Africa Energy Outlook 2022, "three-fifths of the continent's thermal power plants are at high, or very-high risk of disruption by water stress, and one-sixth of its liquefied natural gas (LNG) capacity is vulnerable to coastal flooding." To ensure greater resilience there will need to be a significant investment in climate adaptation.

To mitigate the ongoing volatility in the supply and cost of fossil-fuel energy, and the dangers of accelerating climate change, African governments must focus on scaling up higher volumes of renewable energy – in particular wind power — as part of their sustainable energy mixes.

The International Renewable Energy Agency (IRENA) energy progress report of 2021 estimates that 75% of the world's population without access to electricity is based in Sub-Saharan Africa. It states that to achieve sustainable development goal (SDG) 7.1 — universal access to affordable, reliable, sustainable, and modern energy services — Sub-Saharan Africa alone will need to connect approximately 85 million people each year through 2030.

Africa currently accounts for less than 3% of the world's energy-related carbon dioxide (CO^2) emissions, and it experiences a disproportionate number of negative effects of climate change. According to the IEA, by 2050, North Africa is facing a rise in median temperature of 2.7 degrees Celsius in comparison with the global average rise of 2 degrees Celsius. If not addressed, this could result is a reduction of African gross domestic product (GDP) by around 8 percent in 2050. In East Africa, this figure would be closer to 15 percent.

Wind power as a driver of socio-economic growth in Africa

By increasing renewable energy production targets, national economies stand to benefit from the growing demand for people to work in the green sectors thereby addressing the continent's unemployment challenges. Nations can also expect augmented investment because of a more stable energy grid and due to cost savings realised by a more competitive energy mix.

The wind industry is of strategic importance. It can provide the world with energy security and independence through domestic, clean, and competitive sources. As different countries consider increasing the percentage of renewable energy in their energy mix, they can take insights from the lessons already learned in Africa and Europe. They can also see the tangible positive impact the wind industry has already had across both continents. These can be studied, and relevant insights applied within their specific environment.

The wind industry started in Northern Europe and Spain in the 1980s, and since then, has burgeoned across the continent. Today, the European Union's wind energy sector has a significant impact on the EU's economy, supporting more than 300,000 jobs, contributing €37 billion to the EU's GDP, and generating €5 billion in local taxes every year. In fact, with each new wind turbine installed in Europe, a further €10 million of economic activity is added.

Progress is also being made across the Middle East and Africa (MEA) region, recording in 2021 its best year ever in wind power installations. According to the Global Wind Energy Council, over the next five years (2022 – 2026), MEA is expected to add a total of 14 GW of new wind capacity, primarily driven by growth from South Africa (5.4 GW), Egypt (2.2 GW), Morocco (1.8 GW), and Saudi Arabia (1.3 GW).

IRENA's modelling reveals that when accompanied by the right policies, shifting towards a renewable energy system could lead to a 6.4% higher GDP, 3.5% more economy-wide jobs, and a 25.4% higher welfare index throughout the outlook period of 2020 to 2050.

Partnerships must drive Africa's energy transition

Although blessed with abundant renewable sources, like wind and solar, as well as land availability, Africa is only tapping into 0.01% of its wind power potential. Unlocking the potential of wind and solar will also trigger the development of green hydrogen projects in the continent. This will enable the transferring of the benefits of renewables beyond the electricity sector, to achieve a fully decarbonized economy, while enabling energy export capacities.

Uncertainty on wind enabling frameworks is jeopardizing the full potential that wind can play in accelerating the energy transition while providing with clean and competitive energy security. Partnerships, both among public stakeholders as well as between the public and the private sector, can create stability and strengthen the wind energy sector and allow it to contribute to climate crisis mitigation efforts, continue innovating, and provide energy security across the continent.

According to the IEA Africa Energy Outlook report, "Achieving full access to modern energy in Africa by 2030 would require investment of USD 25 billion per year – equal to around a quarter of total energy investment in Africa prior to the pandemic – but just slightly above 1% of total energy investment globally and comparable to the cost of just one large LNG terminal investment. Almost half of this investment would be in just five countries – DRC, Ethiopia, Nigeria, Tanzania and Uganda."

When you consider that 46 of Africa's 54 countries are classed as low-income or lower-middle income according to the World Bank, it makes sense that for a successful transition to renewable

energy to occur, partnerships are the most feasible way forward, as it would be difficult for governments, or the private sector to bear these costs alone. The role of power pools in Africa and, thus, collaboration between countries and regions, is essential to unleash the full potential that wind can bring to combat climate change and bring prosperity based in a decarbonized economy. These partnerships can pave the way for a just energy transition enabling people coming from fossil-fuel-based energy sectors to be re-skilled and secure their rights and livelihoods in the shift to sustainable energy production.

While ambitious global political targets have been set, there is a significant mismatch between stated targets and actual wind capacity installation figures which are substantially lower. By accelerating the approval of wind power plant permits, governments could close the gap between the targets and actual production, improving energy independence and geopolitical stability, while alleviating the pressure that the wind supply chain suffers from due to a lack of projects.

Partnerships between governments and the wind industry are crucial in our fight against the climate crisis. To succeed in a just energy transition, governments must continue to attract international investment, and for that they need to deliver visible project pipelines for wind energy installations, especially in the MEA region. This means investors require stable and predictable frameworks and clear implementation pace so that manufacturers and suppliers can load existing factories and plan in advance for new capacities. This would create greater stability in the industry and increase its ability to hire and upskill teams. While there will be challenges to overcome to ensure a just energy transition, wind power has the distinct ability to deliver sustainably for both people and the planet. By focusing on the development of cohesive and inclusive policies, streamlining permitting schemes, fostering multilateral renewable energy partnerships and trade agreements, and investing in the acceleration of renewable electricity grid construction, African governments can move closer to achieving more than just SDG7. In doing so, they could reap the socio-economic benefits that wind energy offers, while increasing their country's energy security, and contributing to global efforts to combat climate change.

The COP27 Climate Change Conference taking place in Egypt in November 2022 provides a golden opportunity for global leaders to collaborate on workable solutions that will drive important climate change mitigation. The time to act is now.