

## **Energy Security and Climate Change**

13 December 2023

The Asia Pacific is one the regions to be greatly impacted by El Niño in 2023-2024. Myanmar has already experienced severe flooding and extreme swings in weather, even though we were projected to be affected between December 2023 and November 2024.

Myanmar is widely considered to be one of the countries most vulnerable to the impacts of climate change. In May 2008, Cyclone Nargis killed nearly 140,000 people and caused over 10 billion dollars in damage (30% of GDP). Cyclone Mocha in May 2023 was less deadly but caused around 2.5 billion dollars in damage (3% of GDP). Our commercial capital Yangon, which contributes a quarter of the country's GDP, is the 4<sup>th</sup> fastest sinking coastal city in the world, ahead of Jakarta.<sup>1</sup>

Climate change is putting energy security at risk, affecting fuel supply, energy production, resilience of current and future energy infrastructure, and energy demand.

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<sup>1</sup> Tay C, Lindsey EO, Chin ST, McCaughey JW, Bekaert D, Nguyen M, Hua H, Manipon G, Karim M, Horton BP, Li TH and Hill EM. Sea-level rise from land subsidence in major coastal cities. Nature Sustainability 2022 Sep 12; 5:1049-1057

## **Myanmar Power Sector**

Myanmar's power sector has been spiralling downward since end 2021 with prolonged blackouts across the country. Fiscal constrictions, economic challenges, conflict and political factors have impacted the stability of the entire transmission system. The power grid, including transmission stations, gas lines, repair crews and utility offices, have been attacked over 200 times between February 2021 and April 2023.

Changing climate conditions and energy mix calibrations caused more water resources to be utilised from reservoirs during the Monsoon seasons, causing sharp drops in water available for irrigation.

## **Power Projects**

Myanmar has a number of power projects but most are on hold for now or still in the exploratory phase. Projects include: the 1,390MW Mee Lin Gyaing LNG project; the 388MW Ahlone LNG project; the 600MW Kyaiklat gas power plant; the 280MW Upper Yeywa project; the 111MW Thahtay hydroelectric plant; the 52MW Upper Kyaingtaung; and wind power projects in Rakhine.

Myanmar signed an Intergovernmental Agreement with Russia in end-2022 to collaborate in the installation of small civilian nuclear

power plants. Two MoUs were also signed with Russia's NovaWind in June 2023 to install 372MW of wind power projects. More recently, Myanmar signed an agreement with China last month to purchase 90MW of electricity from three solar projects in central Myanmar.

### **Sanctions on the Myanmar Power Sector**

On February 2022, the European Union imposed new sanctions on Myanmar that included the state-owned Myanmar Oil and Gas Enterprise (MOGE). The restrictions come on top of withholding EU financial assistance going directly to the government and the freezing of all assistance that may be seen as legitimising the military government. The United States imposed a ban on financial transactions to MOGE as well starting from December 2022. Multilateral finance institutions have also halted loans and grants.

### **Impact**

Official statistics show that Myanmar produced 1,700 gigawatt-hour (around 8%) less electricity from April 2022 to March 2023 compared to the same year before. Other reports note a steeper

decline. Energy shortages are affecting all aspects of life across Myanmar.

Unstable power supplies are affecting the storage of essential medicines and samples. Most factories and commercial buildings use diesel generators. These outages impact the competitiveness of MSMEs in the manufacturing and service sectors, such as the low-margin garment industry that is a major source of employment for nearly half a million young women, representing around 1% of the Myanmar population. Increased reliance on diesel is causing higher fuel prices that also affect agricultural productivity as farmers cannot afford to run irrigation pumps.

One of the impacts of sanctions is that it is now harder to maintain and repair the gas power plants feeding the national grid. Power outages now cause long queues at compressed natural gas (CNG) filling stations, which are used mainly by public buses and taxis.

The political situation has also impacted interest and operations of international companies in both the exploration of offshore gas fields and investments in power generation.

## Outlook

Some private companies are working on mini-grids and other enterprises are adopting standalone solar installations while homes are using inverters and batteries to mitigate the impacts.

Many enterprises have diesel generators but only a fraction know of renewable energy alternatives and their financial viability. The government has emphasized solar energy and electric vehicles as key components for energy security and self-sufficiency, but banking challenges, highly subsidised utility rates and the security situation are affecting investor interest. Myanmar is also starting to explore wind energy along its coast as well as in the highland regions.

Myanmar's energy sector faces many challenges, including political headwinds and access to financing. It is a major focus of political pressure and sanctions onto the current authorities, but the impact falls mainly on ordinary citizens and ordinary businesses. Some are trying their best to adapt in the face of both manmade and climate change linked challenges, but more needs to be done by all concerned stakeholders. For example, the Government needs to address issues such as supply reliability, greater accessibility and affordability. Furthermore, efforts should be made by foreign governments to ensure that the fallout of their

policies and punitive measures do not add more burden onto the Myanmar people.

The energy mix reflects a trade-off between concerns for the climate and energy security. Concerns about energy security increase support for fossil forms of energy and even drive opposition to renewable energies. Conversely, concerns about climate change increase support for renewable energies. Energy policies and commitments need to better address energy security in a changing climate and promote the transition to net zero, including by scaling up climate services.

The energy industry has extensive experience using weather services but less experience with climate services, the latter being a more recent endeavour. However, in the context of the changing climate and the energy transition, new approaches based on climate information are required. As energy system become increasingly dependent on weather variations, it is apparent that the information flow from weather and climate data and forecasts needs to be properly incorporated into the decision support systems.

Developing a market for distributed renewable energy requires important considerations, including awareness raising. Stronger

domestic supply chains can be developed. Importing renewable energy equipment can be promoted through tax and duty exemptions, or green financing initiatives.

Long-term planning for the transition to generating a higher percentage of the energy mix from renewables is also dependent on climate services and information.

Well-designed policies and structural reforms to support climate mitigation, that is reducing carbon emissions; and climate adaptation such as is minimising damages from climate-related disasters, increasing the share of renewables in the energy mix and improving energy efficiencies, will help reduce CO<sub>2</sub> emissions and strengthen energy security.