

CENTRAL ASIA PUSHES FOR GREATER ENERGY DIVERSITY

Central Asia's dependence on oil and gas for both its domestic energy consumption and export economy has been challenged recently, with declining demand internationally due to Covid-19 and domestic supply issues. Kimberley Long looks at how the region is turning towards renewable projects to bridge the gap.

The winter of 2020 was a difficult one in Uzbekistan. The country experienced an unusually cold winter, driving up demand for gas. However, as the supply faltered and ageing equipment failed to keep up with the pressures, power outages ensued. Children who had been home-schooling due to the Covid-19 pandemic no longer had the electricity to connect to remote learning, forcing them to return to classrooms heated by coal and firewood. The cuts to energy supplies also impacted the economy, affecting agriculture and halting manufacturing and production. This led to protests breaking out across the country, which lasted into January 2021.

This resulted in the energy ministry announcing it would cut exports of natural gas in order to meet domestic demand. The majority of exports go to China and Russia, with some to neighbouring central Asia countries. Exports had already taken a hit earlier in the year, as China's consumption plummeted due to the pandemic, seeing pre-pandemic levels of 20 million cubic metres per day drop four-fold between March and August 2020. Exports to Russia were shut off completely. This was a sizeable economic blow, as the two countries accounted for 80% of Uzbekistan's total



Cleaning up: Uzbekistan is taking steps to modernise its energy industry

\$2.3bn of gas exports in 2019.

Despite relying on revenue from exports of natural gas, Uzbekistan has outlined plans to stop exports by 2025. Instead, it intends to process gas into polymer products, such as petrol and plastics for export and for domestic use.

Odilbek Isakov, deputy finance minister of Uzbekistan, says: "Russia and China have been our biggest export partners; but during Covid-19, China lowered its gas imports. We may not be exporting as much gas in the future as our domestic demand grows, especially when gas chemical projects — including a gas-to-liquids plant — become fully operational."

The gas sector is still hugely significant in Uzbekistan. Dakota Irvin, head of research at Bluestone Investment Bank, says: "In 2020, the largest tax-paying companies in the country contributed around 65% of the overall tax revenues. Around 15% of these companies are gas and oil firms. Exports are a major source of revenue, valued at around \$2.5bn and 14.5% of total exports. This has all been

impacted by the pandemic. The impact of the collapse in Chinese fuel imports and the Russian border closing mean Uzbek energy exports fell to below \$700m and only 4.4% of total exports."

Projects are underway to improve the existing stock to bring it in line with modern standards. "We are refurbishing some of our gas-fired power stations to make them more efficient," Mr Isakov says. "Some of the existing facilities are up to 60 years old. Modernising them will increase energy production capacity and reduce consumption of gas."

But the need to diversify the energy sector is well understood. Uzbekistan has plans to increase its renewable capacity by 2030, with solar power increasing to 5 gigawatts (GW) and wind to 3GW. Hydropower will also play a role, with an aim of creating 1GW of energy. The increase will see renewables account for up to 30% of all power produced in Uzbekistan, but there are plans to invest in projects to increase this percentage further. >>



**UZBEKISTAN IS ANOTHER
REGIONAL DECARBONISATION
CHAMPION TARGETING
CARBON NEUTRALITY OF ITS
ENERGY SECTOR BY 2050**

Aida Sitdikova ●●

DIVERSIFYING ENERGY SUPPLIES

Uzbekistan's push to move towards a dual energy system is not unique in the central Asia region. Kazakhstan has experienced a number of issues in its export economy over the past year, not solely down to the impact of the pandemic. The country is heavily dependent on oil exports, with more than 80% of total exports going to EU countries.

But having too great a dependency on oil and gas is likely to create a risk to stability, according to a report from risk analyst Verisk Maplecroft. Kazakhstan was identified in the report as one of the highest-risk countries, due to the lack of energy diversity before the pandemic and concerns over political stability.

With these concerns as a backdrop, the country has also been moving forwards with a decarbonising agenda. President Kassym-Jomart Tokayev announced in December 2020 that the country will achieve carbon neutrality by 2060.

Aida Sitdikova, head of energy for Eurasia at the European Bank for Reconstruction and Development (EBRD), says the group has been encouraged by the proactive steps taken. "We are very happy to have signed a memorandum of understanding with the Kazakhstani government to actually help get the energy sector on this decarbonisation path, which involves both the scale-up of renewables and the gradual phase-out of inefficient thermal capacity," she says. "Uzbekistan is another regional decarbonisation champion targeting carbon neutrality of its energy sector by 2050, and again we are helping the country to develop and implement this low carbon pathway."

GREEN AS A NECESSITY

Exploring green alternatives to oil and gas has become an ever-important part of the energy mix in central Asia. Getting these projects off the ground requires a considerable level of development from the government and efforts to attract financial partners.

Mr Isakov explains how the Uzbekistan government has been focused on expanding its energy sector to attract international investment. "Since 2018 we have been attracting investments to the power sector and now we have five major projects ongoing," he says. "We have a project for a 100-megawatt solar power station [that began in] October 2019, when UAE-based company Masdar won the tender. The project should be completed by the end of next year. We have launched three requests for proposals for solar power stations."

The move towards a greener energy economy requires consistent support over

time. Yongping Zhai, chief of the energy sector group, sustainable development and climate change department at the Asian Development Bank (ADB), says: "There is a challenge in helping these countries to make a long-term transition to low-carbon energy when they have large resources of oil and gas. It is about supporting them to create a greener mix of their energy sources. For example, we support solar energy projects in Uzbekistan and help with defining the long-term energy strategy that will give priority to greener energy. We want to see how countries plan to move forwards after having their green energy investments."

Other countries in the region are looking towards other forms of renewables through a lack of alternatives domestically. Both Kyrgyzstan and Tajikistan lack the sizeable oil and gas reserves of their neighbours, so have a history of utilising hydropower.

"Their power sectors are predominantly hydropowered, which is, of course, an almost carbon-free source of energy," Ms Sitdikova says. "These countries do have to deal with the issue of seasonality, for the times of the year when there is little water in the system. We have worked with these countries, in particular Tajikistan, on commercialising their energy sector through the unbundling of integrated utilities and establishing cost-reflective tariffs to make commercial investments more attractive."

Having a strong alternative energy source could be beneficial across the whole region, especially since the region covers 1.5 million square miles and has a population of 72 million. With this comes significant differences between geographies and climates.

"Network stability and ability to absorb intermittent renewable energy needs to be addressed across the whole of central Asia to ensure large-scale deployment of renewables," Ms Sitdikova adds. "How do countries balance their systems when the sun is not shining and the wind is not blowing? One potential answer can lie in a closer cross-regional co-operation and electricity trade. This would require grid reinforcement and storage capacity."

NEW REVENUE STREAMS

As well as creating domestic energy sources, the development of green power introduces a new exportable commodity, and creates projects that can be of benefit to several countries in the region.

One such project is the Casa 1000 pipeline, which will connect Kyrgyzstan, Tajikistan, Pakistan and Afghanistan. The project has been in development since 2015 and has

received support from agencies including the EBRD and ADB. Casa 1000 will see the construction of 1200km of electricity transmission lines to transport excess hydropower energy generated in the summer months by Kyrgyzstan and Tajikistan.

“This project will take clean hydro energy from Kyrgyzstan and Tajikistan, down through Afghanistan into northern Pakistan — bringing the green energy capacity of central Asia to the demand centres of south Asia, while generating export revenues for Kyrgyzstan and Tajikistan,” says Ms Sitdikova.

Afghanistan has announced that construction of its leg of the project began in February 2020. The country will generate revenues from the transit fee for energy that passes through its borders.

However, the significance of oil and gas exports in the region means there are still projects being rolled out. The Tapi pipeline project, running from Turkmenistan through Afghanistan and Pakistan to India, will create another transmission line for Turkmenistan for the export of its gas. As with the Casa 1000 project, it has received support from the development banks.

“ADB has supported the development of a gas pipeline to connect central Asia with Afghanistan, Pakistan and India,” Mr Zhai says. “This project would help provide another source of export revenue for Turkmenistan and help to diversify its markets. ADB is keen to support regional integration and co-operation.”

Mr Zhai adds that although not a green source of energy, the human needs it meets means the bank is still able to provide financing: “The project fits with the ADB’s mandate of supporting access to energy and electricity for people. The use of gas is also a greener form of energy than is still being used in some countries, such as India where coal power is still common.”

FINANCING PROJECTS

The support of the development banks has been integral to the modernisation and expansion of energy networks across Central Asia.

Mr Irvin notes how support from the International Finance Corporation, ADB, EBRD and the World Bank, as well as investments from the private sector that have been subject to competitive bidding processes, are all vital to helping Uzbekistan to reach its renewable energy goals within the next decade.

Having the support of development organisations can be necessary to attracting private investment. Urvaksh Patel, regional manager, Europe and central Asia at the South Korea-based Green Climate Fund

(GCF), says: “We fund both mitigation and adaptation investments within countries. Specifically, adaptation financing is an area where we would like to support the private sector, since mobilising private capital for such investments can [be difficult]. Without favourable risk-returns and positive cash flow, it is unlikely that adaptation projects will attract private sector investment.”

Mr Patel continues: “The GCF’s interest is in helping countries with the planning and strategising of climate change-related investments, and then using our funds through a variety of instruments to mobilise the financing that the investments may need. Our concern is that a project is not only fundable, but also how well designed it is.”

However, the use of public-private partnerships (PPP) is also starting to gain traction. In Uzbekistan, this has drawn interest from foreign investors in countries including the UAE, Russia, China, Turkey, South Korea, South Africa and Malaysia.

Mr Isakov says this form of financing has its drawbacks. “We are at the early stages of PPP, but it is a double-edged sword,” he notes. “It brings much-needed investment and proven mechanisms to close the infrastructure gap, but it also brings fiscal risks. We must learn from countries that have implemented these structures successfully and learn from the failures of similar projects.”

These projects do have the potential to be a long-term form of revenue generation, which may further appeal to investors.

“At the same time, PPP projects in the power sector do have a bright future,” Mr Isakov adds. “Not only will our domestic consumption grow due to rising demand for power, but also our exports will grow. Currently, we do have strong power-export potential to neighbouring countries. Tajikistan and Kyrgyzstan’s demands vary depending on the time of the year, but this has been constant for Afghanistan.”

There are other options for financing that have yet to be fully explored across the region, which could attract additional investment from new sources. Mr Irvin notes: “As Uzbekistan has a majority Muslim population, there is increasing interest recently in Islamic finance. Its use is a regulatory grey area, given the structure of the country’s banking laws, but there has been talk of using Islamic financing to offer green bonds, or sukuks.”

As Islamic financing has been outlined by some institutions as an ideal fit for the promotion of green investments, this may open up another line of financial support that could accelerate the region towards its ambitious green energy goals. **18**



THERE IS A CHALLENGE IN HELPING THESE COUNTRIES TO MAKE A LONG-TERM TRANSITION TO LOW-CARBON ENERGY WHEN THEY HAVE LARGE RESOURCES OF OIL AND GAS *Yongping Zhai*