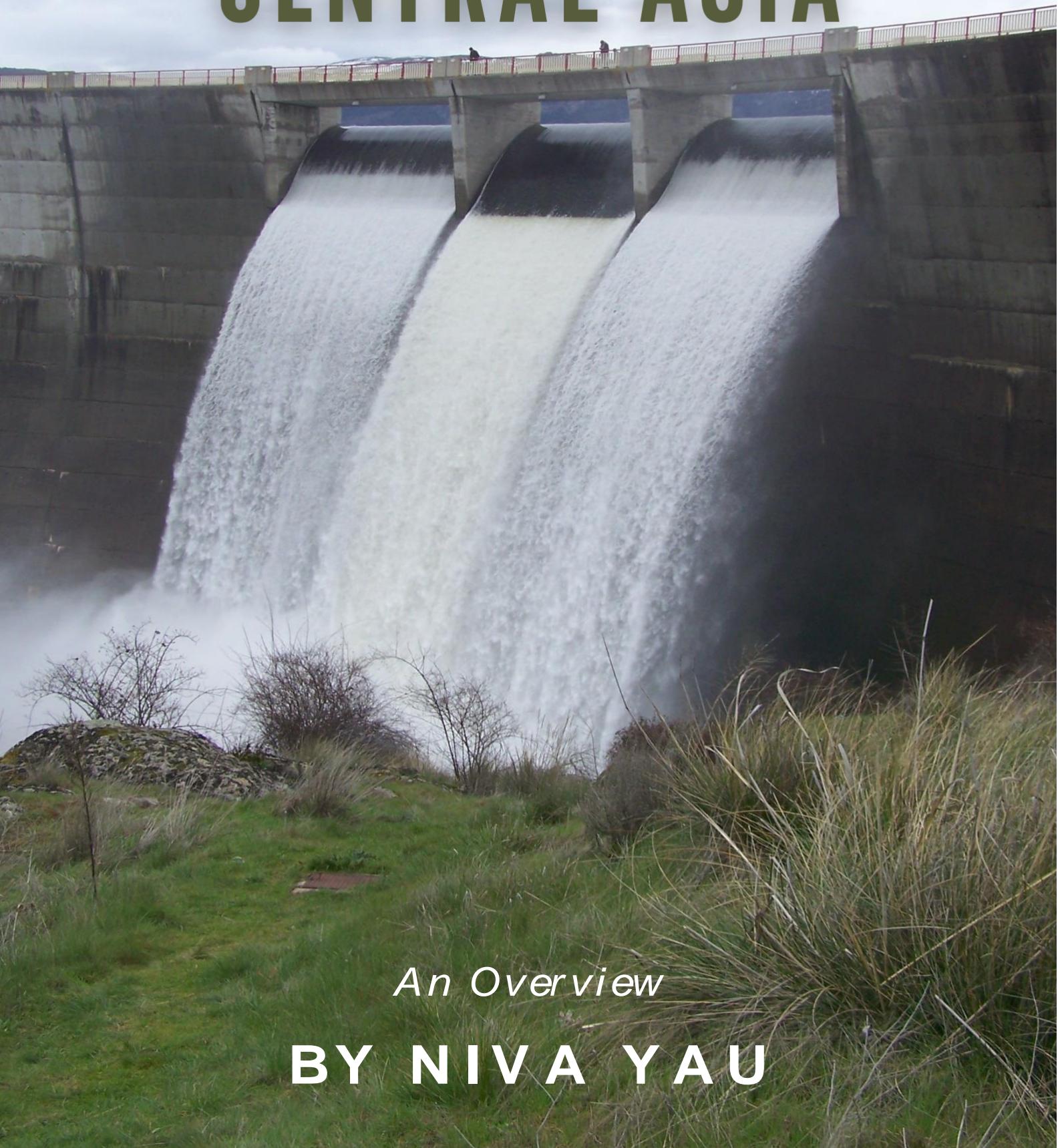


CHINA'S RENEWABLE INVESTMENTS IN CENTRAL ASIA



An Overview

BY NIVA YAU

INTRODUCTION

Development of the renewable energy sector in Central Asia is uneven. China's arrival in the past decade as an investor in the region's renewable energy sector has been welcomed mostly by Kazakhstan, which has the region's largest renewable capacity in solar and wind. This paper details the number of renewable investments China has undertaken in Central Asia across hydro, solar, and wind, while highlighting how these projects are entangled in regional politics. It also looks at how international standards apply to project implementation. The paper ends with policy recommendations for Central Asian policymakers.

HYDROELECTRIC POWER

Hydropower is the dominant form of renewable energy in Central Asia. The Soviet Union built large numbers of small to medium and large-sized hydropower stations in upstream Kyrgyzstan and Tajikistan, while a small number of hydropower stations have been built in downstream Kazakhstan and Uzbekistan. Kyrgyzstan and Tajikistan have the highest hydropower capacities at 3673 MW and 5273 MW in 2019, respectively.¹ The two countries are highly dependent on hydropower to generate electricity, making up 24.3% of Kyrgyzstan's total energy supply and 51.6% of Tajikistan's.² While hydropower makes up only a small percentage (1-2.4%) of the total energy supplies of oil and gas rich Kazakhstan and Uzbekistan, the two countries have spent much effort in building new hydropower stations and upgrading the Soviet-built ones in the past decade. In 2019, Kazakhstan's and Uzbekistan's hydropower capacities were at 2778 MW and 1939 MW.

Since the collapse of the Soviet Union in 1991, water has been a consistent source of conflict in the landlocked region. China has invested with caution, focusing on bilaterally helping downstream Kazakhstan and Uzbekistan to develop their hydropower potential, and avoiding projects in Kyrgyzstan and Tajikistan that could create conflicts with downstream countries. Any upstream Chinese assistance is multilateral, such as the modernization of Toktogul in Kyrgyzstan and Nurek in Tajikistan, financed by the World Bank and the Asian Development Bank.³ By working primarily downstream, China avoids the regional politics

¹International Renewable Energy Agency. "Energy Profile: Kyrgyzstan (2019)".

https://www.irena.org/IRENADocuments/Statistical_Profiles/Asia/Kyrgyzstan_Asia_RE_SP.pdf. Accessed 26 May 2021.

International Renewable Energy Agency. "Energy Profile: Tajikistan (2019)".

https://www.irena.org/IRENADocuments/Statistical_Profiles/Asia/Tajikistan_Asia_RE_SP.pdf. Accessed 26 May 2021.

²United Nations Economic and Social Commission for Asia and the Pacific. "Energy and Development in Central Asia A statistical overview of energy sectors in Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan (2018)".

https://www.unescap.org/sites/default/files/Central%20Asia%20Statistical%20Perspective%202018_WEB.pdf. Accessed 26 May 2021.

³World Bank. "World Bank Supports Rehabilitation of the Nurek Hydro Power Plant in Tajikistan." 20 March 2019, <https://www.worldbank.org/en/news/press-release/2019/03/20/tajikistan-nurek-hydropower-rehabilitation-project>. Accessed 26 May 2021.

Asian Development Bank. "Kyrgyz Republic: Toktogul Rehabilitation Phase 3 Project." 2016, <https://www.adb.org/projects/49013-002/main>. Accessed 26 May 2021.

while helping its main economic partners, Kazakhstan and Uzbekistan, to boost their water and energy security. This strategy is acceptable to all, while not overtly aiding the United States' efforts to link Central Asian energy to development in South Asia.

In 2012, state-owned China International Water & Electric Corporation (CWE) completed the 300 MW Moynak hydropower plant, a major contribution to Kazakhstan's energy security in the south, located between Almaty and the Chinese border. The Moynak hydropower plant cost \$330 million, \$200 million of which China Development Bank loaned to Kazakhstan.⁴ CWE was tasked with the design and construction and trained 40 Kazakh engineers before transferring the entire site to Kazakhstan's control in 2013. The success of Moynak led to the building of more dams and hydropower stations by CWE in Kazakhstan. In December 2014, the company signed initial deals to build dams along the Ili and Shilik rivers in the east of the country. Some officials have discussed selling this generated electricity to China.⁵ In late 2018, CWE completed a small, \$23 million, 25-MW project at Turgusun on the Irtysh River in north-eastern Kazakhstan.⁶ Construction has begun on the 20-MW Turgusun-2, and a proposed Turgusun-3 would add an additional 115 MW.⁷ The largest Chinese hydropower project in Central Asia would be a proposed five-dam, 480 MW cascade on the Tentek River in Almaty Region. State-owned China Gezhouba Group Corporation signed a \$1.5 billion deal with Kazakhstan's Arai-Oil company in December 2018, but the financing agreement is still under negotiation.⁸

Starting in 2006, China's Exim Bank began issuing modest loans for Uzbekistan to hire Chinese companies to repair, upgrade, and modernize Soviet-era infrastructure. That same year, state-owned China National Electric Engineering Corporation, a subsidiary of construction giant Sinomach, began expanding the capacity of hydropower stations in Tashkent and Andijan.⁹ Work on the \$15.9 million deal was finished in 2010.¹⁰ After the

⁴The Central People's Government of the People's Republic of China. "Zhōng shuǐdiàn duìwài gōngsī chéngjiàn hāsàkè sítān jiàngguó lái zuìdà shuǐdiànnzhàn [China Hydropower Foreign Corporation undertook the construction of the largest hydropower station in Kazakhstan since the founding of the country]." 10 April 2008, http://www.gov.cn/ztzl/2008-04/10/content_941526.htm. Accessed 26 May 2021.

⁵China International Water & Electric Corporation. "Gōngsī yǔ hāsàkè sítān sà néng gōngsī qiānshǔ hézuò xiéyi [The company signed a cooperation agreement with Kazakhstan Saanen Company]." 17 December 2014, <http://www.cwe.cn/contents/project-trends/2081.html>. Accessed 26 May 2021.

⁶Industrial Development Fund of the Republic of Kazakhstan. "The Construction of the Turgusun HPP in the East Kazakhstan Region." 2018, <https://idfrk.kz/en/project/construction-of-hydropower-plant/>. Accessed 26 May 2021.

⁷China International Water & Electric Corporation. "Hāsàkè sítān tú ér gǔsōng shuǐdiànnzhàn xiànggmù shíxiàn èr qí dǎo liú [Turgusun Hydropower Project in Kazakhstan realizes the second-phase diversion]." 22 October 2019, <http://www.cwe.cn/contents/project-trends/9216.html>. Accessed 26 May 2021.

⁸China Energy Engineering Corporation. "Voluntary announcement: Entering into EPC contracts for five cascade hydropower stations located at the headstream of Tentek river in Kazakhstan by a subsidiary of the company." 12 December 2018, <https://www1.hkexnews.hk/listedco/listconews/sehk/2018/1212/ltn20181212422.pdf>. Accessed 26 May 2021.

⁹China National Electric Engineering Company. "Wūzībiékè shuǐdiànnzhàn xiànggmù yònghù huífǎng hé ānquán jiānchá yuánmǎn wánchéng [Uzbek Hydropower Project User Return Visit and Safety Inspection Successfully Completed]." 4 August 2010, http://www.cneec.com.cn/xwzx/gsyw/201008/t20100804_78060.html. Accessed 26 May 2021.

¹⁰Embassy of the People's Republic of China in Uzbekistan. "Zhōngguó diàngōng shèbèi zǒng gōngsī wéi wūzībiékè sítān liǎng zuò shuǐdiànnzhàn gōngyìng shèbèi quánbù dàowèi [All the equipment supplied by China National Electrical Equipment Corporation for the two hydropower stations in Uzbekistan is in place]." 7 October 2008, <http://uz.mofcom.gov.cn/article/catalog/200810/20081005814290.shtml>. Accessed 26 May 2021.

Embassy of the People's Republic of China in Uzbekistan. "Zhōngguó diàngōng shèbèi zǒng gōngsī gōngyìng shèbèi gǎizào de liǎng gè diànnzhàn tóuchǎn fāidiàn [Two power stations supplied by the China National Electrical Equipment Corporation for equipment renovation were put into production and power generation]." 12 July 2010, <http://uz.mofcom.gov.cn/article/tupxw/201007/20100707018525.shtml>. Accessed 26 May 2021.

Uzbek leadership transition in late 2016, China's partnership with Uzbekistan in hydropower modernization escalated. Within three years, Beijing allocated \$144 million in loans for hydropower projects.¹¹ One deal, signed at a summit of the Shanghai Cooperation Organization in Qingdao in 2018, saw China's Exim Bank loan \$63 million to modernize five dams, including three in Tashkent and the Fergana Valley.¹² In addition, Dongfang Electric Corporation completed construction in 2019 of an entirely new \$15.8 million, 11.4 MW hydropower station at the Tuyabugiz reservoir south of Tashkent with \$8.1 million in financing from China's Exim bank.¹³

SOLAR POWER

While both Kazakhstan and Uzbekistan have made promises in the past decade to invest in solar, Kazakhstan is the only Central Asian country that has made a serious commitment to investing in it. Kazakhstan is also the one Central Asian country that holds majority of the total regional solar potential at 77%, while Uzbekistan holds 12%.¹⁴

Kazakhstan first experimented with solar in 2012 when then-President Nursultan Nazarbayev inaugurated a small plant to product photovoltaic cells in Astana, stating, "the green economy is our future."¹⁵ By 2017, Chinese governmental subsidies ended for the solar industry, and Chinese solar manufactures aggressively headed towards the global market. The Chinese government then began to offer Kazakhstan Chinese solar technologies, gifting a 1MW solar plant to the Alatau Innovation Park near Almaty. In its handover ceremony in December 2018, Chinese officials described this project as a symbolic one to connect Kazakhstan's "Bright Road" initiative to China's Belt and Road Initiative, encouraging Kazakhstan to look east for its green energy needs.¹⁶

¹¹Podrobno. "Kitay vydelil Uzbekistanu 65 millionov dollarov na stroitel'stvo i remont GES [China allocates \$ 65 million to Uzbekistan for the construction and repair of hydroelectric power plants]." 28 August 2019, https://podrobno.uz/cat/uzbekistan-i-kitay-klyuchi-ot-budushchego/kitay-vydelil-uzbekistanu-65-millionov-dollarov-na-stroitelstvo-i-remont-ges/?mc_cid=dad6e5a73a&mc_eid=4b516b0c01. Accessed 26 May 2021.

¹²Embassy of the People's Republic of China in Uzbekistan. "Zhōngguó zhèngfǔ yōu mǎi dàikuǎn xiàng xià wū sān zuò shuǐdiàanzhàn gǎizào xiàngmù qǐdòng shíshī [The renovation project of three hydropower stations in Uzbekistan under the preferential purchase loan of the Chinese government started implementation]." 9 July 2018, <http://uz.mofcom.gov.cn/article/jmxw/201807/20180702764213.shtml>. Accessed 26 May 2021.

The Export-Import Bank of China. "China Eximbank Signed Hydropower Project Loan Agreement with Uzbekistan's Turonbank." 8 June 2018, http://english.eximbank.gov.cn/News/NewsR/201810/t20181016_6948.html. Accessed 26 May 2021.

¹³State-owned Assets Supervision and Administration Commission of the State Council of the People's Republic of China. "Wūzibékè sítān tú yá bùgǔ zī shuǐdiàanzhàn wángōng dōngfāng diànrqì chéngjiàn [Construction of Tuyabuz Hydropower Station in Uzbekistan completed, contracted by Dongfang Electric]." 8 April 2019, <http://www.sasac.gov.cn/n2588025/n2588124/c10916783/content.html>. Accessed 26 May 2021.

Kun. "Tuyabugiz Hydroelectric Power Station commissioned." 27 March 2019, <https://kun.uz/en/49250257?q=%2Fen%2F49250257>. Accessed 26 May 2021.

¹⁴United Nations Economic and Social Commission for Asia and the Pacific. "Energy and Development in Central Asia A statistical overview of energy sectors in Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan (2018)." https://www.unescap.org/sites/default/files/Central%20Asia%20Statistical%20Perspective%202018_WEB.pdf. Accessed 26 May 2021.

¹⁵The Astana Times. "High Hopes for Alternative Energy as Country Bets on Solar." 18 September 2013, <https://astanatimes.com/2013/09/high-hopes-for-alternative-energy-as-country-bets-on-solar/>. Accessed 26 May 2021.

¹⁶Xinhua. "Zhōngguó yuán jiàn hásàkè sítān tàiyángnéng jí fēngnóng diàanzhàn tóurù shǐyòng [China-assisted construction of solar and wind power plants in Kazakhstan put into use]." 1 December 2018, http://www.xinhuanet.com/fortune/2018-12/01/c_1123793953.htm. Accessed 26 May 2021.

This gift was to demonstrate Chinese knowledge of the solar industry to Kazakhstan. In June 2018, Ningbo-based Risen Energy started working on a \$39 million, 40 MW solar photovoltaic plant in Karaganda.¹⁷ Speaking at the ground-breaking, Yuan Jianping, Risen's general manager, again linked the project to Chinese President Xi Jinping's signature foreign policy priority, saying that his company was "seizing the opportunity of the Belt and Road Initiative."¹⁸ The European Bank for Reconstruction and Development (EBRD) loaned \$22 million to Kazakhstan towards financing this 40 MW solar plant in Karaganda.¹⁹ Shortly after operation began, the EBRD loaned another \$42.5 million to Kazakhstan toward a \$75 million, 63 MW solar plant in Chulakkurgan that would also be built by Risen Energy.²⁰ Shanghai-based Universal Energy opened East Kazakhstan's first solar farm in August 2019, a 30 MW plant in Zhangiztobe that cost \$22 million, with \$12 million contributed by the EBRD.²¹ The next month, Universal Energy opened China's largest solar farm in Central Asia, a 100 MW farm for \$65 million in Kapshagay near Almaty.²²

As of 2019, Kazakhstan has an installed solar capacity of 823 MW, at least 234 MW of which is jointly operated by Chinese and Kazakh companies.²³ However, as Chinese companies are the industry leaders of solar manufacturing, the share of Chinese solar equipment in Kazakhstan's solar capacity is likely much higher than that described above.

WIND POWER

Kazakhstan holds over 90% of Central Asia's wind potential.²⁴ In July 2019, construction began on Central Asia's largest wind power farm in Kazakhstan.²⁵ In September 2020, the

¹⁷ Risen Energy. "Dōngfāng rì shēng shēnrù tuījìn yǐdài yǐlù jiànshè, hāsàkè sítān 40MW guāngfú diànnzhàn pòtǔ dōnggōng [Risen Energy further advances the construction of the Belt and Road Initiative, and Kazakhstan breaks ground for a 40MW photovoltaic power station]." 11 June 2018, <https://www.risenenergy.com/index.php?c=show&id=156>. Accessed 26 May 2021.

¹⁸ Risen Energy. "Dōngfāng rì shēng shēnrù tuījìn yǐdài yǐlù jiànshè, hāsàkè sítān 40MW guāngfú diànnzhàn pòtǔ dōnggōng [Risen Energy further advances the construction of the Belt and Road Initiative, and Kazakhstan breaks ground for a 40MW photovoltaic power station]." 11 June 2018, <https://www.risenenergy.com/index.php?c=show&id=156>. Accessed 26 May 2021.

¹⁹ European Bank of Reconstruction and Development. "Risen Solar." 2018, <https://www.ebrd.com/work-with-us/projects/psd/50002.html>. Accessed 26 May 2021.

²⁰ European Bank of Reconstruction and Development. "Chulakkurgan Solar." 2018, <https://www.ebrd.com/work-with-us/projects/psd/chulakkurgan-solar.html>. Accessed 26 May 2021.

Risen Energy. "Shēnhuà "yǐdài yǐlù" yánxiàn shíchǎng bùjù dōngfāng rì shēng hāsàkè sítān 50MWp EPC guāngfú diànnzhàn kāigōng [Deepen the market layout along the "Belt and Road," Risen Energy starts construction of 50MWp EPC photovoltaic power station in Kazakhstan]." 5 July 2019, <https://www.risenenergy.com/index.php?c=show&id=426>. Accessed 26 May 2021.

²¹ Universal Energy. "Huán tài néngyuán Zhangiz 30MWp guāngfú diànnzhàn tóuchǎn yùnyíng xì dōng hā zhōu dì yī gè guāngfú fādiàn xiàngmù [Universal Energy's Zhangiz 30MWp photovoltaic power station was put into operation, the first photovoltaic power generation project in East Kazakhstan]." 16 August 2019, <http://www.universalenergy.com/zh/news/243>. Accessed 26 May 2021.

European Bank of Reconstruction and Development. "KAZREF – Universal Energy Zhangiz Solar." 2019, <https://www.ebrd.com/work-with-us/projects/psd/kazref-universal-energy-zhangiz-solar.html>. Accessed 26 May 2021.

²² Universal Energy. "Huán tài néngyuán Kapshagay 100MWp guāngfú diànnzhàn bìng wǎng yùnyíng [Universal Energy's Kapshagay 100MWp photovoltaic power station is connected to the grid for operation]." 3 September 2019, <http://www.universalenergy.com/zh/projects/244>. Accessed 26 May 2021.

²³ International Renewable Energy Agency. "Energy Profile: Kazakhstan (2019)." https://www.irena.org/IRENADocuments/Statistical_Profiles/Asia/Kazakhstan_Asia_RE_SP.pdf. Accessed 26 May 2021.

²⁴ United Nations Economic and Social Commission for Asia and the Pacific. "Energy and Development in Central Asia A statistical overview of energy sectors in Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan (2018)." https://www.unescap.org/sites/default/files/Central%20Asia%20Statistical%20Perspective%202018_WEB.pdf. Accessed 26 May 2021.

²⁵ People's Daily. "Zhōng yà zuidà fēngdiàn xiàngmù zài hāsàkè sítān kāigōng [Construction of the largest wind power project in Central Asia starts in Kazakhstan]." 17 July 2019, <http://world.people.com.cn/n1/2019/0717/c1002-31238264.html>. Accessed 26 May 2021.

project was completed, and the Chinese-built Zanatas 100MW wind power farm began to generate electricity.²⁶ \$95.3 million of the total cost of \$150 million was financed by a joint fund from the EBRD, the Asian Infrastructure Investment Bank (AIIB), the Industrial and Commercial Bank of China (Almaty), and the Global Greengrants Fund. The rest is financed by Power China, which owns 80% of the wind farm project.²⁷

With 40 2.5 MW wind turbines, this wind power farm has a total installed capacity of 100 MW, generating 350 million kWh of electricity for the southern region of Kazakhstan.²⁸ The Zanatas wind power farm project is part of the China-Kazakhstan Industrial Cooperation framework under the principle of “Chinese capital, Chinese technology, international standards” aimed to be a project model of the Belt and Road Initiative. The Zanatas project area is rich in wind energy resources and has an average annual wind speed of 87 meters per second, measured by an 81-meter wind measuring; the project area has about 3,500 annual useable hours.²⁹ The wind power farm replaces the usage of up to 109,500 tons of standard coal and prevents more than 2,000 tons of greenhouse gas emissions each year.³⁰ Additionally, China Power built the Tainty 24 MW wind farm in 2015 and the Shar 37.5 MW wind farm in late 2016, both in eastern Kazakhstan.³¹ As of 2019, Kazakhstan has a total wind capacity of 284 MW, at least 161.5 MW of which are generated through joint projects of Chinese and Kazakh companies.³²

ISSUES

REGIONAL POLITICS

Chinese investments in the renewable energy sector in Central Asia are influenced by regional politics. These regional political competitions can motivate deals in renewable

²⁶China Energy. “Zhōng yà zuidà guīmó fēng cháng hāsàkè sítān zhá nà tǎ sī 100MW fēngdiàn xiàngmù shǒu pī fēngjī bìng wǎng [The first batch of wind turbines connected to the grid for the Zanatas 100MW wind power project in Kazakhstan, the largest wind farm in Central Asia].” 9 October 2020, <https://news.bjx.com.cn/html/20201009/1108606.shtml>. Accessed 26 May 2021.

²⁷Embassy of the People’s Republic of China to Kazakhstan. “Zhōng yà zuidà fēngdiàn xiàngmù zhèngshí huò yà tóuxíng děng jīgòu dàikuǎn zhīchí [Central Asia’s largest wind power project officially received loan support from institutions such as the Asian Infrastructure Investment Bank].” 29 October 2020, <http://kz.mofcom.gov.cn/article/jmxw/202010/20201003011665.shtml>. Accessed 26 May 2021.

²⁸Embassy of the People’s Republic of China to Kazakhstan. “Zhōng yà zuidà fēngdiàn xiàngmù zhèngshí huò yà tóuxíng děng jīgòu dàikuǎn zhīchí [Central Asia’s largest wind power project officially received loan support from institutions such as the Asian Infrastructure Investment Bank].” 29 October 2020, <http://kz.mofcom.gov.cn/article/jmxw/202010/20201003011665.shtml>. Accessed 26 May 2021.

²⁹Xu, Hongfeng & Wang, Jing. “Hāsàkè sítān kě zàiishēng néngyuán fāzhǎn xiānzhùang jí zhōng hā kě zàiishēng néngyuán hézuò [Development status of renewable energy in Kazakhstan and China-Kazakhstan renewable energy cooperation].” Russia, Eastern Europe and Central Asia Studies, Issue 4, 2019, <http://www.oyyj-oys.org/UploadFile/Issue/25lpai3b.pdf>. Accessed 26 May 2021.

³⁰Embassy of the People’s Republic of China to Kazakhstan. “Zhōng yà zuidà fēngdiàn xiàngmù zhèngshí huò yà tóuxíng děng jīgòu dàikuǎn zhīchí [Central Asia’s largest wind power project officially received loan support from institutions such as the Asian Infrastructure Investment Bank].” 29 October 2020, <http://kz.mofcom.gov.cn/article/jmxw/202010/20201003011665.shtml>. Accessed 26 May 2021.

³¹PowerChina Hubei Engineering Company. “Gōngsī hāsàkè sítān Shar37.5MW fēngdiàn EPC xiàngmù jǔxíng qìānyuē yíshì [The company’s Kazakhstan Shar37.5MW wind power EPC project held a signing ceremony].” 20 December 2016, <http://www.powerhubei.com/detail.asp?ArticleID=4072>. Accessed 26 May 2021.

PowerChina Hubei Engineering Company. “Hāsàkè sítān 24 zhào wǎ Tainty fēngdiàn xiàngmù yèzhǔ gōngsī fā lái gǎnxiè xìn [The owner company of the 24 MW Tainty Wind Power Project in Kazakhstan sent a letter of appreciation].” 2 April 2015, <http://www.powerhubei.com/detail.asp?ArticleID=413>. Accessed 26 May 2021.

³²International Renewable Energy Agency. “Energy Profile: Kazakhstan (2019).” https://www.irena.org/IRENADocuments/Statistical_Profiles/Asia/Kazakhstan_Asia_SP.pdf. Accessed 26 May 2021.

energy, as in the case of Moynak to rid Kazakhstan electricity dependence on Kyrgyzstan, or end deals, as in the case of Zarafshan hydropower station in Tajikistan.

The Chinese company CWE was well aware of Moynak's capacity to end Kazakhstan's electricity dependence on Kyrgyzstan. Yu Qiang, CWE's deputy chief engineer in Kazakhstan, told a Chinese documentary crew that "before the Moynak project, the south of Kazakhstan imported electricity from Kyrgyzstan. After Moynak went online, the south became self-sufficient."³³ Moynak is ideally located in a strategic location to provide electricity to Almaty, ending dependence on electricity imported from Bishkek. The planned 480 MW hydropower station on the Tentek River in Almaty Region will further aid Almaty's energy independence from Bishkek.

Downstream Uzbekistan and upstream Tajikistan have long had major conflicts over water resources. Uzbekistan's former president even threatened war over a dam project upstream in Tajikistan. Since the 1990s, China has been eyeing the potential of the Zarafshan River, which flows from Tajikistan into Uzbekistan near Samarkand. In 2007 Tajik President Emomali Rahmon signed a deal with Sinohydro to build two dams on the Zarafshan River as a part of a \$1 billion investment package secured during a visit to Beijing.³⁴ However, the 2007 deal never materialized likely due to Uzbek President Islam Karimov's aversion.

LACK OF INTERNATIONAL STANDARDS

When Chinese renewable projects are financed multilaterally with the participation of international development banks, international standards are well-implemented. Chinese renewable projects that are financed by Chinese policy banks do not have to follow international standards and in many cases follow China's standards. Kazakhstan's brand-new Moynak hydropower station, for example, was a complete replica of a Chinese hydropower station in China.³⁵ In 2018, China Power conducted a design contract for the first wind energy farm in Kyrgyzstan.³⁶ While the deal never materialized, the construction of the project would have completely followed the standards of China's wind power industry.

³³CCTV. "Hāsàkè sītān bàifāng hā fāng shuǐlì gōngchéngshī [Visiting Kazakhstan Water Conservancy Engineer]." 2 April 2018, <http://tv.cctv.com/2018/04/02/VIDEwc81rCmJRhTEDxpEEbJF180402.shtml>. Accessed 26 May 2021.

³⁴The Central People's Government of the People's Republic of China. "Zhōngguó shuǐdiàn jiànshè jítuán qiānshǔ tǎjíkè sī yī shuǐdiànzhan jiànshè héttóng [China National Hydropower Construction Group Signs Contract for the Construction of Tajiks No. 1 Hydropower Station]." 22 January 2007, http://www.gov.cn/ztzl/2007-01/22/content_503499.htm. Accessed 26 May 2021.

Institute for War & Peace Reporting. "Tadzhikistan poluchit kitayskiye investitsii [Tajikistan will receive Chinese investments]." 18 January 2007, <https://iwpr.net/ru/global-voices/tadzhikistan-poluchit-kitayskie-investicii>. Accessed 26 May 2021.

³⁵CCTV. "Hāsàkè sītān bàifāng hā fāng shuǐlì gōngchéngshī [Visiting Kazakhstan Water Conservancy Engineer]." 2 April 2018, <http://tv.cctv.com/2018/04/02/VIDEwc81rCmJRhTEDxpEEbJF180402.shtml>. Accessed 26 May 2021.

³⁶State-owned Assets Supervision and Administration Commission of the State Council of the People's Republic of China. "Zhōngguó néngjiàn xīnjiāng yuàn qìdǐng jí'érjí sītān shǒu gè fēngdiàn xiànggmù héttóng [PowerChina Xinjiang branch signs contract for Kyrgyzstan's first wind power project]." 13 March 2018, <https://finance.sina.cn/2017-12-28/detail-ifyqchnr6652240.d.html?vt=4&pos=17>. Accessed 26 May 2021.

Environmental standards aside, a lack of local push for Chinese companies to abide by international standards creates Central Asian dependence on Chinese core technology in the renewable sector. In Central Asia, China's industrial standardization efforts largely target renewable energy, energy transmission projects, livestock management, and agricultural farming. In these sectors, adopting China's industrial standards will require Central Asian states to acquire foundational technology from China, as well as implement the appropriate trainings to carry out day-to-day operations. This reinforces long-term dependence on China and distances Central Asia from the Western market.

POLICY RECOMMENDATIONS

CREATE A DIALOGUE FOR REGIONAL RENEWABLE ENERGY PLANNING

While each of the Central Asian states has a domestic plan for renewable energy development, they do not communicate about or coordinate these plans in a way that affects the regional energy landscape. While a number of international organizations have hosted events aimed at promoting regional dialogue among Central Asian states on renewable development, there currently is no high-level governmental dialogue for regional renewable planning.

An intergovernmental renewable energy committee should be established among the five Central Asian states, led by the respective governments' Ministries of Energy, with regular annual meetings and a communication mechanism. This intergovernmental renewable energy committee should aim to familiarize regional neighbors with projects and plans underway to meet domestic renewable goals. The committee's meetings would allow regional governments to share their experiences in undertaking renewable projects and manage political issues of these projects.

ENCOURAGE FINANCING FROM INTERNATIONAL DEVELOPMENT BANKS

In 2015, the EBRD pledged to spend 40% of its annual budget on renewable energy projects in Kazakhstan, with 67% of the current portfolio spent on "sustainable infrastructure."³⁷ More international development banks should follow. Central Asian initiatives should be supported to show commitment to renewable energy projects and encourage financing from international development banks. With increased financing from these banks, more of Central Asia's renewable projects are likely to be held to international standards.

³⁷European Bank of Reconstruction and Development. "EBRD investments in renewable energy in Kazakhstan." https://unece.org/fileadmin/DAM/energy/se/pp/gere/Nur-Sultan_June_2019/1._Yerlan_Ramazanov_EBRD_investments.pdf. Accessed 16 June 2021.

European Bank of Reconstruction and Development. "Kazakhstan data." <https://www.ebrd.com/kazakhstan-data.html>. Accessed 26 May 2021.

TRAINING CENTRAL ASIAN GOVERNMENT OFFICIALS ON INTERNATIONAL STANDARDS

Central Asian government officials should be trained on the benefits of adapting to international standards in the renewable sector. Implementation of this initiative would be in the interests of companies that are experts of international standards in the area of renewable projects, like France's Total Eren. Apart from the private sector, regional non-governmental environmental organizations could also support these trainings for state partners to adapt international standards in the renewable sector.

CONCLUSION

While renewable energy potential is uneven in Central Asia, Chinese companies have been actively engaging with all of the Central Asian states to explore prospects of cooperation in the region. In most cases, Chinese actors view these renewable projects as more than profitable businesses. The Chinese officials who have been present at opening ceremonies and have made regular visits to these projects all point to the political implications they have for regional politics. These projects' ability to contribute a stabilizing effect on regional water and energy politics is considered by the Chinese Communist Party a political public good that has been enabled by loans from Chinese policy banks.

While China's political motivation will work in favor of Central Asian states by attracting investments in its renewable sector, international standards ought to be promoted to avoid overdependence on Chinese technologies. Because China considers itself to be a mediator in regional water and energy politics, Central Asian states should open a regional intergovernmental dialogue on renewable energy in order to foster the sharing of experiences and cooperative planning. At the very least, financing from international development banks should be encouraged in Central Asia as the most effective and immediate way of guaranteeing international standards in the renewable sector.

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