OSCE ACADEMY in Bishkek
NUPI Norwegian Institute of International Affairs

Central Asia Data Gathering and Analysis Team

CADGAT

Renewable Energy Policies of the Central Asian Countries

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A B S T R A C T

This data article surveys the government policies in support of renewable energy in the five Central Asian republics: Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan. It begins by providing general information and key energy statistics for these countries. It then presents comparative data on their regulatory policies, fiscal incentives, and public financing policies. The data were collected from government institutions of the Central Asian states, official national statistics, media reports, and international organizations.

Keywords: renewable energy, energy policy, key energy statistics, Central Asia, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan

1. Background

Central Asia is a resource-rich region with abundant oil and natural gas reserves. These reserves are unevenly distributed among the five countries in the region: Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan.

Kazakhstan, Turkmenistan, and Uzbekistan, as the major fossil fuel producers, are net fossil-fuel exporters and have the highest CO_2 emissions per capita in the region. Kazakhstan produces half the energy consumed in Central Asia. Besides marginal intraregional trade, the Central Asian states mainly trade energy with Afghanistan, China, Iran, and Russia.

The energy world is currently witnessing a global transition from fossil fuels to renewable energy.[1][2] Central Asia is also rich in renewable energy resources, but renewables have received little attention in academic research and the media. Therefore, the Central Asia Data Gathering and Analysis Team (CADGAT) is producing a series of datasets on renewable energy in Central Asia to provide a basis for further research in this area. These data are also available in a unified database in Excel format from http://osce-academy.net/en/research/cadgat/

[1] Sweijs et al. (2014) *Time to Wake Up: The Geopolitics of EU 2030 Climate and Energy Policies*. The Hague Centre for Strategic Studies (HCSS).
[2] O'Sullivan et al. (2017) *The Geopolitics of Renewable Energy.* Working Paper. Harvard University, Columbia University and Norwegian Institute of International Affairs (NUPI). https://www.researchgate.net/publication/317954274_The_Geopolitics_of_Renewable_Energy

2. Data collection

The empirical work for this data article was carried out between November 2018 and January 2019, and the figures presented reflect the situation during that period. Data were gathered by one CADGAT researcher in each of the Central Asian countries.

3. Key findings

The article first presents the key energy statistics for the Central Asian states, information on their regulatory policies, and their fiscal incentives and public financing policies (see Tables 1-3).

Except for Turkmenistan, all the countries in the region have precise targets for renewable energy capacity expansion. Kazakhstan and Kyrgyzstan have introduced feed-in tariffs, while Kazakhstan and Tajikistan have tradable renewable electricity certificates. Turkmenistan has so far not established a renewable energy support policy.

Table 1. Key energy statistics

	TPES (Mtoe)	TPES per GDP (PPP) (toe per thousand, 2005 USD)	Net imports (Mtoe)	Electricity consumption (TWh)	$C0_2$ emissions (Mt of CO_2)	$C0_2$ per capita (kg of CO_2 per capita)
Kazakhstan	74.85	0.37	-88.02	69.21	225.78	13.88
Kyrgyzstan	4.13	0.36	2.52	9.59	9.51	1.74
Tajikistan	2.27	0.15	0.63	13.87	2.74	0.34
Turkmenistan	25.57	0.54	-42.03	9.70	63.82	12.34
Uzbekistan	48.28	0.52	-8.46	43.32	111.14	3.89

Table 2. Renewable energy regulatory policies

	RE target	Biofuels obligation/ mandate	Electric utility quota obligation/ RPS	Feed-in tariff/ premium payment	Heat obligation/ mandate	Net metering	Tendering	Tradable REC
Kazakhstan	✓	-	-	✓	-	✓	-	-
Kyrgyzstan	✓	-	-	✓	-	-	-	✓
Tajikistan	✓	-	-	-	-	-	-	✓
Turkmen.	-	-	-	-	-	-	-	-
Uzbekistan	✓	-	-	-	-	-	-	-

Table 3. Fiscal incentives and public financial support for renewable energy development

	Capital subsidy/ rebate	Energy production payment	Investment/ production tax credits	Public investment, loans, or grants	Reduction in sales, energy, CO_2, VAT, or other taxes
Kazakhstan	-	✓	✓	✓	✓
Kyrgyzstan	-	✓	✓	✓	✓
Tajikistan	-	✓	✓	✓	-
Turkmenistan	-	-	-	-	-
Uzbekistan	-	-	-	-	-

Abbreviations and terminology

Mt	million tons	tradable REC	tradable renewable energy certificate
Mtoe	million tons of oil equivalents	TPES	total primary energy supply
RE	renewable energy	TWh	terawatt hours
RPS	renewable energy portfolio standard	VAT	value added tax

References

O'Sullivan, M., Overland, I., Sandalow, D., Lemphers, N., Begg, H., Behrens, A., Bhatiya, N., Clark, A., Cremer, T., Elkind, J., Fessler, M., Nakagawa, M., Seol, M., Soylu, C. and R. Vakulchuk (2017) *The Geopolitics of Renewable Energy.* Working Paper. Harvard University, Columbia University and Norwegian Institute of International Affairs (NUPI). https://www.researchgate.net/publication/317954274_The_Geopolitics_of_Renewable_Energy

Sweijs, T., de Ridder, M., de Jong, S., Oosterveld, W., Frinking, E., Auping, W., Coelho, R., Bylappa, J. and I. Ilko (2014) *Time to Wake Up: The Geopolitics of EU 2030 Climate and Energy Policies*. The Hague Centre for Strategic Studies (HCSS).

About CADGAT and Central Asia Regional Data Review

The Norwegian Institute of International Affairs (NUPI) and the OSCE Academy established the Central Asia Data-Gathering and Analysis Team (CADGAT) in 2009. The purpose of CADGAT is to produce new cross-regional data on Central Asia that can be used free of charge by researchers, journalists, NGOs, government employees, and students, both inside and outside the region. The data articles can be found at http://osce-academy.net/en/research/cadgat/

The following CADGAT data articles have been published:

1. Hydroelectric dams and conflict in Central Asia
2. The narcotics trade and related issues in Central Asia
3. Language use and language policy in Central Asia
4. The transportation sector in Central Asia
5. Road transportation in Central Asia
6. Gender and politics in Central Asia
7. Political relations in Central Asia
8. Trade policies and major export items in Central Asia
9. Intra-regional trade in Central Asia
10. Trade barriers and tariffs in Central Asia
11. Holidays in Central Asia. Part I: Laws and official holidays
12. Holidays in Central Asia. Part II: Professional and working holidays
13. Media in Central Asia: Print Media
14. Media in Central Asia: TV
15. Media in Central Asia: Radio
16. Renewable energy policies of the Central Asian countries

CADGAT has also produced a database on Elites in Central Asia, which can be found at http://osce-academy.net/_dbelite/