

Central Asia Data Gathering and Analysis Team

CADGAT



Renewable Energy Policies of the Central Asian Countries

Bahtiyor Eshchanov,a,b\* Alina Abylkasymova,b Farkhod Aminjonov,b,c Daniyar Moldokanov,b Indra Overland,b,d Roman Vakulchuk b,d

a *Westminster International University in Tashkent*

b *Central Asia Data Gathering and Analysis Team (CADGAT)*

c *College of Humanities and Social Sciences, Zayed University*

d *Norwegian Institute of International Affairs (NUPI)*

\* *Corresponding author: B. Eshchanov; Email address: beshchanov@wiut.uz; bahtiyor.eshchanov@gmail.com*

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

## 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 CO2 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]](#footnote-1)[[2]](#footnote-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/>

## 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.

## 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) | C02 emissions (Mt of CO2) | C02 per capita  (kg of CO2 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, CO2, 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/>

© 2019 by the authors. This is an open access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>). The material can be used freely, as long as a reference to this article is included.

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). [↑](#footnote-ref-1)
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> [↑](#footnote-ref-2)