Addressing the Gender Gap and Skills Shortage in Central Asia’s Energy Transition

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When one speaks of the energy transition in Central Asia, what immediately springs to mind?
Energy sector jobs – Global outlook (1)

![Figure 3.10](image)

Global energy sector jobs (2019) and under the 1.5°C Scenario and PES (2030)

Source: IRENA World Energy Transitions Outlook 2022
Energy sector jobs – Global outlook (2)

Source: IRENA World Energy Transitions Outlook 2021
Central Asia in focus
Renewable energy potential in Central Asia

<table>
<thead>
<tr>
<th>Country</th>
<th>Hydro potential (theoretical)</th>
<th>Solar potential</th>
<th>Wind potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kazakhstan</td>
<td>199 TWh/year</td>
<td>3760 GW</td>
<td>354 GW</td>
</tr>
<tr>
<td>Kyrgyzstan</td>
<td>163 TWh/year</td>
<td>267 GW</td>
<td>1.5 GW</td>
</tr>
<tr>
<td>Tajikistan</td>
<td>527 TWh/year</td>
<td>195 GW</td>
<td>2 GW</td>
</tr>
<tr>
<td>Turkmenistan</td>
<td>24 TWh/year</td>
<td>655 GW</td>
<td>10 GW</td>
</tr>
<tr>
<td>Uzbekistan</td>
<td>88.5 TWh/year</td>
<td>593 GW</td>
<td>1.6 GW</td>
</tr>
</tbody>
</table>

Source: OSCE, 2022

Organization for Security and Co-operation in Europe
Electricity mix in Central Asia

Kazakhstan
- Coal: 0.1%
- Natural Gas: 8.7%
- Oil: 2.2%
- Hydro: 67.3%
- Solar, Wind, etc.: 21.7%

Kyrgyzstan
- Coal: 9.1%
- Natural Gas: 90.9%

Tajikistan
- Coal: 8.2%
- Natural Gas: 1.6%
- Solar, Wind, etc.: 90.1%

Turkmenistan
- Coal: 100%

Uzbekistan
- Coal: 0.7%
- Natural Gas: 7.5%
- Oil: 4.0%
- Hydro: 87.8%

Central Asia
- Coal: 43%
- Natural Gas: 34%
- Solar, Wind, etc.: 22%

Total generation in Central Asia

Organization for Security and Co-operation in Europe
Renewable energy and emission reduction targets

**RE:**
- 2030: 15% of elec. gen.
- 2030: 9GW of capacity

**NDC (w.r.t 1990):**
- 15-25% ↓ CO₂ 2030

**RE:**
- 2030: 40% of final consumption
- 2030: 25GW of capacity

**NDC (w.r.t 2010):**
- 2030: 35% ↓ CO₂/GDP

**RE:**
- no quantified target

**NDC (w.r.t 2010):**
- 20% reduction in CO₂

**RE:**
- (excl. large hydro): n.d.: 10% of elec. gen.

**NDC (over baseline):**
- 2030: 16% ↓ CO₂ (uncond.)
- 2030: 44% ↓ CO₂ (cond.)

**RE:**
- (excl. large hydro): 2030: 10% of elec. gen.

**NDC (w.r.t 1990):**
- 2030: 30-44% ↓ CO₂ (uncond.)
- 2030: 40-50% ↓ CO₂ (cond.)

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Notes:
elec. = electricity
gen. = generation
cap. = capacity
cond. = conditional
uncond. = unconditional
w.r.t. = with reference to
Labour force participation in Central Asia vs EU

Figure 6.
Labour force participation (% of population ages 15-64)

Source: ILO/World Bank Data, 2019
Share of women graduates in energy-related fields

Figure 7.
Share of women graduates in energy-related fields

Source: World Bank Open Data
Energy sector workforce in Central Asia (1)

Figure 8.
Estimated share of women in the energy sectors of Central Asian countries

- Central Asia: 16%
- Kazakhstan: 25%
- Kyrgyzstan: 18%
- Tajikistan: 10%
- Turkmenistan: 21%
- Uzbekistan: 12%
Energy sector workforce in Central Asia (2)

Table 3.
Estimated levels of current employment in renewable energy

<table>
<thead>
<tr>
<th>Country</th>
<th>Hydropower</th>
<th>Solar photovoltaic</th>
<th>Wind</th>
<th>Biogas</th>
<th>Solar heating / cooling</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kazakhstan</td>
<td>2,379</td>
<td>430</td>
<td>533</td>
<td>23</td>
<td>-</td>
<td>-</td>
<td>3,365</td>
</tr>
<tr>
<td>Kyrgyzstan</td>
<td>2,000</td>
<td>30</td>
<td>-</td>
<td>60</td>
<td>20</td>
<td>150</td>
<td>2,260</td>
</tr>
<tr>
<td>Tajikistan</td>
<td>6,793</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>6,793</td>
</tr>
<tr>
<td>Uzbekistan</td>
<td>2,961</td>
<td>1,150</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>4,111</td>
</tr>
<tr>
<td>Total</td>
<td>14,133</td>
<td>1,610</td>
<td>533</td>
<td>83</td>
<td>20</td>
<td>150</td>
<td>16,529</td>
</tr>
</tbody>
</table>
Projected employment in renewables to 2050, by scenario

- Ambitious scenario
- Current targets
- BAU - business as usual
Implications for workforce development, Central Asia

The energy transition will not happen if skilled labour is not available in sufficient numbers.
Barriers to entry into the renewable energy sector in Central Asia

1. Prevalent hiring practices (preference for male candidates)
2. Cultural and social norms (gender stereotypes)
3. Lack of gender diversity targets (hiring quotas, overall workforce target)
4. Lack of awareness of opportunities (among women)
5. Limited ability to move or travel for work (family support, social responsibilities)
6. Prejudices about women’s capabilities (technical capabilities, physical strength requirement)
7. Inadequate workplace policies for work-life balance
8. Self-perception (lack of confidence)
9. Lack of the right STEM background
10. Lack of the right non-STEM background

“I prefer to hire men in projects involving field work. They tend to be technically sound and easier to work with. I believe that the demand for female perspective is already fulfilled through my guidance”

Source: OSCE Survey on the Participation of Women in the Sustainable Energy Sector in Central Asia, 2022
OSCE supporting Just Energy Transition in Central Asia

Data & Analysis
Surveys, research, interviews: 400+ stakeholders

Capacity Building
100+ women and girls trained to drive the energy transition

Policy development
Supporting governments in Just Energy Transition
Recommendations

01. Initiating an inclusive and participatory energy transition, leveraging the comparative advantages of Central Asian countries;

02. Enhancing the collection of gender-disaggregated data in the energy sector;

03. Providing better support for women in acquiring the necessary skills to participate effectively in the energy transition;

04. Establishing workplace environments that are responsive to women’s needs and priorities;

05. Strengthening regional cooperation in energy transitions.

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