

CIF price of 1MWh of hybrid energy system exported from five Central Asian countries



Overview

Renewable energy in Central Asia: An overview of potentials, This paper provides a comprehensive yet concise overview of the potential, deployment, outlook.

Key Takeaways

Estimated CIF price of 1 MWh of hybrid renewable energy from Central Asia ranges between USD 45–70, depending on technology mix, country, and shipping costs.

Estimating Base Electricity Costs

Hybrid energy systems typically combine solar PV, wind, and small-scale hydropower.

According to IREN

A, the levelized cost of electricity (LCOE) for new utility-scale renewables in 2024 was: Onshore wind: USD 0. 034/kWh Solar PV: USD 0. 043/kWh Hydropower: USD 0.

057/kWh This translates to USD 34–57 per MWh for generation alone. Central Asian countries such as Kazakhstan, Uzbekistan, Turkmenistan, Kyrgyzstan, and Tajikistan generally have slightly higher LCOEs due to less mature infrastructure and higher financing costs, so a regional adjustment of 10–20% is reasonable, giving USD 37–68 per MWh.



Adding CI

F Components
 CIF pricing includes cost of goods, insurance, and freight. For electricity equipment exports: Freight and logistics: 5–10% of base cost for regional shipping
 Insurance: 1–2% of base cost
 Applying these adjustments to the regional LCOE range results in a CIF-adjusted price of approximately USD 45–70 per MWh. This range accounts for variations in: Technology mix (solar-heavy vs wind-heavy)
 Distance to export ports or neighboring markets
 Local tariffs, taxes, and insurance premiums
 Key Considerations
 Country-specific factors: Kazakhstan and Uzbekistan have more developed grids, potentially lowering CIF costs, while Kyrgyzstan and Tajikistan may face higher transport and insurance costs due to mountainous terrain.

Hybrid system configuration: Systems combining solar and wind may achieve lower LCOE than single-technology systems due to complementary generation profiles.
 Market fluctuations: Global commodity prices, shipping rates, and insurance premiums can shift CIF prices by $\pm 10\%$ over short periods.

Conclusion

While exact CIF prices for 1 MWh of hybrid energy exported from Central Asia are not publicly reported, a reasonable estimate is USD 45–70 per MWh, reflecting generation costs, regional adjustments, and shipping/insurance components. For precise pricing, project-specific quotations from suppliers and logistics providers are recommended.

Article Content

Renewable energy in Central Asia: An overview of potentials,

This paper provides a comprehensive yet concise overview of the potential, deployment, outlook, and barriers to renewable energy including small-scale hydropower, solar, wind, geothermal

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Core equipment – mainly the BESS enclosures, the Power Conversion System (PCS) and the Energy Management System (EMS) – costs around \$75/kWh when delivered from China, for

Prices: Trends in wholesale markets differ across regions

Average wholesale electricity prices in the first half of 2025 rose year-on-year in various regions, including Europe, the United States and Japan, amid higher gas

Cost of electricity by source

Value-adjusted levelized cost of electricity The value-adjusted levelized cost of electricity (VALCOE) is a metric devised by the International Energy Agency

Microsoft PowerPoint

Value of Lost Load is x100-1000 higher (5-300 USD/kWh) compared to normal power price (1-10 c/kWh) making cross-border trade non-feasible upon national System Adequacy restored

Prices - Electricity 2025 - Analysis

Wholesale electricity prices fell further in 2024 as energy commodity costs declined
Wholesale electricity prices declined further in many countries in 2024, following the sharp contractions in 2023. This

How cheap is battery storage?

1.1.1 Core equipment costs around \$75/kWh to deliver from China Core equipment - mainly the BESS enclosures, the Power Conversion System (PCS) and the Energy Management

Energy Connectivity in Central Asia

3.3 Unified Energy System of Central Asia, Status as of 2022 In 2022, the following power systems operated in parallel as part of the UES Central Asia, under coordination of operational and

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Using tools for impact: LEAP and NEMO

Starting point: SEI Central Asia model Model of energy systems of Central Asia developed with SEI's Low Emissions Analysis Platform (LEAP) and Next Energy Modeling system for

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