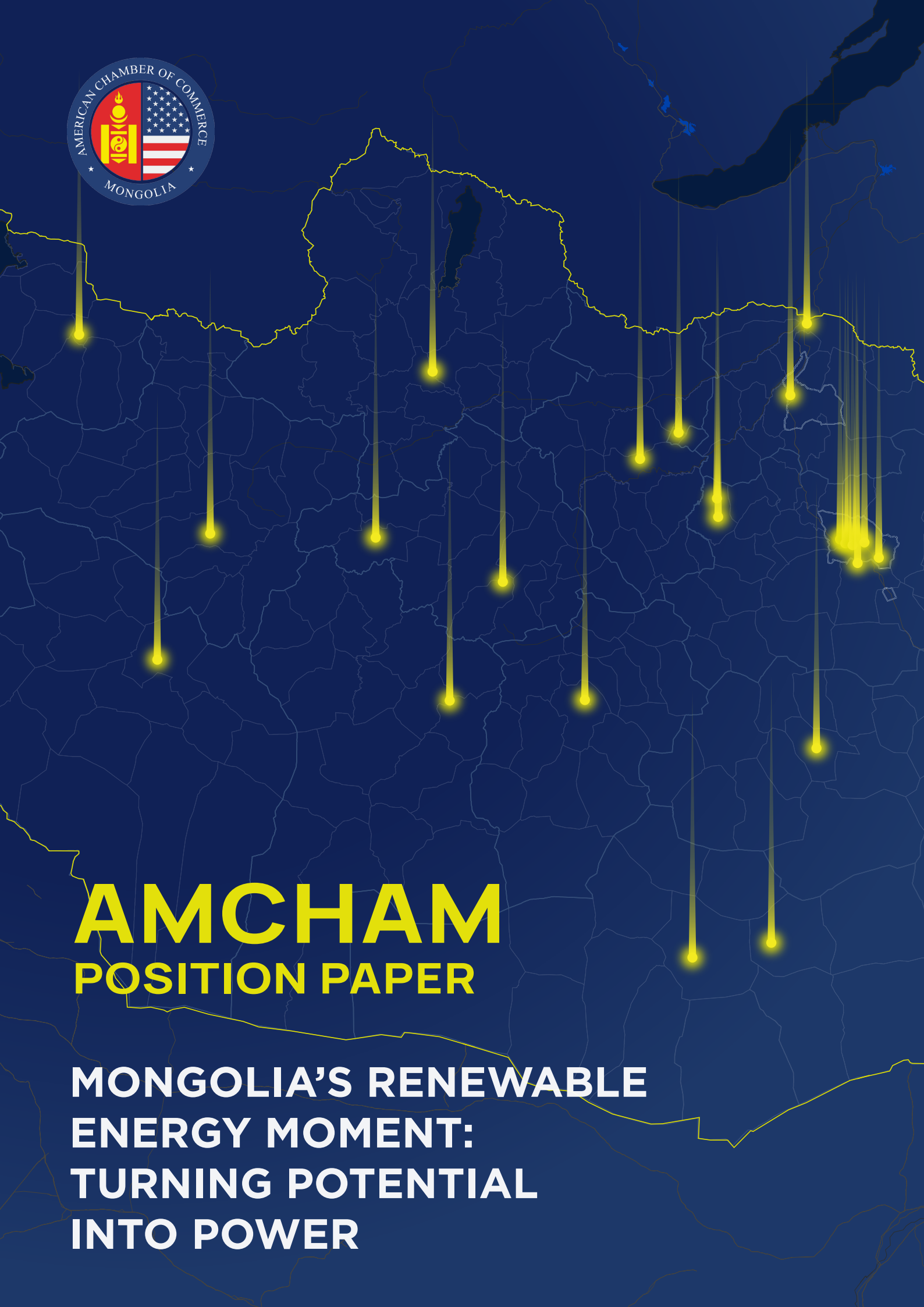


AMCHAM
POSITION PAPER

MONGOLIA'S RENEWABLE ENERGY MOMENT: TURNING POTENTIAL INTO POWER

INTRODUCTION

Mongolia stands at an inflection point in its energy history. Blessed with one of the world's richest endowments of solar, wind, and other renewable resources, the country could transform its energy sector, enhance national security, and drive sustainable economic growth. Yet, despite this immense potential, renewables currently make up a fairly modest share of the energy mix, while dependence on coal and imported electricity persists.

This paper explores the current situation, legal and policy frameworks, ongoing reforms, opportunities, challenges, comparative lessons from neighbors, and policy recommendations for accelerating Mongolia's renewable energy transition, ensuring that promise becomes delivered power.

INTRODUCTION

CURRENT SITUATION AND CONTEXT

Mongolia's unique geological landscape gives it very high potential for generating renewable energy, even though renewable electricity production currently makes up only **about 9% of its energy mix**. Its wind energy resource alone has been estimated at approximately 1.1 terawatt electrical (TWe), with a possible annual electricity output of around 2,550 terawatt-hours.

Beyond wind, the country's combined wind and solar potential could generate up to 5,457 TWh of clean electricity each year—roughly **63 % of China's total electricity generation** in 2022—**according to the Asian Development Bank**. This positions Mongolia not only as a prospective clean energy exporter within Northeast Asia but also as a likely recipient of Chinese solar exports, which are expected to surpass domestic consumption by 2030.

To date, the total installed capacity of renewable energy in Mongolia is 311 MW, of which 10 solar power plants with a total capacity of 130 MW, 3 wind power plants with a total capacity of 155 MW, and 6 hydroelectric power plants with a total capacity of 26 MW supply electricity to the grid. A total of 772.6 million kWh of electricity will be generated and supplied from these sources in 2023.

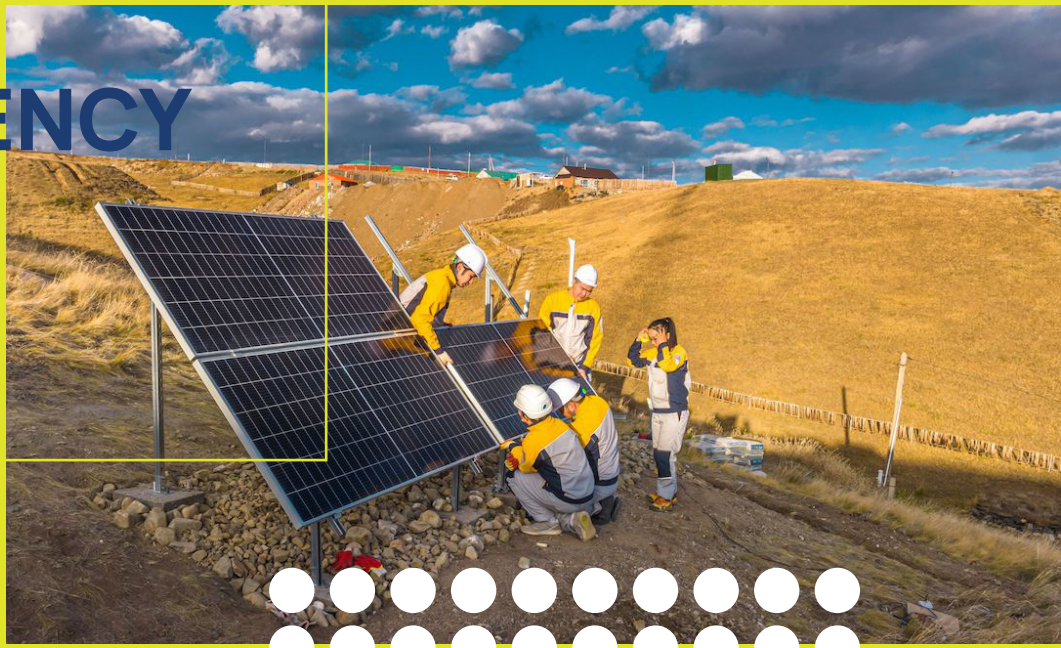
Renewable energy accounts for 17.4 percent of installed capacity, underscoring deep infrastructure, regulatory, and investment barriers. In this context, clean energy, including hydrogen, renewables, storage, and grid modernization, is rising to the forefront of national priorities.

Electricity from these solar plants is sold into the grid at 483–588 MNT per kWh (≈ 14.2–17.3 ¢) and from wind farms at 320–323 MNT per kWh (≈ 9.4–9.5 ¢), which is 4–6 times higher than the average tariff of combined heat and power plants. However, Mongolia's coal-fired energy sector remains heavily subsidized by the government, keeping coal-generated electricity artificially cheaper than renewable energy. In the 2024 budget amendment, 131 billion MNT in subsidies was allocated to support the energy sector, including measures to prepare for winter, build up safe coal reserves, purchase imported power, reduce tariff losses, and gradually cover outstanding debts such as supplier payments, taxes, and social insurance contributions - steps aimed at stabilizing finances and ensuring reliable energy supply.

A 90 MW hydropower facility is being built on the Khovd River in Erdeneburen soum, Khovd province. Of the total US$288.5 million needed for construction, $274 million will be financed by a concessional loan from China as part of a US$1 billion package, with the remainder covered by the state budget.

ENERGY AND AUTONOMY:

MONGOLIA'S QUEST FOR SELF-SUFFICIENCY



Mongolia's energy system remains heavily dependent on fossil fuels, especially coal, for domestic electricity generation and on imported power to meet total demand. The country's total installed electricity capacity is just over 1,927 MW, and the vast majority of that capacity is tied to fossil fuels, with coal-fired combined heat and power plants dominating both capacity and actual generation.

Thermal coal plants account for 82.1 percent of the installed capacity, while renewables such as wind (8.05%), solar (8.05%), and small-scale hydropower (1.4%) make up a much smaller share of the system. Overall, renewables account for about 18 percent of total installed capacity and contribute under 10 percent of actual electricity production.

82.1% THERMAL COAL PLANTS

8.05% WIND RENEWABLES

8.05% SOLAR POWER

1.4% HYDROPOWER

In absolute terms, wind farms have about 155 MW of capacity, solar contributes a similar amount, and hydropower and diesel generators make up only a small fraction of the total. Domestic generation still falls short of full demand, and in recent years Mongolia has relied on imports of electricity from Russia and China to cover the gap, with imported power supplying roughly one-quarter of total electricity consumption in 2024. Domestic sources supplied about three-quarters of that total, with the rest met through imports. Much of the domestic generation share comes from coal-based combined heat and power plants, while renewable energy sources make up the remainder of production.

Since 2000, the Government of Mongolia has pursued a number of renewable energy initiatives, most prominently the 100,000 Solar Ger Electrification Program (2000–2012), which successfully equipped nomadic herder households with modern energy through solar home systems and the enactment of the **Law on Renewable Energy** in 2007 (later amended in 2015), which created a regulatory framework, including a U.S. dollar-based feed-in tariff, that enabled the development of roughly 137 MW of renewable power generation capacity.

Mongolia must both expand its energy capacity and diversify its sources to meet rising demand, and this need has been formally recognized as integral to national security; accordingly, the country's **2010 National Security Concept,** the most recent iteration of this policy document, included a dedicated sub-chapter on energy security as a key element of economic security. In Article 3.4.2.2 of that Concept, Mongolia set out a goal to ensure reliable energy and fuel supplies by 2020 through the development of cost-effective, environmentally responsible domestic energy production, utilizing coal alongside renewable resources such as solar, wind, hydroelectric, and biofuels to satisfy growing consumption.

In diversifying energy sources, Mongolia places importance of increasing renewable energy capacity. In June 2015, Mongolia's Parliament approved the **State Policy on Energy**, which established strategic targets to raise the share of renewables in the country's total power generation capacity to 20 percent by 2020 and further to 30 percent by 2030.

In 2024, Mongolia's domestic power generation supplied 75.4 percent of total electricity demand, while the remaining 24.6 percent was met through imports, primarily from Russia and China. Combined heat and power plants (CHPs) dominated domestic generation, accounting for 90.6 percent of output, while renewable energy sources contributed 9.4 percent. Within the renewable electricity generation, wind power represented the largest share at 62.8 percent, followed by solar power at 28.2 percent and hydropower at 9.0 percent.

While national import dependence averages about one-quarter, reliance varies sharply by region. Mongolia's electricity system is not a single, fully integrated national grid but consists of several regional energy systems with differing levels of self-sufficiency. **The Western Energy System**, supplying Khovd, Uvs, and Bayan-Ulgii provinces, operates largely in parallel with the Russian power system. These provinces are geographically remote from the Central Energy System and have very limited domestic generation capacity. The Durgun Hydropower Plant in Khovd Province, with a capacity of approximately 12 MW, provides only a small share of local electricity demand. As a result, historically more than 70 percent of electricity consumption in the western provinces has been met through imports, with hydropower covering only around 25–30 percent of regional needs.

Although an overall import dependence of 24.6 percent may appear not high when compared to other import-reliant countries, Mongolia's situation is shaped by structural and climatic factors. Imports, particularly from Russia, are indispensable not only to fully supply the Western Energy System but also to support the Central Energy System during peak demand

periods. This dependence becomes especially critical in winter, when Mongolia's severe climate, combined with Ulaanbaatar being one of the coldest capitals in the world, drives a sharp increase in demand for both heating and electricity, making reliable cross-border power supplies essential to prevent shortages.

Beyond its technical and economic dimensions, this energy dependence has direct implications for Mongolia's strategic autonomy and foreign policy. Heavy reliance on external energy supplies from its two immediate neighbors constrains Mongolia's strategic flexibility and limits its ability to pursue fully independent foreign policy decisions. These structural vulnerabilities extend into the diplomatic sphere, as illustrated by Mongolia's careful navigation of highly controversial international issues. In such contexts, overt alignment or explicit criticism risks undermining energy security and economic stability, often leading Mongolia to adopt cautious, neutral, or deliberately ambiguous positions. Energy dependence therefore functions as a core determinant of Mongolia's international behavior, underscoring that energy security is not merely a technical or economic concern but a central pillar of national sovereignty and foreign policy autonomy.

Imports from Russia and China

24.6%

75.4%

Mongolia's domestic power generation

COMBINED HEAT AND POWER PLANTS

90.6%

9.4%
RENEWABLE ENERGY SOURCES

62.8%
WIND RENEWABLES

28.2%
SOLAR POWER

9.0%
HYDROPOWER

INTERNATIONAL COMMITMENTS AND LEGAL FRAMEWORK

While coal continues to dominate the energy mix, the government has set increasingly ambitious climate and energy goals under Vision 2050 and the New Revival Policy, including a 30 percent renewable energy share in installed capacity by 2030. Moreover, under the Paris Agreement of the United Nations Framework Convention on Climate Change, Mongolia has committed to reduce its greenhouse gas (GHG) emissions by 22.7 percent by 2030 compared to projected "business-as-usual" levels, equivalent to around 16.89 million tons of CO_2-equivalent. This includes a specific reduction target of 8.34 million tons in the energy production and supply sector by 2030.

Within this framework, Mongolia is implementing medium- and long-term policies and objectives to expand renewable energy development, enhance energy efficiency, and support a low-carbon transition appropriate to the country's sustainable development priorities.

The Renewable Energy Law was approved by the Parliament of Mongolia and amended severable times including major amendments in 2015 and 2019. This legal framework transitioned Mongolia from fixed feed-in tariffs to competitive auctions to attract cost-effective. This system has not yet been implemented.

With the adoption of the Law on Renewable Energy, the Energy Regulatory Commission issued special licenses to 39 legal entities between 2008 and 2018 to develop renewable energy facilities with a combined installed capacity of 1,352.4 MW.

Under the Renewable Energy Law, developers are required to obtain a license from the Energy Regulatory Commission (ERC) pursuant to Article 7. The ERC then approves

a USD-denominated feed-in tariff based on the project's investment payback period, in accordance with Article 11. Amendments adopted in 2019 introduced tariff caps of USD 0.085/kWh for wind power and USD 0.12/kWh for solar photovoltaic projects. Prior to these amendments, tariffs ranged between USD 0.08–0.095/kWh for wind and USD 0.15–0.18/kWh for solar PV.

Once the tariff is approved, developers enter into a power purchase agreement (PPA) with the National Dispatching Center (previously the National Power Transmission Grid before the 2019 amendment). Article 11 also establishes a renewable energy support tariff charged to end users. Under the single-buyer model, distribution companies collect this surcharge together with electricity bills and transfer the funds into a zero-balance account administered by the National Dispatching Center, which is used to make daily payments to renewable energy producers.

The 2019 amendment further introduced a competitive auction mechanism for renewable energy projects (Article 4), although this system has not yet been implemented, and imposed project implementation guarantee requirements in the form of bank guarantees or cash deposits. All PPAs are required to include such guarantees in accordance with Article 10.

Renewable energy projects also benefit from tax incentives, including exemptions from value-added tax under Article 13 of the Value Added Tax Law (as amended on 18 December 2015) and exemptions from import duties under Article 38 of the Customs Tariffs and Customs Duties Law, as amended on the same date.

The 2019 amendments to Mongolia's Renewable Energy Law introduced competitive bidding for renewable energy generation projects, requiring them to be selected based on technical criteria established by the Ministry of Energy and competitive price offers from developers. Under this framework, the Government's 2024-2028 Action Plan foresees phased competitive selection of up to 200MW of solar and 300MW of wind power capacity, aligned with the technical capabilities of the energy system and future planning priorities. Since 2011, electricity tariffs for the mining sector have been set and applied separately from those for general business consumers. In 2024, electricity consumption was distributed as approximately 26 % for households, 43 % for businesses, and 31 % for the mining sector.

ENERGY REFORM EFFORTS

Following the 2024 parliamentary elections, a coalition government formed by the MPP, DP, HUN Party, and Civil Will–Green Party committed to comprehensive energy sector reforms, addressing legal frameworks, tariff structures, and institutional organization. To improve coordination, the National Committee on Energy Reform was formed in 2024 but was dissolved after the coalition collapsed in June 2025.

In 2025, the government established Erchist Mongol SOE LLC as a centralized holding entity to consolidate 44 non-mining state-owned enterprises, including major energy producers, distributors, and grid operators such as the National Dispatching Center, Ulaanbaatar Heat Network, Thermal Power Plants II, III, and IV, and the National Power Transmission Grid Company. A July 2025 resolution introduced structural reforms to ensure reliable operations, reduce costs, eliminate overlaps, and enhance efficiency. Western Region Energy System SOE and Altai-Uliastai Energy System SOE were merged into National Power Transmission Grid SOE, consolidating nine SOEs and eight branch operations into four streamlined entities. While this reduced redundancy and improved coordination, institutional fragmentation—particularly in tariff setting, regulatory stability, and SOE accountability—remains a barrier.

LEGAL REFORM

Despite over 15 amendments, the Energy Law of 2001 lacked structural modernization. Parliamentary Resolution No. 80 established a working group to draft comprehensive legal reforms. In June 2025, the Cabinet submitted a draft to clarify project selection, pricing, energy delivery, and ownership transfer, alongside amendments to the PPP and Debt Management Laws. The draft, however, proceeded without broad consultation, introduces a new "energy project" concept limited to non-renewable grid-connected developments, and allows project-specific PPP agreements, raising potential legal conflicts. Licensing authority would shift from the ERC to the Ministry of Energy, with a minister-led working group overseeing project selection, tariffs, financing, and transfer conditions.

The Minister of Energy of Mongolia approved a revised Regulation on Project Selection for the Construction of Renewable Energy Generation Facilities by Order No. A/217 on 9 September 2025, which lays out updated procedures for publicly announcing, evaluating, and selecting renewable energy generation projects and governs contractual arrangements with developers. The revision narrows eligibility from all renewable energy sources over 1 MW under the 2020 regulation to only solar and wind projects connected at 6 kV or above.

Key changes include extending the minimum public announcement period to 45 days, requiring project owners to publish evaluation criteria and provide performance guarantees, and mandating detailed feasibility and environmental studies. Participants must submit standardized documentation including legal registration, financial history, and experience, and a defined methodology for calculating project technical and economic costs is introduced. The project selection process now includes preliminary, technical, and financial evaluation stages with specific scoring rules, and winners must conclude an agreement within five working days of notification. The revised regulation also tightens dispute resolution by requiring complaints to be resolved within five working days and corrective measures implemented promptly.

TARIFF REFORM

Electricity generation costs averaged MNT 285 per kWh in 2024, while end-user tariffs were MNT 216, resulting in MNT 1.8 trillion in accumulated debt. The ERC implemented a three-tier residential tariff, raising average electricity costs to MNT 280 per kWh. Heating tariffs in Ulaanbaatar, currently covering only 40% of actual costs, were postponed until January 2026, while industrial tariffs are set to double. Adjustments to water tariffs are scheduled from September 2025. These measures, though fiscally necessary, may strain household budgets in the short term.

WHEN POLITICS SETS THE PRICE

Mongolia's energy market operates under a Single Buyer Model, in which a central buyer purchases electricity from generators and resells it to distributors. This structure limits competitive pricing and prevents electricity prices from being determined purely by market forces, giving the government a dominant role in tariff setting and overall pricing policy.

Energy pricing is an extremely sensitive political issue, as it directly affects the cost of consumer goods and services. As a result, politicians have often been reluctant to support tariff increases due to concerns over public backlash. This political constraint has contributed to persistent financial losses in the state-owned, SOE-dominated energy sector, as tariffs have long been maintained below cost-recovery levels. At the same time, energy producers argue that tariff adjustments must reflect rising operational and input costs, emphasizing that current prices are insufficient to sustain normal operations.

Under Article 26.2 of the Law on Energy, Mongolia applies a fundamentally "cost-plus" methodology for setting electricity and thermal energy prices, based on production costs. Over time, the Energy Regulatory Commission has amended this methodology multiple times. In 2014, it introduced price indexation through the "Regulations for Indexing Energy Prices and Tariffs," incorporating broader macroeconomic factors. The current "Methodology for Setting Prices and Tariffs for Electricity and Thermal Energy" was approved by ERC Resolution No. 504 on May 31, 2024, replacing earlier regulations adopted between 2014 and 2017. Between 2002 and 2024, changes in tariff-setting methodology resulted in 12 adjustments to electricity and thermal energy tariffs.

Despite these revisions, **a substantial gap remains between actual energy costs and end-user tariffs.** The real cost of electricity

is approximately 280 MNT per kilowatt-hour, while prior to the tariff adjustment at the end of 2024, the average tariff charged to households, businesses, and organizations stood at 216 MNT. Household tariffs were particularly low, averaging 140 MNT per kilowatt-hour—roughly half of the actual cost. A similar imbalance exists in the heating sector: the cost of thermal energy is around 63,000 MNT per gigacalorie, yet it is sold to consumers in Ulaanbaatar at an average price of 33,800 MNT. Residential heating tariffs are set at 506 MNT per square meter, compared to 800–1,024 MNT in provincial centers.

As a consequence of tariffs being kept well below cost-recovery levels, the coal mining, coal transportation, and energy sectors have collectively incurred annual losses of approximately 355 billion MNT as of 2024. Accumulated short-term debt has reached 357 billion MNT, severely undermining financial stability and disrupting normal production and maintenance activities across the sector. These structural and financial weaknesses have translated directly into operational stress. During winter peak periods, the energy system operates at full capacity in emergency mode, without sufficient backup equipment and under high operational risk.

Despite high expectations for energy reforms, Mongolia continues to experience frequent blackouts that significantly disrupt both businesses and households. Throughout January 2026, the National Dispatch Center was forced to ration electricity to prevent a complete blackout of Ulaanbaatar, intensifying public frustration. Many citizens and businesses argue that higher energy prices have not delivered improved reliability, highlighting a clear disconnect between reform promises and actual outcomes. Without the construction and commissioning of new large-capacity power plants, the sector will remain unable to meet growing demand, making supply restrictions increasingly unavoidable.

In this context, while a favorable energy tariff may not be the sole determinant, it remains a decisive factor for attracting private investment, particularly in renewable energy. Although renewable energy development has been encouraged through special licensing regimes and relatively high feed-in tariffs, these measures have yet to produce a significant increase in electricity supplied to the market. Cheap energy prices that are kept significantly below the real cost of production distort market incentives and weaken the economic foundation of the sector, making it unattractive for both domestic and foreign investors to finance much-needed infrastructure renovation and capacity expansion.

Because tariffs do not reflect cost-recovery levels, power producers operate at a loss and depend on subsidies, discouraging investment in modernizing plants and expanding generation capacity. As a result, domestic production has lagged behind growing consumption, forcing the country to increasingly rely on expensive energy imports, including electricity from Russia and China, which strains public finances and undermines Mongolia's long-term energy autonomy and resilience. In this way, the link between artificially low prices, limited investment, and rising import dependence highlights a core structural challenge: without pricing that more accurately reflects true costs and sends clear market signals, the energy sector will continue to struggle to attract capital, modernize infrastructure, and ensure reliable supply.

OPPORTUNITIES

Mongolia is accelerating its renewable energy transition through a combination of domestic initiatives and international collaborations, aiming to diversify its energy mix, enhance grid reliability, and advance low-carbon power generation. Late in 2025, the Mongolian Parliament approved a nationwide green energy transformation led by the "100,000 Solar Gers" Initiative, which seeks to equip 100,000 ger-area households with solar panels, electric heating, and battery storage by 2035. The program simplifies grid connections, allows households to receive quarterly payments for excess electricity, and enables participation in carbon markets, promoting both energy access and sustainable economic development. In January 2026, Deputy Prime Minister Enkhbayar Jadamba engaged with U.S. renewable energy companies to attract investment, discuss ongoing energy reforms, and highlight opportunities for public-private cooperation.

In the past, renewable energy project developers independently planned and developed new renewable energy sources based on their own assessments. However, the government has now decided to allocate certain new projects to private developers according to the country's energy needs and policy priorities as outlined in key national energy plans and strategic documents. These projects will be awarded through competitive auctions, where private developers bid based on price and other criteria, including technical specifications for the specific project. The auction framework has not yet been finalized, so the government is receiving technical assistance from international institutions such as the International Finance Corporation (IFC) and the Asian Development Bank (ADB).

Mongolia is partnering with international financial institutions to expand utility-scale renewable energy projects. **The International Finance Corporation (IFC)** serves as lead transaction advisor for the country's first competitively tendered renewable energy independent power producer (IPP), supporting a ~100 MW wind project designed to reduce coal dependence, cut emissions, create jobs, and establish a replicable model for future renewables. Mongolia and the **European Bank for Reconstruction and Development (EBRD)** are collaborating to deploy up to 300 MW of solar and 200 MW of wind capacity with energy storage and transmission infrastructure by 2028, using competitive auctions, technical assistance, and strategic planning to enhance grid reliability and reduce fossil fuel reliance. Meanwhile, **the Asian Development Bank (ADB)** provides transaction advisory services for the Stable Solar Energy in Mongolia Project, which plans approximately 115 MW of solar PV capacity and 65 MW/237 MWh of battery energy storage systems across the Western and Eastern Energy Systems. As one of Mongolia's largest renewable energy procurements—and its first combined solar plus storage auction—this project strengthens energy security, improves renewable integration, and expands access to affordable clean energy in remote areas.

Together, these coordinated domestic and international efforts demonstrate Mongolia's commitment to energy security, clean power expansion, and sustainable economic growth. With vast solar and wind potential, the country is increasingly attractive to foreign investors. However, the design and levels of energy tariffs, including feed-in tariffs and other pricing mechanisms, remain critical for investment viability. While initial tariffs helped attract foreign capital, developers emphasize that more competitive and predictable pricing structures could further enhance Mongolia's renewable energy investment appeal, ensuring long-term profitability and stability.

SALKHIT WIND FARM:

MONGOLIA'S FIRST PRIVATELY FINANCED RENEWABLE ENERGY PROJECT

Clean Energy LLC, established in 2004, is a pioneer in Mongolia's renewable energy sector as the country's first private investment company focused on wind power. At a time when Mongolia's energy system relied heavily on coal, the company demonstrated that large-scale renewable projects could succeed through private investment and international cooperation.

This vision materialized in the Salkhit Wind Farm, which achieved several national firsts: it was the first renewable energy generator connected to the central grid, the first independent power producer in the sector, and the first utility-scale renewable project developed with private investment. It was also registered as the largest Clean Development Mechanism project with the United Nations. The USD 120 million project attracted major investors, including Newcom Group, General Electric Pacific PTE Ltd, European Bank for Reconstruction and Development, and the Netherlands Development Finance Company, signaling strong international confidence in Mongolia's renewable energy potential.

The wind farm has a 50 MW capacity, powered by 31 GE 1.6-82.5 turbines. It introduced advanced infrastructure, including a 27 km 35 kV cable network, the country's first 110 kV gas-insulated substation in a thermo-block building, a thyristor-controlled static VAR compensator for grid stability, and a SCADA system for remote monitoring. Construction began in 2011, with major works starting in April 2012. About 95 percent of the more than 4,000-person workforce were Mongolian nationals, boosting local employment and skills. Commercial operations commenced in June 2013.

By 2014, Salkhit supplied 174 million kWh of clean electricity—around 3 percent of the central region's consumption—enough for 80,000 households. The project reduced coal use by 122,000 tons annually, saved 1.6 million tons of fresh water, and cut carbon dioxide emissions by 180,000 tons each year.

The success of Clean Energy LLC and the Salkhit Wind Farm highlights how private investment, modern technology, and international partnerships can drive sustainable development in Mongolia. The project remains a milestone in the country's energy transition and a model for future renewable initiatives.

CHALLENGES

Mongolia's renewable energy development is constrained by deep-rooted structural, institutional, and governance challenges that collectively undermine investor confidence and slow sectoral progress. A fundamental obstacle is the condition of the country's power infrastructure. Much of Mongolia's electricity system dates back to the 1960s–1980s, particularly the coal-fired thermal power plants that dominate the Central Energy System. These aging facilities suffer from efficiency losses estimated at 15–25 percent, limited redundancy, and weak interconnection among the Western, Central, Eastern, and Altai–Uliastai grids. As repeatedly highlighted in Mongolia's Energy Master Plans and assessments by the Asian Development Bank, insufficient grid integration and delayed modernization limit the system's ability to absorb and balance variable renewable energy sources such as wind and solar.

Beyond physical infrastructure, excessive government involvement in the renewable energy sector presents a significant institutional challenge. Heavy reliance on discretionary decisions by state bodies or individual officials often results in inconsistent regulatory interventions and unpredictable project outcomes. In many cases, public authorities lack sufficient experience in private-sector business management, commercial risk assessment, and market-driven operations. As a result, decisions on pricing, procurement, project approvals, and implementation are frequently shaped by administrative or political considerations rather than transparent, rule-based market mechanisms. This environment discourages innovation, constrains entrepreneurial initiative, and increases uncertainty for investors seeking to plan long-term projects.

These governance weaknesses are compounded by the failure of state institutions to consistently honor contracts and commitments previously agreed upon in good faith. When government bodies do not fully implement or uphold contractual obligations, legal certainty is weakened and perceptions of regulatory unpredictability intensify. This lack of reliability erodes trust among domestic and international investors, making them hesitant to commit capital — especially in a sector like renewable energy that requires stable policy frameworks and long-term investment horizons.

The consequences of not honoring past agreements extend far beyond the individual contracts themselves. Such actions set negative precedents that can reverberate throughout the investment community and damage Mongolia's reputation as a viable destination for renewable energy projects. Potential partners and developers may interpret these breaches as indicative of a broader regulatory risk, leading them to divert their resources to countries with more predictable institutional behavior. In turn, this dynamic slows the pace of renewable energy deployment, constrains technology transfer, and limits the diversification of Mongolia's energy mix, despite the country's abundant wind, solar, and other clean energy resources.

Addressing these institutional and contractual challenges is essential not only to attract further capital but also to ensure that Mongolia can meet its renewable energy targets and broader economic goals. Strengthening contract enforcement, improving dispute resolution mechanisms, and reinforcing consistent, transparent governance would help signal to investors that Mongolia is serious about supporting sustainable energy development. Without such improvements, the risk remains that investors will remain cautious, and the country's large renewable energy potential will remain under-utilized.

Excessive government involvement in the renewable energy sector can inadvertently hinder the industry's growth by making it overly dependent on discretionary decisions by state institutions or individual officials. In many cases, such officials may lack deep expertise in private sector business management, commercial risk assessment, and market-driven operational dynamics. This can result in inconsistent decision-making, unpredictable regulatory interventions, and a regulatory environment that is perceived as unstable or opaque by private investors. When public authorities play an outsized role in project implementation, it can deter innovative commercial practices and dampen entrepreneurial initiative.

Moreover, heavy government control often means that the pace and direction of renewable energy development are subject to political priorities rather than competitive market forces. Decisions about pricing, procurement, project approval, and contract enforcement can become contingent on administrative discretion, rather than on transparent, rule-based processes designed to attract private capital and expertise. This makes long-term investment planning more uncertain and elevates risk perceptions for domestic and foreign developers considering renewable energy projects in Mongolia.

By reducing direct state intervention and allowing the private sector to operate more freely within a predictable market framework, the renewable energy sector can unlock greater efficiency and growth. A market-oriented approach — where private developers compete under clear regulations, transparent tariff mechanisms, and reliable contract enforcement — encourages innovation, attracts diverse capital sources, and leverages the business acumen and technological expertise that private firms bring. International financial institutions and development partners are already supporting initiatives to expand private sector participation in Mongolia's renewable energy market — such as public-private partnership models that structure competitive auctions to harness private capital and expertise for wind projects.

INTERNATIONAL COMPARISONS: LESSONS FROM KAZAKHSTAN

Countries such as Kazakhstan and Uzbekistan illustrate how renewable transitions can be accelerated through clear auction frameworks, competitive tendering, and grid preparation. In the past decade, both Kazakhstan and Uzbekistan have shifted their national energy strategy to prioritize the development of renewables. These former Soviet republics share many similarities with Mongolia, like aging communist era energy infrastructure, primarily located on the Eurasian steppe, and an overreliance on fossil fuels. All 3 nations have prioritized the development of solar and wind power projects to hasten the transition from carbon-based fuels to clean energy.

Kazakhstan's green energy transition emphasizes auctions to choose projects, investor bankability, and grid flexibility to allow for variability in solar and wind electricity production because of weather conditions. The Kazakh government awards clean energy contracts to the organization that bids the lowest, which has the effect of standardizing the industry's competitive tendering and decreasing prices through competition. Additionally, **it is easier for prospective investors** to receive loans from banks because projects demonstrate a clear and dependable revenue stream. On the other hand, **Mongolia has begun a process** to move towards auction but still relies on paying a fixed tariff once the renewable project has been built. This has the unintended consequence of making the process unpredictable and financially unstable if contractors' finances are weak, tariffs are too low, or contracts aren't standardized industry-wide.

Kazakhstan's electricity generating infrastructure supports a rapid expansion of renewable energy sources by absorbing the variability caused by a lack of wind or sun at certain points in the year. This is evidenced by the fact that in the past 4 years, the country's share of energy production sourced from green sources rose from 2% to 7%. Mongolia's power grid is vulnerable to shortages and lacks the flexibility and capacity to rapidly adapt to solar and wind. Mongolia will need to balance its long-term goal of achieving carbon neutrality with the need for consistent power at all times in the present.

Kazakhstan shows that the swift implementation of renewable energy depends on the accessibility to procurement, consistent contracts, and an electrical grid that can adapt to fluctuating energy production from renewable sources. For Mongolia, the problem is not resource potential, with an estimated capacity of 5,457 TWh from solar and wind renewables, which would supply all of Mongolia's energy needs, but grid capability and readiness, and mechanisms to reduce investor risk. Kazakhstan's model demonstrates how auction processes and predictable revenue streams from green projects can encourage private investment. Mongolia will only capture these benefits if it can find alternative sources of energy, like solar and wind, to fulfill its total energy needs.

CONCLUSION

Mongolia's vast renewable energy resources present an extraordinary opportunity to transform its energy sector, strengthen national energy autonomy, and contribute to global climate goals. Yet, converting this promise into practical power generation requires overcoming deep-rooted structural, institutional, and financial hurdles. Through thoughtful policy reform, strategic international cooperation, and decisive market-oriented actions, Mongolia can chart a future in which its renewable energy potential becomes not only an engine of domestic growth but a critical pillar in the broader regional energy landscape.

POLICY OPTIONS AND RECOMMENDATIONS

To unlock Mongolia's full renewable energy potential, attract broader private and foreign investment, and ensure the sector's sustainable growth, a comprehensive policy approach is essential. While Mongolia has set ambitious targets and begun implementing reforms like competitive auctions and new renewable project planning, persistent barriers, especially around tariff design and investor confidence, must be addressed to accelerate progress.

1. REFORM AND STRENGTHEN TARIFF STRUCTURES TO REFLECT REAL COSTS AND MARKET DYNAMICS

A critical step is to overhaul energy pricing mechanisms so that tariffs more accurately reflect the real costs of renewable generation and grid integration, while ensuring returns that are attractive to investors. Mongolia initially used relatively high feed-in tariffs to jump-start renewable investments; these supported early interest but are increasingly outdated as technology costs fall and competitive mechanisms become more necessary.

- Tariffs should be adjusted to more closely align with long-term cost structures of solar and wind projects, including maintenance, financing costs, and risk premiums.
- Phased tariff guarantees (e.g., for 15–20 years) and inflation-linked adjustments will give developers the revenue stability needed to secure financing.
- Consider hybrid tariff models that blend feed-in security with market price participation to balance investor confidence and market competitiveness. By moving from arbitrary fixed rates toward cost-reflective pricing, Mongolia can improve fiscal sustainability and better signal predictable returns.

2. FULLY IMPLEMENT COMPETITIVE AUCTIONS WITH TRANSPARENT RULES

Competitive auctions are internationally recognized as one of the most effective ways to discover cost-efficient renewable prices and stimulate private investment. Mongolia has taken initial steps toward auction-based procurement for wind and solar, including technical assistance from institutions like the International Finance Corporation (IFC) to prepare competitive tender frameworks.

- Develop clear, published auction rules that specify eligibility, bid evaluation criteria, price caps, and transparency requirements well before each auction cycle.
- Maintain regular and predictable auction schedules to reduce uncertainty and allow developers to plan pipelines.
- Include penalties for non-performance and requirements for financial viability to avoid speculative bids that cannot be executed.

Transparent auctions will attract competitive bids, lower project costs, and enhance system credibility with international investors.

3. LIBERALIZE MARKET FRAMEWORKS TO ENCOURAGE COMPETITIVE PURCHASING

Mongolia's current Single Buyer Model centralizes power purchasing through a state entity, which can limit price competition and distorts market signals. Opening the market to a broader set of buyers, including large industrial consumers, would help diversify revenue streams and deepen the market.

- Allow qualified end users (e.g., commercial and industrial sectors) to enter direct power purchase agreements (PPAs) with renewable generators.
- Gradually transition toward a wholesale competitive electricity market where prices reflect supply-demand fundamentals.
- Introduce ancillary service and balancing markets that reward flexibility, grid support, and storage integration.

A more competitive market reduces dependence on a single purchasing entity and gives renewable developers more options for monetizing output.

4. UPGRADE GRID INFRASTRUCTURE AND INTEGRATION CAPABILITIES

Even with sound tariff and market reforms, the grid's capacity to absorb variable renewable energy (VRE) is critical. Mongolia's existing transmission system reflects older infrastructure and is not yet fully optimized for high shares of wind and solar, which can result in curtailment and reliability challenges.

- Invest in transmission backbone improvements to connect renewable-rich regions with major load centers.
- Prioritize energy storage solutions (e.g., utility-scale batteries) that help smooth variability and maintain grid stability.
- Implement advanced grid management technologies (e.g., smart grid, demand response) to increase flexibility and lower integration costs.

Strategic grid investments will ensure that renewable capacity additions are supported by reliable operational frameworks.

5. STRENGTHEN REGULATORY PREDICTABILITY AND CONTRACT ENFORCEMENT

Investors require certainty and trust in regulatory environments. Inconsistent rules, unpredictable tariff adjustments, or weak enforcement of contracts discourage long-term capital commitments.

- Enhance enforcement of existing PPAs and renewable project agreements to build confidence in Mongolia's legal environment.
- Establish independent or specialist energy arbitration mechanisms to resolve investor-government disputes efficiently.
- Regularize tariff setting processes to limit political discretion and base adjustments on transparent, measurable criteria.

Improved regulatory certainty would reduce perceived risk, particularly for foreign developers weighing Mongolia against alternative markets.

6. INCENTIVIZE DIVERSE COMMERCIAL MODELS AND PRIVATE SECTOR PARTICIPATION

To unlock new types of projects and financing models, Mongolia should encourage a broader set of renewable business structures.

- Support public-private partnership (PPP) frameworks that clearly allocate risks and rewards between the state and investors.
- Facilitate distributed generation and community renewable projects with clear rules for grid interconnection and compensation.
- Enable virtual power purchase agreements (VPPAs) and corporate renewables procurement to diversify revenue sources for developers.

These measures broaden the investment base and introduce innovative financing mechanisms that can accelerate deployment.

7. LEVERAGE INTERNATIONAL PARTNERSHIPS AND CLIMATE FINANCE MECHANISMS

Global financial institutions (e.g., IFC, European Bank for Reconstruction and Development) are actively supporting Mongolia's renewable transition through auction design, project preparation, and financing.

- Expand collaboration with multilateral development banks to structure bankable projects that meet international investment standards.
- Use blended finance and guarantee mechanisms to attract private capital while minimizing risk for early-stage renewable projects.
- Explore access to carbon pricing and green bond markets tied to Mongolia's Paris Agreement commitments to lower cost of capital.

International financial tools can bridge gaps in domestic financing capacities and catalyze larger-scale renewable development.

8. BROADER ECONOMIC PLANNING

Long-term strategic alignment ensures that renewable reforms support Mongolia's wider economic and climate goals.

- Coordinate tariff reforms with Mongolia's Vision 2050, 2030 renewable targets, and commitments under the Paris Agreement.
- Establish cross-sector policy coherence (energy, industrial, climate) to reinforce mutual incentives for green investment.
- Integrate planning for emerging sectors such as green hydrogen into tariff and grid strategy frameworks.

Policy coherence helps manage tradeoffs and ensures that reforms amplify economic, environmental, and energy security goals.