



**ASIAN INFRASTRUCTURE
INVESTMENT BANK**

Energy Sector Strategy: Sustainable Energy for Tomorrow

Nov. 22, 2022

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Background and Acknowledgements

On June 15, 2017, the Board of Directors of the Asian Infrastructure Investment Bank (AIIB) recorded its support for "Energy Sector Strategy: Sustainable Energy for Asia" (Strategy). The Strategy was developed through an iterative, consultative process, including two rounds of public consultations. AIIB wishes to thank all the parties who provided comments for their valuable contributions.

On April 11, 2018, the Board of Directors approved revisions to the Results Monitoring Framework (Annex), which replaced the preliminary Framework in the Strategy.

On November 22, 2022, the Board of Directors approved additional updates to the Strategy, which are reflected in this version of the Strategy. As in the case of the 2017 Strategy, these updates were developed through an interactive consultative process, including public consultations.

Abbreviations

bcm	billion cubic meters
BECCS	bioenergy with carbon capture and storage
CCS	carbon capture and storage
CCUS	carbon capture, utilization and storage
CDR	carbon dioxide removal
CEIU	Complaints-resolution, Evaluation and Integrity Unit
CO ₂	carbon dioxide
COP	The Conference of the Parties
DACCS	direct air carbon capture and storage
ESF	Environmental and Social Framework
FI	Financial Intermediary
GDP	gross domestic product
GHG	greenhouse gas
GRM	Grievance Redress Mechanism
GW	gigawatt
GWh	gigawatt-hour
IEA	International Energy Agency
IPCC	International Panel on Climate Change
LNG	liquefied natural gas
LTS	long-term low greenhouse gas emission development strategies
MDB	multilateral development bank
Mtoe	million tons of oil equivalent
MW	megawatt
MWh	megawatt-hour
NDCs	Nationally Determined Contributions
NO _x	nitrogen oxides
OECD	Organisation for Economic Co-operation and Development
PM	particulate matter
PPP	public-private partnership
R&D	research and development
SDG	Sustainable Development Goal
SOE	state-owned enterprise
SO _x	sulfur oxides
T&D	transmission and distribution
UN	United Nations
UNSD	United Nations Statistics Division
USD	United States Dollar
WHO	World Health Organization
WtE	Waste-to-Energy

Energy Sector Strategy: Sustainable Energy for Tomorrow

Energy is central to nearly every major challenge and opportunity the world faces today. Be it for jobs, security, climate change, food production or increasing incomes, access to energy for all is essential. Sustainable energy is opportunity – it transforms lives, economies, and the planet.

United Nations on Sustainable Development Goal 7 – Affordable and Clean Energy

Introduction

1. Energy services are vital to economic activity, social development, and quality of life. They fuel the economy and facilitate the operation of factories and businesses. They are essential to deliver goods and services and to meet people's mobility needs. Finally, they contribute to social development and wellbeing, increase gender equality, and are crucial to lifting vulnerable people out of poverty. How we produce, distribute, and consume energy services impacts societies' ability to achieve these essential activities sustainably. The United Nations (UN) Secretary-General has noted: "We have a double imperative – to end energy poverty and to limit climate change. And we have an answer that will fulfil both imperatives: affordable, renewable, and sustainable energy for all."¹
2. The Asian Infrastructure Investment Bank (AIIB) developed its Energy Sector Strategy (Strategy) to help its Members meet societal demands for essential energy services, facilitate their transition to a low- or zero- carbon energy system, and to support its vision of a prosperous Asia² based on sustainable development and regional cooperation. The Strategy focuses on *Sustainable Energy for Tomorrow*, and its objective is to provide the framework, principles, and operational modalities to guide AIIB's energy sector engagement, including the development of its project pipeline and subsectoral lines of business.
3. The Strategy was first formulated in 2017 with revisions to the Results Monitoring Framework approved in 2018. This 2022 update to the Strategy reflects AIIB's Corporate Strategy (2020), including its mission of *Financing Infrastructure for Tomorrow* and the transitioning environment in the energy sector, and pays particular attention to strengthening AIIB's guidance on fossil fuels.
4. Recent years have seen elevated climate change commitments and actions from both governments and the private sector. This necessitates the scaling up of investments in clean and resilient energy infrastructure and reviewing the conditions for fossil fuel investments. The multilateral development banks (MDBs), including AIIB, continue to be at the forefront of addressing climate change. Following the joint announcement at the 2019 UN Secretary-General's Climate Summit to align their financings with the goals of the Paris Agreement, MDBs have each individually committed to their respective Paris

¹ UN Secretary-General António Guterres' remarks to the High-level Dialogue on Energy on Sept.24, 2021.

² In this document, references to "Asia" and "Region" include the geographical regions and composition classified as Asia and Oceania by the United Nations, and the Russian Federation.

Alignment timeline. Specifically, AIIB will align all its new financing operations with the goals of the Paris Agreement by July 1, 2023 through application of a rigorous project appraisal process that draws on the Paris Alignment assessment framework developed jointly by MDBs.³ AIIB has also set the target to reach or surpass a 50 percent share of climate finance in its actual financing approvals by 2025.

5. The Strategy embraces and is informed by the principles underpinning the 2030 Agenda for Sustainable Development, particularly Sustainable Development Goal 7 (SDG 7), and the Paris Agreement (Box 1).

Box 1: Global Initiatives

The **2030 Agenda for Sustainable Development** is a set of 17 aspirational "Sustainable Development Goals" with 169 targets, developed under UN auspices and involving 193 UN Member States and global civil society. The goals are contained in paragraph 54 of the UN General Assembly Resolution A/RES/70/1 of Sept. 25, 2015. One of those goals, Sustainable Development Goal 7 (SDG 7), calls for ensuring access to affordable, reliable, sustainable, and modern energy for all by 2030. SDG 7 is inherently linked with SDG 13, Climate Action. It is also interconnected with several other SDGs due to the far-reaching social, economic, and environmental impacts of modern energy services.

The **Paris Agreement's** central aim is to strengthen the global response to the threat of climate change by "holding the increase in the global average temperature to well below 2 degrees Celsius above pre-industrial levels and pursue efforts to limit the temperature increase to 1.5 degrees Celsius." The Agreement also aims to make "finance flows consistent with a pathway toward low greenhouse gas emissions and climate-resilient development." According to the Agreement, countries shall publicly outline nationally determined contributions (NDCs)⁴ that they intend to achieve for reductions in greenhouse gas emissions. The Paris Agreement was agreed by 197 Parties during the 21st Conference of the Parties (COP21) of the UN Framework Convention on Climate Change in Paris in December 2015, one month before AIIB began operating, and entered into force in November 2016.

The 26th Conference of the Parties in 2021 (COP26) adopted the **Glasgow Climate Pact**, which established a range of items aiming to build resilience to climate change, curb greenhouse gas emissions, and scale up the necessary climate finance. In the lead-up to COP26, more than 120 countries announced new emissions reductions targets by 2030. Governments representing about 70 percent of global emissions pledged to bring those emissions to net-zero by 2050 or soon after. Many governments and financial institutions also adopted restrictive measures toward financing new coal power.

COP26 recognized that the impacts of climate change will be much less severe if the temperature increase is kept to 1.5°C compared to an increase of 2°C and resolved to pursue efforts to limit the temperature increase to 1.5°C. COP26 also recognized that such target requires net zero carbon emissions around mid-century as well as deep reductions of other greenhouse gases (GHG). The conference was the first time that the Parties to a UN Climate Conference explicitly agreed to accelerate the phasedown of unabated coal power.

³ The joint MDB Paris Alignment approach can be found [here](#). Note that as of August 2022, guidance is only available for direct lending. MDBs are in the process to finalize guidance for indirect lending which will be published once available.

⁴ According to Article 4, paragraph 2 of the Paris Agreement, "Each Party shall prepare, communicate and maintain successive nationally determined contributions that it intends to achieve. Parties shall pursue domestic mitigation measures, with the aim of achieving the objectives of such contributions."

The Global Energy Landscape

6. The 2022 update to the Strategy is made on the cusp of a profound transformation of the global energy landscape, driven by ambitious global, regional, and national goals and commitments to shift to a low- or zero-carbon energy system. Meanwhile, concerns are mounting that much of the developing world have still not met their energy security and energy affordability aspirations, and that the global energy system and transition process remain vulnerable to external shocks, such as the COVID-19 pandemic and geopolitical tensions, which further heighten concerns about energy security, accessibility, and affordability. Yet global commitments to combat climate change and recent technological developments give hope that the transformation can lead to sustainability and a just energy transition as well as the concurrent attainment of the goals of energy accessibility, security, affordability.
7. **Energy demand and access.** The growth of global primary energy demand in 2010-2019 was slower than during the previous decade but continued to be driven by non-members of the Organisation for Economic Co-operation and Development (OECD) with their demand increasing at an average annual rate of 2.5 percent while that of OECD members contracted by 0.2 percent annually.⁵ Energy access has improved but progress varies widely across countries and falls far short of the pace required to achieve universal access to affordable and reliable modern energy services by 2030 as required by SDG 7. Furthermore, the COVID-19 pandemic has brought about increased poverty, reversing the progress that has been made on both electricity and clean cooking access in 2020-2021.⁶
8. **Market volatility.** For several decades, energy security and price volatility have been a source of concern, particularly for low-income countries. Energy prices have risen rapidly from the record low levels of 2020 to a record high in 2022 as a result of supply and demand uncertainties exacerbated by the continued impact of the pandemic and the geopolitical tensions. Price volatility has also been high during this period. The international economy and energy markets are seeking a new balance. Volatile and rapidly rising energy prices accelerate inflation, cause uncertainty surrounding energy investment decisions, harm economic growth, and have a particularly detrimental impact on energy-importing countries. The situation is expected to have a profound influence on long-term energy policy making globally.
9. **Climate change.** The energy sector's interaction with climate change is two-fold: on the one hand, energy sector activities are directly impacted by climate change. Not only is the sector vulnerable to the adverse impacts of climate change such as droughts, floods, extreme weather events, and rising sea levels, electricity supply and demand are also becoming increasingly weather-dependent. The management of climate-related risks needs to consider and reduce vulnerability, which necessitates adaptation investments to strengthen climate resilience of the energy system. On the other hand, the energy sector is also the largest contributor to anthropogenic climate change, making it the pivotal sector to respond to climate change and economy-wide decarbonization. Its role in addressing climate change has gained unprecedented global recognition in recent years, further driving the search for innovative solutions and the development, deployment, and uptake of low carbon technologies.

⁵ IEA data and statistics.

⁶ IEA. 2022. SDG7: Data and Projections. Paris.

10. **Technology and electrification.** Significant technological advancements have taken place in recent years leading to the sharp fall in the cost of renewable energy, along with improvements in processes and technologies that increase energy efficiency and reduce emissions. Innovative business models have matured to develop smart and sustainable demand-side solutions and facilitate the rise of prosumers⁷ as new energy sector players. These combine new technologies with existing infrastructure, in such areas as distributed generation, virtual power plants, or infrastructure for electric mobility. The electricity subsector plays an increasingly critical role in this ongoing energy transition, which will gradually change the structure of the energy mix and ultimately lead the way to net zero carbon emissions globally. Solar and wind power have already become competitive in most markets. On the other hand, further cost reductions and technological breakthroughs of some key enabling technologies—such as energy storage, hydrogen, and digital solutions—are still required, particularly to facilitate renewable energy integration.
11. Although carbon dioxide removal (CDR) technologies are not yet a feature in the global energy landscape, they are expected to play a crucial role in counterbalancing residual GHG emissions in many recognized mitigation pathways. There is therefore rising interest in the development and deployment of emission abatement methods such as carbon capture and storage (CCS) for bioenergy, CCS with fossil fuels, and direct air carbon capture and storage (DACCS).

Issues and Challenges

12. The issues and challenges that Asian countries confront in their energy sectors are largely similar to those facing most non-OECD countries – they are driven by the need for affordable, sustainable, and reliable energy systems to support national, regional, and global economic growth and human development.
13. The region's energy demand grew at a rate of 2.4 percent per year from 2010-2019, almost twice the global rate, on the back of population growth and economic development that supports improvement of living standards. As a result, the region's increase in energy demand during this period accounted for 94 percent of the global increase (Table 1). It is worth noting that 96 percent of Asia's growth in demand was driven by developing countries. China and India together represented over 54 percent of Asia's total demand. It is expected that Asia's energy demand will continue to rise at an annual rate between 0.6 percent to 1.6 percent in the next decade.⁸

⁷ “Prosumer” is defined as an individual/household/entity/facility that both produces and consumes energy.

⁸ IEA. 2021. World Energy Outlook. Paris.

Table 1: Total Primary Energy Demand (Mtoe), 2010-2019

By Region	2010	2019	CAAGR* 2010–2019	% of total in Asia
Asia	6,516	8,081	2.4%	100.0%
China	2,536	3,389	3.3%	41.9%
India	667	938	3.9%	11.6%
Russia	693	773	1.2%	9.6%
Türkiye	106	147	3.7%	2.0%
OECD Asia	918	866	-0.6%	10.7%
Rest of Asia	1,596	1,968	2.4%	24.3%
World	12,813	14,486	1.4%	-

* CAAGR – Compounded Annual Average Growth Rate

Source: IEA data and statistics, 2010-2019.

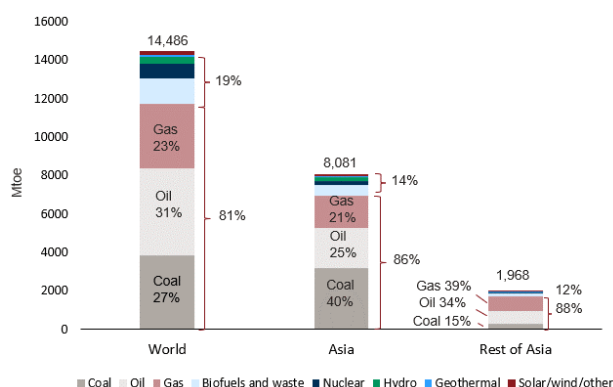
14. While the rapid rise in energy demand reflects economic and social progress, the benefits of modern energy are not yet available for all in Asia. Meanwhile, strong energy demand is the source of several challenges. Therefore, the following issues in the region call for AIIB's attention: (i) energy access and affordability; (ii) energy sustainability; (iii) energy security and market stability; (iv) transitioning to clean energy.
15. **Energy access and affordability.** The level of access to modern energy in Asia has improved markedly over the years, but a significant number of people still lack modern energy services to support their basic needs and improvement of living standards. The deficit is concentrated in low- and lower-middle-income countries, mostly in their rural and hard-to-reach areas. Between 2011 and 2019, the number of people without electricity in Asia was reduced by more than three-quarters from 633 million to 146 million people. This represents an average regional electrification rate of 97 percent.⁹ When constrained by affordability and technical design, however, electrification often provides only for basic human needs. Electricity consumption per capita in Asia's low-income countries is only a fraction of the world average. In addition, the power systems of many countries do not meet the standards for reliability required by sophisticated equipment and the connectivity needs of households and businesses. Therefore, the mission of electrification is toward delivering electricity services for all to facilitate the realization of full human and economic development potential. The clean cooking agenda has advanced more slowly than electrification with 1.3 billion people in Asia still relying on traditional biomass, unprocessed coal, and kerosene for home cooking in 2019. This represents 69 percent rate of access to clean cooking in the region.¹⁰ These fuels expose their users, particularly women and girls engaged in household work, to indoor pollution and the consequent detrimental health impacts. Time spent on fuel collection also deprives them of alternative employment and schooling opportunities. The lack of access also relates to the issue of energy affordability, which continues to be a key concern in Asia, especially in low-income countries where the energy bill takes up a much larger proportion of household income compared to developed economies. This renders many households in the region vulnerable to price shocks and other market distortions.

⁹ The World Bank's Global Electrification Database (GED). The region considered is based on the UN breakdown including Central and Southern Asia, Eastern Asia and South-eastern Asia and Oceania. It excludes Middle East and Russia.

¹⁰ <https://trackingsdg7.esmap.org/>. Data excludes Oceania, Middle East and Russia.

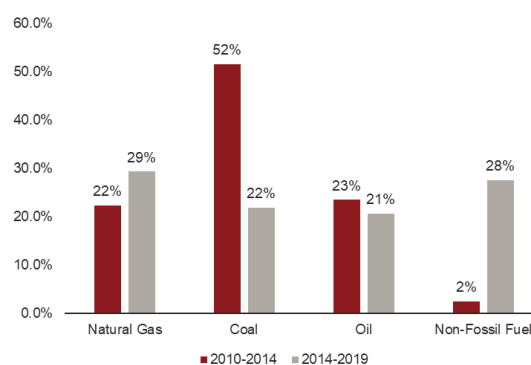
16. **Energy sustainability.** Despite growing diversification, 91 percent of Asia's energy demand increase during 2010–2019 was met by fossil fuels. In 2019, Asia's reliance on fossil fuels was 86 percent—5 percentage points higher than the global average (Figure 1), though a notable shift can be observed in the growth portfolio during the latter part of the decade. Non-fossil fuels represented a mere 3 percent of the supply increase from 2010–2014, but the period from 2014–2019 saw the share increase to 28 percent. Meanwhile, there was a growth of natural gas use while the share of coal in incremental supply declined sharply (Figure 2).

Figure 1: Dominance of Fossil Fuels (2019)¹¹



Source: IEA data and statistics, 2019.

Figure 2: Source of Incremental Energy Supply (2010-2019)¹²



Source: IEA data and statistics, 2010-2019.

17. Economic growth and energy use are linked, but a gradual divergence of the growth rates of economic activities and energy demand can be observed in most of the world. Modernization and deliberate energy efficiency measures, as the main drivers for the decoupling, are pivotal for energy sustainability. Energy intensity in Asia declined steadily during 2000–2018 and reached 5.1 megajoules per USD (constant 2017 GDP), indicating improved energy efficiency. However, it remained higher than the worldwide average of 4.8 megajoules per USD. SDG 7 sets a target for energy intensity to decrease by 2.6 percent per year.¹³ Regionally, this reduction rate target has been achieved in most of Asia, except for Western Asia, Oceania, and Russia, where annual energy intensity reduction ranges between 1.1 percent to 2.3 percent during 2015–2018. In view of the slow progress at the early monitoring period, the SDG target was revised upwards in 2018 to 3 percent.¹⁴
18. Asia's intensifying demand for energy coincides with the growing urgency of addressing climate change and environmental degradation. As a result of fossil fuel combustion and inefficient energy use, Asia's energy-related CO₂ emissions grew at twice the global average, at 2.4 percent in 2010–2019. In 2019, the region accounted for 62 percent of the global total energy-related CO₂ emissions.¹⁵ Continued increase

¹¹ For figure 1, "Rest of Asia" refers to Asia (see footnote 2) excluding China, India, Russia, Türkiye, and OECD Asia.

¹² Note that less than one percent of incremental supply was met by other sources including cross-border electricity trading.

¹³ Tracking SDG 7 – The Energy Progress Report, available at <https://trackingsdg7.esmap.org>.

¹⁴ Sources: IEA. 2020. World Energy Balances and Energy Statistics Database 2018. United Nations, New York, 2020, combined by and available at <https://trackingsdg7.esmap.org/results>

¹⁵ IEA. 2021. World Energy Outlook 2021, Table A.26, Paris. Here, the region refers to IEA's categorization, including Asia-Pacific, Eurasia and Middle- East

in emissions could give rise to significant physical climate risks which will affect Asia's people, assets, and economic development more than other regions. For example, the intermediate emission scenario of the Intergovernmental Panel on Climate Change (IPCC) expects South Asia and Central Asia to experience 7-15 times greater GDP losses than Europe due to water stress, heat waves, and other physical events.¹⁶ To address the climate imperative, mitigation must be regarded as a global concern and measures need to be pursued concurrently to bring down GHG emissions in the energy sector. Furthermore, air pollution, owing to extensive fossil fuel uses, also affects Asia disproportionately more than the rest of the world. The region hosts over 95 percent of global observation stations reporting annual mean concentrations of PM₁₀ and PM_{2.5} that exceed ten times the WHO's recommended level.¹⁷

19. Diminishing biodiversity and loss of species are intertwined with the adverse impacts of anthropogenic climate change and local pollution. Human activity, including in the energy sector, is the main contributor to the increasing biodiversity challenges worldwide. According to the regional assessment report on Biodiversity and Ecosystem Services for Asia and the Pacific Region, covering over 60 countries in Asia, the region is home to 17 of the 36 global biodiversity hotspots, eight of the top 10 most plastic-polluted rivers in the world are in Asia, and nearly 25 percent of the region's endemic species are threatened.¹⁸
20. **Energy security and market stability.** Continuing economic development needs to be underpinned by a reliable and stable supply of energy at affordable costs. Energy security is a crucial concern of many AIIB Members and is dependent on local circumstances, including resource endowment, diversity of energy mix, geopolitics, international trade, and level of connectivity, among others. AIIB members include both the world's leading energy exporters and those highly dependent on energy imports. Reliance on fossil fuel imports subjects many to the risks of supply chain disturbances and price volatility. On the other hand, renewable energy is domestic and less exposed to global risks. However, variable renewable energy plants do not supply a consistent flow of electricity the way conventional energy sources do and require other types of resources to balance generation. Development of renewable generation at scale also depends on the availability, prices, and secure supply chains of critical minerals and components. Infrastructure investments in the diversification of energy mix, energy efficiency, decentralized energy, resilient grid systems, energy storage, regional energy connectivity and trade, and flexibility resources to balance variable renewable energy are among the crucial responses to energy security challenges. Facilitating global energy trade and connectivity including between Asia and the rest of the world also forms an important part of these responses.
21. **Transitioning to clean energy.** To achieve the temperature goals of the Paris Agreement and the net-zero and carbon neutrality targets set by AIIB Members, the fundamentals of the region's energy systems must entirely change in the coming decades. This will require AIIB Members to overcome new kinds of constraints, and consider solutions to issues such as uneven resource endowment, inadequate

¹⁶ World Economic Forum. 2022. Available at <https://www.weforum.org/agenda/2022/04/climate-change-global-gdp-risk/>

¹⁷ WHO. 2018. Ambient Air Quality Database. World Health Organisation, Geneva.

¹⁸ IPBES. 2018. The IPBES regional assessment report on biodiversity and ecosystem services for Asia and the Pacific. Karki, M., Senaratna, Sellamuttu, S., Okayasu, S., and Suzuki, W. (eds). Secretariat of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, Bonn, Germany.

supporting infrastructure, shifts in employment opportunities, and the financing gap that could slow the energy transition:

- To fully exploit abundant renewable energy resources, AIIB members can take advantage of technologies and trading mechanisms that support enhanced regional connectivity. Because renewable energy resources are unevenly distributed across the region and within countries, country-specific and regional deployment strategies will be needed. High population density, land topography, and other factors limit renewable energy resource potentials in some members or localities —such as in Bangladesh, Singapore, and island economies—where land availability and cost are critical factors. These challenges can be addressed through long-distance transmission of renewable electricity both within countries and across borders, or increasing adoption of tradable clean hydrogen, ammonia, and synthetic fuels. Transitional fuels, such as natural gas or biofuels in some instances, can also quickly lower the carbon intensity of the energy mix where local constraint is significant.
- The systemic transformation offers opportunities to increase investments in soft and hard supporting infrastructure that enhance the flexibility in the existing generation and grid capacity, such as modifications in the operation and design of electricity markets, development of energy storage, and demand-side responses. Such improvements are necessary to enable a higher share of renewable energy integration in the energy mix and to accelerate end-use electrification. Many Asian countries continue to be burdened with aging and outdated grid systems, which cannot meet the demands set by the energy transition. For example, the transmission and distribution losses in South Asia and some Central Asian countries are estimated to be more than two times higher than the world average.¹⁹
- Substantial new employment opportunities will be created in the clean energy sector, which are expected to outpace job losses in conventional energy sectors. However, the job transfer will not be on a one-on-one basis due to the different requirements for skills and the jobs being located in other areas. The renewable energy sector employed over 7 million people directly or indirectly in Asia in 2019-2020, accounting for 62 percent of global renewable energy employment.²⁰ However, it is estimated that the region will lose around 2 million jobs in the coal sector and 0.2 million jobs in the oil and gas sectors by 2030 if the announced national decarbonization pledges are realized and more if the temperature goals of the Paris Agreement are to be attained.²¹ The impact will be especially pronounced in countries and communities heavily dependent on conventional energy production. Specially designed programs will be needed to meet the social and economic needs of these displaced workers and their communities as well as a wider effort to facilitate a Just Transition that mitigates and avoids negative socio-economic impacts.
- Significant efforts to close the financing gap and redirect capital flows toward clean and sustainable energy investments will be a crucial requirement for such energy

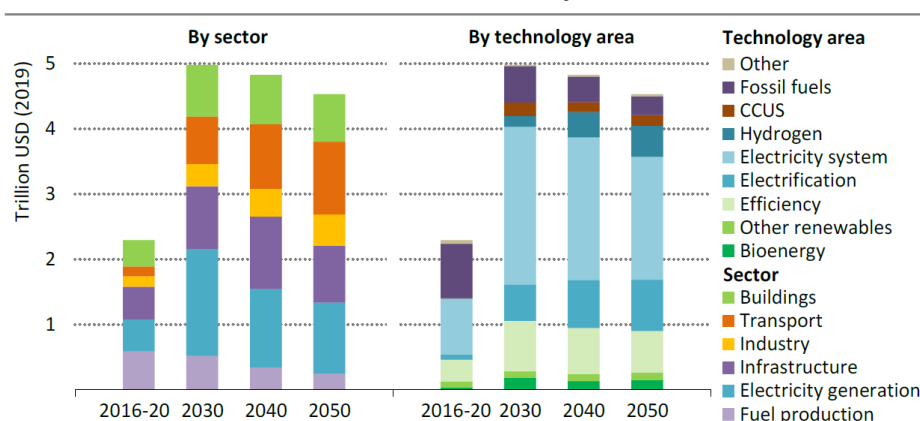
¹⁹ World Bank Data on Electric Power Transmission and Distribution Losses.

²⁰ IRENA. 2021. Renewable Energy Jobs Review. Abu Dhabi.

²¹ IEA. 2021, World Energy Outlook. Paris.

transitions. Of the USD2 trillion global energy investment in 2021, only USD750 billion was invested in clean energy.²² According to IEA's World Energy Outlook scenarios,²³ holding the global temperature rise "well below 2°C" as targeted by the Paris Agreement will require clean energy investments to double their current levels by 2030 and triple if the 1.5°C target is to be achieved. This implies a rapid redirection of investments from conventional energy to clean power generation, electricity infrastructure, energy efficiency, and use of low carbon energy in the building, industry, and transport sectors. In addition, transition investments are considered indispensable for enabling emissions reductions, although they themselves do not deliver zero-emissions energy services. Examples include efficiency or flexibility measures that reduce fossil fuel use, fuel switching away from coal or oil to less polluting alternatives, and gas-fired plants that enable higher penetration of variable renewables. (Figure 3). It is estimated that USD500 billion worth of transition investments are needed annually between 2022 and 2030.

Figure 3: Annual average capital investment in 2016-2050 under IEA's net-zero by 2050 scenario



Source: IEA. 2021. *Net-zero by 2050 – A Roadmap for the Global Energy Sector*. Paris.

The nature of energy asset ownership in developing economies suggests that energy transition will elevate the role of private financing as fossil fuel investments, which are mainly sponsored by governments or state-owned enterprises (SOEs), decline. It is estimated that private financing, from both domestic and international sources, will meet more than half of the investment needs to achieve clean energy transition. Meanwhile, traditional energy conglomerates and SOEs are already pursuing a major shift in corporate strategies and business modalities to redirect investments in view of the potential transition risks and vast opportunities associated with decarbonization. They will also be crucial players to facilitate a just transition. Governments, MDBs and other development institutions, while serving as important sources of financing, need to be at the forefront to mobilize and enable sustainable financing to fill the large investment gap.

²² IEA. 2021. *World Energy Investment*. Paris.

²³ IEA. 2021. *World Energy Outlook*. Paris.

Lessons Learned

22. The update to the Strategy has been informed by lessons learned from the implementation of the Strategy and AIIB's energy sector investments during its initial years of operation as well as Early Learning Assessments on energy projects conducted by its Complaints-resolution, Evaluation and Integrity Unit (CEIU). The Strategy also draws lessons from other MDBs which have issued new policies, strategies, and evaluations regarding their energy sector operations during the same period.
23. AIIB's energy sector investments (i.e., debt financing and financial intermediary (FI) investment including on-lending and funds) amounted to over USD5.8 billion over the period 2016-2021, representing 28 percent of AIIB's total regular financing amount²⁴ and making the energy sector the largest infrastructure sector by investment volume. AIIB's energy sector portfolio covers conventional electricity generation, gas, electricity transmission and distribution (T&D), and various types of renewable energy and supporting infrastructure, including solar, wind, geothermal, hydropower, and energy storage.
24. A review of AIIB's project experiences shows that energy sector projects are inherently complex in design and implementation given their multifaceted interactions with other social, economic, and environmental objectives, as well as their wide-ranging implications on the local environment and communities. Successfully implemented projects have benefitted from early assessments of project risks and mitigants, diligent application of the Environmental and Social Framework (ESF), a gradual build-up of staff capacities, and strong collaboration with peer MDBs as co-financiers.
25. Noteworthy lessons for specific subsectors include the following:
 - i) Demand for gas and liquefied natural gas (LNG) investments is growing against the backdrop of AIIB Members' commitments to phase down coal. Gas projects generate specific benefits including enhancing energy security, reducing pollution through coal-to-gas switching, and improving efficiency, but are also subject to increased scrutiny with respect to Paris Alignment;
 - ii) Electricity T&D projects were predominantly in the public sector and generally straightforward in preparation. However, capacity building is required to better understand the value of integrating technological advancements that improve grid efficiency and flexibility;
 - iii) Enabling policy incentives and a conducive environment for the private sector are essential to spur renewable energy investments. Despite significant progress, many AIIB Members are still at an early stage of attracting private financing, indicating the need to deepen partnerships to create better conditions for financing. Moreover, concessional financing continues to be needed to improve bankability, especially in less developed Members. Large-scale renewable energy technologies, such as hydropower, geothermal, and offshore wind, involve

²⁴ The stated energy sector investment amount presents a conservative calculation and does not include energy investment committed under multisector funds. AIIB's regular financing excludes financing support provided under the COVID-19 Crisis Recovery Facility, approved in April 2020.

complex design and implementation arrangements, requiring intensive engagement by AIIB and further development of staff capacity. The increased deployment of solar, wind, and battery storage also poses emerging concerns relating to their environmental and social risks and impacts along the value chains and project cycles.

- iv) Energy efficiency investments, especially on the demand-side, are hindered by weak regulatory frameworks, limited implementation capacity, and fragmentation across infrastructure sectors, which indicates the need for upstream support, innovative business models and a cross-sectoral approach; and
 - v) Financial intermediation is effective in directing additional financial resources particularly to subsectors needing smaller scale financing or in markets where AIIB did not have an established reputation. AIIB investments into energy-focused private equity funds have also allowed an expansion of available equity while undertaking several innovative capital market transactions increasing investor interest in the broader Asian energy sector.
26. MDBs have updated their energy policies and strategies in recent years, particularly with a focus on addressing the evolving trend of decarbonization. MDBs are jointly committed to supporting a Just Transition and have issued a Joint Statement setting out their strategic priorities on this matter.²⁵ They have also tightened conditions for financing fossil fuel-related projects including the notable exclusion of coal and coal-related investments as well as financings to upstream oil and gas. MDBs' updated policies and strategies have also given stronger weight to renewable energy, innovative technologies, digitalization, electrification, and decentralized energy systems while highlighting the need for regulatory reform and new business models as a basis for achieving the desired objectives.

Objective of the Energy Sector Strategy

27. The objective of the Strategy is to provide the framework, principles, and operational modalities to guide AIIB's energy sector engagement, including the development of its project pipeline and subsectoral lines of business. AIIB respects its Members' energy policy decisions and their climate plans and recognizes the challenges to achieving these as posed by periodic turbulences in domestic and international energy markets, fiscal constraints, and supply disruptions. This Strategy aims to guide AIIB's financing decisions and priorities in the sector, not to determine Members' energy policies.
28. The Strategy embraces AIIB's vision, mission, its four thematic priorities, and other institutional goals set out in the Corporate Strategy. It finds inspiration from the 2030 Agenda for Sustainable Development to pursue universal access to affordable, reliable, and modern energy services by 2030. It also aligns with AIIB's commitment to the Paris Agreement.

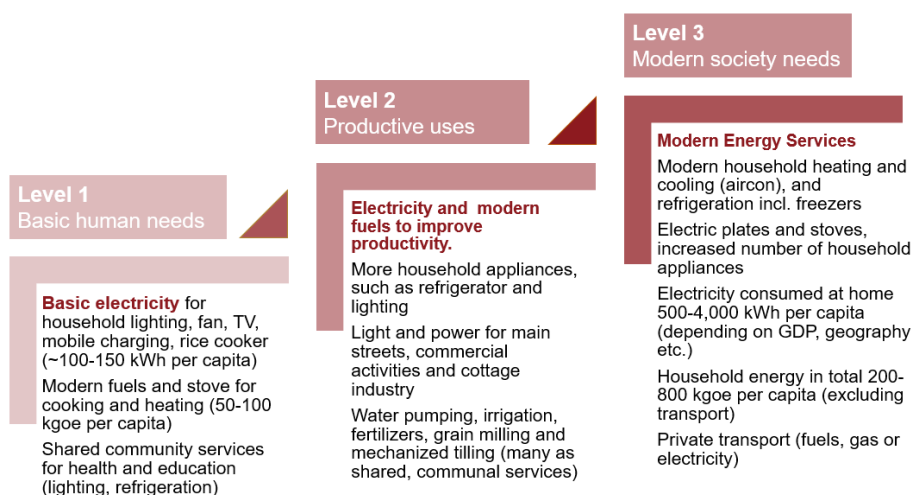
²⁵ MDB Joint Statement on Just Transition High-Level Principles. [MDB-Just-Transition-High-Level-Principles-statement_19.11.2021.pdf \(aiib.org\)](https://www.aiib.org/press-releases/2021/11/19/mdb-just-transition-high-level-principles-statement-19.11.2021.pdf)

29. The implementation of the Strategy will be guided by the strategic and sectoral planning processes of AIIB's Members at the regional, national, and subnational level. AIIB seeks to benefit from the work undertaken by other development partners in the energy sector. Regular monitoring and reporting of portfolio composition will be an important discipline and help build a portfolio that reflects the Strategy and is aligned with AIIB's core values.

Guiding Principles

30. Energy is an indispensable part of modern lives and development aspirations. Accounting for around 64 percent of total global greenhouse gas emissions²⁶, energy is also the dominant contributor to climate change, which poses an existential threat to human beings, especially the most vulnerable. By supporting its Members to transition to a clean energy system, and to address their energy challenges in a balanced and holistic manner, AIIB's energy sector strategy aims to help achieve their long-term climate goals and net-zero/carbon neutrality commitments, to accelerate the just transition towards secure, sustainable, and low-carbon energy access for all. In meeting this goal, AIIB's energy sector strategy will be guided by the following six principles.
31. ***Principle 1: Promote energy access and security.*** Access to affordable and reliable modern energy services is instrumental in underpinning development and expanding economic opportunities for people to improve their lives. It is also a key aspiration of SDG 7. In Asia, lack of such access continues to deprive the most vulnerable people of their basic human needs. Reliance on traditional fuels, especially for cooking and heating, also extends gender inequality and prolongs exposure to health risks. Furthermore, AIIB considers that the access agenda is not limited to last-mile electrification and realizes that the provision of entry-level solutions (Figure 4) alone does not accomplish the mission of SDG 7. AIIB therefore supports its Members in moving to higher service levels of access, ensuring that clean energy services are affordable, of adequate capacity and good quality, available when needed, reliable, convenient, and safe.
32. AIIB recognizes that efforts to promote energy access and security are to be considered under Member's specific context and the long-term Paris-aligned climate pathways for co-benefits to be reaped and for multidimensional developmental impacts to be attained. AIIB also attaches great importance to new technologies and business models in extending modern energy and fostering access and prosperity through the transition process.
33. AIIB will place emphasis on: (i) promoting, directly or indirectly, access to modern energy, including electricity, clean cooking and heating, by those who currently have little or no access; (ii) improving the affordability, reliability, and quality of electricity supply to serve productive uses and modern society needs; and (iii) reducing the negative health impacts caused by indoor combustion of solid fuels.

²⁶ According to the IPCC WG III report on Mitigation of Climate Change (2022), emissions from fossil fuel combustion and industrial processes accounted in 2019 for 38 ±3 GtCO₂-eq of the total GHG emissions of 59 ±6.6 GtCO₂-eq.

Figure 4: Access to Modern Energy Services²⁷

34. **Principle 2: Support transition to a clean energy system.** Energy is the dominant contributor to climate change, accounting for around 64 percent of total global greenhouse gas emissions. AIIB's support to its members to transition to a clean energy system helps them achieve their long-term climate goals and net-zero/carbon neutrality commitments, and therefore plays a crucial, albeit not exclusive, role in AIIB's climate and Paris alignment objectives.
35. AIIB recognizes that the process of transitioning to a clean energy system is already underway and that the deployment strategies for low- and zero-carbon technical solutions reflect its Members' individual primary energy resource endowment, financing capacity, knowledge, and regulatory framework, among other factors. AIIB will support and accelerate its Members' respective transitions toward low- or zero-carbon energy mixes through investments in (i) renewable energy; (ii) enabling infrastructure and system flexibility for low carbon electricity and fuels; (iii) electrification of end-uses, (iv) fuel shifts from carbon intensive fossil fuels such as coal and oil to lower carbon alternatives; and (v) associated efforts to mitigate the adverse social impacts of energy transition and facilitate a Just Transition.
36. Implementing low-carbon pathways toward global net-zero emissions will inevitably lead to gradually reduced levels of operation and closures of fossil fuel-based assets. A Just Transition needs to avoid or mitigate inequitable impacts that would bring about a multifaceted set of social hardships, particularly in Members and communities where fossil fuel sectors constitute a significant share of economic activities. AIIB will seek cross-sectoral opportunities to support Members' affected regions and localities through infrastructure investments to remediate, repurpose and revitalize land and physical assets, improve the general business environment, and reskill the workforce. In this context, AIIB may also support conventional energy companies as they seek to diversify and reorient their businesses into clean energy value chains.

²⁷ Originally from Energy for a Sustainable Future: Summary Report and Recommendations, United Nations Advisory Group on Energy and Climate Change, 28 April 2010, New York, page 13, modified by AIIB in August, 2022.

37. **Principle 3: Realize energy efficiency potential.** International experience and prevailing climate scenarios analysis indicate that energy efficiency measures and investments offer substantial potential to reduce CO₂ emissions expeditiously and cost-effectively. They play a crucial role in achieving the temperature goals of the Paris Agreement – it is projected that attaining the 1.5°C target would require more than doubling global energy efficiency investments (see Figure 3). Prosperity and well-being can no longer be gauged only by the consumption of energy, but should instead focus on the efficient provision and use of the services derived from energy. Given the high energy intensity in most non-OECD countries in Asia, AIIB will help its Members tap the existing large, but dispersed, potential for energy efficiency in their energy infrastructure, industry, buildings, and transport. In this context, AIIB will (i) take a cross-sectoral approach and seek to consider efficiency measures across its infrastructure investments; (ii) develop more tailored financial instruments as it engages with partners, national energy efficiency agencies, project aggregators and financial intermediaries in these areas; and (iii) support generators and utilities to implement energy efficiency measures and programs at existing infrastructure stocks such as electricity generation, power transmission and distribution networks, buildings, heating networks, commercial and industrial facilities, among others.
38. **Principle 4: Manage local and regional pollution.** AIIB will support its clients in reducing, limiting, and mitigating the deleterious impact of pollution. Fossil fuel production, transport, and consumption can have severe negative impacts on the local environment, especially in Asia's densely populated cities. Historically, issues related to local and regional pollution have been addressed mainly by end of pipe solutions limiting SO_x, NO_x, and particulate matters (PM) emissions of fossil fuel-based power generation, especially coal-fired plants, and effluent treatment before discharging wastewater into the environment. While pollution from large energy infrastructure can be controlled through statutory measures, the dispersed energy end uses, such as traffic or household energy, are more challenging to address and often require a shift of energy sources embedded in a systemic transformation. AIIB will (i) support cross-sectoral projects aimed at pollution reduction at the city, national, and regional levels; (ii) support fuel shifts and cleaner energy infrastructure solutions resulting in lower air pollution; and (iii) integrate pollution control and carbon intensity reduction, where relevant.
39. **Principle 5: Mobilize private capital.** This principle reaffirms AIIB's Corporate Strategy thematic priority on *Private Capital Mobilization*, which aims to help close the enormous infrastructure investment gaps in developing Asia through mobilizing private financing both at the project and sector level. For varying reasons, to date, private capital investments in energy and infrastructure have been marginal in non-OECD countries, although partial credits, investment, and country guarantees by MDBs have been instrumental in promoting successful projects. Innovative approaches have also been initiated using grants and concessional financing to reduce the cost of electricity generated under public-private partnerships (PPP) or to improve risk sharing in PPP ventures. AIIB will: (i) explore innovative models, at both project and sector level, to mobilize private investments in energy infrastructure; (ii) build upon the successful experience of and lessons learned by MDBs operating in Asia, especially in PPPs, ensuring that the costs and risks are appropriately shared and distributed; (iii) explore new cooperation modalities with clients and private sector partners to meet Members' needs; (iv) mobilize partnership resources to enhance

client capacities, mitigate project risks, and reduce the cost of capital in high impact areas; and (v) in doing so, avoid crowding out the private sector. When pursuing such opportunities, AIIB will evaluate risk carefully and will put in place appropriate measures to mitigate and manage such risks.

40. **Principle 6: Promote connectivity and regional cooperation.** This principle reflects AIIB's Corporate Strategy thematic priority on *Connectivity and Regional Cooperation*. Regional and in-country connectivity, complemented by regional cooperation, are essential to take advantage of synergies, increase the market size to improve competitiveness, and create a critical mass for cooperative research and development (R&D) and manufacturing capabilities. Efforts deployed by MDBs and bilateral agencies in Asian countries and other regions have had moderate success. AIIB will engage its Members and pursue regional, cross-regional, and domestic connectivity of energy systems, value chains, and virtual platforms, with a view to: strengthening system reliability and flexibility; improving the security and efficiency of energy supply; optimizing the use of resources; fostering greater use of renewable energy; removing energy trade bottlenecks; and reducing adverse environmental and social impacts at the local, regional, and global level.

Implementation

41. The framework, principles, and approach set out by the Strategy will guide both direct and indirect (such as FI) financing of energy sector operations by AIIB. The Strategy will also apply to both regional and nonregional members of AIIB, with the latter being additionally governed by the Strategy on Financing Operations in Non-Regional Members (NRM).²⁸
42. AIIB will continue to report to its Board of Directors on implementation progress through the annual sector strategy implementation update. Recognizing the dynamic nature of the energy sector and the rapid evolution of global agreements on climate change, a review of the Strategy will be conducted no later than 2027 to ensure that it continues to address the needs of AIIB Members, and is consistent with international ambition as well as the Bank's commitments regarding climate change. A review of the Strategy will take into account, for example, the following:
- Advances in scientific knowledge as emerging technology opportunities become available and affordable to accelerate the transition to sustainable energy systems (e.g., power and thermal storage, hydrogen), improve operational efficiency along the power supply chain (e.g., digitalization), and facilitate considered use of fossil fuels by limiting carbon (e.g., through CCS and CCUS) and methane emissions.
 - Changed economic circumstances and the competitive situation between different forms of energy. As demonstrated in the past with solar and wind, it is highly likely that low-carbon, zero-carbon, and enabling technologies will see an increase in competitiveness in the future. The underlying cost reductions can be a result of intensive research and development, increased economies of scale, and technological progress due to accumulating and supply chain-wide experience.

²⁸ AIIB's Strategy on Financing Operations in Non-Regional Members: <https://www.aiib.org/en/policies-strategies/strategies/financing-operations.html>

- AIIB's own evolution in terms of its accrued operational experience, size, reach and market position, expanded staff competences, and development of new types of financing, new financing partnerships, and special fund resources.
43. Application of the guiding principles will take into account, to the extent possible, Members' capacities and constraints given their unique circumstances. AIIB will align its support with Members' energy-related policies and commitments, including NDCs and the long-term low greenhouse gas emission development strategies (LTS). It will also consider science-based international and regional benchmarks set out in Paris-aligned emission pathways by authoritative international climate and energy agencies.
 44. Guided by AIIB's commitment to Paris Alignment and MDBs' joint effort, AIIB will build its staff capacity and integrate relevant adjustments to the project cycle to align all energy investments with both the mitigation and adaptation objectives of the Paris Agreement.
 45. All AIIB supported projects, whether financed directly or indirectly (such as through a FI), are subject to an environmental and social review process to confirm that they meet the policy provisions of AIIB's ESF.

Sectoral Approach

46. **Power T&D.** Power grid infrastructure development will be an essential component of AIIB's mandate to promote connectivity and regional cooperation. Support for the development of T&D infrastructure remains indispensable for the transfer of generated electricity to demand centers without the bottlenecks and high losses that are hampering economic growth in many Asian countries. Such investments are beneficial irrespective of the mix of power generation at the time. MDBs operating in the region have deployed great efforts, but substantial investments are still needed to achieve the SDG 7 targets for access to modern energy and allow for smooth renewable energy integration into power systems.
47. AIIB will support: (i) new T&D projects to increase power systems' resilience to natural disasters and assist members in "leapfrogging" to state-of-the-art T&D technologies, digital solutions, and smart grids to empower consumers, and operate systems efficiently; and (ii) rehabilitation and reinforcement of existing networks to increase their resilience to natural disasters, reduce technical losses, allow smooth integration of variable renewable energy, and improve reliability of supply. Despite the generally lower risk of T&D projects, attention will be paid to their design as to environmental risks, effects on birdlife, and the impact of ecosystem fragmentation. These risks should be avoided or mitigated through early consideration of environmental and social issues in the planning process and use of appropriate technological solutions.
48. **Energy efficiency investments.** The pursuit of higher energy efficiency includes codes and standards for the energy efficiency of appliances, building, and vehicles; consideration of energy efficiency in public infrastructure planning; initiatives for encouraging behavioral changes in consumers; phase out of inefficient fossil fuel subsidies; and energy policies and market regulation that enable and motivate energy efficiency measures and investments in physical infrastructure. AIIB is keenly aware of the wide scope of measures to improve energy efficiency and is working to advance energy efficiency by supporting aggregated demand-side energy efficiency projects

as well as investing in supply-side energy efficiency of generation companies and utilities.

49. Small and fragmented demand-side projects hold a large share of the potential for improving efficiency. AIIB's operating experience and the most successful public and private sector projects supported by MDBs so far show that demand-side energy efficiency can be most effectively supported through project aggregators and FIs. Furthermore, several energy efficiency activities undertaken by MDBs have been supported by grants to build the capacities of FIs that will evaluate potential energy efficiency projects and monitor performance during their implementation. Technical assistance for project developers on energy auditing and appropriate technologies is also useful. In this regard, AIIB will continue cooperating with multilateral, bilateral, and other partners active in the region to address this constraint and to scale up efficiency programs. It is also recognized that smart and digital technologies will be crucial in providing efficiency-improving solutions across the end-use sectors. AIIB will support the development, deployment and promotion of these solutions and technologies through financing.
50. AIIB will proactively support generators and utilities to: (i) improve the use of existing electricity generation stocks through rehabilitation, reduce fuel consumption, raise operational efficiency, introduce predictive maintenance methods, and upgrade regulation systems; (ii) develop and implement loss reduction programs at all levels of the electricity supply chain and demand-side management programs; (iii) design and implement utility-driven final use efficiency initiatives, such as green lighting and improvement in the insulation of buildings; and (iv) enhance the efficiency of district heating networks and extend them to meet the needs of rapidly urbanizing cities. AIIB will also support programs aimed at improving the energy efficiency of commercial and industrial sector facilities and processes.
51. **Renewable energy investments.** Renewable energy is generated partially or entirely from non-depleting domestic energy sources and therefore offers long-term sustainability and energy security. Investments in renewable energy are essential to limit CO₂ emissions and other air and water pollutants associated with fuel combustion. Wind and solar energy will have a major role in this transition. However, the scale of energy demand and the need to manage the increasing variability of generation call for mobilizing all sources and tools of renewable energy, such as hydropower, geothermal and bioenergy, smart grid solutions, demand-side flexibility, and electricity storage.
52. AIIB will support Members to develop renewable energy—hydropower, wind, solar, and other sources—for a swift, smooth, and just transition to a clean and smart power system and to increase access to modern energy through renewables-based decentralized generation and mini- and micro-grids. AIIB will also support renewable energy solutions for heating and cooling in buildings, industrial processes, and transport. To further promote renewable energy development in Members, AIIB will proactively:
 - Support **hydropower** that is technically, economically, and financially viable and environmentally and socially sound, in a manner consistent with the provisions of AIIB's ESF, good practices, and lessons learned from other MDBs operating in Asia and elsewhere. The development of hydropower, of different scales, in an

environmentally and socially sound manner could make an important contribution to sustainable energy supply. This includes multi-purpose, storage reservoir-based, run-of-the-river, and pumped storage hydropower investments. AIIB has already co-financed the upgrading of generation capacity and rehabilitation of existing hydropower infrastructure to improve efficiency and dam safety. It will continue to pursue such capacity upgrading, rehabilitation, and dam safety opportunities at existing facilities, as well as modernization of such facilities, as they arise, where possible in combination with variable renewable energy generation. AIIB will assess the potential for the selective use of floating solar on reservoirs. AIIB's support for the development of hydropower will seek to improve quality, enhance resilience, more comprehensively address environmental and social issues, as well as GHG emissions, including methane, and reduce the risk of these investments for the public and private sector. Given the complexity of hydropower projects, AIIB anticipates that many of them will be supported in partnership with other MDBs.

- Support centralized and decentralized **wind and solar** energy generation. AIIB will continue developing its wind and solar energy portfolio and leverage the rapidly evolving renewable energy markets characterized by a high share of private sector involvement, improving competitiveness and reducing risks as a result of evolving technologies, economies of scale, competition and accruing developer experience. In doing so, AIIB will continue to partner with other MDBs and bilateral agencies to put in place enabling schemes and financing tools in support of private sector participation in this sub-sector. AIIB will also actively promote **distributed generation** (e.g., mini- and micro-grids and rooftop solar programs, distributed electricity generation for commercial and industrial use) with a view to reduce burden on centralized systems, increase renewable energy penetration, and as means to increase energy access and improve reliability of the power supply. In the meantime, AIIB will continue to work with other MDBs and development partners to address the complex and emerging environmental and social issues associated with the rapidly growing development of renewables and their supply chain, including labor and working conditions, ecosystem impacts, and land acquisition, among others.
- Support Members (including possibly high-income economies with sizable variable renewable energy resources and the financial capacity to support them) to develop **innovative and transformative projects**, including electricity storage, offshore wind, and hybrid renewable energy plants, among others. AIIB will explore the development of transformative but still high-cost technologies, such as low- or zero-carbon hydrogen production and concentrated solar power, to contain consumption of fossil fuels and help create a market of scale for such technology. The latter could be done through increased cooperation among Asian economies to tap the synergy of regional technological and manufacturing capabilities and make the renewable energy programs more affordable and replicable at lower cost.
- Support the development of the significant **geothermal** resources identified in many AIIB Members, alone or in partnership with other MDBs and bilateral agencies, through the development of new approaches to reduce resource risks. Sovereign loans to Members or state-owned entities could be considered to

confirm resources prior to requesting private sector proposals for power generation or PPP approaches based on appropriate resource risk sharing.

- Support, when appropriate and sustainable, modern **biomass** technologies to meet Member energy needs, especially in rural areas, and the development of biofuels and biogas, with particular attention to environmental and social impacts, including ecosystems, biodiversity, rural communities, and food security.

53. **Fossil fuel investments.** Due to their current dominance, fossil fuels will inevitably continue to play a role in the energy mix of most AIIB members for some time. However, the Glasgow Climate Pact, adopted at the COP26,²⁹ called on the Parties to transition to net-zero emissions, including accelerating the phasedown of unabated coal power and phase-out of inefficient fossil fuel subsidies. Most AIIB Members have pledged to transform their energy systems to reach net-zero emissions or carbon neutrality. AIIB will consider the unique circumstances of its Members and strive to build an energy sector portfolio that reflects equity and the principle of common but differentiated responsibilities. AIIB commits to appraising all its project operations including fossil fuel projects' alignment to the Paris Agreement goals following the guidance of the joint MDB assessment approach (see footnote 3 for details).
54. **Coal.** In line with its Paris Alignment commitment, AIIB will not finance thermal coal mining, coal-fired power and heating plants or projects that are functionally related to coal. Projects functionally related to coal means associated facilities that are dedicated to enable the mining and use of coal or projects that would not be carried out without dedicated coal-based power supply. To assist members with the reduction of coal use, AIIB will support projects that aim at the early retirement of coal plants, replacement of coal with lower-carbon fuel sources, or projects for decommissioning, remediation, and redevelopment of affected coal facility sites and communities.
55. **Oil.** Considering the high carbon intensity of oil consumption and the availability of private sector financing, AIIB will only support oil sector investments under exceptional circumstances to improve basic energy access and control GHG emissions from flaring and leakage. As such, AIIB may support investments in oil-fired power generation as part of renewable energy hybrid systems to supply clean and reliable energy for small grids in isolated locations, island communities, and temporary disaster response initiatives. Such investments will have to demonstrate that an entirely renewables-based system is not technically or financially feasible. The non-renewable share in the investment and its future operation will also have to be minimized within the limits of financial feasibility and the targeted level of grid reliability. AIIB's support for GHG emissions control is set out in para 59. *Reduction of methane emissions and routine gas flaring along the oil and gas value chains.*
56. **Natural gas.** Increasing natural gas use instead of oil and coal has helped many developed economies reduce carbon emissions and air pollution. The transition strategies of many developing countries in the region also plan for natural gas to play a transitional role in their energy systems, especially in hard-to-abate end-use sectors. Gas-fired power can also offer flexibility for balancing the variability of renewable energy and thus enable a higher share of renewables in the electricity generation mix. However, it is recognized that the transitional role of gas will evolve over time and

²⁹ UN Climate Change Conference in Glasgow (COP 26).

should be carefully assessed within the context of commitments under the Paris Agreement.

57. The dynamics of the world natural gas market are dramatically changing. In the traditional model, countries rely on domestic gas production and regionally traded pipeline gas. In the meantime, LNG trade is considered an alternative source to enhance commercial flexibility and energy security. The market however, is becoming more globalized with increasing LNG trade, as traditional gas producers face diminishing resources and rising demand. The turbulence in international energy markets and the resulting high and volatile LNG prices from late 2021 and through 2022 have undermined the perception of LNG's role in increasing the region's energy security, while natural gas continues to provide energy security for those dependent on domestic resources or stable regional pipeline gas markets. The role of natural gas as a transition fuel is also being reconsidered by those vulnerable to price volatilities vis-a-vis domestic alternatives such as renewable energy and energy efficiency.
58. In this context, AIIB will focus its funding for natural gas investments on transitional projects linked to Members' energy and climate objectives and decarbonization trajectories. The framework for AIIB's support for natural gas infrastructure is as follows:
- i) AIIB will not support gas upstream exploration and drilling activities.
 - ii) AIIB will support gas mid-stream infrastructure (LNG terminals, storage, and transmission pipelines), natural gas-fired power generation, and downstream (distribution and end-use) facilities under the following specific criteria:
 - Investments will not conflict with, or will actively contribute to, the achievement of a Member's climate policy and commitments including its NDC, LTS and net zero/carbon neutrality pledges.
 - Investments will not create a risk for carbon lock-in or stranded assets, taking into account a long-term decarbonization trajectory of the Member that is consistent with the mitigation goals of the Paris Agreement.³⁰
 - Investments will reduce the energy sector's carbon intensity immediately or over time. Appropriate project goals might include, for example, credibly replacing higher carbon fuels, inefficient technologies, or oil- and coal-fired energy facilities, or supporting the integration of renewable energy.
 - Investments will represent advanced, state-of-the-art technologies and sector best practices in limiting methane emissions.
 - Investments will not displace low-carbon solutions, or a mix of such solutions, that are equally or more technically and economically feasible and are able to provide the service at an equivalent quality and scale as proposed for the natural gas investments.

³⁰ Defining the role of any single investment for achieving NDC, LTS, and long-term decarbonization plans may be subject to unavailability, low relevance for the considered investment, or uncertainty due to the insufficient granularity of such plans. In such cases, AIIB, together with the client and the development partners, will explore relevant references to inform the Paris Alignment assessment. Where possible, AIIB will collaborate with its partners to support members to initiate, design, refine and update their climate plans and commitments under NDCs and LTSs, including to translate them into investment plans as relevant.

- Investments will consider the shadow cost of carbon.³¹

59. **Abatement of CO₂ emissions.** IPCC and IEA recognize that most modelled global pathways that limit global warming include a role for CCS/CCUS applications, such as for CCS with fossil fuels, CCS with bioenergy (BECCS), and direct air carbon capture and storage (DACCS).³² However, these abatement technologies are not yet technologically mature and, within the regulatory frameworks of most Members, lack commercial incentives for implementation. AIIB will support creating readiness, whenever technically feasible, for the future integration of CCS technologies in its natural gas projects for power and hard-to-abate sectors. AIIB may also consider investments in financially feasible CCS/CCUS solutions if the applied technologies have passed the demonstration stage. However, AIIB will not finance CCUS in the context of coal bed methane and enhanced oil or gas recovery.
60. **Reduction of methane emissions and routine gas flaring along the oil and gas value chains.** Methane emissions have a large near-term warming effect. According to IEA, its reduction has the potential to close 15% of the gap to net-zero energy system.³³ While the energy industry is continuously improving the management and reduction of methane emissions, most countries lack policy and regulatory frameworks relevant to methane emissions abatement and the internalization of the net costs of investments in best available solutions. AIIB will support international initiatives on this issue and may consider financing investments for the reduction of methane leakage. Furthermore, AIIB has endorsed the World Bank's Zero Routine Flaring by 2030 Initiative³⁴ and will support projects and international collaborative effort aimed at reducing routine gas flaring.
61. **Waste-to-Energy.** A Waste-to-Energy (WtE) investment should be considered in the context of an integrated waste management approach to promote sustainable cities development which aims at resource-efficient and environmentally sound waste management and leads to improved environment and health. Such an approach should follow the waste management hierarchy that makes avoidance and reduction of waste the highest priority, followed by opportunities for reuse, recycling and conversion of waste into usable products or feedstock such as for heat and electricity. In this context, AIIB supports energy recovery from waste combustion, which is regarded as an alternative for waste disposal via landfilling or open dumping in an unmanaged manner that endangers the biodiversity of terrestrial and aquatic life, emits methane and CO₂, and creates health risks and environmental hazards that disproportionately impact the lives of marginalized groups. AIIB's Environmental and Social Standard 1, Environmental and Social Assessment and Management, provides for the application of pollution prevention and control measures consistent with international good practice as reflected in internationally recognized standards. It also provides for minimizing and managing waste generation.

³¹ See paragraph 64 on *Conducting economic evaluation*.

³² IPCC, 2022: Summary for Policymakers. In: Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. For IEA scenario, please see Figure 3.

³³ IEA. 2021. World Energy Outlook. Paris.

³⁴ World Bank Zero Routine Flaring By 2030. <https://www.worldbank.org/en/programs/zero-routine-flaring-by-2030>

62. **Nuclear power generation.** Financing of nuclear plants will not be considered by AIIB. Should demand arise for very special cases of support for safety improvement, AIIB could possibly consider engagement, in partnership with other international institutions. AIIB does not anticipate developing the highly specialized expertise required to be involved in technically complex and capital-intensive nuclear projects.

Cross-Cutting Issues

63. Global environmental, social, and sustainable development goals and principles are widely accepted and embraced by other MDBs, bilateral agencies, and members. However, their realization is not always straightforward. Green energy investments require: (i) new approaches to evaluate their economic viability because they may not be economically justified according to the assumptions traditionally used by most MDBs; (ii) highly skilled and diversified teams and a solid knowledge base; (iii) methods of addressing environmental and social aspects; (iv) careful attention to take gender and disability into account; and (v) effective coordination among sectoral teams within the financing institutions to meet client needs efficiently. These issues are discussed below.
64. **Conducting economic evaluation.** It will become increasingly important to provide a rigorous economic evaluation of energy projects with significant externalities to ensure their long-term economic viability and compatibility with the transition to a low-carbon economy. This economic analysis will need to consider both costs and benefits, internalizing projects' material external effects for GHG emissions, air and water pollution, and other externalities outside the project boundary. In estimating the costs of GHG emissions, AIIB will apply a shadow cost of carbon consistent with its peer MDBs, and which relies on an extensive review of studies valuing these costs. A rigorous economic analysis will also need to identify an appropriate baseline against which the climate impact will be measured. AIIB will continue to update its methodology in line with the evolving evidence on the costs of externalities, including that from other MDBs, as well as build its staff capacity for robust economic evaluation of energy sector projects.
65. **Building highly skilled multi-disciplinary teams.** AIIB has built a highly skilled and diversified team of staff and consultants with recognized expertise in the sector. This has contributed to the successful development of a high-quality portfolio and a solid understanding of the sectoral landscape. AIIB will continue to build its staff capacity and deepen its sectoral knowledge in view of the need to expand its investment and adapt to the evolving energy sector context. AIIB also recognizes the importance of a supportive policy environment for project success. While AIIB does not foresee support for policy-based financing instruments, it may develop programmatic loans, performance-based lending and other innovative financing instruments that are tailored to client needs and circumstances.
66. **Adaptation Investments.** AIIB aims to scale up adaptation finance to better serve its Members and clients' development needs and meet its 2025 climate finance target. Adaptation needs are often multi-sectoral as are, consequently, many of the adaptation investments. When screening energy sector investment opportunities, AIIB will consider the project's climate risks and vulnerability based on the risk assessments, methodology for assessing Paris Alignment, and internal technical

guidance. Climate-linked hydropower, solar and wind energy, heating and cooling demands, and electricity transmission and distribution deserve particular attention in this context. AIIB will continue to develop its capacity to integrate climate resilience and adaptation into its financing operations.

67. **Addressing environmental and social aspects.** The provisions of the ESF, as updated in 2021, will continue to guide implementation of the Strategy. The ESF applies to all Bank-supported operations, including those directly and indirectly financed (e.g., FI), whether they are in regional or nonregional Members. Energy system impacts include not only climate change and air pollution, but also impacts on human settlements, land use, and livelihoods, as well as on water bodies, landscapes, ecosystems, and biodiversity. As appropriate, environmental and social assessment—both strategic and project-specific—and other specialized instruments, including project-level grievance redress mechanisms, will be used to address environmental and social aspects of operations. In the case of financial intermediaries, attention will be paid to their capacity for environmental and social management and careful screening of subprojects, including consultations on these subprojects, and disclosure of environmental and social documentation as provided in the ESF.
68. **Climate change.** Under the provisions of the ESF, AIIB requires its clients to assess proposed projects with respect to climate change mitigation and adaptation. This includes assessing the impacts of the project on climate change (i.e., GHG emissions), and designing and implementing the project so as to minimize emissions. Clients are required to assess the risks induced by climate change on the project, and to design and implement the project so as to minimize the project's vulnerability and increase its resilience to the adverse impacts of climate change. AIIB also requires its clients to assess alternatives under their projects and implement technically and financially feasible and cost-effective options that support them in meeting their NDCs. Finally, AIIB requires its clients to develop an estimation of GHG emissions under their projects, and will provide support where they lack the necessary capacity to do so.
69. **Greenhouse gas reporting.** Under the ESF, AIIB mandates GHG accounting on a phased basis, starting with energy sector projects. If AIIB determines that the project is expected to produce or currently produces significant levels of GHG emissions annually, that an accounting of such emissions is feasible, and that the client has the capacity to do such accounting, it will require the client to conduct an ex-ante GHG accounting assessment (i.e., gross emissions) for the project before approval, based on internationally recognized methodologies and good practice acceptable to AIIB. The client will be required to report to AIIB on the results of these assessments, and AIIB will disclose gross emissions following consultation with the client.
70. **Commitment to social sustainability and inclusiveness.** The Corporate Strategy and the ESF reflect AIIB's firm commitment to social sustainability and inclusiveness by requiring that all investments address direct and indirect impacts, especially on Indigenous Peoples, displaced persons, vulnerable groups, and community health and safety. Social sustainability promotes inclusive access to project benefits for all citizens—irrespective of age, gender, location, ethnicity, and other socio-economic characteristics—and particularly for groups which are often marginalized, vulnerable, or excluded from access to services. Inclusiveness empowers people to participate in

and benefit from the development process and promotes equality of opportunity and nondiscrimination. AIIB recognizes the rights of Indigenous Peoples and the need for their engagement in the development and implementation of energy investments that may affect their livelihoods and traditional territories. Areas where AIIB gives particular emphasis include the following:

➤ **Promoting gender equality.** AIIB recognizes that access to modern, sustainable energy and energy-based technologies can significantly enhance women's lives by reducing their time and labor burdens, improving their health, and providing them with opportunities to engage in economic activities. Women can thus increase their incomes through entrepreneurship, and young girls can attend school. The transition to sustainable energy creates benefits and opportunities for both women and men, such as employment generation, market opportunities, and better health conditions. AIIB will support project specific measures to address gender gaps with respect to access to energy. In developing AIIB's portfolio, measures will be supported and implemented to include and maximize women's involvement in project consultations, and to address their priorities and needs so as to increase opportunities for their enhanced livelihood and economic benefits as well as improved health outcomes. AIIB will continue to build staff capacity and work with its clients with a view to developing a consistent approach to designing, implementing and measuring the impact of energy sector projects so that they promote gender equality.

➤ **Taking disability into account.** In Asia and the Pacific, there are an estimated 690 million people with a disability. While SDG 7 includes access to affordable, reliable, sustainable, and modern energy for all, people with disabilities face multiple energy-related challenges, such as affordability of essential energy use, and are at particular risk of fuel poverty. Some physical impairments or conditions have more obvious energy-related consequences, such as increased costs of home heating, cooling, and lighting to people of limited mobility. AIIB will support measures to promote access to affordable energy for people with disabilities, increase opportunities for livelihood and economic benefits in its energy portfolio, and include people with disabilities in project consultations.

71. **Grievance Redress Mechanisms (GRM) and access to Project-affected People's Mechanism.** Under the policy provisions of its ESF, AIIB requires its clients to establish a suitable project-level GRM scaled to the risks and impacts of the project concerned; receive and facilitate resolution of the concerns and complaints of people who believe they may be or have been adversely affected by the project's environmental or social impacts; and inform project-affected people of the availability of the GRM. In addition, AIIB's Project-affected People's Mechanism serves as an independent accountability mechanism to address complaints from project-affected people who believe they have been or are likely to be adversely affected by AIIB's failure to implement the ESP in situations when their concerns cannot be addressed satisfactorily through the GRMs or AIIB's Management processes.
72. **Managing risks of retaliation.** AIIB recognizes and takes seriously the increasing risk of retaliation to stakeholders who express views regarding the environmental and social risks and impacts of development projects. Where a project financed or proposed to be financed by AIIB presents such risks to relevant project stakeholders,

the ESF requires that the Client assess its risks and develop measures, if needed, to protect against them. Where there are allegations of retaliation under the project, AIIB will review them and take action together with the client as AIIB determines to be necessary. AIIB has published a Statement on Retaliation (May 2022) explaining its approach to this important matter.³⁵

73. **Promoting collaborative approaches among infrastructure subsectors.** In developing its portfolio, AIIB will promote holistic approaches to energy sector development, taking into consideration its other sector strategies. AIIB aims to: (i) incorporate renewable energy and energy efficiency across its infrastructure investments; and (ii) promote intra-sectoral collaboration to meet client needs in the most efficient way and maximize synergies among the different subsectors. Examples may comprise: sustainable urban infrastructure, including energy efficient buildings; transport sector initiatives that improve carbon and energy efficiency outcomes; multi-purpose dams with agricultural, industrial, and urban sectors as users; digital solutions that improve the efficiency and flexibility of energy infrastructure; and access to modern energy within the rural development and agricultural sectors.
74. **Partnerships.** Recognizing that partnerships will be crucial for achieving the desired objectives, AIIB will build and deepen collaboration with partners including MDBs, bilateral agencies, private financial institutions, international facilities, and think tanks, among others. AIIB will seek to (i) conduct timely exchange with partners to broaden its knowledge base and access the latest sectoral developments and (ii) work closely with partners to strengthen project feasibility and quality through mobilizing technical know-how and resources including grants, concessional funds, and technical assistance.

Results Monitoring Framework

75. AIIB will monitor outcome and output indicators to assess the alignment of its evolving energy portfolio with the Strategy principles. The Results Monitoring Framework is attached in the Annex.

³⁵ AIIB. 2022. Statement on Retaliation. [AIIB-Statement-on-Retaliation-EXTERNAL-31-05-22.pdf](#)

Annex: Results Monitoring Framework

As part of the implementation of the Energy Sector Strategy, and in line with the six Guiding Principles of the Strategy, AIIB will monitor outputs and outcomes from its energy investments guided by the Principles that contribute to the development objectives of clients. Key output/outcome indicators have been selected on the basis that they are clear, relevant, and monitorable, and can be aggregated at the portfolio level. All energy projects financed by AIIB will include these indicators in their results framework where applicable. Project level indicators will be aggregated across AIIB's energy investment portfolio to monitor progress toward implementing the Energy Sector Strategy. Total investment guided by each Principle will also be tracked and reported. These indicators will be revisited and refined as experience is gained during AIIB's early years of operation.

Guiding Principles	Portfolio Level Output / Outcome Indicators	Investment amount (US\$ million)
Promote energy access and security	Total generation capacity added /upgraded, MW Total T&D lines /pipelines added /upgraded, km Total T&D capacity added /upgraded, MVA Total electricity storage capacity financed, MW/MWh Number of households provided with new/improved connection to energy services, million	Amount of AIIB investments in energy access and security
Support transition to a clean energy system	Renewable generation capacity installed, MW Greenhouse gas emission avoidance/reduction, tons of CO ₂ equivalent per year	Amount of AIIB investments in supporting transition to a clean energy system
Realize energy efficiency potential	Primary energy consumption saved, GWh	Amount of AIIB investments in energy efficiency
Manage local and regional pollution	* measured at specific project level, e.g. reduction of CO ₂ , NO _x , SO ₂ and particulate matter, tons per year	Amount of AIIB investments in local pollution management
Mobilize private capital	Amount of private capital mobilized, USD million	-
Promote regional cooperation and connectivity	* measured at specific project level, e.g. cross-border transmission of electricity (MW) and natural gas (bcm per year)	Amount of AIIB investments to support cross-border trade of electricity and natural gas