Policy Brief

A Series of Policy Papers on Renewable Energy

Policy Paper I

Policy and Institutions Shaping Renewable Energy in Egypt

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Executive Summary

Egypt's renewable energy sector has undergone a significant transformation over the past decade, driven by rising electricity demand, climate commitments, and the country's exceptional solar and wind resource endowments. Renewable energy has become a strategic pillar of Egypt's energy, economic, and climate policy, with the government positioning the sector as a cornerstone for energy security, fiscal sustainability, industrial competitiveness, and regional leadership.

As of the early 2020s, renewable energy projects account for approximately one-fifth of Egypt's installed electricity generation capacity, while contributing a lower share of actual electricity generation due to the variable nature of solar and wind resources and constraints within the transmission grid. National strategies, most notably the Integrated Sustainable Energy Strategy (ISES 2035), target a substantial expansion of renewable electricity to around 42 percent of generation over the medium term, supported by large-scale solar and wind deployment, grid reinforcement, and the gradual integration of renewable energy–based green hydrogen and its derivatives.

Egypt's institutional framework for renewable energy development is characterized by a clear, though complex, allocation of responsibilities across policy making, project development, regulation, environmental oversight, and investment facilitation. The Ministry of Electricity and Renewable Energy provides strategic direction and sector oversight, while implementation functions are shared among specialized entities, most prominently the New and Renewable Energy Authority and the Egyptian Electricity Transmission Company. Regulatory supervision is exercised by the Egyptian Electric Utility and Consumer Protection Regulatory Agency, environmental compliance is ensured by the Egyptian Environmental Affairs Agency, and investment facilitation is coordinated through the General Authority for Investment and Free Zones.

Renewable energy projects in Egypt progress through a structured development cycle encompassing design, implementation, and commercial operation. While multiple project models coexist—including government-led projects, Build–Own–Operate arrangements, and private-to-private supply mechanisms—the regulatory framework remains centralized, with grid access and electricity offtake largely managed by the state

transmission company. This structure has enabled the successful deployment of landmark projects but also introduces procedural complexity and capacity constraints.

Despite notable progress, several challenges continue to affect the pace of renewable energy expansion. Transmission grid limitations have emerged as a binding constraint on new capacity additions, while lengthy permitting processes and limited private-sector participation in grid infrastructure increase development timelines and costs. Addressing these bottlenecks will be essential to achieving Egypt's renewable energy targets and maximizing the sector's contribution to emissions reduction, job creation, and industrial decarbonization.

This policy paper maps and analyzes the institutional framework governing renewable energy in Egypt, clarifying the roles and interactions of key public authorities and examining how regulatory and procedural arrangements shape project development outcomes. By identifying both strengths and structural constraints within the existing framework, the paper provides a foundation for future policy recommendations aimed at improving coordination, accelerating investment, and unlocking Egypt's full renewable energy potential.

1. Introduction

There is a clear global trend toward shifting electricity systems away from fossil fuels and toward renewable energy sources. This transition has become a central pillar of global energy security and climate policy, as reflected in the work of major international institutions such as the International Energy Agency (IEA) and the International Renewable Energy Agency (IRENA). In 2023, renewable energy sources supplied approximately 30 percent of global electricity generation, compared to around 19 percent in 2000. Solar and wind power together accounted for more than 13 percent of global electricity generation, while renewables represented approximately 86 percent of newly installed power-generation capacity worldwide, bringing total installed renewable capacity to nearly 3.9 terawatts.

Within this global context, Egypt is increasingly positioning itself as a key participant in the energy transition. According to recent assessments drawing on International Monetary Fund and government data, renewable energy sources accounted for approximately 12 percent of Egypt's actual electricity generation in fiscal year 2022/2023. This share is lower than the contribution of renewables to installed capacity, reflecting the lower capacity factors of solar and wind power compared to conventional thermal generation.

At present, renewable energy projects represent approximately 20–22 percent of Egypt's installed electricity production capacity, while contributing roughly 11–13 percent of total electricity generation. This divergence is primarily explained by the intermittent nature of renewable resources, particularly solar and wind, as well as grid constraints that limit full energy evacuation in some regions. Egypt's official policy targets aim to raise the share of renewable electricity to around 42 percent by 2035, supported by large-scale solar and wind projects, grid upgrades, and emerging green hydrogen initiatives.

Egypt possesses exceptional natural endowments for renewable energy development. Solar irradiation levels range between approximately 2,000 and 3,200 kilowatt-hours per square meter per year, placing Egypt among the highest solar-potential countries globally. Wind resources are similarly strong, with average wind speeds exceeding 10–11 meters per second in areas such as the Gulf of Suez and along the Red Sea coast. In addition, vast areas of flat, sparsely populated land in the Western Desert provide significant opportunities for large-scale renewable energy deployment, including projects linked to regional electricity interconnections and export-oriented green fuel production.

Beyond electricity generation, renewable energy plays a strategic role in Egypt's broader economic and climate agenda. The National Climate Change Strategy 2050 and Egypt's updated Nationally Determined Contribution emphasize renewable energy expansion as a core mitigation measure, alongside energy efficiency and low-carbon fuels. Egypt has also positioned itself as a regional hub for green hydrogen and its derivatives, with a focus on green ammonia production for export markets, particularly Europe. Government statements indicate an ambition to reduce the cost of green hydrogen production to approximately USD 1.7 per kilogram by 2050, compared to an estimated USD 2.7 per kilogram in the mid-2020s. The enactment of Law No. 2 of 2024 introduced a dedicated incentive framework for green hydrogen projects and their supply chains, reinforcing this strategic direction.

Renewable energy expansion offers important macroeconomic benefits for Egypt. Increased deployment of domestic solar and wind power can reduce reliance on imported fossil fuels, mitigate exposure to fuel price volatility, and ease pressure on the state budget associated with energy subsidies. Large-scale renewable projects—whether publicly or privately owned—produce electricity at a lower long-run cost than conventional thermal power plants, particularly when fuel and environmental externalities are considered.

From an investment perspective, Egypt is among the most advanced renewable energy markets in Africa, often compared with South Africa. While Egypt has demonstrated strong capabilities in large-scale project execution, grid development, and green hydrogen planning, South Africa has been more advanced in market liberalization and private-sector participation. Egypt's competitive advantages include a skilled workforce with extensive experience in renewable project construction and operation, a growing domestic electricity market, and the potential to host relocated green industrial activities such as cement, steel, and fertilizer production. According to World Bank-related assessments, Egypt's clean energy transition could generate up to two million net job-years by 2050, equivalent to roughly 67,000 additional jobs annually, while also delivering public health benefits through reduced air pollution.

Despite these strengths, several structural challenges constrain the pace of renewable energy expansion. Transmission grid limitations have restricted the evacuation of new renewable capacity, contributing to a plateau in renewable deployment in recent years. In addition, regulatory and institutional constraints—such as limited private-sector participation in transmission infrastructure and lengthy permitting procedures—continue to affect project timelines. Recent financing support, including loans approved by international financial institutions for grid reinforcement, is expected to partially alleviate these constraints, but further reforms will be required to unlock Egypt's full renewable energy potential.

This policy paper is the first in a series produced by ECES to examine the status, challenges, and institutional foundations of renewable energy development in Egypt. It focuses specifically on mapping the institutional framework governing the sector, identifying the roles and interactions of key public authorities, and analyzing how these institutions shape project development and implementation across the renewable energy value chain.

2. Taxonomy of the Institutional Framework in Egypt's Renewable Energy Sector

The renewable energy sector in Egypt operates through a multi-layered institutional framework in which policy formulation, project development, regulation, environmental oversight, and investment facilitation are distributed across a number of specialized public entities. Understanding this institutional architecture is essential for assessing how renewable energy projects are initiated, approved, implemented, and operated in practice.

For analytical clarity, the institutional framework can be grouped into three interrelated dimensions: (i) policy making and strategic direction, (ii) project development and implementation, and (iii) regulation and oversight. Each dimension involves a distinct set of institutions whose mandates are defined by sector-specific legislation and executive regulations, yet whose functions are closely interdependent throughout the renewable energy project cycle. The table below show the various relevant institutions and their interconnections.

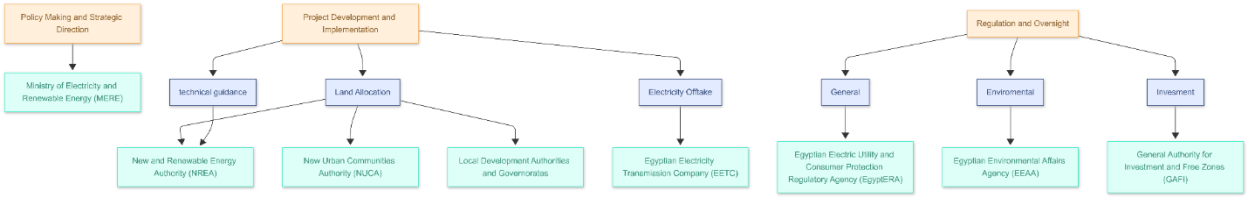
Table 1. Institutional Framework for Renewable Energy Development in Egypt

Institutional Dimension	Institution	Core Responsibilities
Policy Making & Strategic Direction	Ministry of Electricity and Renewable Energy (MERE)	Sets national energy policy, renewable energy targets, and market structure; oversees sector entities and coordinates cross-government energy planning.
Project Development & Land Management	New and Renewable Energy Authority (NREA)	Prepares and manages renewable energy sites, allocates state land through usufruct, provides technical data, and facilitates project development.
Electricity Offtake & Grid Integration	Egyptian Electricity Transmission Company (EETC)	Acts as single buyer for grid-connected projects, signs PPAs, conducts grid studies, and manages transmission integration.
Regulation & Market Oversight	Egyptian Electric Utility and Consumer Protection Regulatory Agency (EgyptERA)	Issues generation licenses, sets technical and tariff regulations, governs grid access, and protects consumers.
Environmental Oversight	Egyptian Environmental Affairs Agency (EEAA)	Reviews and approves environmental and social impact assessments and ensures compliance with environmental standards.
Investment Facilitation	General Authority for Investment and Free Zones (GAFI)	Registers project companies, administers investment incentives, and operates one-stop-shop mechanisms (Golden License).

Source: Prepared by ECES.

This taxonomy illustrates the functional separation and coordination mechanisms underpinning renewable energy development in Egypt.

Figure 1. Institutional Roles and Interactions in Egypt's Renewable Energy Sector



Source: Prepared by ECES.

Figure 1 illustrates the interaction among the principal public institutions governing renewable energy development in Egypt. Strategic direction is set by the Ministry of Electricity and Renewable Energy (MERE), which oversees sector policy and implementation. The New and Renewable Energy Authority (NREA) supports project development through site preparation, land allocation, and provision of technical resource data. The Egyptian Electricity Transmission Company (EETC) manages grid integration and electricity offtake. Regulatory oversight is exercised by the Egyptian Electric Utility and Consumer Protection Regulatory Agency (EgyptERA), while environmental compliance is ensured by the Egyptian Environmental Affairs Agency (EEAA). Investment facilitation and company registration are coordinated by the General Authority for Investment and Free Zones (GAFI). The figure highlights the coordinated yet functionally distinct roles of these institutions across the renewable energy project lifecycle.

3. Project Development and Implementation

Renewable energy projects in Egypt progress through a structured development and implementation cycle that reflects both technical requirements and the country's institutional and regulatory framework. For analytical clarity, this cycle can be divided into three main stages: (i) the Design Stage, (ii) the Implementation Stage, and (iii) Commercial Operation. While the precise sequence and documentation requirements vary by project model, scale, and location, the underlying structure is broadly consistent across renewable energy technologies.

3.1. Design Stage

The Design Stage constitutes the foundational phase of a renewable energy project. Decisions taken at this stage determine the project's technical configuration, financial viability, regulatory pathway, and bankability. This stage can be further disaggregated into

four interrelated components: initial project assessment, selection of implementation scheme, land allocation and site acquisition, and regulatory approvals and licensing.

3.1.1 Initial project assessment

The initial project assessment begins with the identification of the renewable energy source—solar, wind, or hybrid—which in turn defines the project's technical parameters, capital costs, and risk profile. Project initiation may occur through either a developer-led or government-led process.

In a developer-led process, a private developer submits an expression of interest to the Ministry of Electricity and Renewable Energy or the relevant authority, proposing a renewable energy project of a specific capacity and, in some cases, an indicative tariff. If the proposal is considered preliminarily acceptable, the project proceeds to further technical and commercial evaluation. Where the proposed tariff or commercial terms are not accepted, the proposal does not advance to subsequent development stages.

In a government-led process, the Ministry of Electricity and Renewable Energy or affiliated entities may announce plans to expand renewable capacity in specific regions or technologies. Developers then express interest in response to these signals, and projects are structured accordingly through defined procurement or development frameworks.

At this stage, technical site suitability is a critical determinant of project feasibility. NREA plays a central role by providing access to available data and studies, including solar irradiation assessments and wind measurement campaigns. Key site-selection considerations include resource quality (such as wind speed or solar irradiation), proximity to grid connection points, land topography and geotechnical conditions, environmental sensitivity, and bird migration pathways for wind projects. For solar projects, soil conditions and distance to substations are particularly relevant, while wind projects additionally require long-term wind measurements to establish bankable energy yield estimates.

For established wind zones such as the Gulf of Suez, NREA may make historical wind measurement data available to developers. In newer areas, such as West Aswan or West Sohag, developers are typically required to conduct new measurement campaigns. These campaigns usually span six to twelve months for early screening, twelve to eighteen months for bankable studies, and up to twenty-four months for high-confidence assessments suitable for lender due diligence.

All initial studies are generally financed by the developer as part of early-stage development costs and are not recoverable if the project does not proceed. Where preliminary assessments indicate viability, a memorandum of understanding may be signed between the government and the developer to define initial development parameters and enable progression to more detailed and capital-intensive studies.

3.1.2 Selection of implementation scheme

The implementation scheme defines project ownership, risk allocation, and the contractual structure governing construction and operation. In Egypt, renewable energy projects have been implemented under several models, including government-led projects, Build–Own–Operate (BOO) arrangements, feed-in tariff–based projects, and private-to-private power supply mechanisms such as wheeling and net metering (Table 2).

Table 2. Renewable Energy Project Implementation Models in Egypt

Implementation Model	Ownership	Offtake / Revenue Structure	Risk Allocation	Current Status
Government-led (Public EPC)	Public sector (e.g., NREA)	Electricity sold to EETC at regulated tariff	Construction risk with EPC; operational risk with public entity	Active for selected strategic projects
Build–Own–Operate (BOO)	Private sector (IPP)	Long-term PPA with EETC	Construction, operational, and commercial risks borne by investor	Primary model for large-scale renewables
Feed-in Tariff (FiT)	Private sector (IPP)	Fixed tariff under standardized PPA	Reduced revenue risk; standard regulatory risk	Historical; no longer primary scheme
Wheeling (Private-to-Private / P2P)	Private sector (IPP)	Bilateral PPA with eligible consumer; wheeling charges apply	Market and demand risk with IPP; grid access regulated	Legally recognized; limited implementation
Net Metering / Self-Consumption	Consumer or third-party investor	Bill offset and surplus export at regulated terms	Limited market risk; consumer bears investment risk	Active for small and medium-scale systems

Source: Prepared by ECES.

Under government-led projects, NREA or another public entity owns the renewable energy asset. The public entity procures private contractors through competitive EPC tenders to design and construct the plant, while ownership and operational responsibility remain with the state. Electricity generated under this model is sold to EETC at regulated prices approved by the competent authorities.

The BOO model represents a private-sector–driven approach in which the developer finances, constructs, owns, and operates the power plant. Electricity is sold to EETC under a long-term power purchase agreement that defines the tariff, duration, and risk allocation. While this model provides investors with full asset control, it also exposes them to construction, operational, and commercial risks.

The feed-in tariff scheme, which was introduced to accelerate private investment during earlier phases of renewable energy deployment, offered fixed, pre-announced tariffs under standardized power purchase agreements. Although this mechanism played a pivotal role in projects such as the Benban Solar Park, it is no longer the primary procurement tool for new large-scale renewable capacity.

Private-to-private supply mechanisms include wheeling arrangements and net-metering systems. Under wheeling, independent power producers sell electricity directly to eligible consumers through bilateral contracts, using the national grid in exchange for regulated wheeling charges. Although legally recognized, this model remains limited in practical implementation. Net metering enables consumers to offset electricity consumption by exporting surplus generation from on-site renewable systems, subject to capacity caps and regulatory conditions set by EgyptERA.

3.1.3 Land allocation and site acquisition

Land allocation arrangements depend on the project model and the jurisdiction under which the project site falls. Where land is located within areas designated for renewable energy development and allocated to NREA, land use is governed by NREA's framework. In such cases, land is typically made available to developers through long-term usufruct agreements aligned with the project's operational lifetime, commonly around twenty-five years.

Under BOO projects, NREA does not transfer ownership of land to developers. Instead, it grants the right to use state-owned land for a defined period through a usufruct agreement. Ownership remains with the state, and the land reverts to public control upon expiry of the agreement. Renewable energy projects owned and operated directly by NREA are not subject to usufruct arrangements.

Where projects are located outside NREA-designated areas—such as within new urban communities or specific governorates—land allocation is handled by the relevant authority, including NUCA or local development bodies, in coordination with national energy

authorities. Small-scale and distributed projects, such as net-metering systems, must be installed on land or rooftops owned or lawfully controlled by the consumer, typically through ownership, long-term lease, or usufruct arrangements consistent with the project's technical lifetime.

3.1.4 Regulatory approvals and licensing

Regulatory approvals and licensing constitute a critical component of the Design Stage and vary according to project size and implementation scheme. All grid-connected renewable energy projects must comply with Egypt's electricity and environmental regulatory framework.

For BOO projects, the regulatory sequence typically includes environmental and social impact assessment approval from the Egyptian Environmental Affairs Agency, issuance of an interim generation license by EgyptERA, execution of a grid-connection agreement with EETC, and subsequent issuance of a permanent generation license upon project completion. A bankable power purchase agreement is generally required before finalizing licensing and reaching financial close. In parallel, the project company concludes land-use agreements and secures construction permits from relevant local authorities.

Government-led projects follow a modified approval pathway, as the public entity responsible for implementation undertakes feasibility studies and secures internal governmental approvals before launching EPC tenders under public procurement rules. While some licensing requirements applicable to private developers may be streamlined, grid-connection approvals, environmental clearances, and regulatory authorizations remain necessary.

For small-scale projects under net metering, the approval process is more streamlined and focuses on technical compliance rather than full generation licensing. Projects below specified capacity thresholds are exempt from generation licenses, while larger installations require licensing from EgyptERA. Distribution companies approve technical designs and protection schemes, and net-metering agreements govern the commercial relationship between the consumer and the utility.

3.2. Implementation Stage

Following completion of the Design Stage and receipt of all required permits and approvals, projects enter the Implementation Stage. This phase encompasses detailed engineering, procurement of equipment and services, on-site construction, and installation of electrical and mechanical systems. Although contractual structures differ across project models, the core technical activities—such as foundation works, equipment installation, grid connection, and testing—are broadly similar. Table (3) below illustrates the various stages of project development.

Table 3. Renewable Energy Project Development Stages and Institutional Roles

Project Stage	Key Activities	Lead Institutions	Supporting Institutions
Design	Resource assessment, site selection, feasibility studies, selection of implementation scheme, permitting and licensing	MERE; NREA; EgyptERA	EEAA; GAFI; local authorities
Implementation	Detailed engineering, procurement, construction, grid connection, testing and commissioning	Project company / NREA; EPC contractors	EETC; EgyptERA; EEAA; governorates
Commercial Operation	Power generation, electricity offtake, revenue collection, compliance monitoring	EETC; project owner	EgyptERA; distribution companies

Source: Prepared by ECES.

During this stage, developers and contractors must comply with applicable technical standards, grid codes, and environmental, health, and safety requirements. Completion of construction is followed by testing and commissioning procedures to verify performance, safety, and grid compliance.

3.3. Commercial Operation

Commercial operation begins once the project has successfully completed commissioning and has been formally connected to the national grid. In BOO projects, electricity is delivered to EETC and revenues are received in accordance with the power purchase agreement. In government-led projects, generated electricity is integrated into the public power system. For net-metering and other small-scale projects, electricity generation offsets on-site consumption and surplus power is exported to the grid under the applicable regulatory framework.

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The transition to commercial operation marks the conclusion of the project development cycle and the beginning of the operational phase, during which the project contributes to Egypt's renewable energy supply and broader energy transition objectives.

3.4. Regulatory Approvals, Permitting, and Licensing Framework

This section consolidates and clarifies the regulatory approvals and permitting requirements applicable to renewable energy projects in Egypt. For publication purposes, the framework is presented analytically rather than as an exhaustive checklist, recognizing that specific documentation, timelines, and sequencing may vary by project size, technology, location, and financing structure.

3.4.1 Core regulatory principles

All renewable energy projects in Egypt are subject to three overarching regulatory pillars: (i) electricity market regulation and licensing, (ii) environmental and social approvals, and (iii) construction and land-use permitting. While private-sector projects are subject to a more formal licensing regime, public-sector projects follow modified procedures grounded in public investment and procurement rules, without exemption from environmental or grid-integration requirements.

The Egyptian Electric Utility and Consumer Protection Regulatory Agency (EgyptERA) acts as the primary electricity-sector regulator, while the Egyptian Environmental Affairs Agency (EEAA) oversees environmental compliance. Construction and land-use approvals are issued by relevant governorates and land-holding authorities, coordinated with sector institutions.

3.4.2 Licensing and approvals for BOO projects

For privately developed BOO projects connected to the national grid, the regulatory process typically proceeds through the following stages:

First, the project developer secures land-use rights through a usufruct agreement with NREA or the relevant land-owning authority. In parallel, the developer undertakes environmental and social impact assessment studies in accordance with EEAA requirements. Approval of the ESIA by EEAA is a prerequisite for construction.

Second, the developer applies to EgyptERA for an interim generation license. This license authorizes the developer to proceed with project development and construction, subject to compliance with specified technical, financial, and regulatory conditions. Interim licensing is typically required prior to execution of a bankable power purchase agreement.

Third, grid-connection studies are conducted in coordination with the Egyptian Electricity Transmission Company (EETC), followed by execution of a grid-connection agreement that defines technical parameters, connection costs, and responsibilities.

Upon completion of construction and successful testing and commissioning, EgyptERA issues a permanent generation license, enabling commercial operation. In practice, EgyptERA may issue comfort letters or confirmations during construction, indicating that permanent licensing will be granted upon fulfillment of interim license conditions.

Construction permits, road access approvals, and other site-specific authorizations are obtained from the relevant governorate and public authorities prior to commencement of civil works. These permits are governed by national construction laws and executive regulations and may require submission of detailed engineering drawings, insurance documentation, and contractor qualifications.

3.4.3 Regulatory pathway for government-led projects

For government-led renewable energy projects implemented by NREA or other public entities, the regulatory pathway is integrated into the public investment planning and procurement framework. The implementing entity prepares feasibility studies and environmental assessments, secures approvals from the Ministry of Electricity and Renewable Energy and other competent authorities, and ensures inclusion of the project within the national investment plan.

Although public entities are not required to obtain generation licenses in the same manner as private IPPs, grid-integration approvals, environmental clearances, and regulatory authorizations for tariff treatment and power sales to EETC remain mandatory. EPC procurement is conducted under public tendering rules, and project implementation is subject to audit and oversight by relevant state bodies.

3.4.4 Approvals for small-scale and distributed generation projects

Small-scale renewable energy projects, particularly those implemented under net-metering or self-consumption schemes, are subject to a streamlined approval process focused on technical compliance and consumer protection rather than full market licensing.

Projects below EgyptERA's licensing thresholds are exempt from generation licensing requirements, while larger installations—up to the regulatory cap—require generation licenses. Distribution companies play a central role by reviewing and approving technical designs, protection schemes, and metering configurations. Net-metering or self-consumption agreements govern the commercial relationship between the consumer and the utility.

For these projects, land documentation demonstrating ownership or long-term use rights must be submitted as part of the approval process. Environmental approvals may be required depending on project size and location, though requirements are generally less complex than for utility-scale projects.

3.4.5 Timelines, bottlenecks, and practical considerations

While statutory timelines for permits and licenses are defined under Egyptian law and regulatory guidelines, actual processing times may vary in practice due to administrative capacity constraints, coordination requirements among institutions, and project-specific factors. Transmission grid availability and connection capacity have emerged as critical constraints affecting project timelines, particularly for large-scale renewable developments.

For policy analysis purposes, the regulatory framework can therefore be characterized as comprehensive but procedurally dense. Streamlining permitting processes, enhancing inter-agency coordination, and enabling private-sector participation in grid reinforcement are frequently cited reform priorities to accelerate renewable energy deployment.

This consolidated regulatory overview provides a structured basis for assessing how permitting and licensing processes shape renewable energy project development in Egypt and informs subsequent policy recommendations aimed at improving efficiency and investment readiness.

Annex I

Egypt's Climate Commitments and Renewable Energy Targets

This annex provides a consolidated and policy-oriented overview of Egypt's climate commitments and renewable energy targets, drawing on official national strategies and international reporting under the United Nations Framework Convention on Climate Change (UNFCCC). It is intended to contextualize the institutional and regulatory analysis presented in the main body of the paper.

A. International Commitments under the Paris Agreement

Egypt is a signatory to the Paris Agreement and has submitted updated Nationally Determined Contributions (NDCs), most recently in 2023. Egypt's NDC framework adopts a sectoral mitigation approach rather than an economy-wide absolute emissions cap. Commitments are structured around a combination of unconditional actions financed domestically and conditional actions dependent on the availability of international climate finance, technology transfer, and capacity-building support.

B. Greenhouse Gas Mitigation Approach

Egypt's mitigation commitments focus on reducing greenhouse gas emissions relative to a business-as-usual (BAU) trajectory in selected priority sectors. By 2030, Egypt aims to achieve emissions reductions of up to approximately one-third in certain sectors, subject to international support. Priority mitigation sectors include electricity generation, oil and gas, transport, industry, waste management, and agriculture.

Within this framework, decarbonization of the electricity sector represents the single largest contribution to Egypt's mitigation efforts, reflecting both the scale of emissions associated with power generation and the country's strong renewable energy resource base.

C. Renewable Energy Targets in the Power Sector

Renewable energy expansion is a cornerstone of Egypt's climate and energy strategy. Under the Integrated Sustainable Energy Strategy (ISES 2035), Egypt targets a substantial increase in the share of electricity generated from renewable sources, with a policy objective of reaching approximately 42 percent renewable electricity by 2035. Following COP27, policy statements have indicated an intention to accelerate elements of this transition, though

implementation timelines remain subject to infrastructure readiness and investment mobilization.

The renewable energy mix underpinning these targets includes utility-scale and distributed solar photovoltaic projects, onshore wind projects—particularly in the Gulf of Suez and Red Sea regions—and existing hydropower assets. Emerging technologies, notably renewable energy–based green hydrogen and its derivatives, are expected to play an increasing role over the medium to long term, particularly in export-oriented applications.

D. Energy Efficiency and Grid Modernization

In parallel with renewable energy deployment, Egypt has adopted energy efficiency objectives aimed at reducing overall energy intensity by approximately 18 percent by 2030. Priority areas include industrial energy efficiency, improved building performance, and reduction of transmission and distribution losses. Grid modernization, digitalization, and reinforcement are recognized as critical enablers of both renewable energy integration and system reliability.

E. Green Hydrogen and Low-Carbon Fuels

Egypt has positioned green hydrogen and its derivatives as strategic components of its long-term decarbonization and export strategy. Numerous memoranda of understanding have been signed with international partners for the development of green hydrogen and green ammonia projects, targeting export markets in Europe and supporting domestic industrial decarbonization. These initiatives are anchored in Egypt's renewable energy expansion plans and supported by a dedicated legal and incentive framework introduced in 2024.

F. Adaptation and Climate Resilience Priorities

In addition to mitigation, Egypt places strong emphasis on climate adaptation due to its high vulnerability to climate impacts. Priority adaptation areas include coastal protection in the Nile Delta, water resource management and efficiency, climate-resilient agriculture, and heat-resilient urban infrastructure. These adaptation priorities are integrated into national planning instruments, including Egypt Vision 2030 and the National Climate Change Strategy 2050.

G. Net-Zero Position and Policy Outlook

Egypt has not yet announced a formal net-zero target year. Current policy direction emphasizes a gradual and just transition that balances decarbonization objectives with economic development, energy security, and social considerations. Discussions around long-term net-zero pathways are ongoing and are closely linked to the availability of international climate finance and technology support.

H. Implications for Renewable Energy Projects

Projects aligned with Egypt's climate and energy priorities—including solar and wind power plants, grid modernization initiatives, green hydrogen projects, energy efficiency programs, and low-carbon industrial developments—are generally favored within the national policy framework. Such projects are more likely to benefit from government support, international financing from development partners, and alignment with Egypt's NDCs and COP27 commitments.

This annex provides the climate policy context within which Egypt's renewable energy institutional framework operates, reinforcing the strategic importance of effective governance, regulation, and coordination in achieving national and international climate objectives.

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