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Policy implementation plans to support delivery of the State of Palestine's NDC implementation action plans for the energy sector

Report for the State of Palestine's Environment Quality Authority and the World Bank under the NDC Partnership's Climate Action Enhancement Package (CAEP)

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1 Introduction

This document developed with the Palestinian Energy and Natural Resources Authority (PENRA) provides policy implementation plans to progress enabling environment recommendations identified in the Nationally Determined Contributions (NDC) implementation action plans for:

- Energy distribution
- Energy efficiency, and
- Renewable energy production.

By establishing all relevant elements of the enabling environment prior to seeking funding, the State of Palestine will demonstrate to potential donors its readiness to deliver the activities in the NDC implementation action plans. It is intended that this readiness should increase donors' confidence to award funding.

Each policy implementation plan for each recommendation first describes relevant aspects of the current national policy landscape. It then gives examples of efforts to provide an appropriate enabling environment in other countries in the region, which can inform development and/or delivery of the policy implementation plan in Palestine. Finally, drawing on these examples and insights from key stakeholders within Palestine, each policy implementation plan sets out the key steps needed to implement the recommendation, along with those who should be responsible, accountable, consulted, or informed.

2 Policy implementation plan: Energy distribution

The State of Palestine's updated NDC contains the following conditional action: *"Upgrade of the electricity grid to enable distribution of renewable energy, primarily from solar photovoltaic (PV), by 2030".* This action is addressed in the NDC implementation action plan for Energy Distribution, which was adopted in 2020. The enabling environment recommendations for the NDC implementation action plan were updated in 2021 with PENRA and the Environment Quality Authority (EQA) to include a recommendation to develop regulations that:

a. Require distribution companies to map the potential for medium and large-scale solar plants
b. Address grid connections (including unifying the required criteria for grid connections for all distribution companies)
c. Ensure licenses are only granted for connection of medium and large-scale solar PV where an "appropriate percentage" of energy can be stored
d. Address energy storage
e. Ensure connections between distribution companies to enable distribution of the energy load, accommodation of greater capacities in some distribution networks, and switching between networks
f. Address the disposal and recycling of batteries and PV modules.

2.1 Existing national policy landscape and gaps

Energy distribution is considered in the National Development Plan (2021-2023), the Energy and Natural Resources Sector Strategy (2021-2023), and the Decree of Law (2015) on Renewable Energy and Energy Efficiency.

The Electricity Law 2009[1] was enacted to develop and regulate the electricity sector in Palestine. It established the Palestinian Electricity Regulatory Council (PERC), setting its objectives and operational guidelines. It also specified the roles and responsibilities of PENRA, generation

[1] State of Palestine, Law No. (13): General Electricity Law (2009)

companies, Palestinian Electricity Transmission Company Limited (PETL), and the distribution companies.[2]

The energy policy statement for the period 2017-2019 included a programme *"that creates a national system for producing traditional energy to meet the current and future need, providing various energy resources, building and developing transmission and distribution systems, which will be able to cover the increase in energy demand with economic efficiency that reflects real cost of production transmission and distribution".* This programme was repeated in the Energy Policy Statement 2020-2022.

The Energy and Natural Resources Sector Strategy (2021-2023) includes the goal for *"efficient production, transmission, distribution and consumption of energy, and adopting a policy of rationalizing consumption and reducing waste"*. It also highlights the need to *"develop the transmission and distribution system, applying modern technologies and automating the monitoring and control of the energy transmission and distribution system"*.

The Solid Waste Management Bylaw adopted in March 2019 describes the related obligations and rights of stakeholders. For example, service providers are responsible for health and safety measures, collection and transportation processes, treatment/disposal of waste, and record keeping, while the EQA is responsible for hazardous waste treatment approval. The National Strategy for Solid Waste Management in Palestine (2017-22) was adopted in August 2017, superseding the first such strategy (2010-2014). One of the strategic objectives of the 2017-2022 Strategy is: *"Appropriate treatment and inventory of medical, hazardous and special waste".* Batteries are included in the definition of *"hazardous waste".*[3] However, there are currently no specific regulations regarding the disposal and recycling of batteries and PV modules, as the history of this activity is limited in Palestine.

The State of Palestine's legal framework also supports self-generation of renewable energy (i.e., net-metering), according to decision No 13/127/16 approved by the Council of Ministers in March 2012.[4]

The Solar-Med-Atlas project provides high-resolution, long-term solar resource maps and the Global Atlas for Renewable Energy developed by the International Renewable Energy Agency (IRENA) provides tools and data. Together, they can be used in conjunction with other relevant available data to assess Palestine's potential to generate renewable energy.

The Arab League (of which Palestine is a member) introduced the Arab Renewable Energy Framework (AREF) which sets out key principles for a regional transition to more renewables in the energy mix. The AREF emphasises that the availability of information and guidance on support measures is important for all relevant actors, including consumers, builders, installers, architects, and suppliers. The AREF encourages Arab states to ensure that any national rules concerning the authorisation, certification and licensing procedures applied to power plants and associated transmission and distribution network infrastructures are appropriate and necessary (Article 4). It also assists in developing national renewable energy action plans (NREAPs) and thereby supports efficient energy distribution. Palestine also follows guidelines set by The Regional Centre for Renewable Energy and Energy Efficiency (RCREEE), which aims to enable and increase the adoption of renewable energy and energy efficiency practices across pan-Arab countries.[5]

2.2 Relevant regional practices

Desk-based, secondary review of relevant policies, regulations and planning documents has identified a range of relevant practices in Egypt, Jordan, Lebanon, Morocco and Greece.

[2] Palestine Power Generation Co., Palestinian Power Sector - Regulatory Framework
[3] Cesvi, Solid waste management in the occupied Palestinian territory
[4] RCREEE, Arab Future Energy Index™(AFEX) Renewable Energy 2013
[5] RCREEE, About RCREEE

Egypt

The Egyptian electricity sector is managed by the Ministry of Electricity and Renewable Energy, overseen by the Supreme Energy Council, and is regulated by Egyptian Electricity Utility and Consumer Protection Agency (EgyptERA). Egypt's energy market has been liberalised to allow for private sector participation.[6] EgyptERA is responsible for implementing policy decisions, administering licences and, as of 2015, for setting tariffs with the adoption of the Electricity Law No. 87 of 2015. The Law contributes to increased competitiveness of the electricity market and opening up distributed (including clean) energy production. The Law indicates that electricity tariffs are to be set according to the costs of producing energy (or an energy service) and its associated variables. These include the cost of transmitting energy, the rate of inflation, a fuel coefficient, and more recently the targets set by the subsidy reform.[7] The Law is, therefore, relevant to parts b. and e. of the enabling environment recommendation (associated with Palestine's NDC implementation action plan for Energy Distribution) to develop regulations for grid connections and to ensure connections between distribution companies.

Article 32 of the Constitution of the Arab Republic of Egypt (2014) asserts that *"The State shall make the best use of renewable energy sources, motivate investment therein, and encourage relevant scientific research",* reflected within the Prime Ministerial Decree No. (37/4/15/14) of 2015 on allocating land for renewable energy projects. This is relevant to part a. of the enabling environment recommendation (associated with Palestine's NDC implementation action plan for Energy Distribution) to develop regulations that require distribution companies to map the potential for medium and large-scale solar plants.

Palestine may wish to consider setting out similar frameworks to structure electricity regulatory authorities, allow for private sector participation in the energy market and motivate investment in solar power, as implemented in Egypt through the New Electricity Law and Article 32 of the Constitution.

Jordan

Jordan is the only country in the MENA region that has implemented structural separation of generation, transmission, and distribution in the electricity sector. It is the first country in the region to successfully launch and finalise a public-procurement process for solar energy and is the only country in the region that authorises unsolicited or direct proposals for utility supply by independent power producers. Jordan is also the only country in the region that has established grid codes for distributed and utility-scale PV and wind-energy systems. There are, however, serious grid capacity issues that constrain the deployment of PV and wind power in Jordan.

In Jordan, the Renewable Energy & Energy Efficiency Law, No. 3 of 2010 provides the legislative framework to encourage exploitation of renewable energy sources, enhance supply-side energy efficiency, and streamline private sector investment through incentives. The Ministry of Energy and Mineral Resources is responsible for enacting the Law, and it began by identifying geographic areas for renewable energy exploitation. These areas, co-ordinated with the Ministry's Energy Master Plan, will be prioritised for development in a Land Use List, approved by the Council of Ministers. This practice is relevant to parts a. and c. of the enabling environment recommendation (associated with Palestine's NDC implementation action plan for Energy Distribution), requiring mapping the potential for solar plants and ensuring licences are only granted where appropriate.

The General Electricity Law of Jordan, which is the main law for the electricity sector, is also relevant to parts a. and c. of the enabling environment recommendation. The Law regulates the granting of licences by the Electricity Regulatory Commission (ERC), which is the main implementing body ensuring efficiency, reliability, and development of the Jordanian electricity market. Under the Law, the ERC issues licenses to firms that wish to generate, distribute, or sell electricity. Generating plants with a capacity of up to one MW are allowed to operate without a license. Local supply networks with a maximum capacity of 100 kW can be operated without a license, as can power plants used solely to

[6] IRENA, Pan-Arab Renewable Energy Strategy 2030
[7] Renewable Energy Outlook Egypt

generate electricity for self-consumption.[8] Article 47 of the Law provides for the ERC to set tariffs for all sectors, except generation. The tariffs for generation are determined in line with any agreements in force between the generation licensee and the National Electric Power Company as a bulk supply licensee.[9] According to Article 18 of the Law, the ERC shall settle disputes that arise between licensees and consumers involving matters of connection and supply of electric power, quality of service and electric tariffs, and the decision on such disputes shall be subject to appeal to the High Court.[10] Palestine may wish to consider setting out similar articles to regulate licensing and set tariffs, as implemented in the General Electricity Law. For example, Palestine may wish to implement a similar standard enabling generating plants with a capacity of less than one MW to operate without a license.

Jordan has also been developing grid-scale energy storage projects. The Ministry of Energy and Mineral Resources (MEMR) is facilitating solar PV projects to be constructed in the Ma'an area, along with wind farms in the southern region. In the tender documents, MEMR stated clearly that energy storage using batteries will be considered for both types (PV and wind) of renewable energy projects.[11] This is relevant to part d. of the enabling environment recommendation (associated with Palestine's NDC implementation action plan for Energy Distribution), addressing energy storage.

Lebanon

To date, the Lebanese Government has approved 11 solar licenses for 162MW of PV capacity in 2022 and the policy background is relevant to part c. of the enabling environment recommendation (associated with Palestine's NDC implementation action plan for Energy Distribution). Licensing was agreed in accordance with Law No. 129 of 2019, which allows the Government to commission the design, financing, construction, production, operation and transfer to the Government of power plants.[12] Lebanon has established an Electricity Regulatory Authority to define licensing procedures, under the provisions of Law 462 of 2002, however implementation of licensing procedures has been delayed for political reasons.[13]

Morocco

Reform of the energy sector in Morocco has led to improved access to electricity and to renewable energy investments. The Government's Decree N° 2-15-772 expanded the Renewable Energy Law to address distribution grids, providing access to the distribution grid for self-producers to supply medium voltage end-users. The Ministry of Interior supervises private electricity distribution companies, the cross-subsidies (a subsidy granted to a business or activity out of the profits of another business or activity) in the energy distribution sub-sector, as well as contributing to electricity tariff design and implementation. There are 11 distribution companies comprising seven public municipal utilities and four private distribution utility companies. The Government's National Office for Electricity and Water is also in charge of electricity distribution for most of Morocco's cities and regions. The public municipal government's distributors are under the financial supervision of the Ministry of Finance and Economy and are monitored by the Ministry of Interior. The private electricity distribution companies are contracted by the municipal authorities.[14] This is relevant to part b. of the enabling environment recommendation (associated with Palestine's NDC implementation action plan for Energy Distribution) to develop regulation for grid connections (including unifying the required criteria for grid connections for all distribution companies). Palestine may wish to consider a similar system for supervising and monitoring private distribution companies to ensure implementation of regulations that align criteria for grid connections.

[8] UN ESCWA, Case Study on Policy Reforms to Promote Renewable Energy in Jordan
[9] General Electricity Law, Article 37 (B) and 47 (A)
[10] UN ESCWA, Case Study on Policy Reforms to Promote Renewable Energy in Jordan
[11] The Hashemite kingdom of Jordan, Renewables readiness assessment
[12] SOLAR PV FARMS- 180 MW BID
[13] Renewable Energy Outlook, Lebanon
[14] Lessons from Power Sector Reforms: The Case of Morocco

Greece

The Regulatory Authority for Energy is responsible for licensing all energy markets in Greece.

Greece recently issued the National Energy and Climate Plan[15] (NECP), which highlights key policy planning priorities, including *"promoting innovative energy storage applications"*. Within the NECP, a target for energy storage deployment is set at 3GW for 2030, with a ministerial decision adopted in 2018 laying out the minimum number of competitive bidding procedures to be undertaken each year.

The Greek Government has set the priority to interconnect islands with the mainland system, as many Greek islands are not yet connected to the mainland electricity grid. The National Energy and Climate Plan aims to put an end to the energy isolation of islands by early 2029, presenting the objective to "*ensure the strategic diversification of energy imports, while at the same time modernising and developing energy infrastructures and putting an end to the energy isolation of the islands*".

Implementation of the Cyclades Interconnection - Phase A project in 2018 led to a reduction of autonomous island electrical systems from 32 to 29. The Interconnection project involved the implementation of a subsea cable grid operated at 150 kV to connect the main Cycladic islands, namely Syros, Tinos, Mykonos and Paros with the mainland interconnected transmission system of Greece. This allows for cheaper, less polluting energy sources to be used by the islands. In the period 2020-2030, almost all the Aegean islands will also be interconnected, starting with the interconnection of Crete. For islands that have no plan for interconnection, reduction of diesel use is being promoted via the EU Smart Islands Initiative, which provides support for renewable energy plants alongside improved storage technologies. This example may be relevant to Palestine due to the disconnection of Palestinian land areas, with parallel connectivity concerns to the Greek islands.

Commission Regulation (EU) 2016/631, 2016[16] establishes requirements for the technical design and operational requirements for grid connection of generators and, therefore, renewable energy sources, in Member States, such as Greece. The regulation states that *"Harmonised rules for grid connection for power-generating modules should be set out in order to provide a clear legal framework for grid connections".*

The Joint Ministerial Decision 41624/2010[17] set quantitative targets relating to the disposal and recycling of batteries, including a minimum collection rate for batteries and a minimum recycling rate for various types of batteries.

The Greek Ministry of Environment and Energy introduced a new draft bill in May 2022[18], which seeks to update the licensing procedure of renewable energy sources, storage licensing and sets out a framework for pilot marine photovoltaic stations. The aim of the draft bill is to facilitate the achievement of the NECP's goals. The main objectives of the draft bill are to:

- Reduce the average licensing time for new renewable energy projects from five years to 14 months
- Develop electricity storage projects with an installed capacity of at least 3.5 GW by 2030
- Increase the capacity of the electricity network to enable integration of more renewable energy units, and
- Further promote energy net metering.

2.3 Implementation steps and responsible parties

The examples above suggest the key steps in Table 1 for developing regulations related to energy distribution.

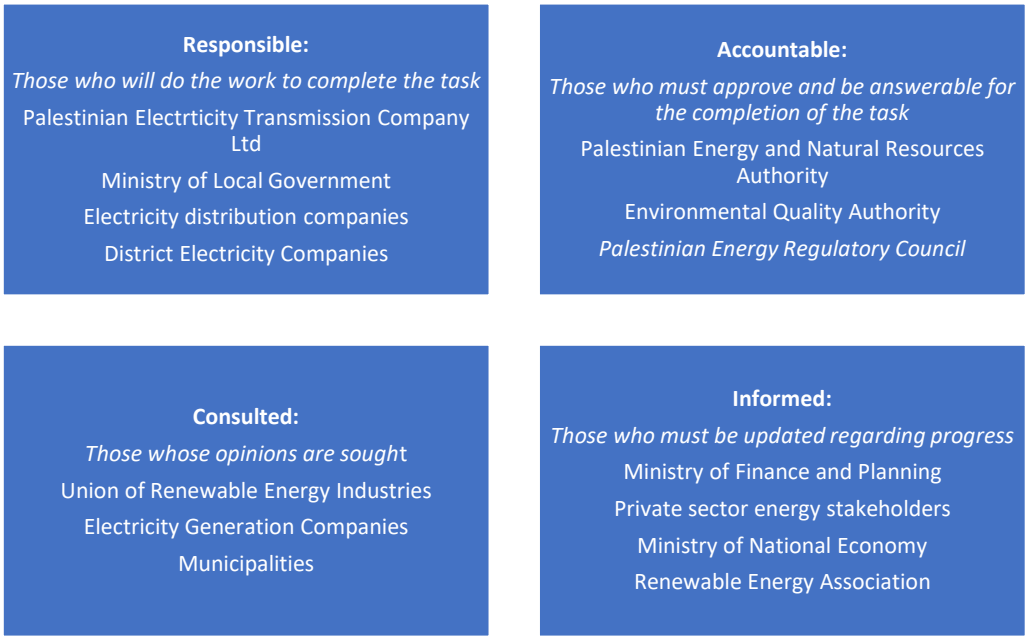
[15] Ministry of Environment and Energy, National Energy and Climate Plan
[16] European Commission, Commission Regulation (EU) 2016/631
[17] Ministry of Digital Governance of the Hellenic Republic, Waste batteries and accumulators
[18] Ministry of Environment and Energy, Modernization of the licensing procedure of renewable energy sources - phase ii, electricity production and storage license, framework development of pilot marine floating photovoltaic plants and special provisions for energy and environmental protection

Table 1: Implementation steps and parties involved for developing regulations related to energy distribution

	Implementation steps	Parties involved
1.	Review of regulations for potential amendment Draw upon relevant regional practices to identify those bylaws and regulations that could potentially be updated to develop regulations that address energy distribution with respect to the enabling environment recommendations included in the NDC implementation action plan.	PENRA EQA Council of Ministers
2.	Identify roles in implementation Identify a RACI (Responsible, Accountable, Consulted, and Informed) matrix of who needs to be involved and how in drafting wording specific to each regulation.	
3.	Consult on updates for relevant regulations Drawing upon regional practices, seek input from relevant stakeholders on draft text of articles to update each relevant regulation.	
4.	Implementing updates to regulations Finalise the proposed text of articles to update each regulation, and secure legal approval for implementation.	

Figure 1 proposes a RACI framework of those who should be responsible, accountable, consulted or informed about implementing the steps in Table 1 for developing regulations related to energy distribution.

Figure 1: RACI framework for developing regulations related to energy distribution



3 Policy implementation plan: Energy efficiency

The State of Palestine's updated NDC contains the following conditional action: *"Improve energy efficiency by 20% (versus business as usual) across all sectors by 2035".* This action is addressed in the NDC implementation action plan for Energy efficiency, which was adopted in 2020. Subsequently, the enabling environment recommendations for the NDC implementation action plan were updated in 2021 with PENRA and the EQA to include a recommendation to develop regulations related to energy efficiency that:

a. Enable enforcement of the Palestinian Efficient Building Code
b. Address the Green Building Code
c. Establish an official energy efficiency labelling mechanism for imports that enables consumers to make informed choices.

3.1 Existing national policy landscape and gaps

The NDC action has been developed following the National Policy Agenda (2017-2022), Legislative Decree no 14/2015 (2015) On Renewable Energy and Energy Efficiency, the Energy and Natural Resources Sector Strategy (2021-2023), and the second National Energy Efficiency Action Plan / Road Map (2020-2030). A "Voluntary energy efficiency building code" was also adopted in 2004[19].

The NEEAP sets out energy efficiency improvement actions with a focus on electricity in residential, industrial, and commercial activities. This is divided into three phases, the first focuses mainly on the use of efficient appliances and industrial equipment; the second has the objective to introduce demand side management; and the third looks to promote the use of new technologies such as smart homes, smart buildings, and smart grids.

Palestine does not have a mandatory building code. However, the Ministry of Public Works and Housing is responsible for promoting use of the voluntary Palestinian Energy Efficiency Building Code (EEBC). The EEBC, developed in 2004, promotes energy conservation in buildings, but does not specify energy benchmarks for any building type. Local engineers commonly use the Jordanian National Building Code, which references other design codes such as the Uniform Building Code or the Euro Code.

The Prime Minister's Office has decreed that the Palestine Engineers Association (EA) is responsible for the registration and approval of all engineers, architects, consultants, and contractors. The EA approves design drawings for buildings and engineering projects. The Department of Civil Defence (DoCD) also reviews and approves such drawings regarding fire safety requirements. Following approval from the EA and DoCD, some local municipalities also review the drawings for conformity with their own standards. Ministries and municipalities do not give licenses for buildings and engineering projects without the EA's approval of drawings.

The EA, in cooperation with the Italian Development Cooperation, established the Palestinian Higher Green Building Council to encourage the achievement sustainable development in architecture and energy. For example, the Council is a partner to the MENA Green Building Awards, which honour companies across the region that demonstrate sustainable design, construction and/or operation of buildings and structures.

The Energy Sector Strategy 2021-2023 points toward legislation required for green buildings, including *"Legislation requiring public buildings to have a minimum insulation level"*, and *"Legislation obligating the commercial sector to adopt a minimum level of insulation in buildings with an area of more than 2,000 square meters"*. The Strategy specifically states that legislation and programmes are required for energy efficiency, including *"Legislation for energy efficiency tests and laboratory work", "A national program to replace used electrical appliances in national institutions"*, and *"Programs to replace old electrical appliances in citizens' homes"*.

[19] RCREEE, Energy efficiency country profile: Palestine

The Palestine Standards Institution (PSI), established by Presidential Decree in 1994, is autonomous and is the sole body responsible for developing and setting Palestinian standards. Many of the standards developed by PSI are for electric appliances and fossil fuel heating systems and apply to locally manufactured products. PSI labels confirm the compliance of products with Palestinian standards. PSI currently provides product testing and standards certification for locally produced goods from Palestinian companies in the industrial and service sectors. Most imported goods enter through the Israeli ports and need to conform with Israeli standards.

The Arab League's Arab Renewable Energy Framework includes information on the benefits of energy efficiency and renewable energy equipment, rules on certification and qualification schemes, and lists of qualified installers and suppliers (Article 5). As Palestine is a member of the Arab League, these rules on certification and qualification schemes would also apply to Palestine.

3.2 Relevant regional practices

Desk-based, secondary review of relevant policies, regulations and planning documents has identified a range of relevant practices in Algeria, Tunisia, and the United Arab Emirates.

Algeria

In Algeria, Thermal Regulation for New Buildings No. 2000-90 was adopted in 2000, revised in 2016.[20] The regulation considers and accounts for the varying climate in Algeria and establishes mandatory thermal compliance checks for the building envelope of new constructions under winter and summer conditions.[21] Furthermore, executive decree No. 495-05 (2005) prescribes mandatory energy audits for large energy-consuming facilities. Minimum energy performance standards alongside a labelling scheme were introduced in 2009 (by three ministerial orders) for air conditioners, household refrigerators, freezers, and lamps.[22] A similar approach could be taken in Palestine regarding the development of regulations for the Green Building Code, and for establishing an official energy efficiency labelling mechanism.

Tunisia

In Tunisia, the Building Energy Code establishes an energy rating for existing buildings, new buildings, and long-term energy efficient buildings. It is an overall performance code with requirements for the maximum annual energy needs allowed for heating and cooling per building type in each climate zone to reach the level of comfort required for the occupants without using heating and/or cooling systems. The Code promotes complementary policies through the alignment of building label energy ratings with the energy requirements in the code. It is mandatory for office buildings exceeding 500m^2, and for residential buildings, except for single-family houses. The energy rating, which ranges from one to eight, is based on estimated energy needs for heating and cooling, using the calculation methodology of the building energy code.[23] A similar approach could be taken in Palestine regarding the development of regulations for the Green Building Code.

United Arab Emirates

The United Arab Emirates (UAE) has developed a national Green Building Council (GBC), fostered under the World Green Building Council. The GBC promotes sustainability in the built environment through provision of training and associated certification. A mandatory energy labelling standard is also in place in the UAE. The Energy Efficiency Standardization & Labelling (EESL) programme is supervised and managed by the Emirates Authority for Standardization & Metrology. The UAE Ministry for Commerce and Industry has introduced a mandatory regulatory program called the Emirates Conformity Assessment System (ECAS), which assists manufacturers, importers and agents who import electrical products into the UAE in understanding and complying with the requirements of

[20] Journal Officiel de la Republique Algerienne, Thermal Regulation for New Buildings No. 2000-90
[21] Morini et al 2021
[22] FAO, Executive Decree No. 05-495 relating to the energy audit of large energy-consuming establishments.
[23] UNFCCC, Modernising Building Energy Codes

the EESL programme.[24] In 2010, the UAE Cabinet approved the Green Building and Sustainable Building standards, which has been followed by other regional schemes such as the Estidama Pearl Rating System in Abu Dhabi, the Dubai Green Building Regulations and Specifications in Dubai, and Barjeel Green Building Regulations in Ras Al Khaimah[25].

A similar approach could be taken in Palestine regarding the development of regulations for the Green Building Code, and for establishing an official energy efficiency labelling mechanism.

Jordan

The Energy Efficient Buildings Code and Manual in Jordan aims to provide minimum requirements for energy efficiency in buildings in the design, construction, operation and maintenance phase of the building. Jordan National Building Code Council (JNBC) and Municipalities are responsible for enforcing penalties s for non-compliance to the energy efficiency building Code[26].

Several energy codes and manuals support this, for example the Natural lighting code (second edition), 2018[27] sets an objective to provide data for building designers regarding energy saving from using natural light.

The Energy Efficiency Standards and Labelling project (EESL)[28] which ran in Jordan between 2008-2012 set the goal to *"reduce GHG emissions through increased adoption of energy efficient domestic refrigerators, air conditioners, freezers and washing machines"*. The scheme structured verification and enforcement of appliance EE labels and raised consumer and retailer awareness of appliance EE standards and labels. Following this scheme, energy label and minimum energy efficiency standards for household appliances have been enforced and became mandatory in Jordan since 1/7/2014[29]. This applies to both imported and locally manufactured appliances. An Energy Labelling Laboratory[30] has also been established in response to Energy Label Technical Rules and Eco-design regulations issued by Jordan Standards and Metrology Organization (JSMO), to monitor the impact of labelling.

Energy Services Companies (ESCOs)[31] in Jordan minimise costs of energy and maintenance. Financing models that involve third party lenders or investors are now being used to address the energy efficiency projects. Energy service company owners generally act as thee funding source and eventually benefit based on the saving in energy bills.

Lebanon

In Lebanon, Minimum Energy Performance Standards (MEPs) and associated labelling have been developed as part of the National Energy Efficiency Action Plan (NEEAP) (2016-2020)[32]. Measures to further develop this scheme are presented in the plans for a new NEEAP for the period 2021-2025[33]. Technologies that do not align with the MEPs will be banned from import to facilitate sales of efficient equipment with labels. So far, this scheme only applies to solar water heaters and compact fluorescent lamps, but is being developed for electric motors, distribution transformers, washing machines and TVs. Lebanon is also developing a regulatory framework to support implementation and enforcement of the efficiency labelling scheme.[34]

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[24] Intertek, UAE ECAS Compliance
[25] EmiratesGBC, Green Building Market Brief
[26] Navigant, Stakeholder Report: Jordan
[27] Royal Scientific Society, Jordan National Building Codes
[28] UNDP, Energy efficiency standards and labelling in Jordan
[29] Ministry of Energy and Mineral Resource, The Second National Energy Efficiency Action Plan (NEEAP) for the Hashemite Kingdom of Jordan
[30] National Energy Research Centre, Energy Labelling Laboratories
[31] International Journal of Energy Economics and Policy, Barriers to Improving Energy Efficiency: Insights from Energy Services Companies in Jordan
[32] Lebanese Centre for Energy Conservation, NEEAP 2021-2025
[33] Lebanese Centre for Energy Conservation, Towards the Third National Energy Efficiency Action Plan (NEEAP) for the Republic of Lebanon
[34] Green Climate Fund, Readiness Proposal

High level energy efficiency guidelines for building reconstruction and upgrades in Lebanon[35] are available, providing guidance for voluntary energy efficiency actions in construction. The document is intended primarily for architects and engineers who are involved in renovating existing residential buildings and interested in reducing their energy consumption at the same time. A voluntary standard titled "*Building Environmental Performance- Principles, Requirements and Guidelines*" is also under development, which can become mandatory at the request of stakeholders.[36]Implementation steps and responsible parties

The examples above suggest the key steps in Table 2 for developing regulations related to energy efficiency.

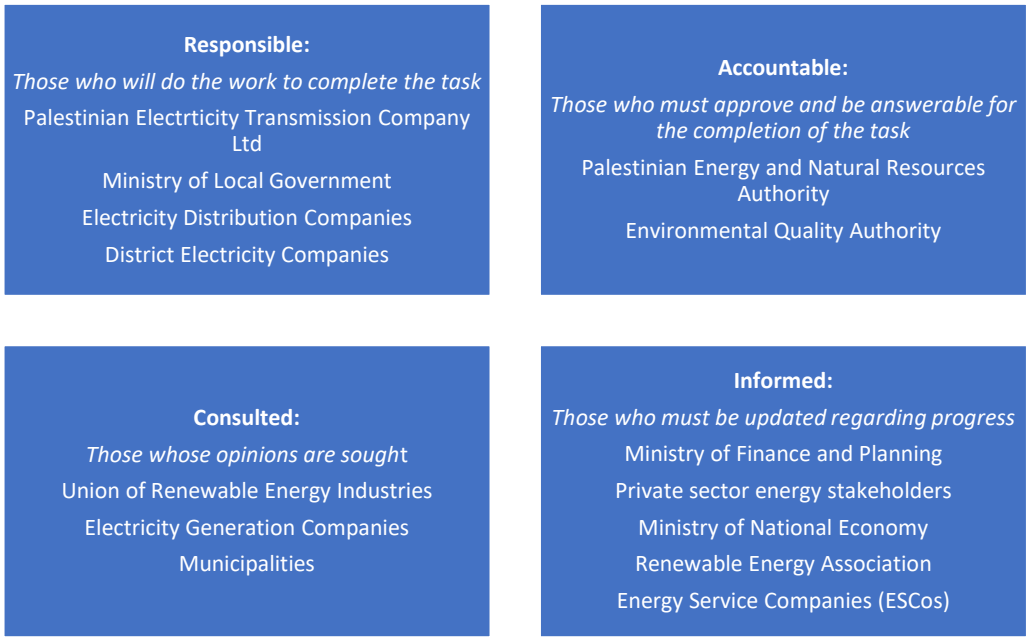
Table 2: Implementation steps and parties involved for developing regulations related to energy efficiency

	Implementation steps	Parties involved
1.	Review of regulations for potential amendment Draw upon relevant regional practices to identify those bylaws and regulations that could potentially be updated to develop regulations to consider energy efficiency.	PENRA EQA Council of Ministers
2.	Identify roles in implementation Identify a RACI (Responsible, Accountable, Consulted, and Informed) matrix of who needs to be involved and how in drafting wording specific to each regulation.	
3.	Consult on updates for relevant regulations Drawing upon regional practices, seek input from relevant stakeholders on draft text of articles to update each relevant regulation.	
4.	Implementing updates to regulations Finalise the proposed text of articles to update each regulation, and secure legal approval for implementation.	

Figure 2 proposes a RACI framework of those who should be responsible, accountable, consulted or informed about implementing the steps in Table 2 for developing regulations related to energy distribution.

[35] Lebanese Centre for Energy Conservation, High Level Energy Efficiency Guidelines for Building Reconstruction and Upgrades in Lebanon
[36] Lebanese Centre for Energy Conservation, Analysis and Recommendations for the Improvement of Energy Efficiency Building Codes in Lebanon

Figure 2: RACI framework for developing regulations related to energy efficiency



4 Policy implementation plan: Renewable energy production

The State of Palestine's updated NDC contains the following conditional action: *"20-33% of electricity to be generated from renewable energy by 2040, primarily from solar PV"*. It is addressed in the NDC implementation action plan for Renewable energy production adopted in 2020. Subsequently, the enabling environment recommendations for the NDC implementation action plan were updated in 2021 with PENRA and the EQA to include a recommendation to *"Establish tax incentives for renewable energy projects".*

4.1 Existing national policy landscape and gaps

The Decision of the Council of Ministers No. (6) of 2017 updated the regulation of incentives aimed at encouraging investment in renewable energy technologies. The Decision relates to incentives for power stations, net-metering projects, and financial institutions. Subsequently, the Council Decision of 12 April 2021 established a package of incentives for investment in renewable energies, including tax reductions. Individuals undertaking utility-scale projects above 1 MW qualify for the following tax incentives: 0% income tax for the first seven years, then 5% income tax for five years, and, finally, 10% income tax for three years. Currently, income tax rates range between 5-15% depending on income band.[37]

The Energy and Natural Resources Sector Strategy (2021-2023) considers the role of the private sector in the development of the energy sector and highlights the importance of the role of Government for *"launching investment incentive packages in the field of renewable energy to stimulate the exploitation of alternative energy sources in the production of electricity".*

A new Palestinian National Renewable Energy Action Plan (NREAP) to 2030 is in development, and will outline the strategy to further accelerate the deployment of renewable energy technologies.

4.2 Relevant regional practices

Desk-based, secondary review of relevant policies, regulations and planning documents has identified a range of relevant practices in Egypt, Jordan and Tunisia.

Egypt

Presidential Decree No 17/2015 reduces sales tax related to investments in the energy sector to 5% (from as high as 10%) and sets customs duties on equipment used for production at 2% instead of 5%.[38] A "one-stop shop" system is implemented through the General Authority for Investment, which acts as a liaison between investors and government agencies when applying for business licenses. The Investment Law in Egypt also grants an investment incentive through the deduction of 30% of the investment cost for projects which depend on or produce new and renewable energy. Palestine may wish to consider implementing similar tax incentives, as implemented under Decree No 17/2015.

Jordan

Under the Renewable Energy and Efficiency Law 13 of 2012 (REEL), and associated bylaws, Jordan exempts import and purchase of all systems and equipment for renewable energy projects from customs duties and sales tax. Sales tax is currently imposed at a rate of 16% in Jordan.[39] Customs duty tariff depends on the value or quantity of the goods.[40]

Palestine may wish to consider implementing similar tax incentives.

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[37] PIPA, Tax
[38] DITP, New draft law of investment
[39] PWC, Sales tax
[40] Jordan Customs, Factors on Basis of Which Import or Export Duties are Applied

Tunisia

The Energy Transition Fund provides financing for renewable energy and energy efficiency projects in Tunisia. The Fund is financed by *"a tax on first licence registration of touristic cars (according to motor capacity), as well as VAT* [value-added] *tax, custom duties on air conditioning equipment and commodities, and revenue derived from fines imposed on non-compliant companies or individuals."*[41] Exemptions from VAT and reduced import duties apply to raw materials and products necessary to manufacture energy efficiency or renewable energy equipment.[42] The Tunisian Investment Fund also provides tax revenue exemption for ten years and social security fees payment exemption for five years for renewable energy projects.[43] For solar energy consumers, the Tunisian government has also implemented the PROSOL programme, which offers capital grants combined with value-added tax exemption, reduction of custom duties and reduced interest loans paid back through electricity bills for the purchase and use of solar water heaters.[44]

Palestine may wish to consider implementing a similar combination of tax incentives and funding support. This could be financed through taxes on activities that run counter to the goals of the energy transition, such as licensing of vehicles as applied in Tunisia, or taxes on oil and gas use that may undermine efforts to increase the generation and use of renewable energy.

Lebanon

Tariffs have been fixed in Lebanon since 1994 at an average of USD 0.092 per kWh.[45] There is currently no Feed-in Tariff scheme established for renewable energy in Lebanon. However, net metering allows private producers to produce electricity for self-consumption, and inject any surplus back into the grid. Electricity injected into the grid is then to be deducted from monthly bills, and can be carried over into following months, but is set to zero at the end of each year.[46]

The Central Bank of Lebanon (BDL) initiated the National Energy Efficiency and Renewable Energy Action (NEEREA)[47] incentive scheme, launched in 2010. The scheme provides subsidized green loans provided by Lebanese commercial banks to the private sector, allowing private sector entities to get subsidized loans for any type of energy efficiency and renewable energy projects. The loan is eligible to private existing and newly built facilities. It has a ceiling of 10 million USD and is offered at a low interest rate for a maximum of 14 years including a grace period of up to 6 months to 4 years. By June 2020, more than 1,000 projects were approved by the NEEREA financing mechanism with a total amount of more than 600 million USD.

A similar scheme, the Lebanon Energy Efficiency and Renewable Energy Finance Facility (LEEREFF)[48] was implemented from 2017-2020 by BDL and MoEW/LCEC with the support of the European Investment Bank and the Agence Française de Développement. The scheme acted as a dedicated credit line for sustainable energy investments in renewable energy, green Buildings and energy efficiency in business and industry. It supports small-scale investments in energy efficiency and renewable energies by private companies in Lebanon, with a particular focus on small and medium-sized enterprises.[49]

4.3 Implementation steps and responsible parties

The examples above suggest the key steps in Table 3 for establishing tax incentives for renewable energy.

[41] IEA, FNME Tunisia
[42] Tax exemptions for the import of renewable energy and energy efficiency equipment materials
[43] UNECE, Overview of the Tunisian "Energy Transition Fund" and presentation of its RE incentives
[44] IRENA, Tunisia Renewables Readiness Assessment
[45] IRENA (2020), Renewable Energy Outlook: Lebanon
[46] MedSolar, The regulatory framework and tariff scheme for grid-connected photovoltaic power plants in Lebanon, Jordan and Palestinian Territories and Recommendations
[47] Lebanese Centre for Energy Conservation, NEEREA
[48] Banque du Liban, Lebanon Energy Efficiency and Renewable Energy Finance Facility
[49] GFA, Lebanon energy efficiency and renewable energy finance facility, LEEREFF

Table 3: Implementation steps and parties involved for establish tax incentives for renewable energy

	Implementation steps	Parties involved
1.	Review of current tax rates for potential amendment Draw upon relevant regional practices to identify the current taxes applied to renewable energy generation that could be reduced or removed.	PENRA
2.	Proposed amendments to taxation Prepare proposed amendments based on the review conducted in the previous steps. Seek input from relevant stakeholders on the proposed amendments to taxation. This will need to include, at a minimum, the Ministry of Finance and Planning, regarding the impact on government budgets of the proposed changes to the taxation.	PENRA Ministry of Finance and Planning
3.	Consultation on proposed amendments Care will be taken to consult with key stakeholders when developing proposed amendments to taxation, including those that the changes seek to incentivise (e.g., those considering implementing or funding renewable energy projects), to ensure that the amendments will have the desired effect.	PENRA Ministry of Finance and Planning
4.	Implementing amendments to taxation Finalise and implement the proposed amendments to taxation.	Ministry of Finance and Planning

Figure 3 proposes a RACI framework of those who should be responsible, accountable, consulted or informed about implementing the steps in Table 3 for establishing tax incentives for renewable energy.

Figure 3: RACI framework for establishing tax incentives for renewable energy

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