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Developments in Law and Policy: The Promotion of Green Energy in the Electricity Sector of Palestine (In press)

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This paper analyses the regulatory framework for renewable electricity in Palestine. The State of Palestine has inherited accumulative problems in its electricity sector, as in many other sectors, mainly due to the Israeli occupation of the Palestinian Territories since June 1967. These territories include the West Bank (including East Jerusalem) and the Gaza Strip. The Occupied Palestinian Territories were declared by the United Nations' General Assembly in September 2012 to hold a non-member state status, and has since been known as the 'State of Palestine'. Multi-faceted limitations and restrictions resulting from the occupation have impeded development in the electricity sector as a pivotal public service. However, the Palestinian Government has recently attempted to take control over electricity and to restructure the sector using legal instruments. The government has adopted regulations and embraced a target to promote the use of renewable energy sources for the generation of electricity. This paper argues that despite the Palestinian Government's attempt to achieve the renewable target, the law needs to be revised thoroughly to ensure increased promotion of alternative energy generation sources.

Keywords: Palestine, electricity, law, policy, renewable energy, renewable energy target, solar energy, feed-in tariff, auction, tax incentives

I. Introduction

Palestine is a Middle Eastern non-member observer state located in southwest Asia, and is one of the Middle East and North Africa countries. The state's jurisdiction currently encompasses two separate territories: the West Bank, including East Jerusalem, and the Gaza Strip. Following the Oslo Accord in 1993, the two regions were brought under Palestinian self-autonomy following almost five decades of Israeli occupation.¹ In the Oslo Accord, the Palestinian Liberation Organisation represented the Palestinian people in general, and they were considered by the international community to hold observer status.² However, a recent United Nations (UN) resolution in 2012 recognises the State of Palestine as a non-member state observer.³ Currently, the State of Palestine has around 4.75 million inhabitants who are living in and distributed across the West Bank, including East Jerusalem, and the Gaza Strip. The state has reached a very low gross domestic product per capita of USD 425.9 in 2015.⁴ Meanwhile, the projected number of Palestinians in the world is 12.37 million, of whom 1.47 million reside in Israel and 5.46 million reside in Arab countries.⁵

Palestine has an insecure energy sector, and the state mostly relies on imports from Israel, Jordan and Egypt.⁶ There are several Israeli restrictions that affect economic development in the Palestinian Territories, such as limitations on imports and exports and

¹ This agreement was signed on 13 September 1993 between the Palestinian Liberation Organization and the Government of Israel and was called the Declaration of Principles Oslo Accord I; see <www.peacemaker.un.org/israelopt-osloaccord93> accessed 2 October 2015

² Observer Status for the Palestine Liberation Organization, GA Res 3237 (XXIX), 29th sess, 2296th plen mtg (22 November 1974); for further information refer to <<http://palestineun.org/status-of-palestine-at-the-united-nations/>>

³ Status of Palestine in the United Nations, GA Res 67/19, 67th sess, 44th plen mtg, Agenda Item 37, UN Doc A/RES/67/19 (29 November 2012)

⁴ Palestinian Central Bureau of Statistics (PCBS), 'Press Report: Preliminary Estimates of Quarterly National Accounts' (First Quarter 2015) 7.

⁵ PCBS, 'The Palestinians at the End of 2015', <www.pcbs.gov.ps/site/512/default.aspx?tabID=512&lang=en&ItemID=1566&mid=3171&wvversion=Staging> accessed 22 May 2016.

⁶ World Bank Group, 'Assessment and Action Plan to Improve Payment for Electricity Services in the Palestinian Territories: Study on Electricity Sector Contribution to Net Lending, Executive Summary' (2014) 15.

total Israeli control of borders and ports (land, sea and air).⁷ Internal political, legal, technical and financial factors also obstruct development, including that of the electricity sector. For example, the political dispute between the major Palestinian factions (Hamas and Fatah) since 2006 and the absence of a complete quorum inside the Palestinian legislative council have impeded the development of legislative process and resulted in the issuance of dual laws in the West Bank and Gaza Strip.⁸ In implementing their legislative power, former and current governments in both the West Bank and the Gaza Strip have issued separate sets of decrees on diverse issues, and this, in turn, has led to non-unified legislation in the two jurisdictions.⁹ However, in June 2014, the factions partially solved this dispute by reaching a national consensus that led to the establishment of a national Unity Government. It was agreed that the Unity Government would rule for six months until new presidential and legislative council elections could be declared.¹⁰ Despite exerted efforts, the new Unity Government did not resolve the legal problems that had been accumulating since the beginning of the political separation. In fact, the Unity Government did not possess full sovereignty over all Palestinian jurisdictions due to a number of internal and external impediments that are outside the scope of this paper. Ultimately, the Unity Government resigned in June 2015, and the political separation was reinstated and remains in place at the time of writing.¹¹

A lack of basic energy facilities also contributes to the vulnerability of the energy sector in Palestine. For example, in the West Bank, there are no sufficient and qualified storage capacities for the petroleum derivatives that are necessary to operate future power plants.¹² Due to the increasing consumption of electricity, insufficient electricity supply

⁷ Ministry of Planning and Administrative Development (MoPAD), 'Sustainable Development under Israeli Occupation: Achievements and Challenges' (2012) 51.

⁸ United Nations Development Programme (UNDP), 'Palestine Human Development Report: Development for Empowerment' (2014) 21, 71–72.

⁹ There were many decree laws issued during the duration of the dispute, and the next sections will provide examples of similar decrees, especially with regards to electricity regulation and renewable energy exploitation.

¹⁰ BBC, 'Hamas and Fatah Unveil Palestinian Reconciliation Deal' <www.bbc.com/news/world-middle-east-27128902> accessed 22 June 2016.

¹¹ ALJAZEERA, 'Palestinian Unity Government Resigns' <www.aljazeera.com/news/2015/06/palestinian-unity-government-resigns-150617125314649.html> accessed 22 June 2016.

¹² MoPAD, 'Palestinian National Plan 2011–13: Energy Sector Strategy' (2011–13) 3.

has become a critical issue affecting roughly one-third of total energy consumption in the Palestinian jurisdiction.¹³ In Palestine, only the Gaza Power Generating Company serves the Gaza Strip, and electricity import exceeds production.¹⁴ The single power plant supplies nearly one-third of the Gaza Strip's needs, with approximately 63% and 8% imported from Israel and Egypt, respectively.¹⁵ Moreover, the plant was critically damaged by airstrikes during an Israeli assault in July 2014, and since then has operated with reduced capacity.¹⁶ This has affected every aspect of life in Gaza: the regular power cuts leave the enclave in a blackout for hours and paralyse its economic wheel.¹⁷ While there are various factors contributing to this humanitarian catastrophe, the major impact is made by the siege and war on the Strip. Further, future consumption of electricity in Palestine is expected to reach 8,400 gigawatts by 2020 as the consumption rate grows 6% annually.¹⁸ It is also worth noting that the aging grid and illegal connections to the grid by individuals have resulted in a 10% loss of imported electricity.¹⁹ * This implies that the current level at which electricity is being provided in Palestine cannot meet the increasing demand.

¹³ MoPAD, Sustainable Development (n 7) 57.

¹⁴ PCBS, 'Quantity of Electricity Imported and Purchased (MWh) in Palestine by Source and Month' (2013) <www.pcbs.gov.ps/Portals/_Rainbow/Documents/Energy-2013-03e.htm> accessed 13 December 2015; total imported electricity for 2013 was 4,734 GW, whereas the produced electricity was 0.4026 GW.

¹⁵ PCBS, Quantity of Electricity (n 14); the Gaza Strip imported 1.327 GW of electricity and produced 0.402 GW of electricity in 2013; OCHA, 'The Humanitarian Impact of Gaza's Electricity and Fuel Crisis' (2015) <<http://gaza.ochaopt.org/2015/07/the-humanitarian-impact-of-gazas-electricity-and-fuel-crisis/>> accessed 22 March 2016; Report on UNCTAD Assistance to the Palestinian People, 62nd sess, Provisional Agenda Item 10(b), UN Doc TD/ B/62/3 (14–25 September 2015) 6.

¹⁶ Ministry of National Economy, 'The National Early Recovery and Reconstruction Plan for Gaza' (2014) 35; Palestine Electric Company, 'Annual Report' (2014) accessed through <www.pec.ps/Control/Files/Final%20Eng%20PEC%20AR014-25Mar2015-FINAL%20TO%20PRINT2-SMALL.pdf5516940494ef0.pdf>.

¹⁷ Roger Coma Cunill and Sara Badieli, 'A Brighter Future for Gaza?' (*Voices and Views: Middle East and North Africa*, 16 June 2016) <<http://blogs.worldbank.org/arabvoices/brighter-future-gaza>> accessed 23 June 2016; Ma'an News Agency, 'Temporary Solution Reached for Gaza Electricity Crisis Amid Tax Dispute' <<https://www.maannews.com/Content.aspx?id=771313>> accessed 23 June 2016.

¹⁸ Palestine Economic Policy Research Institute (MAS), 'Renewable Energy in the Palestinian Territory: Opportunities and Challenges, Round Table 4' (2012) 2.

¹⁹ Palestinian Electricity Regulatory Council (PERC), 'Annual Second Report' (2012) (author's trans). <www.perc.ps/ar/files/publications/annualreport2012ar.pdf> accessed 16 January 2016.

*All translations in the article are by the author, except where otherwise indicated.

II. Electricity Sector Regulation

Electricity continues to be a challenge for the Palestinian Government for a number of reasons. First, the Israel Electric Corporation (IEC) overwhelmingly dominates the electricity utilised in Palestine, as it supplies about 87.7% of Palestinian electricity consumed, mostly through bilateral contracts with local councils.²⁰ This dependence on the IEC is somewhat attributed to the restraints of the Protocol on Economic Relations (the Paris Protocol).²¹ For example, fuel is a major element in the electricity industry, but the fuel imported to the Palestinian Territories must meet US and European Union standards.²² As the regular fuel supply from Egypt and Jordan does not always adhere to these standards, Palestine is forced to import fuel from Israel, and consequently, electricity from the IEC.²³

Israel, as the occupier authority, holds the responsibility of organising the electricity services until a governing power is delivered to the Palestinians in a final status agreement.²⁴ However, the Israeli Government has not carried out its responsibility to serve the Palestinian population, which is under Israeli administrative and security control, particularly in a major portion of the Palestinian area (i.e., the so-called ‘Area C’, which forms about 60% of the occupied West Bank).²⁵ The Israeli Government’s occupation policies on the ground, in addition to its neglect of the status of Palestine as an observer non-member state and the newly agreed upon Palestinian Government, have recently brought the conflict to the foreground and, consequently, increased the tension between the Israelis and the Palestinians.²⁶ Recently, the UN has asserted that Israel has

²⁰ MoPAD, Energy Sector Strategy (n 12).

²¹ Protocol on Economic Relations between the Government of Israel and the Palestinian Liberation Organization PLO, representing the Palestinian people, Annex 4, signed on 29 April 1994. It is the so-called ‘Paris Protocol’, and it is an integral part of the Agreement on the Gaza Strip and the Jericho Area, which was signed on 4 May 1994.

²² MoPAD, Energy Sector Strategy (n 12) 2.

²³ MAS, Renewable Energy in the Palestinian Territory (n 18); imported electricity bills cost around 400–500 million in US dollars annually.

²⁴ World Bank Group (n 6) 5–12.

²⁵ MoPAD, Sustainable Development (n 7) 20; UNDP (n 8) 53; according to the Oslo II Agreement 1995, ‘Area C’ refers to Palestinian populated districts that should be under Israeli governance regarding both administrative and security issues; OCHA, ‘Humanitarian Atlas’ (2015) <www.ochaopt.org/documents/atlas_2015_web.pdf> accessed 22 March 2016, 22, the maps in the atlas show the access to land and livelihood in Area C.

²⁶ UNDP (n 8) 18; Ministry of National Economy (n 16) 15.

violated Palestinian natural resources, which are under the sovereignty of the Palestinians, including its electricity network.²⁷ Meanwhile, the Palestinian Unity Government attempted to reach a fair power agreement with the IEC, but no feasible agreement emerged to resolve the power issues.

In the absence of a formally binding electricity agreement with the Israelis, the IEC, which is a *de facto* Israeli energy generation company, illegally dominates the Palestinians' electricity and its price.²⁸ A formally binding electricity agreement is therefore necessary to preserve the Palestinians' electricity rights and to curb the monopoly of the IEC. Unfortunately, neither the Paris Protocol nor the Oslo Accord resolved the electricity issues between the Palestinian Authority and the Israeli Government. Fundamentally, the Palestinian Government needs to claim the amendment of the key agreement, the Paris Protocol, to free the electricity sector from Israeli energy constraints and total control. The future amended agreement must incorporate the basic rights of Palestinians to control their energy resources. Any future electricity agreement to be developed with the Israeli Government must stipulate the Palestinians' easy access to, and reasonable control of, all components of the Palestinian electricity system. This agreement needs to explicitly express the right of the Palestinians to develop future generation plants and to have full control over an economically viable electricity sector. In line with this agreement, Israel should remove the additional fee imposed on the electricity exported to the Palestinians. The savings of the fee can help to support future Palestinian renewable projects directly, instead of contributing to Israel's renewable electricity through the IEC. Curbing the activities of Israeli renewable energy companies across East Jerusalem and Area C is another fundamental issue. Any new agreement should emphasise that the Palestinian Government has the sole right of organising and granting the concession for businesses that work in renewable electricity deployment across these areas.

²⁷ Permanent Sovereignty of the Palestinian People in the Occupied Palestinian Territory, including East Jerusalem, and of the Arab Population in the Occupied Syrian Golan Heights Over their Natural Resources, GA Res 70/225, UN GAOR, 2ed Comm, 70th sess, Agenda Item 64, UN Doc A/70/480 (22 December 2015).

²⁸ Al-Haq, 'Annexing Energy' (2015) 23.

Nonetheless, the fragmentation of the Palestinian areas and the aforementioned economic constraints give no option for the Palestinian local councils except to sign separate contracts with the IEC in order to receive electricity. This, in turn, obstructs the Palestinian Government's endeavours to thoroughly rehabilitate the electricity sector. This monopoly affects not only the Palestinian citizens, but also the Palestinian distribution companies, such as the Jerusalem Electricity Company.²⁹ The company has recently suffered massive debt due to the volatility of the electricity prices that have been imposed upon the Palestinians by the IEC, and because of Israeli claims over unpaid bills by Palestinians in Area C. Consequently, there have been several incidents of power outages and service intermittencies.³⁰ Recently, the Palestinian Government has added the electricity debt of some West Bank municipalities to the Palestinian Authority's annual budget in order to alleviate the debt problem and to merge the electricity service in these municipalities under the main developed distribution companies.³¹ Through an economic lens, the limited sovereignty of the Palestinian Authority over electricity exacerbates the intervals between payments to the IEC, which accordingly results in massive annual electricity bills owed by the Palestinian Authority. This, in turn, impacts the national budget by increasing the public debt, which impedes the development of Palestinian land and resources.

In 2014, the World Bank reported on Palestine's electricity debt to the IEC for the period 2010-2013.³² The report pointed out the major obstacles that have hindered the Palestinians from making regular payments for the electricity purchased from the IEC: 1) The obstruction of the Palestinians' ability to check meters that are close to connection points with the IEC's grid; 2) The inflexible electricity prices imposed on distributors; and 3) The non-favourable treatment of Palestinian distributors, whereby they are ignored

²⁹ World Bank, 'Economic Monitoring Report to the Ad Hoc Liaison Committee' (2015) 11.

³⁰ Many incidents of power cuts were documented, and this has become the IEC's current policy toward the Palestinians; see, eg, <www.haaretz.com/israel-news/.premium-1.644167> accessed 17 October 2015.

³¹ Council of Ministers, Decision N 10/16/17 for 2014, Remedy for Electricity Debts of Tulkarm Municipality; Council of Ministers, Decision N 11/16/17 for 2014, Remedy for Electricity Debts of Qalqelya Municipality.

³² World Bank Group (n 6).

as the largest single customer, along with the forcible surplus charge on the total price of electricity that is allocated to support Israel's renewable projects.³³ In addition to recommending continuing the reform and the rehabilitation of the electricity sector, especially its legal framework, the report recommended that the Palestinians should finalise a fair electricity agreement with the IEC to resolve the issues of payment progress, reduce the non-payment amounts and set wholesale electricity tariff prices.³⁴

Meanwhile, the increasing population and their growing housing trends are pressuring the Palestinian Government to confront the increasing demand for electricity, especially in the residential sector, which is the largest with respect to the consumption of electricity in the Palestinian Territories.³⁵ The State of Palestine is geographically scattered under the Israeli military occupation due to the land separation between the Gaza Strip and the West Bank, which is an issue that has hindered the Palestinian Government from adopting a unified electricity policy across these regions. Likewise, the dispersed inhabited areas in the West Bank have impeded the Palestinians from continuously improving their electricity network.³⁶ The fragmented territories are also rooted from the interim agreement, the Oslo Accord, which divided the West Bank into three jurisdictions: A, B and C.³⁷

In the State of Palestine, the legislation of past regimes—Ottoman laws, the British mandate, Jordanian laws in the West Bank, Egyptian laws in Gaza Strip and Israeli military orders—has influenced the development of many facets of life, especially the regulation of the electricity sector. In fact, some Jordanian and Egyptian laws, along with Israeli military orders, remain validly in force and influence electricity management. Until 2009, there was no cohesive law to organise and control the electricity sector in the Palestinian jurisdiction, which has undermined the government's efforts to deliver

³³ *Ibid.*

³⁴ *Ibid.*

³⁵ PCBS, Quantity of Electricity (n 14); the total consumption of electricity in Palestine for 2013 was 17050 T/J and household consumption was 11259 T/J.

³⁶ *Ibid.*

³⁷ Al-Haq (n 28) 8.

adequate electricity service to the end consumer.³⁸ Consequently, this lack of control of the electricity sector has left consumers under the control of franchised working companies. However, in coping with the situation of limited sovereignty, and in the absence of the Palestinian Legislative Council, consecutive governments have developed regulations that could improve the electricity sector in the Palestinian jurisdiction. In order to organise the electricity sector, the government issued the *Electricity Decree Law* in 2009.³⁹ The decree aims to restructure and improve the sector in the area of national and foreign investment, and to guarantee a satisfactory power supply and reasonably priced service.⁴⁰ Moreover, the decree stipulates the establishment of the Palestinian Electricity Regulatory Council (PERC), entrusts it with financial and administrative discretion,⁴¹ and determines its duties and responsibilities.⁴²

In turn, PERC has strived to unbundle the electricity service to avoid duplication in the practice of the three actions of generating, transmitting and distributing. Therefore, as suggested by PERC, the Palestinian Energy and Natural Resources Authority (PENRA) attempted to unify, regulate and re-licence the electricity distributors in the West Bank under four main companies: the Jerusalem District Electricity Company, Northern Electricity Distribution Company, Southern Electric Company and Hebron Electric Power Company.⁴³ PENRA and the Council of Ministers issued bylaws and instructions to ensure the effective enforcement of the Decree. The electricity tariff, the instructions to rectify the status of the companies and the local governing councils, the licensing roles and the licensing fees are all legal tools that form the regulatory

³⁸ For example, the Jordanian Electricity Authority Provisional Law N21 for 1967 has partially valid force in the West Bank; similarly, the Gaza Municipal (Electricity) By-law 1958 has partially valid force in Gaza city.

³⁹ Electricity Decree Law N13 for 2009 (Palestine) 81 Palestine Gazette 13.

⁴⁰ *Ibid* art 3.

⁴¹ *Ibid* art 5.

⁴² *Ibid* art 9.

⁴³ PENRA, Instruction 1 for 2010 Rectifying the Status of the Electricity Companies According to Electricity Decree Law N13 for 2009, 85 Palestine Gazette; PENRA, Instruction 2 for 2010 Pertaining the Rectifying of the Status of the Local Governing Council According to Electricity Decree Law N 13 for 2009, 85 Palestine Gazette; technically, the new structuring includes the Gaza electricity companies, but practically, the GAZA Electricity Distribution Company is under the control of the government in Gaza.

framework of Palestine's electricity sector.⁴⁴ PENRA moved forward in restructuring the electricity sector and issued the aforementioned instructions 1 and 2 in 2010, which called upon companies and local councils to comply with the *Electricity Decree Law* and to rectify their status.⁴⁵

In order to achieve the restructuring goal, in 2010, the Palestinian Council of Ministers also issued the *Rules of Licensing Electricity Companies*, and two years later, in 2012, the Council decided on the regulations pertaining to licensing fees, as well as the electricity tariff.⁴⁶ Nonetheless, in its second annual report in 2012, PERC asserted partial compliance with these rules. In fact, more than half of the local councils that are working in the field did not comply with the integration,⁴⁷ a matter which, to some extent, influences the performance of some of the distribution companies. Although PERC and PENRA have developed the necessary tools to restructure the electricity sector, unfortunately, the rules have been somewhat weakly enforced.

III. The Legal Framework of Renewable Energy

Countries have realised that renewable sources could supportively aid electricity production, and therefore, today, renewable sources are increasingly being deployed due to rapid improvements in the renewable market and a notable decline in the prices of renewable technologies.⁴⁸ Across the Palestinian Territories, there are several geographical locations that have implemented adequate measures to exploit renewable energy sources, such as solar, wind and biomass. In fact, scholars have asserted that

⁴⁴ See further, Council of Ministers, Approval for Electricity Tariff, Decision N 04/14/14 for 2012, issued 28 December 2012; Council of Ministers, Basis for Licensing Electricity Companies, Decision N 9 for 2010, issued 15 January 2010, 88 Palestine Gazette.

⁴⁵ PENRA (n 43) Instruction 1, art 4; Instruction 2, art 2.

⁴⁶ Council of Ministers, Electricity Companies Licensing Fees Regulation, Decision N 4 for 2012, issued 31 December 2012, 98 Palestine Gazette.

⁴⁷ PERC (n 19).

⁴⁸ Renewable Energy Policy Network for the 21st Century (REN21), 'Renewables 2014: Global Status Report' (2014) 76.

power generation can feasibly occur through the exploitation of these sources,⁴⁹ and this alternative energy can aid in reducing energy imports into Palestine.⁵⁰

Moreover, the Palestinians' modest experience shows great potential for renewables to have a share in the energy mix. In terms of solar power, Palestine has sufficient solar radiation,⁵¹ and a history of successful implementation that reflects strong potential for solar energy exploitation. In 2015, solar heating systems were widely deployed in about 57% of households.⁵² Further, photovoltaics (PV) technology is successfully being used for the electrification of some rural villages in the West Bank.⁵³ In agriculture, solar power is used for the greenhouses that extend across most of the Palestinian jurisdiction. Additionally, biomass energy contributes to 9% of total energy consumption.⁵⁴ In fact, solar, wind, and biomass sources were claimed, when employed effectively, to replace 25% of Palestine's energy demand in 2011.⁵⁵ In short, renewable energy can increase the supply of electricity and support Palestine in independently meeting part of its energy demand.

In a legal context, the *Palestinian Energy Authority's Constituting Law* first refers to renewable energy in its definition of energy as a term. The law stipulates that the

⁴⁹ See, eg, Imad Ibrik, 'Energy Profile and the Potential of Renewable Energy Sources in Palestine' in Michael Mason and Amit Mor (eds), *Renewable Energy in the Middle East* (Springer 2009) 71; Antonis Tsikalakis and others, 'Review of Best Practices of Solar Electricity Resources Applications in Selected Middle East and North Africa (MENA) Countries' (2011) 15(6) *Renewable and Sustainable Energy Reviews* 2838.

⁵⁰ M S Ismail, M Moghavvemi and T M I Mahlia, 'Energy Trends in Palestinian Territories of West Bank and Gaza Strip: Possibilities for Reducing the Reliance on External Energy Sources' (2013) 28 *Renewable and Sustainable Energy Reviews* 117, 128.

⁵¹ GeoModel Solar, 'Atlas of Solar Resources: Palestinian Territories' (2014) 12.

⁵² PCBS, 'Press Release on Results of Household Energy Survey' (January 2015), issued 5 July 2015, <www.pcbs.gov.ps/site/512/default.aspx?tabID=512&lang=en&ItemID=1439&mid=3172&wversion=Staging> accessed 15 January 2016.

⁵³ See, eg, Marwan M Mahmoud and Imad H Ibrik, 'Techno-economic Feasibility of Energy Supply of Remote Villages in Palestine by PV-Systems, Diesel Generators and Electric Grid' (2006) 10(2) *Renewable and Sustainable Energy Reviews* 128.

⁵⁴ MoPAD, *Energy Sector Strategy* (n 12) 5.

⁵⁵ Tareq Abu Hamed, Hannah Flamm and Mohammad Azraq, 'Renewable Energy in the Palestinian Territories: Opportunities and Challenges' (2012) 16(1) *Renewable and Sustainable Energy Reviews* 1082, 1087.

research and development of all types of renewables is the responsibility of PENRA.⁵⁶ The *Electricity Decree Law* also refers to renewables in two contexts. The first context is the law's requirement that the Electricity Council shall consider alternative energy when deciding upon any new electricity tariff.⁵⁷ The second context is the law's clear statement that PENRA should support research into alternative energy sources.⁵⁸ It seems that the *Electricity Decree Law* builds a logical connection between PENRA and the Environment Quality Authority. It is a normal relation, especially because environmental approvals are necessary to construct any electricity generation plant. This complementation is also clear in the *Electricity Decree Law*'s requirement that distribution and generation companies must comply with environmental protection prerequisites. Likewise, new projects should conform to environmental law provisions and procedures, such as environmental impact assessments, approvals and inspection procedures.⁵⁹

Not surprisingly, in 2012, the Palestinian Government recognised the necessity of regulating the exploitation of renewables. The Council of Ministers issued a decision that established the legal base for the exploitation of renewables in Palestine, and, in the meantime, it approved PENRA's strategy: namely, the *General Strategy of Renewable Energy in Palestine*.⁶⁰ The following section addresses the regulatory framework components.

⁵⁶ Palestinian Energy Authority's Constituting Law N12 for 1995 (Palestine) 7 Palestine Gazette 10, art 1, art 3 s 7.

⁵⁷ Electricity Decree Law, art 13 sub 1.

⁵⁸ *Ibid* art 28.

⁵⁹ *Ibid* arts 6, 17, 27.

⁶⁰ Council of Minister, Decision N 16/127/13 for 2012, Pertaining to Regulating the Exploitation of Renewable Energy in Palestine; the terms 'Renewable Regulation' and the 'Decision' where mentioned in this paper refer to the above Decision, unless otherwise noted.

1. The General Strategy for Renewable Energy in Palestine

The target of the renewable energy strategy is for 10% of electricity production to be obtained from renewable sources by 2020.⁶¹ This percentage equals a capacity of 130 megawatts.⁶² The strategy specifies certain prerequisites to achieve this goal. First is the approval of legislation and regulations that promote the relevant technologies. Second is the adoption of sufficient fiscal sources to provide remuneration for the feed-in tariff that foster investment by the private sector. Third is capacity building for the workforce with regards to renewable technologies. Fourth is approval of the Palestinian Solar Initiative (PSI) 2012-2015. Last is a development plan that improves and promotes renewable energy sources through 2020.⁶³

The strategy expects 240 gigawatts to be generated from renewable projects by 2020, mostly from solar energy. It appears that this figure is a mistake, as the strategy projects the generation of a total of 130 megawatts by 2020 in two phases.⁶⁴ According to the strategy, the first phase involves feasibility studies, bid preparation, construction of small-scale projects and implementation of the PSI. The first phase started in 2012 and extended to 2015, and was supposed to add a capacity of 25 megawatts from potential solar energy, wind energy, biogas from landfills and animal waste.⁶⁵ In fact, the implementation of the PSI entails an increase of only 5 megawatts from solar applications that will be installed on the rooftops of 1000 households. The participants in the PSI will be supported by a feed-in tariff price (included in Appendix 1) and an upfront government subsidy. Appendix 2 shows the specific procedures for carrying out the PSI. During the first phase, it is projected that the private sector would cover most of the project's cost; meanwhile, the feed-in tariff policy will also spur investors.⁶⁶ The PSI

⁶¹ PENRA, 'The General Strategy for Renewable Energy in Palestine' (2012) <www.perc.ps/ar/files/enrgy/General%20strategy.pdf> accessed 10 November 2015, 1.

⁶² Emma Aberg, 'Solar Power in the MENA Region: A Review and Evaluation of Policy Instruments for Distributed Solar Photovoltaic in Egypt, Palestine and Tunisia' (Master thesis, Lund University 2014) 29.

⁶³ PENRA (n 61).

⁶⁴ *Ibid* table 1, 2.

⁶⁵ *Ibid* table 2, 4.

⁶⁶ *Ibid* 7.

expects that there will be a vital role for the stakeholders, and it includes implementation procedures and a preliminary feed-in tariff (see Appendices 1 and 2 of the strategy).

After an evaluation of phase one's output, phase two will extend from 2016-2020, and the generation of 105 megawatts is predicted by the end of the phase. During the phase, a feed-in tariff and direct incentives are the main catalysts for private sector investors. The success of the strategy is assumed when institutions and stakeholders collaborate collectively and when the private sector makes a substantial investment in renewable projects. Reportedly, in Palestine, the share of renewable energy in overall electricity generation has reached only 0.02%.⁶⁷ It is stated that a capacity of 1.25 megawatts was achieved through the PSI by 2014, but unfortunately this residential scheme was suspended due to the government's insufficient financial capacity.⁶⁸

2. The Renewable Energy Exploitation Decision

In order to facilitate the implementation of the renewable strategy, the Council of Ministers issued Decision N 16/127/13 in 2012. The decision regulates the exploitation of renewable energy sources in Palestine, and includes in Article 1, for the first time, a definition of renewable energy sources.⁶⁹ Article 2 asserts that the decision approves the renewable energy strategy in order to increase the share of renewables in the energy mix. The decision adopts the competitive tendering method for the approval of the construction of new renewable projects, especially future plants in which the private sector will invest. The decision also allows individual investors to submit direct offers,⁷⁰ and it grants them the right to install renewable applications. However, the applicants must meet the requirements of PERC before applying to obtain the approvals.⁷¹ Additionally, the decision obliges the owners of new renewable plants to sign a compulsory purchase agreement with a distribution company. Moreover, the decision entrusted PERC with the authority to decide, review and annually adjust the feed-in tariff

⁶⁷ MAS, 'Encouraging Solar Electricity Production in the OPT: Is It Just a Slogan?' (2015) Background paper, Roundtable (7) 2.

⁶⁸ Aberg (n 62) 33.

⁶⁹ Regulation of Renewable Energy in Palestine, art 1.

⁷⁰ *Ibid* art 4 s 1.

⁷¹ *Ibid* art 4 s 2.

price, as well as the prices of renewable electricity.⁷² To measure the price of output electricity, the Council should consider the renewable energy source, the installed technology type, the plant capacity and the starting year of the operation. Moreover, when reviewing the feed-in tariff, the Council needs to refer and adhere to the criteria of the general strategy. By the end of a year, if the Council does not decide upon a suitable feed-in tariff, the Council can apply the adjustment index included in the strategy (see Table 7 of the strategy).⁷³ Further, the decision exempts the feed-in tariff price from taxes and extends its validity for 20 years.⁷⁴ However, the regulation requires PERC to transfer the revenues earned by renewable energy projects and revenues of emissions reduction exclusively to the Treasury.⁷⁵

3. The Law for Renewable Energy and Energy Efficiency

To regulate the exploitation of renewable energy together with energy efficiency, the Palestinian Government in the West Bank thoroughly prepared a decree law, which was signed by the President.⁷⁶ Like Decision N 16/127/13, the decree law was issued based on the *Electricity Decree Law* for 2009.⁷⁷ This paper will only address the updates within the decree law that pertain to renewable energy rather than changes related to energy efficiency organisation. Initially, the new decree gives renewable energy sources a flexible definition by keeping a space to integrate any potential new eco-friendly energy sources and avoid the vagueness that existed in the definition included in the decision.⁷⁸ The decree law also lays out definitions of renewable energy installations, net metering and other essential terms that aid understanding of the law.⁷⁹

⁷² *Ibid* art 4 s 3.

⁷³ *Ibid* art 8.

⁷⁴ *Ibid* art 6.

⁷⁵ *Ibid* art 9.

⁷⁶ Council of Ministers, Sending the Draft of Renewable Energy and Energy Efficiency Law to the President of the State of Palestine, Decision N 6/51/17, issued 19 May 2015.

⁷⁷ The Decree Law N 14 for 2015 Pertaining to Renewable Energy and Energy Efficiency, 115 Palestine Gazette, issued 11 October 2015; throughout the paper, the law is also referred to as the 'Renewable Energy and Energy Efficiency Law'.

⁷⁸ *Ibid* art 1 para 1 the definition of 'renewable energy'.

⁷⁹ *Ibid* art 1.

The law determines the responsibilities of main stakeholders in renewable energy development. PENRA is responsible for developing the relevant plans, public policies, and strategies that aim to improve the renewable energy sector in Palestine.⁸⁰ PENRA is also responsible for the determination of geographical sites qualified for renewable energy exploitation.⁸¹ Additionally, it is responsible for adopting standards, measurements and technical specifications for renewable energy applications.⁸² Preparing adequate electric tariffs, promotion conditions, connecting fees, issuance of the grid code and distribution of the network code are also among PENRA's responsibilities.⁸³ Further, the law entrusts PENRA to prepare the instructions that include the requirements for applying and granting the conditions of competitive bids, as well as the instructions for direct offers.⁸⁴ However, PERC is in charge of the instructions of selling and purchasing electricity, as well as developing the net metering for renewable energy systems and projects.⁸⁵ The law also sets out the responsibilities of other stakeholders such as the Palestinian Electricity Transmission Company (PETL), PEC and distribution companies.⁸⁶

Significantly, the decree law includes two important obligations: one is that distribution companies must connect and purchase the electricity generated by renewable energy plants according to future-issued provisions,⁸⁷ and the other is that PETL must purchase all the electricity generated from renewable energy projects and plants.⁸⁸ Meanwhile, the law forbids any person to generate electricity without approval from PENRA.⁸⁹ Another advantage of the decree law is that it explicitly states the adopted mechanisms to promote renewable energy exploitation. These mechanisms are the PSI with a feed-in tariff (for applications with a capacity below 5 kilowatts in the residential

⁸⁰ *Ibid* art 4 para 1.

⁸¹ *Ibid* art 4 para 2.

⁸² *Ibid* art 4 para 3.

⁸³ *Ibid* art 4 paras 6–7.

⁸⁴ *Ibid* art 4 paras 9–10.

⁸⁵ *Ibid* art 5 paras 5–6.

⁸⁶ *Ibid* arts 6–8.

⁸⁷ *Ibid* art 10.

⁸⁸ *Ibid* art 13.

⁸⁹ *Ibid* art 12.

sector), net metering (for the installations that have a capacity above 5 kilowatts), and competitive biddings.⁹⁰

The law also calls on local authorities that confer building licenses, the Engineers Association and engineering offices to employ methods of exploiting renewable energy resources according to green building codes when preparing buildings' design sketches.⁹¹

To ensure the diffusion of renewable energy, the law guarantees incentives for all renewable energy systems. Application of these systems is eligible for free duties and customs, and they come with privileges and exceptions that are included in the *Investment Encouraging Law*.⁹² The law also gives the government the right to allocate government-owned lands and expropriate private-owned lands for the establishment of renewable energy generating plants.⁹³ It is also worth noting that the law's provisions are clearly aimed to continue applying the strategy, the PSI and its feed-in tariff.⁹⁴

Although the legislators tried to develop a holistic law that overcomes the weaknesses of Decision N 16/127/13, the law still refers a number of issues to future instructions and provisions, such as the procedures and fees of the connection of renewable projects to the transmission grid and to the distribution grid.⁹⁵ Remarkably, the Palestinian Government has prepared and approved the net metering instructions, as well as the instructions of building renewable energy plants, through direct offers and competitive bidding.⁹⁶ Further, the law reasserted the adoption of the general strategy as well as the PSI.⁹⁷

⁹⁰ *Ibid* art 11.

⁹¹ *Ibid* art 17.

⁹² *Ibid* art 18.

⁹³ *Ibid* art 19.

⁹⁴ *Ibid* art 2 para 1, art 11 para 1.

⁹⁵ *Ibid* art 10 paras 1 and 3.

⁹⁶ Council of Ministers, Instructions for Connecting Renewable Projects to the Electricity Grid by Net Metering, Decision N 4/77/17, issued 17 November 2015; Council of Ministers, Approving the Instruction for Building Generating Plants that Use Renewable Energy, Decision N 11/79/17, issued 1 December 2015.

⁹⁷ Renewable Energy and Energy Efficiency Law, art 2 para 1, art 4 para 2, art 11 paras 1–2.

IV. Reviewing the Regulatory Framework

Table 1 summarises how the Palestinian Government regulates the exploitation of renewables for power generation and the instruments that it has used. Nonetheless, there are basic concerns with regard to Decision N 16/127/13 that may affect the execution of the strategy. In fact, Article 1 contains an imperfect definition of ‘renewables’.⁹⁸ The definition makes a broad generalisation by defining renewables as sources that do not have any negative effects on environmental elements; that is, species, humans and flora. In contrast, the exploitation of certain renewables could have, at the very least, slight negative effects on the environment. For example, the exploitation of biomass energy could release a small amount of green-house gases (GHGs) into the atmosphere. In fact, the Intergovernmental Panel on Climate Change (IPCC) may help to enlighten the Palestinian legislature, because it has adequately defined renewable energy as:

Any form of energy from solar, geophysical or biological sources that is replenished by natural processes at a rate that equals or exceeds its rate of use. Renewable energy is obtained from the continuing or repetitive flows of energy occurring in the natural environment and includes resources such as biomass, solar energy, geothermal heat, hydropower, tide and waves, ocean thermal energy and wind energy.⁹⁹

Thus, the definition in the decision as well as in the decree law could be revised based on the IPCC’s definition.

Another concern is the inadequacy of the financial provisions in the decision. The regulation does not guarantee the reliable and practicable provision of finances. For example, PERC’s responsibility to transfer the revenues to the Treasury as per Article 9 is inappropriate. Such proceeds should be retained by PERC, as this may enhance their

⁹⁸ MAS, Renewable Energy in the Palestinian Territory (n 18) 6.

⁹⁹ Ottmar Edenhofer and others (eds), *Renewable Energy Sources and Climate Change Mitigation: Special Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press 2011) 956.

administrative and financial powers for renewable energy investment.¹⁰⁰ The law, in turn, has not mentioned financial provisions relevant to renewable energy deployment. No particular scheme, rebate and grant has been mentioned throughout the law.

Another debatable point in the decision is the provision regarding the reduction of emissions.¹⁰¹ Palestine has not yet applied any particular regulation, and it has not designed any policy that targets GHG emissions; thus, it is too early to refer to proceeds that may result from emissions reductions. Conversely, one goal that underlies the strategy is the reduction of CO₂ (reasons are mentioned in Appendix 1); however, to date, Palestine has no market-based carbon mechanism, such as cap-and-trade, or a carbon price mechanism, such as a carbon tax. This may be attributed to the trivial levels of emissions per capita in the State of Palestine,¹⁰² and because its CO₂ emissions are within the global average.¹⁰³ The unstable economy as well as the regular deficit in the public budget are also major issues that may distract the Palestinian Government from developing an appropriate emissions policy. Therefore, it is inappropriate to address the issue in the strategy, specifically between feed-in tariff provisions. Given Palestine's economic circumstances, it would be of more use if the government first assessed the adequacy of the application of carbon reduction mechanisms in Palestine. Such an analysis must also consider the key role of major available renewables that can be exploited for the carbon reduction mechanism. Yet, the in-effect laws do not refer to any carbon reduction mechanisms.

In terms of fiscal and financial incentives, the decision does not mention incentives and direct support from the Palestinian Government.¹⁰⁴ PENRA has not been

¹⁰⁰ MAS, 'The Electricity Sector: Current Status and the Need for Reform', Final Report Round Table Discussion No. 4 (2014) 5.

¹⁰¹ Regulation of Renewable Energy in Palestine, art 9.

¹⁰² PCBS, 'Statistical Report on Air Emissions' (2013), issued 19 June 2013

<www.pcbs.gov.ps/portals/_pcbs/PressRelease/Press_En_Emissions-air-2011e.pdf> accessed 7 November 2015.

¹⁰³ Maher Abu-Madi and Ma'moun Abu Rayyan, 'Estimation of Main Greenhouse Gases Emission from Household Energy Consumption in the West Bank, Palestine' (2013) 179 *Environmental Pollution* 250, 254.

¹⁰⁴ Regulation of Renewable Energy in Palestine, art 3.

successful in determining these incentives. It is inadequate to merely mention the incentives related to the PSI in the strategy.¹⁰⁵ It is not sensible to rely on the expected capability of the government in determining incentives for the medium- and large-scale projects that are supposed to be constructed during the second phase (2016-2020).¹⁰⁶

Further, the government's direct support for small renewable applications related to the PSI is mentioned but not detailed in either the decision or the strategy. Such support needs to be clearly identified to let the public know what financial benefit is provided by the PSI.¹⁰⁷ However, for household installations, it is asserted that the overall cost estimated for each application is roughly USD 2500 in 2013.¹⁰⁸ This governmental support could arguably be considered upfront production support. However, it is doubtful that the Palestinian Government will be able to continue supporting renewable electricity projects in the short term. This is because of the lack of financial resources,¹⁰⁹ particularly in light of the electricity debt that resulted from major municipalities and was transferred to the government's budget.¹¹⁰ The law, in turn, merely mentions the support of a feed-in tariff in accordance with the decision.¹¹¹

Stable governmental direct support can influence the renewable market, especially in newly emerging markets. Some governments, such as Japan's, typically support renewable projects with special funds that are provided at the early stage for investments in renewable technology.¹¹² However, other governments, such as Indonesia's, promote renewable energy using other means through public finances, such as soft loans with low interest rates.¹¹³ Grants are given to these projects as upfront payments with no refunds required; alternatively, support is provided as rebates with repayment required by

¹⁰⁵ PENRA (n 61) app 1 and 2.

¹⁰⁶ *Ibid* 7.

¹⁰⁷ *Ibid* 5; article 3 of the renewable regulation says that revenues from PERC, and the allocations, that will be recorded as tax exemptions in the annual budget, are to be used to finance the renewable projects.

¹⁰⁸ Aberg (n 62) 30.

¹⁰⁹ *Ibid* 32.

¹¹⁰ Council of Ministers (n 31).

¹¹¹ Renewable Energy and Energy Efficiency Law, art 11 para 1.

¹¹² Edenhofer and others (n 99) 889.

¹¹³ See, eg, Richard L Ottinger and Rebecca Williams, 'Renewable Energy Sources for Development' (2002) 32(2) Environmental Law 331, 363.

instalments, which are sometimes coupled with a grace period. This stable support increases certainty and attracts investors to renewable projects,¹¹⁴ and therefore, the allocation of adequate direct support should precede the selection of a particular policy. In this regard, the International Energy Agency has emphasised that determining adequate incentives is one factor that will impact the implementation of the adopted policy.¹¹⁵ Conducting a cost-recovery study prior to any approved budgetary support—especially considering the unstable economic status of Palestine, wherein low income per capita is worth noting—may present other adequate alternative financial resources.¹¹⁶

Tax legislation is another preferable supportive tool during the production and operation phases of renewable projects. For example, tax credits in the production phase are aimed at affording generators or investors a reduction in their tax liability for the electricity produced from their utilities.¹¹⁷ Production tax incentives can also be applied in different ways by implementing a reduction in property taxes, corporate taxes or sales taxes.¹¹⁸ Investment tax incentives can also be used to subsidise renewable projects. In contrast to production tax credits, investment tax credits are paid in advance to either an investor or a project developer according to the project's overall capital cost. The amount paid is due at the time the project is connected to the grid and starts operating.¹¹⁹

In the Palestinian context, tax incentives are not discussed within the renewable regulation; instead, they are included within the strategy. Such incentives should be either included within the relative tax laws or within the *Electricity Decree Law* with more

¹¹⁴ See also Lincoln L Davies, 'Reconciling Renewable Portfolio Standards and Feed-In Tariffs' (2012) 32 Utah Environmental Law Review 311.

¹¹⁵ Gabriela Elizondo Azuela and Luiz Augusto Barroso, *Design and Performance of Policy Instruments to Promote the Development of Renewable Energy: Emerging Experience in Selected Developing Countries* (World Bank Publications 2012) 6.

¹¹⁶ PCBS, 'Environment and Sustainable Development in Palestine' (2012) 16; around 36.4% of salaries in Palestine are under the extreme poverty line, which was estimated to be about USD509 per month according to the exchange rate in 2011.

¹¹⁷ See, eg, Felix Mormann, 'Beyond Tax Credits: Smarter Tax Policy for a Cleaner, More Democratic Energy Future' (2014) 31(2) Yale Journal on Regulation 303, 313–14.

¹¹⁸ Charles Purcell and others, 'Innovation in Tax Credit Structuring for Solar Energy Projects' in Andrea S Kramer and Peter C Fusaro (eds), *Energy and Environmental Project Finance Law and Taxation: New Investment Techniques* (Oxford University Press, USA, 2010) 767.

¹¹⁹ Kevin M Walsh, 'Renewable Energy: Where We Are Now and How Renewable Energy Investment and Development Can Be Expanded' (2014) 23 University of Miami Business Law Review 69, 73.

details. Indeed, Appendix 1 of the strategy asserts that one of the incentives is a tax exemption, whereas the decision does not provide further details. Only one tax exemption is set out in the decision through the stipulation of the validity of a 20-year tax-free tariff.¹²⁰ Although the type of tax exemption is not specified, it is typically applied to income, and it could be considered a tax incentive in the production phase. Due to the risks associated with investment in Palestine and the other externalities, supporting the construction phase of large-scale renewable projects with a tax exemption is advisable. Applying a particular percentage as a tax exemption may assist investors in overcoming some of the project costs. In short, the balanced implementation of tax incentives may reinforce both large- and small-scale projects. Nonetheless, the *Electricity Decree Law* exempted renewable applications from custom duties, and no tax incentives are detailed. Alternatively, the law refer to the *Encouraging Investment Law 1998*, which includes attractive tax incentives and privileges that can strongly spur investment in such projects.¹²¹ According to the *Encouraging Investment Law*, and in addition to other privileges that attract international investors, the following incentives are applicable when investing in renewable projects:

1. The projects' fixed assets enjoy free tax and customs, and similarly the imported spare parts are applicable when its value does not exceed 15% of the fixed assets value.¹²² The fixed assets are also exempted when projects are to be further expanded and developed.¹²³
2. Every investment project valued above USD 100,000 and less than USD 1 million, above USD 1 million and less than USD 5 million, and above USD 5 million is exempted from income tax for five years starting from when the production phase begins, and, afterwards, these projects are subject to nominal value of 10% income tax on net profit for 8, 12 and 16 years, respectively, or for 20 years where the project is capital distinguished.¹²⁴

¹²⁰ Regulation of Renewable Energy in Palestine, art 6.

¹²¹ Law N 1 for 1998 Encouraging Investment in Palestine, 23 Palestine Gazette, issued 23 April 1998.

¹²² *Ibid* art 22 paras 1–2.

¹²³ *Ibid* art 22 paras 3–4.

¹²⁴ *Ibid* art 23.

3. For the public good, the Council of Ministers has the right to extend the exemption's period to an additional five years upon particular criteria,¹²⁵ and the period could be extended for a further two years when national instruments and applications constitute 60% of these projects, while the Palestinian Authority has the right to give favourable treatment as well as special guarantees for national investors.¹²⁶
4. The *Encouraging Investment Law* allows the transfer of exemptions and incentives to the new owners of the project where the project continues to operate and produce.¹²⁷

Despite these incentives, international investors are yet to participate in renewable energy development in Palestine. However, this could happen after the Palestinian Government prepares direct offers and competitive bids procedures. At the time of writing, only national investors and the Palestinian Investment Fund had invested in renewable energy projects.¹²⁸

However, the feed-in tariff is a price-based instrument that usually guarantees a supportable price for every renewable electricity unit during a fixed term.¹²⁹ This economic tool typically encompasses three basic elements: the purchase price of renewable electricity, the duration of the price's validity and a commitment by companies to purchase renewable electricity at the determined price.¹³⁰ Under a feed-in tariff, electricity utilities commit to purchase the generated electricity from renewable energy applications at a cost that is either equal to or a bit higher than the price in the electricity

¹²⁵ *Ibid* art 24 para 1.

¹²⁶ *Ibid* art 24 paras 3–4.

¹²⁷ *Ibid* art 29.

¹²⁸ Palestinian Investment Fund, 'Annual Report' (2014) 24. The Fund constituted investment company called Masader in order to develop the natural resources and infrastructure and has invested about 200 million US dollars in solar power projects, and further has started investing in establishing new generation plant in the West Bank and the transition process of Gaza Power Plant to gas operated plant instead of diesel operated plant, for further information refer to < <http://www.pif.ps/masader>>.

¹²⁹ Peng Sun and Pu-yan Nie, 'A Comparative Study of Feed-in Tariff and Renewable Portfolio Standard Policy in Renewable Energy Industry' (2015) 74 *Renewable Energy* 255, 255; REN21 (n 48) 209.

¹³⁰ Davies (n 114) 324.

market, and it is usually estimated according to the specifications of the technologies.¹³¹ A feed-in tariff policy usually entails that utilities join with renewable electricity providers in a long-term contract in order to minimise the risk and to encourage private sector investment in the field.¹³²

In the Palestinian context, the rules in the renewable decision describe how to estimate the feed-in tariff price, and they identify who is responsible for reviewing and issuing it.¹³³ The decision details the tariff prices for 2012 and refers to the strategy to determine the tariff price for the PSI. However, the design and rules of the feed-in tariff are not well organised. The design of the feed-in tariff would be easy to understand if the rules and prices were included in appendices and attached to the decision. Alternatively, the feed-in tariff price could be separately issued in a special decision or bylaw due to the necessity of an annual adjustment. One simple reason for this is that the feed-in tariff's design not only includes the tariff price, but it also encompasses the rules for its estimation and implementation. However, the validity of the feed-in tariff is a concern, because the decision determined the validity at a lengthy 20 years.¹³⁴ This could be a long-term binding contract when the Palestinian Government decides to apply another suitable instrument in response to decreasing technology prices.¹³⁵ Binding the companies to a 10-year price seems reasonable, especially considering that the payback period (as mentioned in Appendix 1 of the strategy) is 8 to 10 years.¹³⁶ Although a long-term tariff affords certainty to investors in Palestine, especially under the dominant climate of investment, shortening the term of the purchasing agreement may ease the adjustment of the tariff price in response to the volatile prices of conventional electricity.

¹³¹ Edenhofer and others (n 99) 899.

¹³² *Ibid.*

¹³³ Regulation of Renewable Energy in Palestine, art 6.

¹³⁴ *Ibid.*

¹³⁵ PENRA (n 61) 7; the Strategy took into account the declining cost of renewable technologies and estimated a cost for intended renewable projects less 20–30% than what is projected.

¹³⁶ Pablo del Rí'o, 'The dynamic efficiency of feed-in tariffs: The impact of different design elements' (2012) 41 Energy Policy 139–151, 148; long duration of support is that between 15 and 20 years and short contracts are 5–10 years.

Finally, the decision does not include an explicit obligation for companies to purchase renewable electricity from producers. Although this was mentioned in the strategy, non-restrictive expressions were used. As an alternative, the decision could include the obligation, together with other statements that constitute a right or duty. However, the Palestinian Government has reduced the subsidies for fossil-fuel generated electricity purchased from Israel. Thus, the fiscal amount saved could be used in subsidising the feed-in tariff on renewable electricity.¹³⁷

Not surprisingly, remuneration can provide more certainty and can lower the risk for investors. Here, there are two options for the implementation of a feed-in tariff policy: shifting the price gap between the spot market price and the tariff price to end-users' bills, or supporting the gap with governmental subsidies.¹³⁸ Usually, the feed-in price contains a remuneration model through which the feed-in tariff can be determined in two ways: independent and dependant of the market price.¹³⁹ The model of the independent market feed-in tariff depends on the cost of the renewable technology project, and it guarantees a stable price for every renewable electricity unit dispatched to the grid, normally in kilowatts per hour.¹⁴⁰ This model can be developed in forms such as fixed price, fixed price with full or partial inflation adjustment, and front-end load price. In the model of the dependent market feed-in tariff, which implements, for example, a premium or feed-in premium price, a surplus is added to the actual electricity price, which can help investors in estimating the cost of a renewable energy project.¹⁴¹ All of the aforementioned price forms aim at fostering the renewable market, but the decision about the adequate form depends on the capacity of the Palestinian Government to cover the surplus, as well as on how and when the government will achieve its target.

¹³⁷ Council of Ministers, Approval for Electricity Tariff (n 44) art 4.

¹³⁸ Karen B Wong and Allan T Marks, 'Overview of the Development and Financing of Renewable Energy Projects' in Andrea S Kramer and Peter C Fusaro (eds), *Energy and Environmental Project Finance Law and Taxation: New Investment Techniques* (Oxford University Press, USA, 2010) 136.

¹³⁹ Toby Couture and Yves Gagnon, 'An Analysis of Feed-in Tariff Remuneration Models: Implications for Renewable Energy Investment' (2010) 38(2) *Energy Policy* 955, 956–61.

¹⁴⁰ *Ibid.*

¹⁴¹ *Ibid.*

However, the strategy classifies the price of a feed-in tariff based on the type and the capacity of the renewable projects, but it neither defines the type of feed-in tariff adopted nor determines the reduction formula used for the tariff's annual adjustment. In practice, PERC made a commitment to remunerate distribution companies for 2013.¹⁴² Although the Council adjusted the feed-in tariff for 2013, the feed-in tariffs for 2014 and 2015 were neither released nor referred to in the adjustment index. This is attributed to the suspension of the scheme in 2013. Again, the law adopted the feed-in tariff for the residential sector, but the government has not disclosed whether this price is for homes connected already or for future participants. In both cases, PENRA should decide the new feed-in tariff for 2016.

Meanwhile, in an effort to more prudently consume electricity, the Palestinian Government has provided soft loans to encourage only governmental institutions to install renewable electricity applications.¹⁴³ This effort is also aimed at supporting the institutions' energy efficiency. PENRA grants such loans for four years, and a special account is assigned for this purpose under the supervision of the Ministry of Finance.¹⁴⁴ The government will also study the capacity for loans that can incentivise residents who intend to install renewable applications for domestic electricity use, but do not have the opportunity to participate in the PSI. Unfortunately, the law does not mention government subsidised loans, rebates and grants, either for the residential sector or for investors.

The decision needs to include procedures for choosing qualified locations for renewable projects, taking into account limited accessibility to Areas A and B in the West Bank. Alternatively, the development of land-use provisions, which identify adequate locations for renewable projects and define the easement rights, is crucial for private investment. Such provisions can further enhance relationships with other ministries, such

¹⁴² PERC, Decision for covering the gap price of feed in tariff, issued 24 December 2012 <www.perc.ps/ar/files/publications/Cover%20FIT%202013.pdf> accessed 31 October 2015.

¹⁴³ MAS, Renewable Energy in the Palestinian Territory (n 18).

¹⁴⁴ Council of Ministers, Opening Special Bank Account to Cycle Demonstration Loans for Energy Efficiency and Renewable Energy, Decision N 4/45/14 for 2013, issued 5 March 2013.

as the Ministry of Agriculture. Identifying the locations may also help preserve landlords' rights and guarantee fair compensation for properties that may be affected when the *Expropriation Law* applies, while also easing the engagement of investors in renewable projects. For example, in order to build a new conventional power generation plant in the West Bank, the Palestinian Government granted investors the right to use private lands under the 'public good' principle.¹⁴⁵ Unfortunately, this principle has not been extended to include renewable energy projects before the law successfully stipulates the right of the government to legally expropriate private lands in order to establish renewable energy plants.¹⁴⁶

In addition, Decision N 16/127/13 does not consider the residents of buildings and complexes in its effort to broaden the participation of the public in the PSI. It is important to find legal solutions that facilitate the engagement of this segment. Focusing on the status of tenants and owners could bring about creative solutions based on property law and tenancy law. The PSI only incentivises owners and individuals by applying conditions that targets persons who have their own property.¹⁴⁷ If tenants are not considered, the diffusion of renewable electricity will be slowed.

Auctions can also be a supportive tool in conjunction with the feed-in tariff, tax incentives and subsidies. This instrument confers upon the winning bidder the right to provide a specified quantity of renewable power, and its ultimate goal is to turn the wheel of investment in the renewable electricity market.¹⁴⁸ There are three common types of auctions: sealed-bid auctions, descending-clock auctions or a hybrid combination of both. The use of this instrument has become very common, with nearly 44 countries (30 of which are developing) having adopted auctions during the period 2009-2013.¹⁴⁹

¹⁴⁵ MAS, The Electricity Sector (n 100).

¹⁴⁶ Renewable Energy and Energy Efficiency Law, art 19.

¹⁴⁷ PERC, 'Palestinian Solar Initiative: Instruction Guide' (2012); the instruction's general conditions allow persons who possess qualified property, which is not surrounded with trees and or neighboring high buildings, and the holders of the building license to apply to the initiative. Neither the Decision nor the Strategy included the right of tenants on buildings and complexes to access to these installations.

¹⁴⁸ Hugo Lucas, Rabia Ferroukhi and Diala Hawila, 'Renewable Energy Auctions in Developing Countries' (IRENA 2013).

¹⁴⁹ *Ibid* 6.

In Palestine, the decision adopts a competitive bid process and directs offers that allow the government to approve future generation plant that will exceed 15 kilowatts, once the necessary studies are presented, along with proof of previous experience similar to the intended project.¹⁵⁰ However, the type of auction and the procedures for the bidding process are unclear. In order to encourage investors to bid in a transparent and competitive process, the auction procedures need to be clearly identified. It is also useful to determine whether a descending-clock or sealed auction would be most appropriate. However, it should be taken into account that auction schemes have pros and cons. The International Renewable Energy Agency has addressed some of the benefits of auctions, such as decreasing the risk for investors, achieving cost efficiency, enhancing control of the budget and providing competitive prices.¹⁵¹ Auctions also incur downsides related to the high level of indefinite opportunities to win the bid and the infrequency of market development. Therefore, it is preferable to adopt a descending-clock auction in the Palestinian context, because this allows investors to compete under transparent conditions, with a determined price and without favouritism.¹⁵²

Thus, it seems that the Palestinian Government embraced a mixed-instruments policy to promote renewable sources of energy. These instruments are: a feed-in tariff, tax incentives and auctions. One advantage of this mixed design is that the adoption of a feed-in tariff will reduce the investment risk and profit uncertainty for investors when they are preparing a cost study for their projects. This policy may also enhance the renewable market and encourage mature renewable technologies. Even so, it is crucial to consider the transaction costs and the remuneration model, and to bear in mind the lack of resources and frequent deficits in Palestine's annual budget. Further, when using a government subsidy together with a feed-in tariff to encourage both individuals and investors to engage in the market, the government should secure sufficient resources to subsidise the projects. The government needs to give attention to the complex procedures

¹⁵⁰ Regulation of Renewable Energy in Palestine, art 4, sub 1.

¹⁵¹ Lucas, Ferroukhi and Hawila (n 148) 14.

¹⁵² *Ibid.*

of auctions that may increase their costs. Policymakers need to seek the lowest level of incremental costs and subsidies during the design of the policy, before making decisions about which economic instruments or policies to utilise. The policy should also have a flexible design to enable the government to shift to the appropriate economic tool when a feed-in tariff becomes too expensive. The UN Development Programme has suggested that Palestinian Government should switch to net metering with no subsidies due to their unstable financial status. The UN's report emphasises the effectiveness of solar power as a supportive energy, and notes its remarkable recent growth in the Palestinian market.¹⁵³

In 2015, the renewable energy strategy required to evaluate the progress of phase one.¹⁵⁴ However, no evaluation has been disclosed as yet. If an evaluation finds that it was unable to achieve its renewable goal for the first phase, then it policy reform is likely required, involving designing a comprehensive policy for the whole jurisdiction, rather than one that is applicable solely to one region, namely, the West Bank. Policymakers should take the potential resources of the Gaza Strip into account, such as hydropower exploitation and offshore wind energy, bearing in mind the restrictions imposed on Gaza under the current siege and the recent severe destruction of infrastructure. Therefore, the Palestinian Government must consider a unified regulation covering one jurisdiction, rather than resorting to legislation duality. If this is difficult to accomplish, then the government needs to secure sufficient support or focus on a particular scheme that enhances the potential exploitation of renewables in the Gaza Strip in particular, due to its difficult position and energy vulnerability. At the same time, the government should reform the current renewables decision as well as the strategy to close its loopholes.

V. Conclusion

This paper has argued that Palestine's natural environment has sufficient renewable energy sources that can be successfully exploited to generate power, especially solar,

¹⁵³ UNDP (n 8) 105.

¹⁵⁴ PENRA (n 61) 7.

wind and biomass power. Despite the severe impact of Israeli military occupation of the West Bank, including East Jerusalem, and the Gaza Strip, the State of Palestine has made progress towards the exploitation of renewable energy sources through a decision issued in 2012, as well as a related law and strategy. While these cannot instantly resolve the electricity problems by harnessing electricity from renewable energy sources, they are significant steps towards gaining electricity independence from Israeli control and towards meeting part of the local demand for electricity.

In addressing the regulatory framework of the electricity sector and the exploitation of renewable energy in Palestine, this paper has revealed various strengths and weaknesses. Palestine inherited a poor electricity sector that is controlled by the IEC, and it is influenced by external and internal factors. Therefore, electricity dependency along with energy import have negatively impact the real economic development in the State of Palestine. On the other hand, the regulatory framework is limited because it is only applicable to one region within the Palestinian jurisdiction: the West Bank. In this region, the inconstant feed-in tariff policy and the absence of an alternative instrument failed to promote significant exploitation by the residential sector, and accordingly the policy did not achieve its targeted 25 megawatts by 2015. The Palestinian Government needs to consider designing and regularly adjusting a dynamic renewable energy policy that parallels the recent enacted law to accomplish the goal of obtaining 10% of electricity production from renewable sources by 2020. Therefore, coherent regulations, a well-designed policy and financial capacity are the key focus areas required to accomplish renewable energy goals in Palestine.

Table 1. The regulation of electricity generated from renewable energy sources in Palestine

Subject	Tool
Legal base for electricity generated by renewable energy sources	<i>Palestinian Energy Authority's Constituting Law N12 for 1995.</i> <i>Council of Ministers' Decision N 16/127/13 of 2012.</i> General Renewable Energy Strategy in Palestine. <i>Electricity Decree Law N13 for 2009.</i> <i>Decree Law N 14 for 2015 pertaining to Renewable Energy and Energy Efficiency.</i>
Renewable energy strategy	The General Strategy for Renewable Energy in Palestine adopted and integrated into the renewable regulation.
Renewable energy target	Achieving 10% of electricity from renewable sources by 2020 (25 mw by 2015 and a further 105 mw by 2020). Achieving 25% of the energy mix from renewable sources by 2020.
Feed-in law	A feed-in tariff with a decrement ratio is designed for domestic applications. A fixed feed-in tariff is designed for large-scale projects.
Tax incentives	Sales tax exemption applies for purchasing costs.
Financial support	The government offers a subsidy for each householder who participates in the PSI. A government grant of USD 8000 is given to each householder, but this is not documented either in the regulation or in the strategy.
Auctions	Auctions are mentioned in the decision, but details are insufficient.
Purchase agreements	A 20-year agreement is developed only for the production of householders.
Large-scale projects Investment	Bidders and direct offers are mentioned in the renewables regulation, but procedures are not provided.
Net metering	This mechanism applies to residential applications, but neither the regulation nor the strategy disseminate and illustrate it.