UNITED NATIONS DEVELOPMENT PROGRAMME

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PROJECT DOCUMENT
Lebanon

Project Title: Sustainable Energy for Security: Interventions for the Lebanese Armed Forces (LAF) along the North-eastern Lebanese border.
Award Number: 00120029 **Project Number:** 00116354
Implementing Partner: UNDP (DIM)
Start Date: July 2019 **End Date:** December 2021

Brief Description
The project focuses mainly on strengthening the security and well-being of the LAF personnel in the North-Eastern regions subject to tremendous security pressures, through the provision of specifically targeted actions using sustainable energy solutions. These actions build on the Lebanese Armed Forces Sustainable Energy Strategy of 2016 that was prepared by the EU-funded CEDRO project and endorsed by the Minister of Defence and the Commander of the LAF in 2017. In summary, the project targets the installation of renewable energy applications (solar PV, micro-wind, solar hot water systems, use of biomass, energy efficient lighting systems, ...) and also build the capacity of the LAF on renewable energy applications (on the design, operation, and maintenance of the applications, provision of related technical guidelines, and the dissemination of awareness raising activities). This project document is elaborated to implement the agreement signed between the EU and UNDP (contract reference: ENI/2019/408-183) signed end of June 2019.

Contributing Outcome: UNSF Outcome 3.1 Environmental Governance Improved. CPD Outcome 4.1 Low emission climate resilient actions initiated, Indicator 4.1.2 Amount of energy saved from the implementation of decentralised and/or small scale mitigation projects. Indicative Output(s) with gender marker: Security of border communities promoted and LAF logistic strengthened – GEN 1	**Total resources required:**	USD 4,603,800
	Total resources allocated:	
	UNDP:	USD 127,000
	EU:	USD 4,476,800
	UNDP: Additional USD 25,000 for Audit fees	
	Unfunded:	USD 0.00

Agreed by (signatures):

Council for Development and Reconstruction (CDR)	United Nations Development Programme (UNDP)
Mr. Nabil El-Jisr President	Ms. Celine Moyroud Resident Representative
Date: 26 JUL 2019	Date: 11/07/2019

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1. Development Challenge

Lebanon's general security situation has improved considerably since 2014 – 2016, when frequent terrorist attacks targeted civilian soft targets and caused significant loss of human life and damage to property. The control of the border between Lebanon and Syria was one of the major reasons for the improvement of the general security situation. However, things remain cautious; the threat of terrorism is still considered relatively high, especially with the ongoing hostilities in Syria. The border region between Lebanon and Syria is still a key area to monitor and secure to minimize illegal and undocumented infiltration of individuals that may be deemed a high security threat to Lebanon.

Ensuring the continued stability and security of Lebanon is a fundamental pre-requisite for economic development, growth, and job creation. The European Union is investing heavily (as noted in the EU-Lebanon Action Plan) in the Lebanese Armed Forces to assist them in continuing their tasks of providing sufficient security to the Lebanese people and economy. The EU has confirmed its support to the Lebanese security sector on more than one occasion. The EU High Representative for Foreign Affairs and Security Policy, Vice-President of the European Commission, officially cited that these issues are "crucial to ensure the stability, security and unity of the country, for the benefit of the Lebanese people and of the entire region".

Alongside enhanced investments in the LAF, economic development and job creation indirectly reinforce security and stability in the country, and Lebanon's energy sector is one of the most, if not the most, critical sectors requiring interventions to improve the economic performance of the country.

The World Economic Forum's 'Global Energy Architecture Performance Index' combines 18 indicators which reflects how secure, accessible and diversified is a country's energy architecture, and how this architecture impacts economic growth and development, and the environment (WEF, 2017[1]). Out of 127 countries ranked, Lebanon is third from the bottom. Lebanon's electricity sector is characterized by a significant gap between power supply and demand. On the generation side, the real onshore generation capacity of the national utility (EDL) is approximately 1,800 MW, increasing to 2,300 MW when considering the rented power ships and the power imported from Syria. With respect to the electricity network, technical losses associated with the transmission and distribution of power amount to 13%, whereas non-technical losses (i.e. uncollected bills and illegal connections) add a further 18% loss of power from a financial payback perspective (CoM, 2018)[2]. In 2018, the peak power demand was estimated at 3,450 MW, yielding a physical power deficit of 1,450 MW (reaching 1,810 MW deficit if the total physical power and unbilled power deficits are combined) (CoM 2018). This situation causes daily structured blackouts that average 6 hours per day, however, this average masks areas such as the administrative capital Beirut, where 21 hours per day is secured from the national utility, and other areas where power cuts are more than 12 hours per day such as in the Bekaa (North-East Lebanon) region (Diab et al., 2019)[3]. Lebanese citizens and institutions rely, mostly, on backup diesel generators, to secure their power needs in the face of these structured power-cuts.

The electricity tariffs in Lebanon have been set in 1996 when the price of oil was around $21 per barrel, and to this day remain unchanged. This has caused and causes a large gap between

[1] WEF, 2017. Global Energy Architecture Performance Index Report 2017. World Economic Forum, Geneva.

[2] CoM, 2018. CoM (2018) Summary of the Electricity Sector in Lebanon. Presentation by Minister of Energy and Water to the Lebanese Council of Ministers, Beirut, Lebanon.

[3] Diab, A., Harajli, H., & Ghaddar, N., 2019 (forthcoming). Leapfrogging to Sustainability: Utility-Scale Renewable Energy and Storage Integration - Exposing the opportunities through the Lebanese Power System. In Climate Change and Energy Dynamics in the Middle East, Springer.

the electricity tariff that is paid by consumers (approximately $c9.6/kWh) and the generation, transmission and distribution costs that are incurred. The current average cost of generating one unit of energy and delivering it to the consumer through the T&D network is approximately $c16/kWh, considering a price of oil of $60 per barrel. The average generation costs have been as low as $c12/kWh and as high as $c26/kWh, depending mainly on the international price of oil (Diab et al., 2019). The Government of Lebanon subsidizes the deficit of the utility company, EDL. From 2007 to 2017, the subsidies that have gone to EDL as a percent of annual revenues collected by the Government of Lebanon (GoL), have ranged from least 10% in 2016 to 25.3% in 2012. In terms of total GoL expenditure, subsidies ranged from 7.2% to 22.2%.

Over the period 1992 to 2017, the sum of the public debt including interest that went to subsidize EDL is USD 36 billion and forms approximately 45% of the gross public debt of the government (CoM 2018). From 2007 to 2017, EDL subsidies constituted between 1.9% (in 2016) and 5.5% (in 2008) of gross domestic product (GDP). In 2017, Lebanon is ranked the fifth country in the world with the largest debt-to-GDP ratio (IMF statistics, 2019)[4].

The above propels the energy sector to the forefront of developmental challenges facing the country and urgently requires the implementation of remedial actions that increase the efficiency and effectiveness of the energy sector in terms of affordability, reliability, and sustainability.

The Lebanese Armed Forces (LAF) understand the burdens of the energy sector on the overall welfare of the Lebanese society. Through the LAF Sustainable Energy Strategy (MoD et al., 2017[5]), the LAF indicated that it is 'obliged, from both a civic responsibility and as the largest public institutions in Lebanon, to lead the way in lowering its energy demand, increasing the utilization of local sources of energy, mainly low-carbon sources, enhance its environmental performance, and assist in securing affordable energy to the Lebanese'... and in line with key objective and plans of the Government of Lebanon (GoL).

- **The Lebanese Council of Ministers (Decision 1, dated June 21st, 2010)** and announced at the Copenhagen Summit on Climate Change in 2009[6]. In specific, the Lebanese Government committed, for the first time and voluntarily, to achieve a renewable energy target (12% by 2020) as part of the overall mix to the international community in the Climate Change Summit in 2009.
- **The Ministry of Energy and Water through the Ministry Policy Paper in 2010[7]:** The Policy Paper of the Ministry of Energy and Water reiterated the commitment of the GoL to achieve at least 12% renewable energy by 2020.
- **The National Energy and Energy Efficiency Action Plan (2011 - 2015)[8]:** A focus solely on energy efficiency and renewable energy was published by the Ministry of Energy and Water in 2011 and approved by the Council of Ministers. The Action Plan indicated 14 energy efficiency and renewable energy initiatives.
- **The Second National Energy Efficiency Action Plan (2016 - 2020)[9]:** Energy efficiency objectives and action plans were divided from renewable energy one and focused on in this particular report. Emphasis was put on demand-side management and energy efficiency in the residential, commercial and industrial sectors.

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[4] IMF Statistics, 2019: https://www.imf.org/external/datamapper/GGXWDG_NGDP@WEO/OEMDC/ADVEC/WEOWORLD

[5] Ministry of Defense, Lebanese Armed Forces, Ministry of Energy and Water, UNDP, 2017. Sustainable Energy Strategy of the Lebanese Armed Forces, Beirut, Lebanon; http://www.cedro-undp.org/content/uploads/publication/170529101740862~SustainableenergystartegyfortheLAF.pdf

[6] Commitment of 12% indicated in the following report; https://unfccc.int/resource/docs/natc/lebanon_snc.pdf

[7] Energy Sector Policy Paper, 2017; http://climatechange.moe.gov.lb/viewfile.aspx?id=121

[8] Report can be accessed herein; http://climatechange.moe.gov.lb/viewfile.aspx?id=57

[9] Report can be accessed herein; http://climatechange.moe.gov.lb/viewfile.aspx?id=229

- **The National Renewable Energy Action Plan (2016)**[10]: The Ministry of Energy and Water focused on renewable energy targets and policies in this document and committed to achieve 12.5% renewable energy target by 2030.
- **Lebanon's Intended Nationally Determined Contributions (INDC)** targets set by the Paris Agreement in 2016[11]. Lebanon upped its objectives in terms of renewable energy and energy efficiency and promised to achieve 3% (or 10% if assisted by international community) energy efficiency targets relative to the baseline scenario and 15% (or 20% if assisted) of its energy from renewable energy systems by 2030.

The 2003 *European Security Strategy* and the 2005 *European Consensus on Development* acknowledge that "there cannot be sustainable development without peace and security, and that without development and poverty eradication there will be no sustainable peace". Furthermore, the Lisbon Treaty has indicated its objective "to preserve peace, prevent conflicts and strengthen international security, in accordance with the purposes and principles of the United Nations Charter". The Council of the European Union conclusions of 2007 on security and development state that "conflict prevention should be pursued as a priority goal in particular by fostering and strengthening development cooperation".[12]

The LAF is one of the most important institutions in Lebanon that is ensuring the preservation of internal peace and stability, and is protecting Lebanon's borders from the spill over effects of the Syrian war since 2011. This stability is a pre-requisite for any economic recovery, development, and/or reform plan that Lebanon has pledged under the CEDRE Conference.

One of the key sensitive areas that needs constant monitoring by the LAF is the vast North-Eastern Border region. This project sets out to strengthen the ability and effectiveness of the LAF in that region to better carry out their objectives and tasks through enabling them to be endowed with more energy autonomy in all their bases in that region. This autonomy will reduce the financial burdens of securing this vast area, as well as reduce the security risks of the LAF personnel, both through the reduction of logistical transport between bases and through the enhanced means of end-use energy services such as lighting provision of all sorts that will be powered more quietly and may be operated more frequently.

[10] Report can be accessed herein; http://climatechange.moe.gov.lb/viewfile.aspx?id=245
[11] Report can be accessed herein; http://climatechange.moe.gov.lb/viewfile.aspx?id=232
[12] Reference found at: https://ec.europa.eu/europeaid/policies/fragility-and-crisis-management/conflict-and-crisis-security-development-nexus_en

2. Strategy

2.1 Link to EU and UN Sector Partnership

The European Neighbourhood Policy– Lebanon Action plan sets out the cooperation guidelines between the European Union (EU) member states and Lebanon on various levels, of which "the field of Justice, Freedom and Security" is given particular attention. The latter expands the sub-activities for co-operation, mainly "border management". In specific, Lebanon and the EU agree to 'improve the administrative capacity at border crossing checkpoints; develop effective surveillance along the green and the blue border; ensure provision of training, modern equipment, adequate infrastructure and facilities.'

Furthermore, under Decision No 1/2016 of the EU-Lebanon Association Council agreeing on **EU-Lebanon Partnership Priorities**, one of the areas of cooperation 'include justice and law enforcement, countering the financing of terrorism, border management, airport security, and civil aviation security and countering violent extremism. In this regard, the EU will actively mobilize all its relevant tools, instruments and capabilities allocated for priority third countries faced with a serious terrorist threat.' The EU is committed to 'reinforce Integrated Border Management by supporting the four border agencies' of Lebanon, of which the Lebanese Armed Forces (LAF) is one of the major four.

At the same time, the **EU is committed to energy security, climate action and conservation of natural resources**. In particular, an 'increased attention to the environment through energy efficiency, renewable energy, waste management, water management and natural resources conservation' will be given special attention to 'boost the country's touristic potential, protect the national wealth and reduce the exposure of the population to disease and health hazards' (EU Decision No 1/2016).

For UNDP, this programme aligns closely with its **strategic plan**, particularly the objectives that aim to achieve universal access to clean, affordable and sustainable energy (1.5.1) and solutions developed, financed and applied at scale for energy efficiency transformation to clean energy and zero-carbon development, for poverty eradication and structural transition (2.5.1).

Furthermore, the **United Nations Strategic Framework** (2017 – 2020) and the UNDP Country Programme Document (CPAP) both reflect the Government of Lebanon and UN Country Team's focus on responding to climate change at the national level as well as to meet Lebanon's need for increased energy supply. Output 5.2.1 of the UNDAF specifically targets the development and adoption of a national sustainable energy strategy to mitigate climate change. Given that UNDP is the lead agency on this output, the project will build towards meeting this target. Furthermore, Output 5.2.4 aims at increasing awareness about the effects of climate change among the general public; a component of the proposed project will directly contribute towards this Output.

2.2 Link to Security Priorities

The LAF has seconded the Second Infantry Border Guards Regiment of the LAF to the North-Eastern border, with approximately 1200 personal enlisted to cover the full defensive, security and observatory operations of the area. The Northeastern border is a vast rugged area with a harsh climate and environment. The Northeastern border with Syria that falls under the operational mandate of the Second Regiment runs approximately 85 km on mountainous terrain, all of which have to be closely monitored and secured. In winter, some areas can be completely isolated, forcing the LAF to have sufficient reserves in terms of ammunition, food and logistics.

Approximately 40 facilities belonging to the Second Infantry Border Guards Regiment exists in the North-Eastern area of Lebanon. These are made up of large barracks, smaller barracks, observation towers, and fixed checkpoints.

Logistically, this North-Eastern area is among the most difficult area of Lebanon that the LAF has to protect. Reliable energy is one of the backbone infrastructural requirements needed to ensure that the LAF carries out its combat and defensive missions adequately in this area. The relevance of this action is that it increases the effectiveness, ease and costs of securing reliable and sustainable energy to the LAF in these North-East regions, and consequently to increase the LAF personnel's overall security situation.

2.3 Link to LAF Sustainable Energy Strategy

In specific, the LAF Sustainable Energy Strategy (SES) aligned the army's sustainable energy commitment to that of Lebanon, given that climate change is partly considered a growing national security issue. Lebanon committed to reach a 20% renewable energy target and 10% energy efficiency target by 2030 (if supported by the international community) in the Climate Change Conference of Parties (COP) held in Paris in 2015. The LAF SES mandates the implementation of many plans and projects such as establishing a proper metering and monitoring system for energy and water use, solar hot water systems, solar photovoltaic (PV) systems, and insulation, among others. This project will implement many of these mandated actions listed by the LAF SES which have an equal or more important dual benefit of enhancing security of the LAF personnel in the North Eastern region.

2.4 Description of the Facilities

Based on the site needs assessment and the analysis conducted by the engineering team of the UNDP, last updated in January 2019, and in collaboration with the Lebanese Armed Forces (Second Regiment's team based in the North-Eastern border and the Engineering Department of the Lebanese Armed Forces), hereafter is the breakdown of the various types of facilities in the North Eastern border as indicated in Figure 1 below.

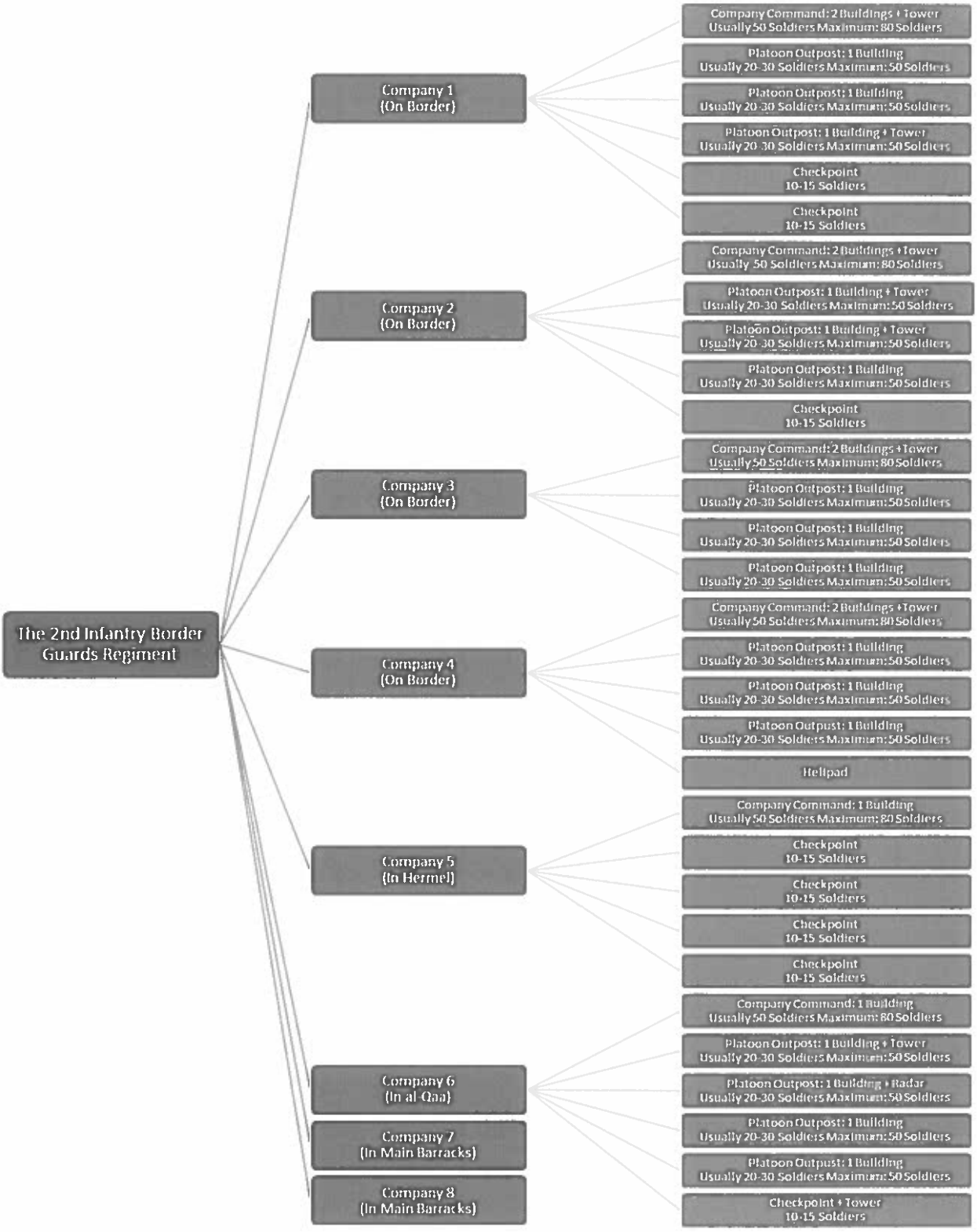


Figure 1. LAF 2nd Regiment's Facilities within the North-Eastern region of Lebanon

As shown in Figure 1, the North-Eastern border region is surveyed and protected through a hierarchical organization from the LAF. The main hub for the Regiment is in Ras Baalbeck, referred to as the 2nd Infantry Border Guards Regiment, and it houses at least 200 soldiers at any given time (however the Army is intending to increase the number of soldiers located in

this Regiment to at least 500). It is from this command hub that the entire area is managed. The 2nd Infantry Border Guards Regiment directly manages 8 smaller facilities, each referred to in Figure 1 as "Company". Companies are built and located closer to the borders. Companies 5 and 6 – located in Hermel and Al-Qaa, respectively, are the oldest such facilities available in the region. They are physically composed of several buildings. Companies 7 and 8 have several floor buildings available and yet are within the main Regiment base premises. Companies – for the exception of company 7 and 8 located within the main base – have a company command complex, typically composed of two buildings and tower (communication / surveillance buildings).

The Ras Baalbeck Regiment is thus the main hub and command and control base of the entire LAF tasked with the protection of the North-Eastern border (i.e., the Second Regiment). It is the:

(1) base that receives all the communication and live video monitoring from the forward sites,
(2) the hub where all the LAF soldiers in the forward bases retreat to rest and recuperate, and
(3) it is also the hub where any injury-related issue is dealt with as a first response, through the set-up health-care services/clinic located within the base. Although this base is connected to the utility grid, it is subjected to long hours of blackouts and thus forced to rely on back-up generators.

The renewable energy interventions in this Hub/Base will therefore ensure that power is delivered more reliability in order that all the command and control operations and activities are always powered, that the soldiers returning to recuperate have access to hot water for bathing and washing, and power for other core services, and that the health care services are never subjected to any power cuts.

Both the Qaa and Hermal companies have company commands composed of 1 building and 1 tower. The company command is the physical location where the smaller and farther locations are managed and supported. At normal times, such facilities house 50 soldiers at a time, during war time, the number could increase to 80. Each company manages several checkpoints, towers, and platoon outposts that are found at the farthest points closest to the Lebanese-Syrian border. Platoon outposts are the farthest facilities spread out along the North Eastern border with Syria. The platoon outposts are typically composed of one building coupled at times with a radar or a tower (both communication / surveillance buildings). The outposts usually host between 20 and 30 soldiers, while at times of war, the number could go up to 50. Finally, the checkpoints are a combination of fixed and mobile structures that are erected where and when needed within the jurisdiction of the "company" in question. Checkpoints and can host, at any one time, between 10 and 15 soldiers.

3. Results and Partnerships

3.1 Objectives

The **overall objective** is to assist the Lebanese authorities to secure the country's borders.

The Specific Objectives of this action is to promote security of border communities and to strengthen the logistic and thus strategic readiness for LAF at the North Eastern borders through the operationalisation of the LAF Sustainable Energy Strategy

The use of sustainable energy systems will enhance the security of both the Lebanese borders community and of the Lebanese Armed Forces personnel by increasing the level of comfort of Lebanese army personnel in remote border areas to levels that are acceptable, which in turn will ensure better combat readiness and ability.

3.2 Results

The objectives of this project will be achieved through the following two outputs:

3.2.1 Result 1: Renewable Energy Applications in Border Areas Installed

The Lebanese Army 2nd Infantry Border Guards Regiment is situated on the north-eastern border of Lebanon and has over 40 established facilities (one story buildings and checkpoints). The main energy consumption of the facilities consists of (1) electrical energy for lighting, telecommunications, surveillance and water heating and (2) thermal energy (diesel oil based) for space heating.

Energy access and soldier comfort (basic needs) are issues that the LAF has had to continuously spend considerable resources on while having subpar reliability and comfort levels. This is due to the prolonged weak performance of the Lebanese power sector, on the one hand, and the difficult location of the border Army facilities on the other. Hence, increased time, effort and resources have been allocated on a recurrent basis to ensure a minimum energy supply reliability.

One example is the supply of diesel oil for both the local diesel generators and heating systems (water and space). The purchasing and transporting of diesel oil to the different sites can be considered as a strenuous activity especially when considering the high dependence on this primary energy source that requires multiple refuelling trips that increase exposure and thus risk to the Army's operations.

The interventions that will be implemented by the project will ensure that they are well integrated into the current systems of the LAF on the one hand, however will also increase significantly the reliability, autonomy, cost, environmental performance and resilience of energy provision of the LAF in the North-East borders. They would have a direct positive impact on security provision, soldier comfort, LAF logistical costs, and environmental performance.

The various types of facilities illustrated in Figure 1 have two diesel generators (one running as main and one running as backup). Most of them have the following gensets:

- Regiment: 1 x 100KVA (main – since 2012) and 1 x 250KVA (backup – since 2017)
- Company Command: 2 x 30kVA (this includes the whole facility except for any UKAID funded equipment – e.g., radar).
- Platoon Outpost: 2 x 15kVA (same as for the company command)

In the below sub-section, the various types of systems that are envisioned to be needed by the LAF and the border communities will be designed, purchased and installed:

Activity 1.1 Install Solar PV and/or microwind integration systems (microgrids)

Small-scale solar and wind based electric energy generation systems are considered effective energy generation systems due to their inherent aspects of modularity, robustness and their conversion of renewable energy into electricity. On one hand, solar photovoltaic (PV) systems apply the photoelectric effect through specially manufactured solar cells (usually silicon-based) to convert solar irradiance into electrical energy that can be converted to be consumed in everyday electrical applications or stored in a battery bank to be consumed at a later time. On the other hand, microwind turbines use relatively small rotors (around 3 meters in diameter) and are designed and erected in a way so that to capture the energy of the passing wind, converting it first into mechanical energy and then into electrical energy through a generator. This electrical energy can then be converted to be consumed directly or stored in a battery bank, similar to the solar PV system.

Both systems are highly desirable and efficient when it comes to off-grid applications, particularly in remote areas. Their dependence on natural and renewable resources to generate energy, coupled with a battery bank, limits the level of variability with varying levels of solar irradiation or wind speed and increases thus their reliability and robustness.

The project will start out, immediately, with the installation of concise weather stations in the platoon outposts (specifically in those outputs that are earmarked to benefit from microwind systems) to measure wind speeds and direction, and solar irradiance and cloud cover. At least 6 months of data would be required in order to best select the technology that best suits each platoon's energy requirements across the year in the most cost-effective and yet reliable manner. This is specifically the case for microwind technology. The 6 months' data collection will be enough to allow the project to accurately model the remaining year's characteristics in terms of wind speeds, directions, and other characteristics through related modelling software. Once the resources are assessed, the technical specifications of the optimally selected technologies (i.e., either solar along, microwind alone, or hybrid solar-microwind per site) will be established. The project will focus only on high standards and quality in order to ensure durability and longevity of such solution, especially given the harsh climates in which they have to operate.

Microwind and/or solar PV installations (with or without battery storage per select site) will be directed for the main Regiment, the Company Commands and the Platoon Outposts. Some of these facilities are connected to the national grid (specifically the main Regiment hub and 4 of the "Companies"), however provision of power from the utility grid in these regions suffers from drastic blackouts that can exceed 12 hours per day. The other facilities (specifically Companies 1 to 4 – on border - as indicated in Figure 1 and all the platoon outposts) are not connected to the utility grid and it will prohibitively expensive for the utility to extend its infrastructure to these facilities. These facilities rely on diesel generators for their power needs. Coupling these diesel generators with renewable energy systems and battery storage (i.e., transforming them into microgrids) will create a source of independent and localized power that reduces the need to constantly send various

convoys for refuelling purposes, reducing thus the risks involved through such petroleum logistics.

Every facility listed in Figure 1 has a critical load that requires continuous electrification. Therefore, the planned hybrid (Renewable Energy (RE) - Diesel - Lithium-ion Battery) systems will feature the following operation:

The RE (solar PV and/or Wind) will be operated either:

- With the diesel generator, hence it would reduce the diesel consumption and the preventive maintenance needs
- ii. With the batteries, hence ensuring current availability during weather unpredictable dips or for times of generator shut down - the critical load will be fed from the batteries directly.
- iii. As an 'emergency' load that will be added to the battery bank in addition to the critical load that would ensure the availability of the 'basic' needs during the above mentioned times.

Activity Results: 23 border sites have been equipped with solar photovoltaic systems and/or microwind systems (including the main regiment (hub) base located in Ras Baalbeck that is responsible for all the regions companies, platoons, checkpoints and other facilities).

Activity 1.2 Install Solar Hot Water Systems in Border Communities

The need for hot water can be critical in these North-Eastern regions. The provision of solar hot water enhances the well-being of soldiers and reduces the need for refuelling from conventional sources that require complex logistics and continuous resupplying convoys.

Solar water heaters present a cost-effective method of heating water for facilities all year round; however, during winter months, further heating using other equipment such as the already installed and/or planned for installation electric or diesel-fuel operated water heaters will still be available. This intervention is directed to the Regiment, the Company Command and the Platoon Outpost. The design sizing will be based on 25 liters per person/soldier, therefore the systems would vary between 700 liters and 15,000 liters.

All facilities will require a pre-requisite retrofit of the available piping system so to (1) avoid water freezing in the pipes, (2) avoid causing any damage to the equipment, and (3) to guarantee minimal heat loss from the running water.

Activity Results: 23 border sites have been equipped with solar hot water systems

Activity 1.3 Promote of the Use of Biomass for Heating in LAF Facilities

Space heating is another vital service that is required by the LAF in the North-Eastern region. In the Winter season, the current heating systems (diesel operated boilers) are operated all day, requiring thus the provision of diesel fuel on a continuous basis. The provision of biomass-led heating presents a more cost-effective and secure (in terms of exposing the LAF's logistical operations) method for space heating. Selected locations (El Qaa and Hermel) are a short distance away from the EU - funded Aandket Biomass Plant which could provide their winter needs from biomass.

The biomass intervention herein will focus on the following:

- Expanding the Aandket Biomass Plant to source an additional 40 tons of biomass briquettes and pellets for the LAF
- The upgrade of 10 diesel boilers in the Company and Platoon outposts to cater for biomass pellets
- The supply and installation of approximately 20 small-scale biomass stoves in several Companies and Checkpoints.

Activity Results:
- *1 biomass plant expanded capacity (≥40 tons)*
- *10 biomass pellet boilers installed*
- *20 small-capacity energy efficient biomass stoves*

Activity 1.4 Expand the Use of Energy Efficient and Renewable Energy Lighting Systems

This intervention will be directed at the Regiment, "company" commands, platoon outposts and checkpoints, and host villages. The main objective of providing lighting services is to enhance the overall security environment and capabilities of the LAF in these regions. The interventions that will be carried out include but may not be limited to the following:

- **Solar street lighting**: The systems will be used to provide lighting at direct entrances to the various facilities (from the back-end) especially in the remote areas where no grid infrastructure is available and on various roads in the North Eastern area within the remote villages adjacent to the border. This intervention will have double benefits, as it not only provides more security to the LAF personnel travelling in the area at night, yet also add a sense of security to the host communities of these areas through the lit streets at night. In the key villages of the North-Eastern border, namely Qaa' and Ras Baalbeck (and some other villages like Fakeha), the presence of large populations of refugees and the location near the border has heightened the sense of insecurity of the inhabitants. Solar street lighting solution, spread out in the main areas and streets of these villages, will boost confidence of the inhabitants in their situation, and will also increase the ability of the Lebanese army to monitor these regions at night, reinforcing the villages sense of protection and security.
- **Xenon projectors**: These projectors will be installed in the "companies" and platoons and will be used by the LAF on a needs bases to project the light unto any direction that arouses suspicion.
- **Solar home systems (SHS)**: Solar home systems are solar kits that enable the provision of lighting and telephone charging. These kits are easily installed and/or removed. The LAF would make use of these in their fixed and mobile checkpoints mostly. SHS consists of PV panels, a controller and batteries capable of providing lighting for up to three rooms along with a phone charging outlet. The proposed solution would provide the army with 'lighting' autonomy for up to 9 hrs at night.
- **Fence flood lights**: These are flood lights placed on the parameters of all the LAF facilities, from the Regiment (app. area 9000 m2), to the Companies and Outposts (areas ranging from 600 – 800 m2). They provide all-night lighting within the facilities themselves and provide lighting in the proximity just outside of the facilities as well. Lighting the outer peripheries would render surveillance at night time slightly easier, with a minimum of 300m lighting capacity radius.

Activity Results:
- *200 solar street lighting applications installed*
- *17 energy efficient projectors installed*

- *220 energy efficient floor lights for border fencing installed*
- *30 solar home system installed*

Activity 1.5 Pilot the Use of Deployable Renewable Energy Powered Solutions
Deployable power solutions for the LAF will be provided. Here after is a list of solutions discussed and validated with the LAF Directorate of Engineering personnel during the site survey (and will be re-validated once the project commences):

- **LED flood light mobile tower**: The solar powered generators provide temporary high power LED lighting projection to locations of interest. The proposed solution would provide the army with a reliable source of light while removing the 'noise' of the diesel generators rendering their operations safer.
- **Deployable solar, wind and storage small microgrid systems**: The proposed systems, similar to the microgrid solution outlined above, are deployable during missions and/or in temporary areas and can be relocated easily to other areas. This solution would be provided to key facilities and will be used to power the mobile surveillance and/or communication technology.
- **Solar Power Blinkers**: This solar powered LED blinkers available in various colours (amber, red, and green) consist of solar panels, traffic signal blinker, charge controller, battery and pole.

Activity Results:
- *1 mobile solar panel for communication deployed*
- *10 deployable flood lights deployed*
- *16 blinkers deployed*
- *30 solar home system installed*

Activity 1.6 Build Capacity for Retrofitting (energy efficiency) of Buildings
The majority of the facilities available are currently under construction based on designs done by the Directorate of Engineering at the LAF and following the passive design standards that would keep in line with the security concerns. Two company commands (Al Qaa and Hermel), the oldest in the Second Regiment, are composed of prefabricated containers and poorly designed / built concrete constructions.

Given the extremely harsh microclimates and changing seasonal and daily temperatures in the region of North Eastern border, proper insulation in facilities greatly impacts the use of energy and the comfort level of LAF personnel. Air tightness of both facility envelope (wall, ceiling and floor) and openings (windows and doors) is critical. Soldiers find it difficult to stay inside the buildings during the hot summer months, as internal temperatures become significantly higher than the outdoor hot temperatures, even with the constant use of ceiling fans. On the other hand, the buildings are draughty and require constant heating during the winter season.

External insulation will be applied were possible in order to maintain the current indoor available space area and reduce the disturbance from the works that will be undertaken on the walls. Furthermore, and in order to ensure the tightness of the envelope (walls), openings – most commonly in the form of windows and doors – will be sealed. Finally, roofs will be replaced with more robust and better fitted sandwiched panels complete with insulation and waterproofing.

Activity Results: - 2 buildings retrofitted for energy efficiency

3.2.2 Result 2: capacity of LAF on renewable energy applications built

Two main activities will be covered in this output: the first will focus on project team set-up, design of the systems, financial management and oversight of the project activities, including the design and supervision of the installation of the renewable energy systems. The second activity focuses mainly on the capacity building and awareness raising of the LAF and the public on the benefits of renewable energy applications.

Activity 2.1 Build the technical capacity of the LAF (and relevant municipalities) on the design, maintenance and operation of renewable energy applications

The implemented solutions at the Lebanese Army 2nd Regiment Border offers a unique opportunity to raise awareness on the importance of renewable energy in providing increased energy security at all army facilities. Through designing, implementing, commissioning and monitoring projects on sustainable energy systems, the Lebanese army will benefit from increased knowledge on all aspects of renewable energy technologies and energy efficiency. The foreseen and planned implementations will be conducted in close collaboration with the engineering team at the army. The Directorate of Engineering at the LAF has a team of engineers from all specialties (electrical, mechanical and architects) that are in charge of designing and overseeing all army related implementations and works. The engineering team of the LAF will work in partnership with the project engineers throughout the implementation of activities.

Technical training workshops will be implemented using both local and international experts to build know-how. The workshops will target army engineers, technicians and officers. Various types of workshops will be held as follows:

1. The first type of workshops would target army engineers and architects and would provide detailed technical information on all the implemented solutions. The Directorate of Engineering will be provided with tools and resources to design and implement similar renewable energy and energy efficiency solutions at other army facilities (PV, Wind, Biomass, Retrofits). The workshops will be given by experts in the fields and would cover the latest trends and specifications of the implemented technologies.
2. The second type of workshop would target army technicians and will focus on the operation and maintenance procedures for all the implemented solutions. The workshops will be given by the winning contractors working on the project and will cover the practical side of the technologies, including implementation, operation and maintenance.
3. The third type of workshop would target the procurement procedures for energy efficient equipment and renewable energy applications through focusing on the Army's procurement team and specifications drafting teams.
4. The fourth type of workshop will target army officers (grades ranging between Colonel – Lieutenant to Brigadier Generals) on the benefits of renewable energy technologies in general, green procurement standards, behavioural changes and energy savings tips that can be easily implemented. The workshop will cover the importance of adopting the RE/EE mind-set in the army and the country as a whole with benefits from financial (savings), to health and environmental benefits. It is expected that the officers will disseminate the information provided to all army personnel and/or will at least begin to actively include these matters in their planning.

Furthermore, the members of the municipal council, particularly the engineers or persons responsible for street lighting, of the villages that will be the recipient of solar street lighting will be targeted with operation and maintenance training on solar street lighting upon installation of the equipment. Manuals will also be provided for future reference and the municipality engineer will be put in contact with the systems suppliers in case needed..

Activity Results:

- *10 workshops on sustainable energy implemented for the LAF*
- *3 trainings for municipalities on sustainable energy*

Activity 2.2 Develop technical guidelines and publications on sustainable energy applications

Four technical reports will accompany the installations undertaken within this project. These technical reports will focus on the innovative technologies such as solar-PV with storage, biomass pellets, lighting technology, and energy efficient insulation. The reports will be uploaded on the project's website and will thus provide an opportunity to communicate to a wider audience and exchange experience and lessons from the projects' implementations that may benefit other sectors of the economy. The reports will also be used during the workshops mentioned in the previous activity as technical material.

The reports on the overall benefits of the project; the reports will be designed to showcase the increased reliability, security, affordability and availability of energy resources at army bases in the North-Eastern border. The reports will also assess the greenhouse gas emission savings after the implementation of the project by highlighting the Lebanese government commitment to combating climate change. Awareness raising will be done at all levels of the LAF through videos, short stories, publications and brochures to be circulated in the LAF. The project will provide guideline publications for the studied, approved and implemented solutions. Furthermore, information from data acquisition equipment will be used to update the LAF's baseline as utilized in the LAF energy strategy developed in close collaboration with the LAF under the EU – funded CEDRO 4 project.

Activity Results:

- *6 Publications published*

Activity 2.3 Prepare and disseminate awareness raising activities on sustainable energy activities undertaken by the LAF

The project will disseminate the best-practices and experienced gained from the implementation of the sustainable energy solutions with the LAF to the public in Lebanon. To the extent possible, media outreach material such as stories, photographs and social media applications will be issued. A project website will be created as an add on to the previous sustainable energy project (CEDROIV) that highlights all the information about this action. More details about the communication campaigns and tools can be found in Annex VI – Communication and Visibility Plan.

Activity Results:

- *-1 website set up*
- *16 outreach tools established*

3.3 Stakeholders Engagement

The UNDP Energy and Environment Programme has been working with several partners on the national and local level in the sustainable energy sector since 2002, giving the UNDP an advantage to implement this project and network with the various stakeholders in the field.

- At the **national level**, the project will coordinate with concerned public institutions including but not limited to The Ministry of Defence, the Ministry of Energy and Water, the Lebanese Armed Forces., the Ministry of Environment and the Ministry of Interior and Municipalities The UNDP will continue its cooperation with the Ministry of Defence, the Ministry of Energy and Water in relation to the sustainable energy sector, building on the partnership that was strengthened during the preparation of the Sustainable Energy Strategy of the LAF and after the implementation of several sustainable energy projects for the LAF through the UNDP CEDRO III project (2012-2014).
- At the **local level**, UNDP will work in close coordination with: Local municipalities and any community groups present in the border communities that will be targeted by this Action.

3.4 Risks and Assumptions

Lebanon is still subject to political instability due to regional conflicts, however the institutional efforts to buffer Lebanon internally from such regional instability have led to the formation of a government that may last the entire length of this project. Therefore, the current political climate can be considered as fairly stable and the probability of impacting this project's implementation remain negligible. The table below lists the potential risks that the project may face and the counter measures that will be taken.

#	Description	Type	Impact & Probability	Counter-measures / Management response
1	Security and safety situation	Security	Lebanon is always subject to political instability which affects the security situation, particularly at the border. This may impact access to the site of the project (North-Eastern border). The probability of this happening is currently low.	Incidences that may prohibit access to site by UNDP or contractors are expected to be limited in time, should they occur. The UNDP, through its security office, will continuously monitor the situation at the North-Eastern border.
2	Weather conditions	Natural	The weather conditions at the North-eastern border are considered harsh and inaccessible in the winter time. This impact will very likely occur every winter over the tenure of the project.	The Project will optimize the timing and scheduling of its work-plan so most of the work done on the ground will be carried out in Spring and Summer.

Table X. Project Risks and Mitigation

4. Methodology

The UNDP team will set up a Steering Committee (SC) with the LAF to closely coordinate the implementation of the project. A detailed field visit and data collection activity will follow to every facility of those identified in Figure 1. This action, together with constant feedback and bottom-up discussion with the LAF, will set the priorities for intervention and/or would further validate the final interventions required, both in terms of types and quantity. Priorities will be given to interventions that have sufficient impact on overall security and improve overall performance of the LAF. Simultaneously and in parallel to identifying the final interventions, the designs and specifications (including bill of quantities (BOQs)) of the tender documents will be prepared. The UNDP will ensure that only the highest standards of equipment and workmanship will be followed. Aiming for the high specifications is one of the ways to ensure product sustainability and eventual replicability by the LAF themselves. The UNDP CEDRO team has the knowledge and experience for the majority of this task, however for certain innovative solutions, international consultants would be hired.

The project will build on tested methods for the design, procurement, implementation and monitoring of all interventions used in the various phases of the UNDP CEDRO projects. The design and technical specifications will be selected to meet the highest standards, such as those abiding to the International Electrotechnical Comission (IEC) certification requirements (for example IEC 61215-2, IEC 61730, IEC 62716, and IEC 61701 for solar PV systems; IEC 61400-2 for microwind systems; and IEC 62133-2 and IEC 62281 for energy storage systems), ability to withstand the extremes of environmental and climatic conditions of the area, environmental health and safety conditions (e.g. protection against fire), and proper operation and maintenance manuals, and pass all verification tests required.

The UNDP project team will prepare the design and tender documents for the procurmenet of all equipment and UNDP procurement precedures will be followed. UNDP will ensure sufficient time on project implementation, given the weather conditions in the area that may render work on the ground during the winter season limited in these regions. The project team will also monitor the implementation of the projects to ensure that all milestones are met and/or that all the requirements in terms of product specification and workmanship are met.

Monitoring of the project implementation will also be given the required attention. All the systems that will be installed will have a monitoring system that will send live data to the team to ensure that the products are working as expected or to flag problems. Furthermore, the project team will also visit the sites post implementation and will receive any feedback from the LAF themselves.

In parallel, data collection will enable the project to verify the project's outcomes via the established indicators, shown in Table 1. At the beginning of the project, the UNDP team will install data meters in key nodes that measure fuel and electricity consumption and will revalidate information through baseline surveys. These baseline data would be compared to the collected data post-intervention in order to have accurate values for the above-mentioned indicators.

5. Indicative Action Plan

Figure 2 below identifies the major steps that are foreseen in the project implementation over the span of 3 months (divided into 10 quarters of 3 months each).

	Quarter									
Major Actions	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Technical initiation with LAF	■									
Detailed/Intensive field visit & data collection	■	■	■							
Setting priority interventions		■	■							
Drafting detailed designs & specifications			■	■	■					
Procurement	■	■	■	■	■	■				
Projects' implementation					■	■	■	■	■	
Projects' commissioning								■	■	
Monitoring & Evaluation									■	■
Project Closure										■

Figure 2. Gantt chart of major milestones

The project will commence with technical initiation with the LAF engineers and launching the baseline surveys and data collection activities, including weather data (e.g. wind speeds). Simultaneously, the project team, through the Steering Committee and through bilateral discussion with the LAF would set the priorities for intervention. This entails that those services and technologies that the LAF requires urgently in the North-Eastern border will receive the due attentions, whereas the other technologies and services (see Table 2) can follow suit.

The project team will launch the interventions as quickly as possible and in batches. UNDP procurement prescribes that any tender document be posted online for 2 – 4 weeks, while the evaluation and contract signature stages of the procurement process may take between 4 – 8 weeks.

The project will then focus on implementation and will monitor the completed works. The overall project timeframe is 30 months.

6. Project Implementation Arrangements

6.1 Implementation Modality

This project will be implemented under the Country Programme Action Plan using UNDP Direct Implementation Modality (DIM). The Project requires close and well-timed collaboration with the LAF in a high security area which requires quick interventions and timely implementation of activities. Further, the project's mandates cross between those of the Ministry of Defence and the Ministry of Energy and Water; it is also related to the mandate of the Ministry of Environment given the strong linkage with climate change mitigation action. It must therefore remain equidistant from all the national stakeholders and for all reasons mentioned above, DIM is considered as the most appropriate mechanism for the Project implementation.

6.2 Governance and Overall Management

The UNDP will monitor the progress towards intended results, and will ensure high-quality managerial, technical and financial implementation of the project, and will be responsible for monitoring and ensuring proper use of administrated funds to the assigned activities, timely reporting of implementation progress as well as undertaking of mandatory and non-mandatory evaluations for each of their respective components. Furthermore, the procurement of goods and services and the recruitment of personnel shall be provided in accordance with UNDP guidelines, procedures and regulations.

A 'Project Board' will be set up and will be responsible for making, by consensus, management decisions for the project when guidance is required by the Project Manager, including recommendation for UNDP approval of project plans and revisions. The Project Board will meet every year or more frequently as needed by the project. The Project Board will also provide expertise and ensure that the various interventions are in line with the national priorities (in particular those of the Ministry of Defence and the LAF) and are well coordinated with other on-going activities within the sector.

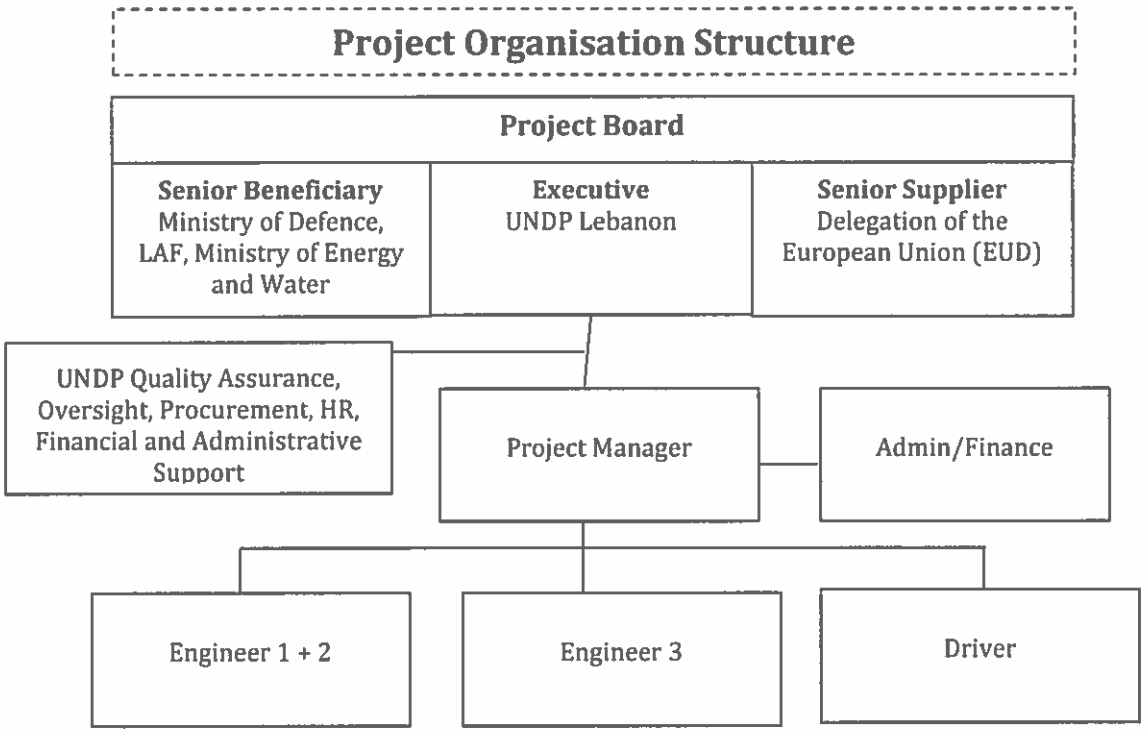


Figure 3. Project Governance Structure

In specific, the responsibilities of the Project Board include:

- Provide overall guidance and direction to the project, ensuring it remains within any specified constraints;
- Address project issues as raised by the project manager;
- Provide guidance on new project risks, and agree on possible countermeasures and management actions to address specific risks;
- Agree on project manager's tolerances as required;
- Review the project progress, and provide direction and recommendations to ensure that the agreed deliverables are produced satisfactorily according to plans;
- Appraise the annual project implementation report, including the quality assessment rating report; make recommendations for the work-plan;
- Provide ad hoc direction and advice for exceptional situations when the project manager's tolerances are exceeded; and
- Assess and decide to proceed on project changes through appropriate revisions.

6.3 Project Management Team and Resources Required to Achieve the Expected Results (Project Office Costs)

6.3.1 Project Office

The project office located in Beirut and will include staff responsible for project management, implementation, technical oversight, administration, monitoring and evaluation It will comprise of full-time and part-time dedicated specialized staff, charged for the time directly attributable to the implementation of the Action.

6.3.2 Personnel

The project staff that work on the Action on full-time basis is listed here below and in the Budget of the Action.

- **Project Manager (Grade SC11):** responsible for the day-to-day management of the project, its staff, consultants and contractors. The Project Manager is also responsible to coordinate with the Country Office on all financial and procurement actions related to the Action while also liaising with the LAF to ensure a smooth partnership, access to the site, design of the systems in line with needs and to determine capacity needs. The Project Manager will be working on a full-time basis.
- **Senior Project Engineer (Grade SC8)**: responsible for the identification of technical needs of the systems including data collection and analysis from the LAF facilities, designing the systems and determining bills of quantities, in close coordination with consultants as may be needed depending on the complexity of the systems, evaluating the technical offers received when the systems are tendered out.
- **Site Engineers (Grade SC6):** responsible for site inspection, follow-up and supervision of the contractors during the installation of the systems given their complexity. Will also be liaising with the maintenance engineers of the LAF to ensure the transfer of knowledge as needed and to provide feedback to the project team as to technical capacity needs. Costs will be fully charged to the Action.
- **Project Finance Assistant (Grade SC6):** responsible for the administrative and logistical support to the project team, managing the day-to-day issues in the project office and liaising with the Country Office on financial, administrative and operational activities of the project through requisitions and payments in line with the standard operating procedures of UNDP.
- **Project Driver (Grade SC2):** responsible for driving the project vehicle(s), maintaining the vehicle log, maintaining the vehicle and managing its operation.

The project office also includes UNDP staff necessary for the implementation of the project activities, charged partially for the time directly attributable to the implementation of the Action.

- **Programme Manager (Grade NOB):** responsible for providing project quality assurance, preparing progress reports, following up on the management of project risks in close coordination with the Project Manager and providing overall oversight of the implementation of the project activities to ensure they are in line with the objectives of the Action. The Programme Manager will be charged through direct project costs for the time spent directly attributed to the implementation of the Action, not exceeding 10% of the working time.
- **Programme Associate (Grade GS6)**: Responsible for the operational and financial oversight duties related to implementation of the project activities, including the overall financial monitoring and reporting for the overall action, assisting the project team in undertaking the needed financial transaction and related project reports, processes of payments and management of project operations such as office logistics, management of equipment, etc. The Programme Associate will be charged through direct project costs for the time spent directly attributed to the implementation of the Action, not exceeding 10% of the working time.
- **Procurement Officer (Grade SC6):** Responsible for providing support in identification of procurement modalities, facilitating quality, transparent, effective and fast procurement processes; supporting the project in the launch and publicity of procurement processes; advising in project procurement evaluation processes; supporting in negotiations with potential contractors (as needed); assisting in the process of contracting, monitoring of contracts. The Procurement Associate will be charged through direct project costs for the time spent directly attributable to the implementation of the Action, not exceeding 50% of the working time. The project does not have a full-time procurement person hence the extensive need for the services of the UNDP Procurement Associate.
- **Security Officer (Grade GS6):** responsible for ensuring the safety and security of the project staff during site visits and missions to the location of the project activities. The role of the Security Officer is essential given that the area of project implementation is a high-risk zone along the border with Syria. The Security Officer will also provide advise regarding the overall security and political situation governing the country and will be responsible to liaise with the EU Delegation security in the Beirut should visits by high level official from either agency be organised. The Security Office will be charged through direct project costs for the time spent directly attributable to the implementation of the Action, not exceeding 25% of the working time.
- **Operations Manager (Grade NOC):** Responsible for administrative quality assurance, advising and verifying procurement and human resources processes for the needs of the project. Responsible for monitoring of effective delivery of administrative services to the project and managing external relations related to all operational aspects of the project. The Operations Manager will be charged through direct project costs for the time spent directly attributable to the implementation of the Action, not exceeding 10% of the working time.

In addition, the services of external experts / consultants will be used for implementation of selected activities. This external expertise will be contracted in accordance with UNDP rules and regulations.

6.3.3 General Expenses

In addition, the Budget for the Action will also provide for the office rental costs, assets for the operation of the office, maintenance and repair contracts, furniture, consumables

and supplies for the operation of the office, costs of IT and telecommunication services, costs of electricity and water, facility management and insurance costs.

6.3.4 Transportation and Security Expenses

Given the high-risk location of the sites where works will be undertaken in this Action, the staff have to abide by the UN Department of Safety and Security (DSS) guidelines. This includes using armoured vehicles in the red zone along the North Eastern border of Lebanon. The armoured vehicles are available for rental; the costs of which are included in the Budget of the Action (Annex III).

7. Sustainability and Scaling Up

The project will impact the Lebanese economy on all levels; technical, economic, social, and environmental level – as described below.

7.1 Leveraging Effect

The project will introduce sustainable energy technology as a means for ensuring more energy autonomy, reduce costs associated with operation and maintenance of army command and operations, and increase overall security of the North-Eastern border region. The LAF operate, however, on other important borders of Lebanon, and therefore such interventions may have a direct consequence for other border regiments. The Project will work on supporting the LAF's through a sustainable energy needs assessment on other border fronts in lieu of project outcomes, activities and experiences.

The project will utilize the project's intervention for the LAF's North-Eastern border to further assist the LAF in meeting their obligation under their SES. The use of crowdfunding platforms will be considered to further the reach of the project in transforming the Lebanese army into a 'green' army.

Furthermore, the LAF owns and maintains vast forests around Lebanon and establishing a briquetting plant (from forestry residues, agricultural residues and / or olive husk – or even a mix of all three) may be encouraged from the experiences gained through this project.

7.2 Technical Impact

This project is the first of its kind to focus on the prospects and potential of renewable energy as a source of heightened security and performance of an army protecting its borders.

Mature solutions, such as the solar PV - diesel system, will be replicated across the various facilities of the LAFs in the North-Eastern region. However, an innovative component will be added, being high-end lithium-ion storage and advanced energy management technology. This intervention will further advance the experience, knowledge and competitiveness of this type of technology, especially for a country such as Lebanon that relies on expensive diesel fuel for backup gensets. It will also pave the way for the use of more durable and effective forms of energy storage that have not, to date, been used in Lebanon.

Innovative solutions, like building retrofits, biomass pellets and biomass boilers, and deployable solutions will expose new venues for sustainable energy that can be re-deployed in the wider economy.

Guideline reports will be published by the CEDRO team on lessons learned and new technologies deployed, to increase the probability of replication. The project is dedicated to the LAF, and therefore most of the direct technical impacts would be experienced by the LAF itself.

The project team will work closely with the LAF in all stages of project preparation, design, execution, and monitoring and evaluation. This is in addition to the capacity building workshops that will be undertaken for the LAF. These activities will thus increase the technical know-how of the LAF and will enable the replication of such activities in other areas of Lebanon under the command and protection of the LAF.

7.3 Social and Economic Impacts

The social and economic impacts of the project will be direct and indirect.

The direct benefits are related to the LAF beneficiaries themselves, in that a direct reduction of costs on energy bills will be achieved, targeting especially the reduction of diesel use in self-generators and EDL bills. The social implications will be enhanced comfort for LAF personal, especially in the sense of:

- Improved lighting in key strategic areas which enhance security and thus the confidence of the LAF personnel
- Improved heating and hot water which will enhance the comfort and health levels of the LAF personnel

The project will also actively support the sustainable energy sector in Lebanon, ensuring its continued development and sustaining job creation. The indirect economic and social impacts of the project will be in multiplier effects where selected solutions will have a higher chance to be replicated elsewhere in the economy. The UNDP team will also communicate all the outcomes of the project. Awareness raising on the project interventions and capacity on the RE applications will ensure replicability.

7.4 Environmental Benefits

Environmental benefits of the RE systems to be installed target mostly the reduction of pollution from self-generation diesel use, mainly carbon dioxide (a green-house gas – GHG), carbon monoxide, particulate matter, nitrogen oxides, and sulphur dioxide among other. They also will target delivering cleaner energy in terms of kWh than that of the Lebanese grid, which is mostly composed of fuel oil generated power.

In some occasions, the technologies selected will enable the complete shutting down of diesel generators, reducing thus the level of noise pollution as well.

Last, one of the major impacts of this project is that the LAF can also attribute these interventions to the commitments it has made under its Sustainable Energy Strategy plan. This project will drive forward the actions aimed at achieving the renewable energy and energy efficiency targets of the LAF. This will also be used by the project team to incentivise other institutions to follow the LAF's leading role in combating climate change.

7.5 Post-project Sustainability

The UNDP will sign a Memorandum of Understanding with the LAF Command to ensure that all the applications that have jointly been decided upon and implemented will be well operated and maintained by the LAF. The training programmes targeting the LAF Directorate of Engineering will ensure capacity is built within the LAF to maintain and operate the equipment that is installed and standard operating procedures will be established for this task.

The UNDP team will also have data loggers installed in some large applications and will monitor these applications over the course of the project. All data monitoring software and protocols will also be transferred to the LAF Directorate of Engineering to continue this monitoring.

8. Logical Framework

Logical Framework								
Intended Outcome as Stated in the UNSF/Country Programme Results and Resources Framework		3.1. Environmental Governance Improved.						
Outcome indicators as stated in the CP Results and Resources Framework including baseline and targets		CPD Outcome 4.1 Low emission climate resilient actions initiated, Indicator 4.1.2 Amount of energy saved from the implementation of decentralised and/or small scale mitigation projects.						
Applicable outputs form the UNDP Strategic Plan	1.5.1 Solutions adopted to achieve universal access to clean, affordable and sustainable energy and 2.51. Solutions developed, financed and applied at scale for energy efficiency transformation to clean energy and zero carbon development for poverty eradication and structural transformation							
Expected Outcomes	**Output Results**	**Baseline 2019**	**Targets year 1**	**Targets year 2**	**Targets year 3**	**Targets total**	**Data Source**	**Assumptions / comments**
Outcome: Strengthen strategic readiness of the LAF at the North Eastern borders through the operationalisation of the LAF Sustainable Energy Strategy	**Result 1: Renewable energy applications in border areas installed**							
	1.1 Number of solar and/or wind microgrid systems installed	0	0	7	16	23	Site surveys & project reports	Project able to install data loggers
	1.2 Number of solar hot water systems installed	0	16	7	0	23	Site surveys & project reports	Project able to install data loggers
	1.3 Biomass plant expanded	0	0	0	1	40 tons/year	Site surveys & project reports	
	1.4.Number of boilers to receive biomass pellets upgraded	0	0	5	5	10	Site surveys & project reports	
Outcome Indicators	1.5 Number of small-capacity energy efficient biomass stoves	0	0	10	10	20	Site surveys & project reports	
Increase in sense of security at Lebanese borders and among LAF personnel	1.6 Number of solar street lighting installed	0	200	0	0	200	Site surveys & project reports	
% reduction in fuel consumption among forward bases	1.7 Number of households with solar home systems	0	30	0	0	30	Site surveys & project reports	
Amount of fuel consumption	1.8 Number of energy efficient	0	8	9	0	17	Site surveys	Project able

reduced (liters)	projectors installed						& project reports	to install data loggers
Number of army personnel knowledgeable of RE and EE applications	1.9 Number of energy efficient flood lights for border fences installed	0	110	110	0	220	Site surveys & project reports	
% reduction in electricity consumption per LAF personnel	1.10 Number of deployable flood lights available with LAF	0	1		0	1	Site surveys & project reports	
Number of LAF personnel with knowledge of sustainable energy solutions	1.11 Number of blinkers installed	0	8	8	0	16	Site surveys & project reports	
Decrease in noise interferences with army security duties	1.12 Number of mobile solar panels for communication available	0	0	10	0	10	Site surveys & project reports	
Decrease in length of interrupted energy supply (hours)	1.12 Number of energy efficiency building retrofitted for improved insulation	0	0	1	1	2	Site surveys & project reports	
% increase in army personnel comfort	**Result 2: Capacity of LAF on renewable energy applications built**							
% increase in sense of community security	2.1 Number of workshops for the LAF on RE	0	4	4	2	10	workshop reports	
	2.2 Number of trainings for municipalities on RE	0	0	3	0	3	training reports	
	2.3 Publications, stories and social media updates issued	0	4	6	6	16	Project reports	Stories to be cleared by LAF and EU
	2.4 Website	0	1	1	1	3	Project website	Website updates to be cleared by LAF and EU
	2.5 Outreach tools	0	2	4	7	13	Project reports	Public activities to be approved by LAF and EU

9. Monitoring and Evaluation

Monitoring Activity	Purpose	Frequency	Expected Action
Track results progress	Progress data against the results indicators in the RRF will be collected and analysed to assess the progress of the project in achieving the agreed outputs.	Quarterly Beginning and end of Project	Slower than expected progress will be addressed by project management. The results of the surveys will be used to provide baseline data and for project's monitoring and evaluation
Monitor and Manage Risk	Identify specific risks that may threaten achievement of intended results. Identify and monitor risk management actions using a risk log. This includes monitoring measures and plans that may have been required as per UNDP's Social and Environmental Standards. Audits will be conducted in accordance with UNDP's audit policy to manage financial risk.	Quarterly	Risks are identified by project management and actions are taken to manage risk. The risk log is actively maintained to keep track of identified risks and actions taken.
Learn	Knowledge, good practices and lessons will be captured regularly, as well as actively sourced from other projects and partners and integrated back into the project.	Quarterly	Relevant lessons are captured by the project team and used to inform management decisions.
Annual Project Quality Assurance	The quality of the project will be assessed against UNDP's quality standards to identify project strengths and weaknesses and to inform management decision making to improve the project.	Annually	Areas of strength and weakness will be reviewed by project management and used to inform decisions to improve project performance.
Review and Make Course Corrections	Internal review of data and evidence from all monitoring actions to inform decision making.	Annually	Performance data, risks, lessons and quality will be discussed by the project board and used to make course corrections.
Project Progress Report	Project Progress Reports (including final report) will be submitted to the EU in line with Article 3 of the GCs. A summary of annual Project Progress Report will be presented to the Project Board and key stakeholders, consisting of progress data showing the results achieved against pre-defined annual targets at the output level, the annual project quality rating summary, an updated risk log with mitigation measures, and any evaluation or review reports prepared over the period.	Semi-annually, annually, and at the end of the project (final report)	

Project Review (Project Board)	The project's governance mechanism (i.e., Project Board) will hold regular project reviews to assess the performance of the project and review the Multi-Year Work Plan to ensure realistic budgeting over the life of the project. In the project's final year, the Project Board shall hold an end-of project review to capture lessons learned and discuss opportunities for scaling up and to socialize project results and lessons learned with relevant audiences.	Annually	Any quality concerns or slower than expected progress should be discussed by the Project Board and management actions agreed to address the issues identified.

10. Legal Context

This project document shall be the instrument referred to as such in Article 1 of the Standard Basic Assistance Agreement between the Government of Lebanon and UNDP, signed in 1986. All references in the SBAA to "Executing Agency" shall be deemed to refer to "Implementing Partner."

This project will be implemented by UNDP in accordance with its financial regulations, rules, practices and procedures only to the extent that they do not contravene the principles of the Financial Regulations and Rules of UNDP. Where the financial governance of an Implementing Partner does not provide the required guidance to ensure best value for money, fairness, integrity, transparency, and effective international competition, the financial governance of UNDP shall apply.

11. Risk Management

UNDP as the Implementing Partner will comply with the policies, procedures and practices of the United Nations Security Management System (UNSMS.)

UNDP as the Implementing Partner will undertake all reasonable efforts to ensure that none of the [project funds][13] [UNDP funds received pursuant to the Project Document][14] are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via http://www.un.org/sc/committees/1267/aq_sanctions_list.shtml. This provision must be included in all sub-contracts or sub-agreements entered into under this Project Document.
Social and environmental sustainability will be enhanced through application of the UNDP Social and Environmental Standards (http://www.undp.org/ses) and related Accountability Mechanism (http://www.undp.org/secu-srm).

UNDP as the Implementing Partner will: (a) conduct project and programme-related activities in a manner consistent with the UNDP Social and Environmental Standards, (b) implement any management or mitigation plan prepared for the project or programme to comply with such standards, and (c) engage in a constructive and timely manner to address any concerns and complaints raised through the Accountability Mechanism. UNDP will seek to ensure that communities and other project stakeholders are informed of and have access to the Accountability Mechanism.
All signatories to the Project Document shall cooperate in good faith with any exercise to evaluate any programme or project-related commitments or compliance with the UNDP Social and Environmental Standards. This includes providing access to project sites, relevant personnel, information, and documentation.
UNDP as the Implementing Partner will ensure that the following obligations are binding on each responsible party, subcontractor and sub-recipient:

Consistent with the Article III of the SBAA *[or the Supplemental Provisions to the Project Document]*, the responsibility for the safety and security of each responsible party, subcontractor and sub-recipient and its personnel and property, and of UNDP's property in such responsible party's,

[13] To be used where UNDP is the Implementing Partner

[14] To be used where the UN, a UN fund/programme or a specialized agency is the Implementing Partner

subcontractor's and sub-recipient's custody, rests with such responsible party, subcontractor and sub-recipient. To this end, each responsible party, subcontractor and sub-recipient shall:
put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried;
assume all risks and liabilities related to such responsible party's, subcontractor's and sub-recipient's security, and the full implementation of the security plan.

UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of the responsible party's, subcontractor's and sub-recipient's obligations under this Project Document.

Each responsible party, subcontractor and sub-recipient will take appropriate steps to prevent misuse of funds, fraud or corruption, by its officials, consultants, subcontractors and sub-recipients in implementing the project or programme or using the UNDP funds. It will ensure that its financial management, anti-corruption and anti-fraud policies are in place and enforced for all funding received from or through UNDP.

The requirements of the following documents, then in force at the time of signature of the Project Document, apply to each responsible party, subcontractor and sub-recipient: (a) UNDP Policy on Fraud and other Corrupt Practices and (b) UNDP Office of Audit and Investigations Investigation Guidelines. Each responsible party, subcontractor and sub-recipient agrees to the requirements of the above documents, which are an integral part of this Project Document and are available online at www.undp.org.

In the event that an investigation is required, UNDP will conduct investigations relating to any aspect of UNDP programmes and projects. Each responsible party, subcontractor and sub-recipient will provide its full cooperation, including making available personnel, relevant documentation, and granting access to its (and its consultants', subcontractors' and sub-recipients') premises, for such purposes at reasonable times and on reasonable conditions as may be required for the purpose of an investigation. Should there be a limitation in meeting this obligation, UNDP shall consult with it to find a solution.

Each responsible party, subcontractor and sub-recipient will promptly inform UNDP as the Implementing Partner in case of any incidence of inappropriate use of funds, or credible allegation of fraud or corruption with due confidentiality.

Where it becomes aware that a UNDP project or activity, in whole or in part, is the focus of investigation for alleged fraud/corruption, each responsible party, subcontractor and sub-recipient will inform the UNDP Resident Representative/Head of Office, who will promptly inform UNDP's Office of Audit and Investigations (OAI). It will provide regular updates to the head of UNDP in the country and OAI of the status of, and actions relating to, such investigation.

UNDP will be entitled to a refund from the responsible party, subcontractor or sub-recipient of any funds provided that have been used inappropriately, including through fraud or corruption, or otherwise paid other than in accordance with the terms and conditions of this Project Document. Such amount may be deducted by UNDP from any payment due to the responsible party, subcontractor or sub-recipient under this or any other agreement. Recovery of such amount by UNDP shall not diminish or curtail any responsible party's, subcontractor's or sub-recipient's obligations under this Project Document.

Where such funds have not been refunded to UNDP, the responsible party, subcontractor or sub-recipient agrees that donors to UNDP (including the Government) whose funding is the source, in whole or in part, of the funds for the activities under this Project Document, may seek recourse to such responsible party, subcontractor or sub-recipient for the recovery of any funds determined by UNDP to have been used inappropriately, including through fraud or corruption, or otherwise paid other than in accordance with the terms and conditions of the Project Document.

Note: The term "Project Document" as used in this clause shall be deemed to include any relevant subsidiary agreement further to the Project Document, including those with responsible parties, subcontractors and sub-recipients.

Each contract issued by the responsible party, subcontractor or sub-recipient in connection with this Project Document shall include a provision representing that no fees, gratuities, rebates, gifts, commissions or other payments, other than those shown in the proposal, have been given, received, or promised in connection with the selection process or in contract execution, and that the recipient of funds from it shall cooperate with any and all investigations and post-payment audits.

Should UNDP refer to the relevant national authorities for appropriate legal action any alleged wrongdoing relating to the project or programme, the Government will ensure that the relevant national authorities shall actively investigate the same and take appropriate legal action against all individuals found to have participated in the wrongdoing, recover and return any recovered funds to UNDP.

Each responsible party, subcontractor and sub-recipient shall ensure that all of its obligations set forth under this section entitled "Risk Management" are passed on to its subcontractors and sub-recipients and that all the clauses under this section entitled "Risk Management Standard Clauses" are adequately reflected, *mutatis mutandis*, in all its sub-contracts or sub-agreements entered into further to this Project Document.

12. ANNEXES

1. **Project Quality Assurance Report**
2. **Social and Environmental Screening**
3. **Risk Analysis.**
4. **Multiyear budget Plan**

1. **Project Quality Assurance Report**

PROJECT QA ASSESSMENT: DESIGN AND APPRAISAL

OVERALL PROJECT

EXEMPLARY (5) ●●●●●	HIGHLY SATISFACTORY (4) ●●●●○	SATISFACTORY (3) ●●●○○	NEEDS IMPROVEMENT (2) ●●○○○	INADEQUATE (1) ●○○○○
At least four criteria are rated Exemplary, and all criteria are rated High or Exemplary.	All criteria are rated Satisfactory or higher, and at least four criteria are rated High or Exemplary.	At least six criteria are rated Satisfactory or higher, and only one may be rated Needs Improvement. The Principled criterion must be rated Satisfactory or above.	At least three criteria are rated Satisfactory or higher, and only four criteria may be rated Needs Improvement.	One or more criteria are rated Inadequate, or five or more criteria are rated Needs Improvement.

DECISION

- **APPROVE** – the project is of sufficient quality to be approved in its current form. Any management actions must be addressed in a timely manner.
- **APPROVE WITH QUALIFICATIONS** – the project has issues that must be addressed before the project document can be approved. Any management actions must be addressed in a timely manner.
- **DISAPPROVE** – the project has significant issues that should prevent the project from being approved as drafted.

RATING CRITERIA

For all questions, select the option that best reflects the project

STRATEGIC

3	2
1	

Evidence

1. **Does the project specify how it will contribute to higher level change through linkage to the programme's Theory of Change?**
   - **3:** The project is clearly linked to the programme's theory of change. It has an explicit change pathway that explains how the project will contribute to outcome level change and why the project's strategy will likely lead to this change. This analysis is backed by credible evidence of what works effectively in this context and includes assumptions and risks.
   - **2:** The project is clearly linked to the programme's theory of change. It has a change pathway that explains how the project will contribute to outcome-level change and why the project strategy will likely lead to this change.
   - **1:** The project document may describe in generic terms how the project will contribute to development results, without an explicit link to the programme's theory of change.

Evidence:

3: Ensuring the continued stability and security of Lebanon is a fundamental pre-requisite for economic development, growth, and job creation. The European Union is investing heavily (as noted in the EU-Lebanon Action Plan) in the Lebanese Armed Forces to assist them in continuing their tasks of providing sufficient security to the Lebanese people and economy. The EU has confirmed its support to the Lebanese security sector on more than one occasion. The EU High Representative for Foreign Affairs and Security Policy, Vice-President of the European Commission, officially cited that these issues are "crucial to ensure the stability, security and unity of the country, for the benefit of the Lebanese people and of the entire region".

Alongside enhanced investments in the LAF, economic development and job creation indirectly reinforce security and stability in the country, and Lebanon's energy sector is one of the most, if not the most, critical sectors requiring interventions to improve the economic performance of the country.

One of the key sensitive areas that needs constant monitoring by the LAF is the vast North-Eastern Border region. This project sets out to strengthen the ability and effectiveness of the LAF in that region to better carry out their objectives and tasks through enabling them to be endowed with more energy autonomy in all their bases in that region. This autonomy will reduce the financial burdens of securing this vast area, as well as reduce the security risks of the LAF personnel, both through the reduction of logistical transport between bases and through the enhanced means of end-use energy services such as lighting provision of all sorts that will be powered more quietly and may be operated more frequently.

2. Is the project aligned with the UNDP Strategic Plan? • **3:** The project responds to at least one of the development settings as specified in the Strategic Plan[15] and adapts at least one Signature Solution[16]. The project's RRF includes all the relevant SP output indicators. *(all must be true)* • **2:** The project responds to at least one of the development settings as specified in the Strategic Plan[4]. The project's RRF includes at least one SP output indicator, if relevant. *(both must be true)* • **1:** The project responds to a partner's identified need, but this need falls outside of the UNDP Strategic Plan. Also select this option if none of the relevant SP indicators are included in the RRF. *Evidence:* 3: The project responds to 1 SPs: a) Eradicate poverty in all its forms and dimensions; b) Accelerate structural transformations for sustainable development and adopts one SS: e) Close the energy gap. The project's RRF includes the relevant SP Output (1.5.1 and 2.5.1).	3 | 2 1 **Evidence**	
3. Is the project linked to the programme outputs? (i.e., UNDAF Results Group Workplan/CPD, RPD or Strategic Plan IRRF for global projects/strategic interventions not part of a programme) *Evidence:* Yes. Please refer to Results Framework of the project document.	**Yes**	**No**
RELEVANT		
4. Does the project target groups left furthest behind? • **3:** The target groups are clearly specified, prioritising discriminated and marginalized groups left furthest behind, identified through a rigorous process based on evidence. • **2:** The target groups are clearly specified, prioritizing groups left furthest behind. • **1:** The target groups are not clearly specified. *Note: Management Action must be taken for a score of 1. *Projects that build institutional capacity should still identify targeted groups to justify support* *Evidence:* 3: The direct beneficiaries of this project are LAF and local municipalities and any community groups present in the border communities.	3 | 2 1 **Evidence**	
5. Have knowledge, good practices, and past lessons learned of UNDP and others informed the project design? • **3:** Knowledge and lessons learned backed by credible evidence from sources such as evaluation, corporate policies/strategies, and/or monitoring have been explicitly used, with appropriate referencing, to justify the approach used by the project. • **2:** The project design mentions knowledge and lessons learned backed by evidence/sources, but have not been used to justify the approach selected. • **1:** There is little or no mention of knowledge and lessons learned informing the project design. Any references made are anecdotal and not backed by evidence. *Note: Management Action or strong management justification must be given for a score of 1 *Evidence:* 3: The project was designed based on the knowledge and lessons learned from the previous UNDP projects.	3 | 2 1 **Evidence**	

[15] The three development settings in UNDP's 2018-2021 Strategic Plan are: a) Eradicate poverty in all its forms and dimensions; b) Accelerate structural transformations for sustainable development; and c) Build resilience to shocks and crises

[16] The six Signature Solutions of UNDP's 2018-2021 Strategic Plan are: a) Keeping people out of poverty; b) Strengthen effective, inclusive and accountable governance; c) Enhance national prevention and recovery capacities for resilient societies; d) Promote nature based solutions for a sustainable planet; e) Close the energy gap; and f) Strengthen gender equality and the empowerment of women and girls.

6. Does UNDP have a clear advantage to engage in the role envisioned by the project vis-à-vis national/regional/global partners and other actors? • **3:** An analysis has been conducted on the role of other partners in the area where the project intends to work, and credible evidence supports the proposed engagement of UNDP and partners through the project, including identification of potential funding partners. It is clear how results achieved by partners will complement the project's intended results and a communication strategy is in place to communicate results and raise visibility vis-à-vis key partners. Options for south-south and triangular cooperation have been considered, as appropriate. *(all must be true)* • **2:** Some analysis has been conducted on the role of other partners in the area where the project intends to work, and relatively limited evidence supports the proposed engagement of and division of labour between UNDP and partners through the project, with unclear funding and communications strategies or plans. • **1:** No clear analysis has been conducted on the role of other partners in the area that the project intends to work. There is risk that the project overlaps and/or does not coordinate with partners' interventions in this area. Options for south-south and triangular cooperation have not been considered, despite its potential relevance. *Note: Management Action or strong management justification must be given for a score of 1 *Evidence:* 3: The UNDP has been working with key partners on the national and local level in the sustainable energy sector since 2002, giving the UNDP an advantage to implement this project and network with the various stakeholders in the field. At the national level, the project will coordinate with concerned public institutions including but not limited to The Ministry of Defence, the Ministry of Energy and Water, the Lebanese Armed Forces., the Ministry of Environment and the Ministry of Interior and Municipalities The UNDP will continue its cooperation with the Ministry of Defence, the Ministry of Energy and Water in relation to the sustainable energy sector, building on the partnership that was strengthened during the preparation of the Sustainable Energy Strategy of the LAF and after the implementation of several sustainable energy projects for the LAF through the UNDP CEDRO III project (2012-2014).	3 | 2 1 **Evidence**
PRINCIPLED	
7. Does the project apply a human rights-based approach? • **3:** The project is guided by human rights and incorporates the principles of accountability, meaningful participation, and non-discrimination in the project's strategy. The project upholds the relevant international and national laws and standards. Any potential adverse impacts on enjoyment of human rights were rigorously identified and assessed as relevant, with appropriate mitigation and management measures incorporated into project design and budget. *(all must be true)* • **2:** The project is guided by human rights by prioritizing accountability, meaningful participation and non-discrimination. Potential adverse impacts on enjoyment of human rights were identified and assessed as relevant, and appropriate mitigation and management measures incorporated into the project design and budget. *(both must be true)* • **1:** No evidence that the project is guided by human rights. Limited or no evidence that potential adverse impacts on enjoyment of human rights were considered. *Note: Management action or strong management justification must be given for a score of 1 *Evidence:* 3: The project seeks to further the realization of human rights-based approach by ensuring the continued stability and security of Lebanon, which is fundamental for any human rights. There are no potential adverse impacts of this project that might affect human rights as the project will contribute to the continued stability and security.	3 | 2 1 **Evidence**
3. Does the project use gender analysis in the project design?	3 | 2 1

• **3:** A participatory gender analysis has been conducted and results from this gender analysis inform the development challenge, strategy and expected results sections of the project document. Outputs and indicators of the results framework include explicit references to gender equality, and specific indicators measure and monitor results to ensure women are fully benefitting from the project. *(all must be true)* • **2:** A basic gender analysis has been carried out and results from this analysis are scattered (i.e., fragmented and not consistent) across the development challenge and strategy sections of the project document. The results framework may include some gender sensitive outputs and/or activities but gender inequalities are not consistently integrated across each output. *(all must be true)* • **1:** The project design may or may not mention information and/or data on the differential impact of the project's development situation on gender relations, women and men, but the gender inequalities have not been clearly identified and reflected in the project document. *Note: Management Action or strong management justification must be given for a score of 1 *Evidence:* 1: The gender marker for this project is 1. *Management Action:* The project will benefit both genders equally through promoting security of border communities and to strengthen the logistic and thus strategic readiness for LAF at the North Eastern borders.	**Evidence**
9. Did the project support the resilience and sustainability of societies and/or ecosystems? • **3:** Credible evidence that the project addresses sustainability and resilience dimensions of development challenges, which are integrated in the project strategy and design. The project reflects the interconnections between the social, economic and environmental dimensions of sustainable development. Relevant shocks, hazards and adverse social and environmental impacts have been identified and rigorously assessed with appropriate management and mitigation measures incorporated into project design and budget. *(all must be true).* • **2:** The project design integrates sustainability and resilience dimensions of development challenges. Relevant shocks, hazards and adverse social and environmental impacts have been identified and assessed, and relevant management and mitigation measures incorporated into project design and budget. *(both must be true)* • **1:** Sustainability and resilience dimensions and impacts were not adequately considered. *Note: Management action or strong management justification must be given for a score of 1 *Evidence:* 3: The project directly addresses sustainability and resilience in Lebanon by promoting security of border communities and to strengthen the logistic and thus strategic readiness for LAF at the North Eastern borders through the operationalisation of the LAF Sustainable Energy Strategy.	3 | 2 1 **Evidence**
10. Has the Social and Environmental Screening Procedure (SESP) been conducted to identify potential social and environmental impacts and risks? The SESP is not required for projects in which UNDP is Administrative Agent only and/or projects comprised solely of reports, coordination of events, trainings, workshops, meetings, conferences and/or communication materials and information dissemination. [if yes, upload the completed checklist. If SESP is not required, provide the reason for the exemption in the evidence section.] *Evidence:* Yes. SESP is uploaded.	Yes | No SESP Not Required
MANAGEMENT & MONITORING	
11. Does the project have a strong results framework?	3 | 2 1

• 3: The project's selection of outputs and activities are at an appropriate level. Outputs are accompanied by SMART, results-oriented indicators that measure the key expected development changes, each with credible data sources and populated baselines and targets, including gender sensitive, target group focused, sex-disaggregated indicators where appropriate. *(all must be true)* • 2: The project's selection of outputs and activities are at an appropriate level. Outputs are accompanied by SMART, results-oriented indicators, but baselines, targets and data sources may not yet be fully specified. Some use of target group focused, sex-disaggregated indicators, as appropriate. *(all must be true)* • 1: The project's selection of outputs and activities are not at an appropriate level; outputs are not accompanied by SMART, results-oriented indicators that measure the expected change and have not been populated with baselines and targets; data sources are not specified, and/or no gender sensitive, sex-disaggregation of indicators. *(if any is true)* *Note: Management Action or strong management justification must be given for a score of 1 *Evidence:* 3: The project has a strong results framework as depicted in the project document uploaded on the above.	**Evidence**
12. Is the project's governance mechanism clearly defined in the project document, including composition of the project board? • 3: The project's governance mechanism is fully defined. Individuals have been specified for each position in the governance mechanism (especially all members of the project board.) Project Board members have agreed on their roles and responsibilities as specified in the terms of reference. The ToR of the project board has been attached to the project document. *(all must be true).* • 2: The project's governance mechanism is defined; specific institutions are noted as holding key governance roles, but individuals may not have been specified yet. The project document lists the most important responsibilities of the project board, project director/manager and quality assurance roles. *(all must be true)* • 1: The project's governance mechanism is loosely defined in the project document, only mentioning key roles that will need to be filled at a later date. No information on the responsibilities of key positions in the governance mechanism is provided. *Note: Management Action or strong management justification must be given for a score of 1 *Evidence:* 3: This project will be implemented under the Country Programme Action Plan using UNDP Direct Implementation Modality (DIM). The Project requires close and well-timed collaboration with the LAF in a high security area which requires quick interventions and timely implementation of activities. Further, the project's mandates cross between those of the Ministry of Defence and the Ministry of Energy and Water; it is also related to the mandate of the Ministry of Environment given the strong linkage with climate change mitigation action. It must therefore remain equidistant from all the national stakeholders and for all reasons mentioned above, DIM is considered as the most appropriate mechanism for the Project implementation. The UNDP will monitor the progress towards intended results, and will ensure high-quality managerial, technical and financial implementation of the project, and will be responsible for monitoring and ensuring proper use of administrated funds to the assigned activities, timely reporting of implementation progress as well as undertaking of mandatory and non-mandatory evaluations for each of their respective components. Furthermore, the procurement of goods and services and the recruitment of personnel shall be provided in accordance with UNDP guidelines, procedures and regulations. A 'Project Board' will be set up and will be responsible for making, by consensus, management decisions for the project when guidance is required by the Project Manager, including recommendation for UNDP approval of project plans and revisions. The Project Board will meet every year or more frequently as needed by the project. The Project Board will also provide expertise and ensure that the various interventions are in line with the national priorities (in particular those of the Ministry of Defence and the LAF) and are well coordinated with other on-going activities within the sector.	3 | 2 1 **Evidence**
13. Have the project risks been identified with clear plans stated to manage and mitigate each risk? • 3: Project risks related to the achievement of results are fully described in the project risk log, based on	3 | 2 1

comprehensive analysis drawing on the programme's theory of change, Social and Environmental Standards and screening, situation analysis, capacity assessments and other analysis such as funding potential and reputational risk. Risks have been identified through a consultative process with key internal and external stakeholders. Clear and complete plan in place to manage and mitigate each risk, reflected in project budgeting and monitoring plans. *(both must be true)* • **2:** Project risks related to the achievement of results are identified in the initial project risk log based on a minimum level of analysis and consultation, with mitigation measures identified for each risk. • **1:** Some risks may be identified in the initial project risk log, but no evidence of consultation or analysis and no clear risk mitigation measures identified. This option is also selected if risks are not clearly identified and/or no initial risk log is included with the project document. *Note: Management Action must be taken for a score of 1 *Evidence:* 3: Lebanon is still subject to political instability due to regional conflicts, however the institutional efforts to buffer Lebanon internally from such regional instability have led to the formation of a government that may last the entire length of this project. Therefore, the current political climate can be considered as fairly stable and the probability of impacting this project's implementation remain negligible. The potential risks that the project may face and the counter measures that will be taken are listed in the project document.	**Evidence**
EFFICIENT	
14. Have specific measures for ensuring cost-efficient use of resources been explicitly mentioned as part of the project design? This can include, for example: i) using the theory of change analysis to explore different options of achieving the maximum results with the resources available; ii) using a portfolio management approach to improve cost effectiveness through synergies with other interventions; iii) through joint operations (e.g., monitoring or procurement) with other partners; iv) sharing resources or coordinating delivery with other projects, v) using innovative approaches and technologies to reduce the cost of service delivery or other types of interventions. *(Note: Evidence of at least one measure must be provided to answer yes for this question)* *Evidence:* Yes: The project followed UNDP's rules and regulation for all procurement and recruitment actions which promote cost efficiency, transparency, competitiveness, and value for money.	Yes (3) / No (1)
15. Is the budget justified and supported with valid estimates? • **3:** The project's budget is at the activity level with funding sources, and is specified for the duration of the project period in a multi-year budget. Realistic resource mobilisation plans are in place to fill unfunded components. Costs are supported with valid estimates using benchmarks from similar projects or activities. Cost implications from inflation and foreign exchange exposure have been estimated and incorporated in the budget. Adequate costs for monitoring, evaluation, communications and security have been incorporated. • **2:** The project's budget is at the activity level with funding sources, when possible, and is specified for the duration of the project in a multi-year budget, but no funding plan is in place. Costs are supported with valid estimates based on prevailing rates. • **1:** The project's budget is not specified at the activity level, and/or may not be captured in a multi-year budget. *Evidence:* 3: The project budget includes a multiyear budget breakdown by budget account and relates to the specific procurement and recruitment actions as required to implement the activities.	3 / 2 1 **Evidence**
16. Is the Country Office/Regional Hub/Global Project fully recovering the costs involved with project implementation?	3 / 2 1

• 3: The budget fully covers all project costs that are attributable to the project, including programme management and development effectiveness services related to strategic country programme planning, quality assurance, pipeline development, policy advocacy services, finance, procurement, human resources, administration, issuance of contracts, security, travel, assets, general services, information and communications based on full costing in accordance with prevailing UNDP policies (i.e., UPL, LPL.) • 2: The budget covers significant project costs that are attributable to the project based on prevailing UNDP policies (i.e., UPL, LPL) as relevant. • 1: The budget does not adequately cover project costs that are attributable to the project, and UNDP is cross-subsidizing the project. *Note: Management Action must be given for a score of 1. The budget must be revised to fully reflect the costs of implementation before the project commences. Evidence: 3: In accordance with the decisions and directives of UNDP's Executive Board reflected in its policy on cost recovery, the contribution shall be subject to cost recovery by UNDP for the provision of general oversight and management services (GMS) for the activities of the project. GMS will be recovered at a flat rate of 7 percent of the EU grant and 8% for other resources.	**Evidence**
EFFECTIVE	
17. Have targeted groups been engaged in the design of the project? • 3: Credible evidence that all targeted groups, prioritising discriminated and marginalized populations that will be involved in or affected by the project, have been actively engaged in the design of the project. The project has an explicit strategy to identify, engage and ensure the meaningful participation of target groups as stakeholders throughout the project, including through monitoring and decision-making (e.g., representation on the project board, inclusion in samples for evaluations, etc.) • 2: Some evidence that key targeted groups have been consulted in the design of the project. • 1: No evidence of engagement with targeted groups during project design. Evidence: 2: The project stakeholders at the national and local level were consulted during the design of the project. This included ministries, LAF, municipalities and local communities. Their concerns and issues have been taken into consideration and addressed.	3 2 1 **Evidence**
18. Does the project plan for adaptation and course correction if regular monitoring activities, evaluation, and lesson learned demonstrate there are better approaches to achieve the intended results and/or circumstances change during implementation? Evidence: Yes: The project will conduct the evaluation and adapt its approach accordingly based on the results of evaluation.	Yes (3) / No (1)
19. The gender marker for all project outputs are scored at GEN2 or GEN3, indicating that gender has been fully mainstreamed into all project outputs at a minimum. *Note: Management Action or strong management justification must be given for a score of "no" No: The gender marker is scored at GEN 1. Management actions: The project will benefit both genders equally through promoting security of border communities and to strengthen the logistic and thus strategic readiness for LAF at the North Eastern borders.	Yes (3) / No (1) **Evidence**
SUSTAINABILITY & NATIONAL OWNERSHIP	
20. Have national/regional/global partners led, or proactively engaged in, the design of the project?	3 2 1

• 3: National partners (or regional/global partners for regional and global projects) have full ownership of the project and led the process of the development of the project jointly with UNDP. • 2: The project has been developed by UNDP in close consultation with national/regional/global partners. • 1: The project has been developed by UNDP with limited or no engagement with national partners. Evidence: 3: The UNDP has been working with several partners on the national and local level in the sustainable energy sector since 2002, giving the UNDP an advantage to implement this project and network with the various stakeholders in the field. At the **national level**, the project will coordinate with concerned public institutions including but not limited to The Ministry of Defence, the Ministry of Energy and Water, the Lebanese Armed Forces., the Ministry of Environment and the Ministry of Interior and Municipalities The UNDP will continue its cooperation with the Ministry of Defence, the Ministry of Energy and Water in relation to the sustainable energy sector, building on the partnership that was strengthened during the preparation of the Sustainable Energy Strategy of the LAF and after the implementation of several sustainable energy projects for the LAF through the UNDP CEDRO III project (2012-2014). At the **local level**, UNDP will work in close coordination with: Local municipalities and any community groups present in the border communities that will be targeted by this Action.	**Evidence**
21. Are key institutions and systems identified, and is there a strategy for strengthening specific/ comprehensive capacities based on capacity assessments conducted? • 3: The project has a strategy for strengthening specific capacities of national institutions and/or actors based on a completed capacity assessment. This strategy includes an approach to regularly monitor national capacities using clear indicators and rigorous methods of data collection, and adjust the strategy to strengthen national capacities accordingly. • 2: A capacity assessment has been completed. There are plans to develop a strategy to strengthen specific capacities of national institutions and/or actors based on the results of the capacity assessment. • 1: Capacity assessments have not been carried out. Evidence: 3: The capacity building of key institutions is one of the key interventions in the project.	3 2 1 **Evidence**
22. Is there is a clear strategy embedded in the project specifying how the project will use national systems (i.e., procurement, monitoring, evaluations, etc.,) to the extent possible? Yes: While implementing DIM modality, The Project requires close and well-timed collaboration with the LAF in a high security area which requires quick interventions and timely implementation of activities. Further, the project's mandates cross between those of the Ministry of Defence and the Ministry of Energy and Water; it is also related to the mandate of the Ministry of Environment given the strong linkage with climate change mitigation action. It must therefore remain equidistant from all the national stakeholders and for all reasons mentioned above, DIM is considered as the most appropriate mechanism for the Project implementation.	Yes (3) / No (1)

23. Is there a clear transition arrangement/ phase-out plan developed with key stakeholders in order to sustain or scale up results (including resource mobilisation and communications strategy)?	Yes (3)	No (1)
Yes: The project will impact the Lebanese economy on all levels; technical, economic, social, and environmental level – as described below: The project will introduce sustainable energy technology as a means for ensuring more energy autonomy, reduce costs associated with operation and maintenance of army command and operations, and increase overall security of the North-Eastern border region. The LAF operate, however, on other important borders of Lebanon, and therefore such interventions may have a direct consequence for other border regiments. The Project will work on supporting the LAF's through a sustainable energy needs assessment on other border fronts in lieu of project outcomes, activities and experiences. The project will utilize the project's intervention for the LAF's North-Eastern border to further assist the LAF in meeting their obligation under their SES. The use of crowdfunding platforms will be considered to further the reach of the project in transforming the Lebanese army into a 'green' army. Furthermore, the LAF owns and maintains vast forests around Lebanon and establishing a briquetting plant (from forestry residues, agricultural residues and / or olive husk – or even a mix of all three) may be encouraged from the experiences gained through this project. The UNDP will sign a Memorandum of Understanding with the LAF Command to ensure that all the applications that have jointly been decided upon and implemented will be well operated and maintained by the LAF. The training programmes targeting the LAF Directorate of Engineering will ensure capacity is built within the LAF to maintain and operate the equipment that is installed, and standard operating procedures will be established for this task. The UNDP team will also have data loggers installed in some large applications and will monitor these applications over the course of the project. All data monitoring software and protocols will also be transferred to the LAF Directorate of Engineering to continue this monitoring.		

2. Social and Environmental Screening

The SESP analysis conducted at the PIF stage concluded that no further environmental and social review and management required for downstream activities.

Project Information

Project Information	
1. Project Title	Sustainable Energy for Security: Interventions for the Lebanese Armed Forces (LAF) along the North-eastern Lebanese border
2. Project Number	Award Number: 00120029, Project Number: 00116354
3. Location (Global/Region/Country)	Lebanon

Part A. Integrating Overarching Principles to Strengthen Social and Environmental Sustainability

QUESTION 1: How Does the Project Integrate the Overarching Principles in order to Strengthen Social and Environmental Sustainability?
Briefly describe in the space below how the Project mainstreams the human-rights based approach
The project seeks to further the realization of human rights-based approach by ensuring the continued stability and security of Lebanon, which is fundamental for any human rights. There are no potential adverse impacts of this project that might affect human rights as the project will result in the further promotion of renewable energy solutions and the reduction of environmental degradation and its negative impacts on public health.
Briefly describe in the space below how the Project is likely to improve gender equality and women's empowerment
The project will benefit both genders equally through promoting security of border communities and to strengthen the logistic and thus strategic readiness for LAF at the North Eastern borders.
Briefly describe in the space below how the Project mainstreams environmental sustainability
Environmental benefits of the RE systems to be installed target mostly the reduction of pollution from self-generation diesel use, mainly carbon dioxide (a green-house gas – GHG), carbon monoxide, particulate matter, nitrogen oxides, and sulphur dioxide among other. They also will target delivering cleaner energy in terms of kWh than that of the Lebanese grid, which is mostly composed of fuel oil generated power. In some occasions, the technologies selected will enable the complete shutting down of diesel generators, reducing thus the level of noise pollution as well. Last, one of the major impacts of this project is that the LAF can also attribute these interventions to the commitments it has made under its Sustainable Energy Strategy plan. This project will drive forward the actions aimed at achieving the renewable energy and energy efficiency targets of the LAF. This will also be used by the project team to incentivise other institutions to follow the LAF's leading role in combating climate change

Part B. Identifying and Managing Social and Environmental Risks

QUESTION 2: What are the Potential Social and Environmental Risks? *Note: Describe briefly potential social and environmental risks identified in Attachment 1 – Risk Screening Checklist (based on any "Yes" responses).*	QUESTION 3: What is the level of significance of the potential social and environmental risks? *Note: Respond to Questions 4 and 5 below before proceeding to Question 6*			QUESTION 6: What social and environmental assessment and management measures have been conducted and/or are required to address potential risks (for Risks with Moderate and High Significance)?
Risk Description	***Impact and Probability (1-5)***	***Significance (Low, Moderate, High)***	***Comments***	***Description of assessment and management measures as reflected in the Project design. If ESIA or SESA is required note that the assessment should consider all potential impacts and risks.***
No risk was identified in Attachment 1	I = P =			No management measures are required.
	I = P =			
	I = P =			
	I = P =			
[add additional rows as needed]				

QUESTION 4: What is the overall Project risk categorization?

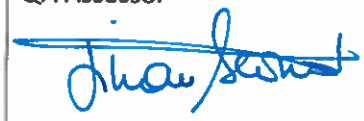
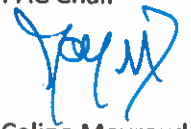
Select one (see SESP for guidance)		Comments
Low Risk	X	**The project has no identifiable social or environmental risks**
Moderate Risk	☐	
High Risk	☐	

QUESTION 5: Based on the identified risks and risk categorization, what requirements of the SES are relevant?

Check all that apply		Comments
Principle 1: Human Rights	☐	
Principle 2: Gender Equality and Women's Empowerment	☐	
1. Biodiversity Conservation and Natural Resource Management	☐	

	2. *Climate Change Mitigation and Adaptation*	☐	
	3. *Community Health, Safety and Working Conditions*	☐	
	4. *Cultural Heritage*	☐	
	5. *Displacement and Resettlement*	☐	
	6. *Indigenous Peoples*	☐	
	7. *Pollution Prevention and Resource Efficiency*	☐	

Final Sign Off

Signature	*Date*	*Description*
QA Assessor  Jihan Seoud Programme Manager		UNDP staff member responsible for the Project, typically a UNDP Programme Officer. Final signature confirms they have "checked" to ensure that the SESP is adequately conducted.
QA Approver  Celine Moyroud Resident Representative	12/07/2019	UNDP senior manager, typically the UNDP Deputy Country Director (DCD), Country Director (CD), Deputy Resident Representative (DRR), or Resident Representative (RR). The QA Approver cannot also be the QA Assessor. Final signature confirms they have "cleared" the SESP prior to submittal to the PAC.
PAC Chair  Celine Moyroud Resident Representative	12/07/2019	UNDP chair of the PAC. In some cases PAC Chair may also be the QA Approver. Final signature confirms that the SESP was considered as part of the project appraisal and considered in recommendations of the PAC.

SESP Attachment 1. Social and Environmental Risk Screening Checklist

Checklist Potential Social and Environmental Risks		
Principles 1: Human Rights		**Answer (Yes/No)**
1.	Could the Project lead to adverse impacts on enjoyment of the human rights (civil, political, economic, social or cultural) of the affected population and particularly of marginalized groups?	No
2.	Is there a likelihood that the Project would have inequitable or discriminatory adverse impacts on affected populations, particularly people living in poverty or marginalized or excluded individuals or groups? [17]	No
3.	Could the Project potentially restrict availability, quality of and access to resources or basic services, in particular to marginalized individuals or groups?	No
4.	Is there a likelihood that the Project would exclude any potentially affected stakeholders, in particular marginalized groups, from fully participating in decisions that may affect them?	No
5.	Are there measures or mechanisms in place to respond to local community grievances?	No
6.	Is there a risk that duty-bearers do not have the capacity to meet their obligations in the Project?	No
7.	Is there a risk that rights-holders do not have the capacity to claim their rights?	No
8.	Have local communities or individuals, given the opportunity, raised human rights concerns regarding the Project during the stakeholder engagement process?	No
9.	Is there a risk that the Project would exacerbate conflicts among and/or the risk of violence to project-affected communities and individuals?	No
Principle 2: Gender Equality and Women's Empowerment		
1.	Is there a likelihood that the proposed Project would have adverse impacts on gender equality and/or the situation of women and girls?	No
2.	Would the Project potentially reproduce discriminations against women based on gender, especially regarding participation in design and implementation or access to opportunities and benefits?	No
3.	Have women's groups/leaders raised gender equality concerns regarding the Project during the stakeholder engagement process and has this been included in the overall Project proposal and in the risk assessment?	No
3.	Would the Project potentially limit women's ability to use, develop and protect natural resources, taking into account different roles and positions of women and men in accessing environmental goods and services? *For example, activities that could lead to natural resources degradation or depletion in communities who depend on these resources for their livelihoods and well being*	No
Principle 3: Environmental Sustainability: Screening questions regarding environmental risks are encompassed by the specific Standard-related questions below		

[17] Prohibited grounds of discrimination include race, ethnicity, gender, age, language, disability, sexual orientation, religion, political or other opinion, national or social or geographical origin, property, birth or other status including as an indigenous person or as a member of a minority. References to ''women and men'' or similar is understood to include women and men, boys and girls, and other groups discriminated against based on their gender identities, such as transgender people and transsexuals.

Standard 1: Biodiversity Conservation and Sustainable Natural Resource Management		
1.1	Would the Project potentially cause adverse impacts to habitats (e.g. modified, natural, and critical habitats) and/or ecosystems and ecosystem services? *For example, through habitat loss, conversion or degradation, fragmentation, hydrological changes*	No
1.2	Are any Project activities proposed within or adjacent to critical habitats and/or environmentally sensitive areas, including legally protected areas (e.g. nature reserve, national park), areas proposed for protection, or recognized as such by authoritative sources and/or indigenous peoples or local communities?	No
1.3	Does the Project involve changes to the use of lands and resources that may have adverse impacts on habitats, ecosystems, and/or livelihoods? (Note: if restrictions and/or limitations of access to lands would apply, refer to Standard 5)	No
1.4	Would Project activities pose risks to endangered species?	No
1.5	Would the Project pose a risk of introducing invasive alien species?	No
1.6	Does the Project involve harvesting of natural forests, plantation development, or reforestation?	No
1.7	Does the Project involve the production and/or harvesting of fish populations or other aquatic species?	No
1.8	Does the Project involve significant extraction, diversion or containment of surface or ground water? *For example, construction of dams, reservoirs, river basin developments, groundwater extraction*	No
1.9	Does the Project involve utilization of genetic resources? (e.g. collection and/or harvesting, commercial development)	No
1.10	Would the Project generate potential adverse transboundary or global environmental concerns?	No
1.11	Would the Project result in secondary or consequential development activities which could lead to adverse social and environmental effects, or would it generate cumulative impacts with other known existing or planned activities in the area? *For example, a new road through forested lands will generate direct environmental and social impacts (e.g. felling of trees, earthworks, potential relocation of inhabitants). The new road may also facilitate encroachment on lands by illegal settlers or generate unplanned commercial development along the route, potentially in sensitive areas. These are indirect, secondary, or induced impacts that need to be considered. Also, if similar developments in the same forested area are planned, then cumulative impacts of multiple activities (even if not part of the same Project) need to be considered.*	No
Standard 2: Climate Change Mitigation and Adaptation		
2.1	Will the proposed Project result in significant[18] greenhouse gas emissions or may exacerbate climate change?	No
2.2	Would the potential outcomes of the Project be sensitive or vulnerable to potential impacts of climate change?	No
2.3	Is the proposed Project likely to directly or indirectly increase social and environmental vulnerability to climate change now or in the future (also known as maladaptive practices)? *For example, changes to land use planning may encourage further development of floodplains, potentially increasing the population's vulnerability to climate change, specifically flooding*	No
Standard 3: Community Health, Safety and Working Conditions		
3.1	Would elements of Project construction, operation, or decommissioning pose potential safety risks to local	No

[18] In regards to CO_2, 'significant emissions' corresponds generally to more than 25,000 tons per year (from both direct and indirect sources). [The Guidance Note on Climate Change Mitigation and Adaptation provides additional information on GHG emissions.]

	communities?	
3.2	Would the Project pose potential risks to community health and safety due to the transport, storage, and use and/or disposal of hazardous or dangerous materials (e.g. explosives, fuel and other chemicals during construction and operation)?	No
3.3	Does the Project involve large-scale infrastructure development (e.g. dams, roads, buildings)?	No
3.4	Would failure of structural elements of the Project pose risks to communities? (e.g. collapse of buildings or infrastructure)	No
3.5	Would the proposed Project be susceptible to or lead to increased vulnerability to earthquakes, subsidence, landslides, erosion, flooding or extreme climatic conditions?	No
3.6	Would the Project result in potential increased health risks (e.g. from water-borne or other vector-borne diseases or communicable infections such as HIV/AIDS)?	No
3.7	Does the Project pose potential risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during Project construction, operation, or decommissioning?	No
3.8	Does the Project involve support for employment or livelihoods that may fail to comply with national and international labor standards (i.e. principles and standards of ILO fundamental conventions)?	No
3.9	Does the Project engage security personnel that may pose a potential risk to health and safety of communities and/or individuals (e.g. due to a lack of adequate training or accountability)?	No
Standard 4: Cultural Heritage		
4.1	Will the proposed Project result in interventions that would potentially adversely impact sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture (e.g. knowledge, innovations, practices)? (Note: Projects intended to protect and conserve Cultural Heritage may also have inadvertent adverse impacts)	No
4.2	Does the Project propose utilizing tangible and/or intangible forms of cultural heritage for commercial or other purposes?	No
Standard 5: Displacement and Resettlement		
5.1	Would the Project potentially involve temporary or permanent and full or partial physical displacement?	No
5.2	Would the Project possibly result in economic displacement (e.g. loss of assets or access to resources due to land acquisition or access restrictions – even in the absence of physical relocation)?	No
5.3	Is there a risk that the Project would lead to forced evictions?[19]	No
5.4	Would the proposed Project possibly affect land tenure arrangements and/or community based property rights/customary rights to land, territories and/or resources?	No
Standard 6: Indigenous Peoples		
6.1	Are indigenous peoples present in the Project area (including Project area of influence)?	No

[19] Forced evictions include acts and/or omissions involving the coerced or involuntary displacement of individuals, groups, or communities from homes and/or lands and common property resources that were occupied or depended upon, thus eliminating the ability of an individual, group, or community to reside or work in a particular dwelling, residence, or location without the provision of, and access to, appropriate forms of legal or other protections.

6.2	Is it likely that the Project or portions of the Project will be located on lands and territories claimed by indigenous peoples?	No
6.3	Would the proposed Project potentially affect the rights, lands and territories of indigenous peoples (regardless of whether Indigenous Peoples possess the legal titles to such areas)?	No
6.4	Has there been an absence of culturally appropriate consultations carried out with the objective of achieving FPIC on matters that may affect the rights and interests, lands, resources, territories and traditional livelihoods of the indigenous peoples concerned?	No
6.4	Does the proposed Project involve the utilization and/or commercial development of natural resources on lands and territories claimed by indigenous peoples?	No
6.5	Is there a potential for forced eviction or the whole or partial physical or economic displacement of indigenous peoples, including through access restrictions to lands, territories, and resources?	No
6.6	Would the Project adversely affect the development priorities of indigenous peoples as defined by them?	No
6.7	Would the Project potentially affect the traditional livelihoods, physical and cultural survival of indigenous peoples?	No
6.8	Would the Project potentially affect the Cultural Heritage of indigenous peoples, including through the commercialization or use of their traditional knowledge and practices?	No
Standard 7: Pollution Prevention and Resource Efficiency		
7.1	Would the Project potentially result in the release of pollutants to the environment due to routine or non-routine circumstances with the potential for adverse local, regional, and/or transboundary impacts?	No
7.2	Would the proposed Project potentially result in the generation of waste (both hazardous and non-hazardous)?	No
7.3	Will the proposed Project potentially involve the manufacture, trade, release, and/or use of hazardous chemicals and/or materials? Does the Project propose use of chemicals or materials subject to international bans or phase-outs? *For example, DDT, PCBs and other chemicals listed in international conventions such as the Stockholm Conventions on Persistent Organic Pollutants or the Montreal Protocol*	No
7.4	Will the proposed Project involve the application of pesticides that may have a negative effect on the environment or human health?	No
7.5	Does the Project include activities that require significant consumption of raw materials, energy, and/or water?	No

3. **Risk Analysis.**

OFFLINE RISK LOG

Project Title: Sustainable Energy for Security: Interventions for the Lebanese Armed Forces (LAF) along the North-eastern Lebanese border.	**Award ID: 00120029**	**Date: 00116345**

#	Description	Date Identified	Type	Impact & Probability (1: low to 5: high)	Countermeasures / Mngt response	Owner	Submitted, updated by	Last Update	Status
1	Security and safety situation	01 July 2019	Security	P = 2 I = 5 Lebanon is always subject to political instability which affects the security situation, particularly at the border. This may impact access to the site of the project (North-Eastern border). The probability of this happening is currently low.	Incidences that may prohibit access to site by UNDP or contractors are expected to be limited in time, should they occur. The UNDP, through its security office, will continuously monitor the situation at the North-Eastern border.	Project *Manager*	Programme Manager		
2	Weather conditions	01 July 2019	Environmental	P = 3 I = 4 The weather conditions at the North-eastern border are considered harsh and inaccessible in the winter time. This impact will very likely occur every winter over the tenure of the project.	The Project will optimize the timing and scheduling of its work-plan so most of the work done on the ground will be carried out in Spring and Summer.	Project *Manager*	Programme Manager		

4. Multiyear budget Plan

Multiyear Budget Plan as per EU agreement

EXPECTED OUTPUTS	PLANNED ACTIVITIES	PLANNED BUDGET (USD)	Total eligible cost (USD)			
		Budget Description	Total eligible (30 months)	Y1 (12 months)	Y2 (12 Months)	Y3 (6 Months)
Outcome: Strengthen strategic readiness of the LAF at the North Eastern borders through the operationalisation of the LAF Sustainable Energy Strategy **Outcome Indicators** Increase in sense of security at Lebanese borders and among LAF personnel % reduction in fuel consumption among forward bases Amount of fuel consumption reduced (liters) Number of army personnel knowledgeable of RE and EE applications % reduction in electricity consumption per LAF personnel Number of LAF personnel with knowledge of sustainable energy solutions Decrease in noise interferences with army security duties Decrease in length of interrupted energy supply (hours) % increase in army personnel comfort % increase in sense of community security	***Human Resources***					
	Project Manager (service contract)	71400	286,000	114,400	114,400	57,200
	Senior project engineer (service contract)	71400	144,000	57,600	57,600	28,800
	Site engineer (service contract)	71400	95,000	38,000	38,000	19,000
	Site engineer (service contract)	71400	95,000	38,000	38,000	19,000
	Project Driver (service contract)	71400	63,000	25,200	25,200	12,600
	Finance Assistant (service contract)	71400	92,000	36,800	36,800	18,400
	Programme Manager (office staff at 10%)	61100	37,109	14,844	14,844	7,422
	Programme Associate (office staff at 10%)	61200	24,758	9,903	9,903	4,952
	Procurement Officer (office staff at 50%)	71400	45,619	18,248	18,248	9,124
	Operations Manager (office staff at 10%)	61100	22,073	8,829	8,829	4,415
	Security Officer (office staff at 25%)	61200	24,758	9,903	9,903	4,952
	Subtotal Human Resources		***929,317***	***371,727***	***371,727***	***185,863***
	Office and Travel Expenses					
	Office rent*	73100	79,200	31,680	31,680	15,840
	Miscellaneous office expenses	74500	15,000	6,000	6,000	3,000
	Office equipment	72200	15,500	6,200	6,200	3,100
	Office supplies	72500	10,000	4,000	4,000	2,000
	Local per diem	71600	7,200	2,880	2,880	1,440
	Fuel	72300	15,000	6,000	6,000	3,000
	Asset depreciation**	77600	17,500	7,000	7,000	3,500
	Security costs	63500	39,000	15,600	15,600	7,800
	Subtotal Office and Travel		***198,400***	***79,360***	***79,360***	***39,680***
	Equipment and Capacity Buidling					
	Contractual services companies	72100	3,040,160	792,000	1,865,500	382,660
	International consultants	71200	72,241	28,896	28,896	14,448

Workshops	75700	25,000	10,000	10,000	5,000
Media communication (website, etc.)	72400	11,400	4,560	4,560	2,280
Audio-visual and printing production costs	74200	25,000	10,000	10,000	5,000
Subtotal Equipment and Capacity Building		***3,173,801***	***845,456***	***1,918,956***	***409,388***
Total Direct cost		**4,301,518**	**1,296,543**	**2,370,043**	**634,932**
Indirect cost (GMS - 7% EU, 8% Other resources)		302,282	91,228	166,373	44,681
Total eligible cost (all incl)		**4,603,800**	**1,387,771**	**2,536,416**	**679,613**

Office rent * Cost of renting premises for the project that will house the project staff

Asset depreciation** These are assets (2 project vehicles, alarm system and 4 laptops/PCs) will be transferred to this project but were not originally purchased using EU funds. The cost of the asset at the time of registration will be their net present value at the time of project initiation.

Other Contribution	127,000	USD
EU Contribution	4,476,800	USD
Total Contributions	**4,603,800**	**USD**

Other Contribution to direct costs	117,593	USD
Other Contribution 8% Indirect costs	9,407	USD
Total Other Contribution	**127,000**	**USD**

EU Contribution to direct costs	4,183,925	USD
EU 7% Indirect costs	292,875	USD
Total EU Contribution	**4,476,800**	**USD**

EU contribution	4,476,800	USD
	4,000,000	EURO

Euro Inforate for June 2019 1.1192

Estimated Audit Costs plus related indirect costs are excluded from above (account 74100): USD 25,000 USD