Sector: Energy

SDG-NDC Synchronization: Assessment and Recommendations

Complimentary and Supportive strategies for the Nationally Determined Contributions on Climate Change and the 2030 Agenda for Sustainable Development

MINISTRY OF ENVIRONMENT
UNITED NATIONS DEVELOPMENT PROGRAMME
Nationally Determined Contribution Support Programme

IN CONTRIBUTION TO THE NDC PARTNERSHIP
ACCELERATING CLIMATE AND DEVELOPMENT ACTION

Supported by:
Federal Ministry for the Environment, Nature Conservation and Nuclear Safety
based on a decision of the German Bundestag

aecid Spanish Agency for International Developement Cooperation

Federal Ministry for Economic Cooperation and Development

This document should be referenced as:

MoE/UNDP (2019). Electricity SDG-NDC Synchronization: Assessment and Recommendations

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Executed by
Ministry of Environment

Funded by
UNDP Funding Window for Climate Change and Disaster Risk Reduction/Climate Change

Implemented by
United Nations Development Programme, Lebanon

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Assessment and Recommendations for Integration of Sustainable Development Goals within Lebanon's Climate Related Plans

Description and Objectives

The Paris Climate Agreement's Nationally Determined Contribution (NDC) and the Sustainable Development Goals (SDGs) share some mutual goals and a common target year (2030). Many synergies exist between the two agendas and addressing those linkages from an integrated institutional viewpoint will enhance the implementation, coordination and tracking of the different actions. The aim of this analysis is to assist policymakers in:

- Assessing the sectoral policies that make up the NDC in terms of SDG linkages using the SDG Climate Action Nexus tool (SCAN tool) in order to establish and clarify the linkages;

- Identifying progress indicators of NDC policies to inform SDG progress and vice versa, in order to synchronize reporting;

- Operationalizing the coordination between institutions responsible for the implementation and reporting of both the NDC and SDGs.

Methodology

- The SCAN-tool provides high-level guidance on how climate actions can impact the achievement of the SDGs (http://ambitiontoaction.net/scan_tool/);

- Coupled with local expertise, this analysis:
    - Identifies potential linkages between specific recommendations included in each of Lebanon's climate related plans and policies and the SDGs;
    - Includes the identification of a primary SDG linkage along with other relevant SDG linkages;
    - Identifies potential linkages to all of the SDG targets, and provides further recommendations.

- All climate-relevant and sustainable development plans inherently contribute to SDG 13 (climate action);

- SDG 17 addresses global partnerships and means of implementation, relevant SDG 17 linkages to local plans are also identified in this assessment.

This is not an exhaustive analysis, but it provides a sound basis to better understand where and how Lebanon's climate actions impact SDG achievement.

How to use this guide?

Step 1: Review

This guidance recommends certain linkages per SDG which should be reviewed in the context of policy-making.

Step 2: Prioritize

Not all the linkages made have the same relevance to the policy or activity, therefore, the linkages should be prioritized considering magnitude of impact, co-benefits and other criteria depending on the institution and its priorities.

Step 3: Consult

Depending on the prioritized SDGs, stakeholder consultations for policy-drafting should include the lead institutions responsible for implementing the selected SDGs.

Step 4: Synchronize

When implementing the policy, synchronization at the level of tracking between the different institutions, the NDC committee and the SDG committee should be considered.

Sector:	Energy
Sub-sector:	Thermal energy, renewable energy and energy efficiency
Source document:	Updated Policy Paper for the Electricity Sector (2019-2025) Policy Paper for the Electricity Sector (2010)
Ministry:	Ministry of Energy and Water
URL:	https://www.energyandwater.gov.lb/mediafiles/articles/doc-100515-2019_05_21_04_27_25.pdf http://www.databank.com.lb/docs/Policy%20paper%20for%20the%20electricity%20sector%202010.pdf

Plan/ Policy Overview

Two policy papers comprise Lebanon's electricity policy, the Policy Paper for the Electricity Sector 2010 (PPES 2010), and the 2019 Updated Policy Paper for the Electricity Sector (PPES 2019). The PPES 2010 includes ten strategic initiatives that entail expanding the necessary infrastructure, meeting supply and demand, and a sound legal framework.

The 2019 Electricity Policy update has two main objectives: 1) reduce EDL's financial deficit and 2) improve electric power. The plan details an ambitious list of projects from now until 2030 to increase transmission and reduce distribution losses.

The policy lays out the short and long-term initiatives including an integrated set of solutions which include 1) the generation plan and the technology deployed 2) the fuel sourcing strategy (including fuel type) and 3) strengthening the grid at the proposed sites. A decision taken by the Council of Ministers in April 2019, commits to implementing the 2010 Policy Paper Initiatives that were not included in the 2019 update such as energy efficiency, measurements and standards. Therefore, the recommendations in both plans remain relevant.

The electricity policies recognize the necessity in making improvements to the electricity supply while reducing environmental impact, but the policy is not positioned in a sustainable development framework. There is a strong emphasis in the Policies to increase reliability and efficiency, as well as to mobilize resources and improve capacity for revenue collection. The 2019 Policy Update does not explicitly mention the Sustainable Development Goals or the Paris Climate Agreement's Nationally Determined Contribution.

Links to Climate Change and Sustainable Development

The Electricity Policy Papers (2010 and 2019) approach Lebanon's electricity both from supply and demand side by creating efficiencies in both transmission and distribution. In implementing the electricity policies, greenhouse gas reductions will be realized through more efficient use of energy resources such as heavy fuel oil and diesel and the increased deployment of renewable energies.

In Lebanon's Nationally Determined Contribution (NDC) to the United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement, the GHG emission reduction mitigation targets which includes energy efficiency and renewable energy targets are as follows:

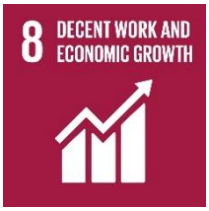
Unconditional Target	A GHG emission reduction of 15% compared to the Business-As-Usual (BAU) scenario in 2030.
	A 3% reduction in power and heat demand through energy-efficiency measures in 2030 compared to the demand under the BAU scenario
	15% of the power and heat demand in 2030 is generated by renewable energy sources.
Conditional Target	A GHG emission reduction of 30% compared to the BAU scenario in 2030.
	20% of the power and heat demand in 2030 is generated by renewable energy sources.
	A 10% reduction in power demand through energy-efficiency in 2030 compared to the demand under the BAU scenario

The following assessment identifies the linkages between the specific recommendations in both Electricity Policy Papers to the SDG targets (Table 1 and 2). It identifies, where renewable energy, for example, can positively or negatively impact SDG targets.

Table 1: Primary SDG Target

Relevant SDG	How does the PPES contribute to this SDG? (examples)
	- Energy efficiency and related reduction in energy demand and losses can help increase energy security by reducing energy imports in countries that rely on trade for energy supply - Energy efficiency decreases energy poverty due to improved energy affordability, increases energy security due to decreased imports and greater reliability, and improves access to modern and sustainable energy services - Solar heating contributes to increasing access to basic affordable and modern energy services. Further, investments in renewables can increase energy security in countries that rely on imports for energy supply

Table 2: Highly Relevant SDG Targets

Relevant SDG	How does the PPES contribute to this SDG? (examples)
	- Higher efficiency can reduce air, water and soil pollution (e.g. less fuel needed) and related non-communicable diseases
	- Improvements in efficiency improve productivity by increasing economic output per unit of energy. Related industry and supply chain development could also support higher productivity - Supports decent job creation and entrepreneurship, and formalization of small enterprises through support for e.g. EE retrofit programmes
	- Efficiency improvements in power generation installations contribute to having sustainable and resilient infrastructure that supports economic development and human well-being - Modal share shift requires and supports development of sustainable, affordable, and accessible transport infrastructure - Supports R&D and upgrading of industrial capabilities by creating demand for new energy efficient building methods and material and energy efficient technologies
	- Improved energy efficiency contributes to sustainable urbanization - Reduces air pollution and improves ecosystem and habitat conservation due to reduced pollution and land use activities
	- Energy efficiency reduces energy demand and related resources needed for power generation - Awareness raising approaches to encourage mitigation actions and sustainability would spread information across society - Can support companies to adopt sustainable practices (e.g. through energy efficiency retrofit schemes)

Summary of Recommendations

Future iterations of electricity policies should explicitly address linkages to specific SDG targets, and the NDC goals. In doing so, there should be narrative that focuses on the plan's broader societal goals and impact on addressing climate change. As highlighted above, the electricity policies positively impact at least twenty-one SDG targets and advances the NDC goals in reducing GHG emissions, and it should therefore be demonstrated within the policy so that common entry points can be better understood within and among Lebanon's sustainable development related plans and policies.

→ For example, energy poverty in Lebanon affects 16% of the households (paying more than 10% of their income on electricity bills) (UNDP - CEDRO Team, 2018) and therefore in implementing the Electricity Policy Paper, poverty (SDG 1) is being addressed by creating a more reliable, accessible and affordable energy supply.

→ Likewise, the energy sector strongly impacts the country's economic productivity capacity. In a 2018 report issued by McKinsey, Lebanon is behind globally in economic productivity in several competitiveness factors. The report states, "The top issue identified by a survey of industrial players is intermittent supply of energy (37%) followed by the cost of electricity (11%)". Access to a reliable and continuous electricity infrastructure, is a crucial element for a functioning and productive economy. It also contributes to quality of life for all residents, and the technological and scientific advancement of societies (Bouri and Assad, 2016). The Lebanese economy is intrinsically tied to the productive capacity of the electric sector, clearly delineating a strong linkage between SDG 8 Decent Work and Economic Growth, SDG 12 Sustainable Consumption and Production, SDG 9 Resilient Infrastructure and Sustainable Industrialization, and SDG 7 Affordable, Reliable and Modern Energy.

→ Furthermore, cleaner energy technologies such as hydro, solar and wind power, can greatly reduce greenhouse gas emissions and greatly reduce premature deaths from air pollutants. According to a study conducted by the American University in Beirut, "Residents in a typical Beirut neighborhood are being exposed to at least 2.5 times more cancer-causing pollutants when diesel power generators are switched on" (Shihadeh et al, 2012). Deploying cleaner energy sources and replacing diesel generators, therefore, can have significant impact on SDGs 3.4 and 3.9 which relate to achieving more positive health outcomes by reducing harmful pollutants.

Policy updates or amendments to the electric energy sector should consider the potential impact on SDG targets and in addressing climate change when developing and prioritizing specific implementation strategies. For example, the plan should prioritize measures that are most economically feasible and have the largest impact on both the NDC and SDGs. In other words, there are opportunities in portraying the electricity infrastructure through a more holistic approach; looking through the lens of the SDGs and NDC might result in a different prioritization of plan strategies.

→ For example, looking at energy efficiency from a gender perspective might result in new strategies to include women and girls in energy efficiency decision making and implementation strategies.

→ Further, electricity key indicators should be developed and synthesized with other plans and policies, to include a broader assessment of meeting SDG targets and NDC goals.

→ The SDG and NDC committees should work collaboratively, alongside the responsible ministries, in the development of joint indicators that can be utilized among all sustainable development related plans and policies to jointly assess both NDC and SDG progress.

Finally, while developing electricity strategies, and considering the linkages with non-environment SDGs, stakeholders from other ministries and institutions should be consulted for more comprehensive decision-making (Annex I).

Potential Negative Linkages

The majority of initiatives within the Lebanon's Electricity Policy result in positive benefits, however, some measures can also have drawbacks or unintended consequences. Total impact and potential trade-offs need to be carefully weighed to determine if projects have a net positive benefit. For example, establishing renewable energy infrastructure can require the procurement of a significant amount of land, or for mass amounts of water resources to be diverted. Policy makers need to assess the availability of land and determine whether or not wind energy, for example, is the best use for that land and what the potential negative impacts might be such as degradation of natural habitats. Some negative consequences may even be avoided if carefully planned for. The SDGs can be helpful in illuminating potential negative impacts of such strategies. Some negative linkages may not be detrimental specifically to the environment, but they can have negative consequences on other factors such as agriculture, poverty, health or jobs. Therefore, it is imperative to understand how certain electricity initiatives may negatively impact specific SDGs to better understand how they might be avoided or mitigated. Following is a list of the potential negative linkages that the deployment of various energy solutions could have on the SDGs. It is not an exhaustive list yet it illustrates some of the primary negative consequences of renewables and natural gas for example, particularly in Lebanon. Table 3 demonstrates a more comprehensive picture of all SDG targets that could be negatively impacted by the Electricity Policy initiatives, primarily the environmental consequences on land and water.

Table 3: Potential Negative Linkages to SDGs

Generally	
SDG 2.3: By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment	Renewables could reduce land and resource access for dependent communities as installations require large land areas
Natural gas	
SDG 3.4: By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being	Gas burning in power generation plants leads to air pollution from e.g. NO_x
SDG 8.4: Improve progressively, through 2030, global resource efficiency in consumption and production and endeavor to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead	Gas can increase environmental impacts of the power sector when displaying cleaner or less GHG-intensive energy sources (e.g. hydro power)
SDG 9.1: Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder	Development of gas power plants and related infrastructure would lock-in the country to limited resources

infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all	
SDG 11.3: By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries	Burning gas in power stations leads to GHG emissions, decreasing sustainability of cities (for electricity consumed in buildings)
Hydro	
SDG 6.6: By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes	Some natural areas are inundated to make space for the water reservoirs and the original route of the river may be changed. Furthermore, dams lead to sediment deposition and interfere with freshwater wildlife
SDG 7.1: By 2030, ensure universal access to affordable, reliable and modern energy services	Climate change can cause large variations in water availability for power generation across regions and even within regions, reducing reliability of energy services
SDG 15.1: By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements	Large-hydropower may negatively impact water ecosystems as natural areas are inundated to make space for the water reservoirs and the original route of the river may be changed. Dams lead to sediment deposition, can interfere with freshwater wildlife and can also affect the water cycle through increased evaporation
Pricing Intervention	
SDG 7.1: By 2030, ensure universal access to affordable, reliable and modern energy services	Increasing tariffs might increase consumer energy prices, reducing access to affordable energy

Sustainable Development Anchors: what is there and what is missing?

A key word search and review of Lebanon's Electricity Policies identifies where the policies explicitly address components of sustainable development and climate change. While the SCAN tool identified where linkages exist between plans and the SDG targets, further examination of each plan reveals where these linkages are explicitly stated in each plan. For example, energy efficiency measures have strong linkages to responsible consumption and production (SDG 12) but these linkages are not included as part of the policy narrative. Likewise, SDG 8 Decent Work and Economic Growth plays a central role in the electricity policies, however, the narrative does not place it in the context of sustainable development.

The following is an assessment of sustainable development and climate change language included the electricity policies and recommendations for creating linkages in future iterations of the plan. The below recommendations tackle the primary SDG, the other important SDG linkages as well as the rest.

Table 4: Recommendation for Estimation of Impact of SDGs		
Key Words	**Description in the Policy/Strategy/Action Plan**	**Recommendation for Estimation of Impact/Integration of Impact**
SDG One: No Poverty · Low-income · Poor · Poverty · Disadvantaged · Underprivileged	- Minimize the effect of the tariff increase on the low consumption subscribers; - In that respect, the Ministry of Energy and Water is currently preparing a tariff study in collaboration with the World Bank with an objective to minimize the effect of the tariff increase on the low consumption subscribers (2019); The 2010 policy specifically addresses low-income consumers: - Adopt special tariffs and fees for low income consumers and productive sectors; - The 2019 policy also addresses the additional strain of the influx of Syrian refugees on the overall electricity infrastructure; - The effect of the Syrian Refugees whose electricity consumption has been estimated to be around 500 MW, causing 275 Million $ of additional costs on EDL and depriving the Lebanese customers from 5 additional hours of supply at peak times.	- Energy efficiency decreases energy poverty due to improved energy affordability, increases energy security due to decreased imports and greater reliability, and improves access to modern and sustainable energy services; - Energy efficiency measures increase energy access to low-income individuals and reduces energy expenditure which contributes to reducing poverty levels; - More steady and reliable energy services allows for more productive and income generating time; - In the long run energy efficiency measures can make energy more affordable through cost savings; - Energy efficiency awareness raising can reduce household energy costs through behavior change (consumption and purchase decisions); - Special tariffs for low-income consumers can assure access to affordable energy.
SDG Two: Zero Hunger · Hunger · Food access · Food security · Food affordability · Agricultural Productivity	Hunger is not included in the Electricity Policy Papers.	- A more reliable energy supply can increase agricultural productivity; - It can create new market opportunities for farmers (production and sale of bioenergy crops in addition to food crops); - Could also contribute to improving agriculture productivity and income through agricultural knowledge and practices that can be transferred to crops for other purposes (e.g. food).

Highly Relevant SDG **SDG Three: Good Health and Well-being** · Environment · Health · Pollution	An umbrella theme of Lebanon's electricity policy is to increase transmission and distribution with reduced environmental impact (fuel switch, renewables, energy efficiency, elimination of losses). However, the policy papers do not address the health benefits in making the electricity system more environmentally friendly. It does address reduced emissions by switching to natural gas in new and existing plants: - On the supply side, the capacity addition shall include conventional energy sources that are the most economical with the least environmental impact mainly the natural gas; and renewable energies such as wind, solar, waste to energy, etc. (2010); - The use of natural gas for energy generation is the key for the strategic transformation of the sector through the improvement of efficiency of the new and existing plants which will translate into treasury savings in the hundreds of millions of dollars in addition to the significant decreases in plants' emissions.	**In addition to SDG 3 in Table 2:** - Reduced transmission and distribution losses can reduce air, water and soil pollution (e.g. less fuel needed) and related non-communicable diseases. This benefit occurs only when efficiency is applied to polluting energy sources, such as fossil fuels; - Gas powered plants can reduce air pollution and thus non-communicable diseases when displacing more polluting energy sources (e.g. coal); - Solar PV, solar heating, hydro and wind power can reduce air, water and soil pollution and contamination when displacing polluting energy sources, such as fossil fuels and bioenergy; - Bioenergy can reduce SO_x and NO_x emissions to air and related non-communicable diseases. However, PM emissions may be comparable to fossil fuels, depending on the quality of fuels; - Energy efficiency reduces air pollution and improves mental health and well-being due to decreased urban heat island effect.
SDG Four: Quality Education · Education · Awareness raising · Youth	The 2010 Electricity Policy focuses on education in terms of electricity use: - Collaboration and commitment of all political parties in supporting the collection plan and ensuring the appropriate climate for the understanding by the citizens of the importance of paying in a timely manner the proposed bills.; - This (2010) policy commits to the preparation and spreading of the culture for proper electricity use; adoption of national programs focused on demand side management as the basis for: effective energy use; peak shaving; load shifting; and demand growth control in order to save a minimum of 5% of the total demand.	- Increased knowledge and a culture shift can lead to behavior change and a decrease in demand; - Shifting consumer behavior through the spreading awareness of proper electricity use.
SDG Five: Gender Equality · Women · Gender · Vulnerable groups · Rural communities	Gender is not addressed in the Electricity Policy Papers.	- Because rural women and girls are primarily responsible for the bulk of household work, access to energy will make a significant difference to their quality of life, including their health (UNDP 2011); - Women and girls benefit the most from clean, efficient energy solutions. In rural areas, where access to modern energy sources is lacking, everyday

		household activities such as cooking and cleaning can be labor and time intensive (EEP, 2017); - Clean and efficient energy products help to reduce health and safety risks and time saved on domestic duties (EEP, 2017); - The availability of affordable lighting, increases the time available for education; employment, income-generating activities, and social and political interactions (EEP, 2017).
SDG Six: Clean Water Sanitation · Clean water · Drinking water · Wastewater · Water quality	Water is not addressed in the Electricity Policy Papers with the exception of solar water heater penetration.	- Water thermal and non-thermal pollution. All types of energy efficiency improvements lead to reduction in discharge of thermal or polluted water, due to reduced requirement for generation; - All types of energy efficiency improvements lead to reduction in water usage for energy production if applied to water-intensive power plants; - Wind power, Solar PV, solar heating can reduce thermal and non-thermal water pollution when fossil fuel generation plant is displaced; - Wind power, solar PV uses almost no water in its operation; - Small hydro (e.g. run of river) uses very little water compared to thermal alternatives; - Energy efficiency supports conservation of water ecosystems due to reduced water use from energy generation; - Solar heating contributes to water-use efficiency when replacing electric water heating (reduced generation from water intensive thermal power plants).
Primary SDG **SDG Seven: Affordable & Clean Energy** · Energy efficiency · Electricity transmission · Electricity distribution · Reliable energy · Affordable energy	The Electricity Policy Papers primarily focus on SDG 7, increasing reliability, affordability and efficiency of the electricity sector: - On the demand side, the policy aims to develop several demand side management and energy efficiency initiatives (e.g., CFL, SWH, etc.) to curb the load growth and improve the load factor which translates into guaranteed savings for the economy (2010); - The 2010 Electricity Policy Paper addresses affordability in terms of establishing a legal framework and both papers also address affordability in light of proposed increases in tariffs;	**In addition to SDG 7 in Table 1:** - Contributes to increasing energy efficiency in power generation; - Reducing energy losses contributes to increasing energy efficiency; - Investments in modern gas power plants can contribute to having modern and reliable energy services; - Increasing solar, wind and bioenergy installations contributes to increasing the share of renewables in the global energy mix;

· GHG reduction · Mitigation · Energy security	- Reducing EDL's financial deficit and improving electric power will be achieved by working in partnership with the private sector, in the short and long term, on producing electricity at the cheapest prices and with the lowest possible environmental impact through public and transparent tenders and quick administrative measures (2019); - The elimination/delay of any initiative and action will lead to losing the policy objective of rescuing the power sector from the current drastic situation to a new sustainable, reliable, and efficient delivery of electricity (2010); - The objective of this policy consists of setting norms and standards for the provision of electric services that is safe, equitable and fair with the best quality and lowest cost; - It is worth noting that such a tariff increase will result in a net decrease of the overall electricity bill that citizens are paying because of the anticipated timely decrease of their private generator bills during the same period (2019); - In that respect, the Ministry of Energy and Water is currently preparing a tariff study in collaboration with the World Bank with an objective to minimize the effect of the tariff increase on the low consumption subscribers (2019); - Increasing the tariffs to cover the production, transmission, and distribution cost taking into consideration the production expected in the five coming years (2019); - Therefore, it is necessary to increase the average tariff from 138 LBP per KWH to around 217 LBP per KWH. This increase will have a small impact on the total electricity bill paid by the citizens, in light of the expected decrease in the bill of private generators. It is worth noting that the MoEW, in cooperation with the World Bank, is preparing a study to revise this tariff so that it has the least impact on low-voltage consumers (2019).	- Solar energy contributes to providing modern, affordable and sustainable energy services; - Renewables can help reduce energy imports in countries that rely on trade for energy supply.

Highly Relevant SDG **SDG Eight: Decent Work and Economic Growth** · Jobs · Income · Employment	The plan does not address the potential benefits to the economy for example, job creation potential or increase in economic productivity due a more reliable electricity network. It does address savings potential to the economy as follows: - On the demand side, the policy aims to develop several demand side management and energy efficiency initiatives (e.g., CFL, SWH, etc.) to curb the load growth and improve the load factor which translates into guaranteed savings for the economy (2010).	**In addition to SDG 8 in Table 2:** - An increase in renewables could contribute to sustained economic growth, through job creation, avoided dependence on limited or imported resources and through creation of new industrial activity; - Financial support to encourage development and uptake of low carbon technologies and services supports entrepreneurship and MSMEs through better financial services; - The availability of affordable lighting, increases the time available for education; employment, income-generating activities, and social and political interactions (EEP, 2017); - Increased capacity for revenue collection can finance technology and infrastructure upgrading potentially creating jobs and improving productivity.
Highly Relevant SDG **SDG 9: Industry, Innovation, Infrastructure** · Industry · Innovation · Infrastructure · Research and development	The electricity policy focuses primarily on upgrading the existing infrastructure to meet current and future demand in the electric energy sector. For example: - This paper remedies most of the problems of the electric energy sector starting by the addition of generating capacity to cover the existing gap, demand forecast and required reserve together with the necessary infrastructure to transmit and distribute the generated energy to consumers throughout the Lebanese service territory in a secure and economical manner (2010); - The transmission and distribution infrastructures will be upgraded to cope with the capacity additions and to improve the operability of the system, thus decreasing the technical losses (2010); - The infrastructure requirements for the natural gas (LNG terminal, pipeline along the coast, etc.) are included in the policy (2010); - The generation policy is targeting a total installed capacity of 4,000 MW by 2014 and 5,000 MW thereafter to meet a load of 2500 MW (summer 2009), 500 MW of demand not currently supplied (i.e. self-generation), future demand corresponding to an annual load growth of 7%, and ~15% of peak load reserve (2010);	**In addition to SDG 9 in Table 2:** - Energy efficiency supports development of sustainable and resilient infrastructure and supports human well-being (better quality living environments); - Energy efficiency supports sustainable industrialization through creation of demand for more energy efficient construction methods and building products; - Energy efficiency supports upgrading and retrofitting of industries, increased resource efficiency, and adoption of environmentally sound technologies through more efficient (industrial) buildings and appliances; - Energy efficiency supports R&D and upgrading of industrial capabilities by creating demand for new energy efficient building methods and materials and energy efficient technologies; - Deployment of solar heating supports development of sustainable, reliable and resilient infrastructure; - Deployment of renewables supports sustainable industrialization through increased sustainability of power supply and development of sustainable industries related to renewable energy project construction and operation;

	- Study and develop a plan for an infrastructure to supply and distribute natural gas based on the land pipeline in Beddawi and LNG marine station(s) and interconnect them with the power plants; thus, providing a flexible and stable supply of natural gas (2010).	- Increased tariffs and capacity for revenue collection can provide the resources necessary to develop quality, reliable, sustainable and resilient infrastructure; - Supports sustainable industrialization through creation of demand for more energy efficient construction methods and building products; - Supports upgrading and retrofitting of industries, increased resource efficiency, and adoption of environmentally sound technologies through urban planning to support energy efficient buildings and behavior;
SDG 10: Reduced Inequalities · Equity · Inclusion	The 2010 Electricity addresses equity in terms of establishing a legal framework: - The objective of this policy consists of setting norms and standards for the provision of electric services that is safe, equitable and fair with the best quality and lowest cost.	Special tariffs adopted for low-income customers can help offset the potential increase in energy prices.
Highly Relevant SDG **SDG 11: Sustainable Cities and Communities** · Cities · Communities · Urban · Urbanization · Fuel efficient vehicles · Modal share shift · Public transportation · Accessibility · Mobility	Cities and urbanization are not addressed in the Electricity Policy Papers.	**In addition to SDG 11 in Table 2:** - Energy efficiency contributes to reducing the environmental impact of cities as less fuel is needed for the same amount of power generated (e.g. reduced air pollution); - When displacing more polluting sources, gas reduces the amount of GHG and air pollutants from power generation, contributing to having sustainable transport systems (for share of electric vehicles); - When displacing more pollutant sources, gas can contribute to reducing the environmental impact of cities by reducing the amount of GHG and air pollutants from power generation; - Deploying renewables can contribute to reducing the environmental impact of cities by reducing the amount of GHG and air pollutants from power generation; - Reduces impact of cities through more green spaces, reduced pollution and more efficient land and energy use; - Improves ecosystem and habitat conservation due to reduced pollution.

Highly Relevant SDG **SDG 12: Sustainable Consumption and Production** · Consumption · Production · Output · Productivity · Efficiency	One of the main objectives of the Electricity Policies is to increase transmission, and distribution efficiency and reliability while decreasing losses: - The transmission and distribution infrastructures will be upgraded to cope with the capacity additions and to improve the operability of the system, thus decreasing the technical losses (2010); - Increase the production capacity, improve its efficiency, and reduce the fuel cost by using natural gas (2019); - In addition, the old plants in Zouk, Jiyeh, and Hrayche will be put out of service as of 2020 and replaced progressively in the same location with eco-friendly, cost-effective and highly efficient plants (2019); - In parallel, work is being done to procure LNG in 2021, through storage plants and floating gasification, which reduces the environmental impact of production plants and contributes in principle to reducing their operational cost (2019); - Decrease of the technical and non-technical losses along with the collection improvement; - Increase the generation capacity, improve efficiency and reduce fuel cost by using natural gas (2019).	**In addition to SDG 12 in Table 2:** - Reducing losses reduces energy demand and related resources needed for power generation; - Energy efficiency reduces energy demand and related resources needed for power generation; - Deploying renewables contributes to sustainable management and efficient use of natural resources; - Building energy efficiency increases resource efficiency through more energy efficient buildings and appliances; - Building energy efficiency contributes to reduced air pollution through reduced fuel consumption; - Increases resource efficiency through planning to enable energy efficient cities; - Using bioenergy (waste-to-energy) for power generation can contribute to reducing the amount of waste being released to air, water or soil; - Bioenergy and biogas (waste-to-energy) production makes productive use of food waste; - Encouraging companies to adopt renewable energy contributes to more sustainable practices in the private sector.

SDG 13: Climate Change · Climate Change · GHG emissions · Resilience · Mitigation · Adaptation · Nationally Determined Contribution (NDC)	The plan makes mention of reducing environmental impact but does not address directly how the plan mitigates climate change nor does the 2019 policy make mention of Lebanon's NDC or how the policies contribute to meeting climate change goals: - On the supply side, the capacity addition shall include conventional energy sources that are the most economical with the least environmental impact mainly the natural gas; and renewable energies such as wind, solar, waste to energy, etc. (2010); - In addition, the old plants in Zouk, Jiyeh, and Hrayche will be put out of service as of 2020 and replaced progressively in the same location with eco-friendly, cost-effective and highly efficient plants (2019); - These will be achieved in the short and long term through fast track public and transparent tenders that will be launched for the supply of electricity in partnership with the private sector at competitive prices with minimal environmental impact (2019); - In parallel, an FSRU procurement process is currently underway with the goal of securing the natural gas by 2021 which will contribute in mitigating the environmental impact of the power plants and result, in principle, in reducing the operating costs (2019); - The approval of the Generation plan for the construction of permanent environmentally friendly power plant as follows (2019-2015).	- Reference how the Electricity policies contributes to climate change mitigation and adaptation; - Reference role of Electricity Policy in the NDC; - Align policy targets with the NDC.
SDG 14: Life Below Water · Water · Sea · Lakes · Streams · Rivers · Mediterranean · Marine life · Run-off · Water pollution · Coastal	The coastal zone is mentioned in the 2010 policy in regard to building a natural gas pipeline along the coast however, the impact marine life or water ecosystems is not mentioned: - Study and develop a plan for an infrastructure to supply and distribute natural gas based on the land pipeline in Beddawi and LNG marine station(s) and interconnect them with the power plants; thus providing a flexible and stable supply of natural gas;	- Improved energy efficiency in fossil power plants will reduce fuel combustion and thus reduce thermal and non-thermal water pollution potentially entering the marine environment; - When displacing fossil fuel power plants, renewables can reduce thermal and non-thermal water pollution potentially entering the marine environment; - Green building and green urban planning also typically reduces water pollution (run-off).

	- Build a gas pipeline along the coast (onshore and subsea where necessary) to feed all power plants from Beddawi to Tyre to reduce their operating costs; - Complete a prefeasibility study and construct a Liquified Natural Gas (LNG) marine terminal in Salaata or Zahrani (2011) where the choice of site location will be based on its results.	
SDG 15: Life on land · Ecosystems · Biodiversity · Forests · Reforestation/ afforestation · Seed bank · Genetic	Life on land is not addressed in the Electricity Policy Papers.	- Solar heating could help displace wood fuel use, contributing to reducing deforestation; - Solar heating can help reduce degradation of natural habitats through reduced air and water pollution and reduced water consumption, if displacing more polluting or intensive alternatives. Solar water heaters may also reduce local deforestation; - Building energy efficiency improves conservation of water ecosystems and improves ecosystem and habitat conservation due to reduced pollution; - Small-hydropower can help reduce degradation of natural habitats through reduced air and water pollution and reduced water consumption, if displacing more polluting or intensive alternatives; - Solar PV can contribute to sustainable use of freshwater ecosystems as it uses considerably less water than thermal alternatives (including thermal renewables); - Wind power can help reduce degradation of natural habitats through reduced air and water pollution and reduced water consumption, if displacing more polluting or intensive alternatives.

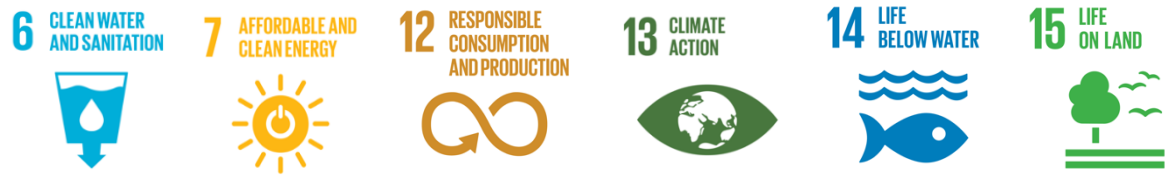
SDG 16: Peace, Justice & Strong institutions · Capacity · Legislation · Regulation · Legal framework · Policy · Participatory · Inclusive (decision-making)	- The Electricity policy aims to create more transparent institutions through the tendering process and legal framework, as well as building capacity; - The plan is based on adopting the highest transparency and competitiveness standards through an international tender guarantying electricity as soon as possible, with the lowest possible cost and the lowest environmental impact (2019); - The policy seeks to build capacity through the corporatization of EdL; - The success of this policy necessitates the "revitalization" of EdL because it is the core entity of the sector. This entails providing the financial, administrative and human resource flexibility needed to cope with the rapid and vital changes. To achieve this goal, this paper considers corporatization as the ideal solution; - Organization of a National campaign on all the Lebanese territories in collaboration with the concerned parties from the Ministry of Interior, the Ministry of Defense, the Lebanese Army and the Ministry of Justice, for the removal of the illegal grid connections, the issuance of infringement notices and the quick processing of the claims for theft of electricity by the competent judiciary units.	- Sound policy and legislative frameworks are a means to developing more effective, accountable, and transparent institutions; - Increasing electricity tariffs might encourage users to reduce energy consumption.
SDG 17 Partnerships for the Goals · Resource · Financing mechanism · Public-Private Partnerships	The Electricity policy focuses on many issues relevant to SDG 17 including establishing a sound legal framework, corporatization of EdL, increasing capacity to collect tariffs and reduce EdL's deficit, engaging in public-private partnerships, and capacity development within EdL: - Reducing EDL's financial deficit and improving electric power will be achieved by working in partnership with the private sector, in the short and long term, on producing electricity at the cheapest prices and with the lowest possible environmental impact through public and transparent tenders and quick administrative measures (2019); - The Ministry of Energy & Water has been seeking optimal technical, financial and political solutions to promptly reduce the financial deficit in compliance with the requirements of the Policy Paper for the Electricity Sector endorsed by the Council of	- Encouraging companies to adopt renewable energy requires effective public-private partnerships; - Deployment of renewable energy will require effective public-private partnerships.

	Minister's decision No.1 dated 21/6/2010 which constitutes the general framework for the Electricity Sector in Lebanon; - Upon launching of the DSP projects in April 2012, the Electricity Sector experienced reduction in losses and improvements in the collection. This project has been the first public private partnership in Lebanon with a clear objective of fixing and upgrading the distribution network through investments for the implementation of a smart grid, the collection improvement, the reduction of technical and nontechnical losses and improvement in customer service; - Improving bill collection with DSPs by implementing the 2019 collection plan which entails mechanisms for collection & issuance of consumers bills; - The success of this policy necessitates the "revitalization" of EdL because it is the core entity of the sector. This entails providing the financial, administrative and human resource flexibility needed to cope with the rapid and vital changes. To achieve this goal, this paper considers corporatization as the ideal solution (2010); - Legal Framework: The objective of this policy consists of setting norms and standards for the provision of electric services that is safe, equitable and fair with the best quality and lowest cost; - Increase the human resource capacity of EdL by direct and gradual hiring and by relying on the private sector using outsourcing contracts for: the administrative, engineering, technical, and contracts of installation, operation and maintenance.	

Annex I: Lead Institution per SDG in Lebanon

Theme: People — Leading Institution: Ministry of Education and Higher Education

Theme: Planet — Leading Institution: Ministry of Environment



Theme: Prosperity — Leading Institution: Ministry of Economy and Trade

Theme: Peace — Leading Institution: Office of the Minister of State for Administrative Reform

Theme: Data and Statistics — Leading Institution: Central Administration of Statistics

Cross-cutting theme:

Annex II: Indicators

A cohesive and integrated indicator framework that synchronizes SDG and NDC progress is essential for coordinated implementation. The Electricity Policy Papers do not identify key performance indicators but it does include targets and several data sets that can be utilized as baseline indicators to demonstrate impact on the SDGs as well as the NDC. Furthermore, Lebanon has yet to nationalize the SDG indicators, however, a robust database of national level data can be found in the SDG API database. The database provides global data sets at the national level that correspond to the global SDG indicator framework and makes comparisons of SDG progress across countries easily accessible and consistent.

The SDG global framework is a valuable starting point to integrate both agendas indicator framework, however, a barrier to solely utilizing the SDG global framework is that it is limited in its ability to measure NDC implementation. Many of the SDG indicators are too unspecific for tracking NDC progress (refer to adoption and operationalization of climate or disaster risk plans) (Bouyé, Harmeling, & Schulz, 2018). Therefore, in addition to the SDG global indicators, additional indicators are needed to effectively and cohesively monitor both agendas. Hence, identification of the targets, goals, and/or indicators within the fourteen plans and policies that comprise Lebanon's climate policies should be identified and provide a basis to develop additional and complementary indicators to the SDGs. Therefore, the existing SDG global framework is complemented by additional indicators that could are both climate and SDG focused and germane to the goals of the specific plan/policy. These are identified in Annex II 'other potential indicators' for the applicable SDG targets.

Annex II: Potential Additional Indicators for an Integrated SDG & NDC Indicator framework	
SDG	Indicator
7.1 By 2030, ensure universal access to affordable, reliable and modern energy services	7.1.1 Proportion of population with access to electricity, by urban/rural (percent)
	7.1.2 Proportion of population with primary reliance on clean fuels and technology
	Other Potential Indicators: -Electricity coverage -Primary Energy Consumption per capita -Annual electricity consumption per capita -Energy Consumption by fuel type -EDL total revenue collected annually -EDL total annual deficit -% Technical and non-technical losses - Total Revenue saved from reductions in losses (annual) -Increase in production in MW -Electricity production capacity compared to demand -Electricity costs as a percentage of median income -Average hours of EDL electricity per day (non-generator)
7.2 By 2030, increase substantially the share of renewable energy in the global energy mix	7.2.1 Renewable energy share in the total final energy consumption
	Other potential Indicators: - Total kilotonnes of oil equivalent (ktoe) from RE projects (NREAP) -Share of Wind energy for electricity production as a percentage of the total energy demand -Solar energy-including solar photovoltaics (PV), concentrated solar power (CSP), as a percentage of total energy demand -Hydro power as a share of total electricity production -Biomass as share of total energy demand
	7.3.1 Energy intensity measured in terms of primary energy and GDP

7.3 By 2030, double the global rate of improvement in energy efficiency	Other Potential Indicators: -Total GWh for primary energy (including electricity generation, transmission and distribution) -Total GWh for end-use energy (including building, industrial and public sectors) - Electric power intensity (NEEAP indicator) -Gross annual electricity generation (NEEAP indicator) -Imported electric power GWh (NEEAP indicator) -Exported electric power GWh (NEEAP indicator) -Projected growth rate for demand for electric power % (NREAP indicator) -Primary Energy consumption at the national level- Mtoe (NEEAP indicator) -Share of electric power of primary energy consumption % (NEEAP indicator) -Marginal cost of producing in kWh (NEEAP indicator) -Electrification Rate % (NEEAP indicator) -% change in power demand through energy efficiency measures (NDC)

Annex III: SDG List

PEOPLE	 **Goal 1. End poverty in all its forms everywhere**	1.1 By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than $1.25 a day
		1.2 By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions
		1.3 Implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable
		1.4 By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance
		1.5 By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters
		1.a Ensure significant mobilization of resources from a variety of sources, including through enhanced development cooperation, in order to provide adequate and predictable means for developing countries, in particular least developed countries, to implement programmes and policies to end poverty in all its dimensions
		1.b Create sound policy frameworks at the national, regional and international levels, based on pro-poor and gender-sensitive development strategies, to support accelerated investment in poverty eradication actions

PEOPLE	 **Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture**	2.1 By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round
		2.2 By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons
		2.3 By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment
		2.4 By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality
		2.5 By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed
		2.a Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries
		2.b Correct and prevent trade restrictions and distortions in world agricultural markets, including through the parallel elimination of all forms of agricultural export subsidies and all export measures with equivalent effect, in accordance with the mandate of the Doha Development Round
		2.c Adopt measures to ensure the proper functioning of food commodity markets and their derivatives and facilitate timely access to market information, including on food reserves, in order to help limit extreme food price volatility

PEOPLE	 **Goal 3. Ensure healthy lives and promote well-being for all at all ages**	3.1 By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births
		3.2 By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births
		3.3 By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases
		3.4 By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being
		3.5 Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol
		3.6 By 2020, halve the number of global deaths and injuries from road traffic accidents
		3.7 By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes
		3.8 Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all
		3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination
		3.a Strengthen the implementation of the World Health Organization Framework Convention on Tobacco Control in all countries, as appropriate
		3.b Support the research and development of vaccines and medicines for the communicable and non-communicable diseases that primarily affect developing countries, provide access to affordable essential medicines and vaccines, in accordance with the Doha Declaration on the TRIPS Agreement and Public Health, which affirms the right of developing countries to use to the full the provisions in the Agreement on Trade-Related Aspects of Intellectual Property Rights regarding flexibilities to protect public health, and, in particular, provide access to medicines for all
		3.c Substantially increase health financing and the recruitment, development, training and retention of the health workforce in developing countries, especially in least developed countries and small island developing States
		3.d Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks
PEOPLE	 **Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all**	4.1 By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes
		4.2 By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education
		4.3 By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university
		4.4 By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship
		4.5 By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations
		4.6 By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy
		4.7 By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development
		4.a Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all
		4.b By 2020, substantially expand globally the number of scholarships available to developing countries, in particular least developed countries, small island developing States and African countries, for enrolment in higher education, including vocational training and information and communications technology, technical, engineering and scientific programmes, in developed countries and other developing countries
		4.c By 2030, substantially increase the supply of qualified teachers, including through international cooperation for teacher training in developing countries, especially least developed countries and small island developing States

PEOPLE	 **Goal 5. Achieve gender equality and empower all women and girls**	5.1 End all forms of discrimination against all women and girls everywhere
		5.2 Eliminate all forms of violence against all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation
		5.3 Eliminate all harmful practices, such as child, early and forced marriage and female genital mutilation
		5.4 Recognize and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and the family as nationally appropriate
		5.5 Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life
		5.6 Ensure universal access to sexual and reproductive health and reproductive rights as agreed in accordance with the Programme of Action of the International Conference on Population and Development and the Beijing Platform for Action and the outcome documents of their review conferences
		5.a Undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance and natural resources, in accordance with national laws
		5.b Enhance the use of enabling technology, in particular information and communications technology, to promote the empowerment of women
		5.c Adopt and strengthen sound policies and enforceable legislation for the promotion of gender equality and the empowerment of all women and girls at all levels

PEOPLE	 **Goal 10. Reduce inequality within and among countries**	10.1 By 2030, progressively 10.1 By 2030, progressively achieve and sustain income growth of the bottom 40 per cent of the population at a rate higher than the national average of the population at a rate higher than the national average
		10.2 By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status
		10.3 Ensure equal opportunity and reduce inequalities of outcome, including by eliminating discriminatory laws, policies and practices and promoting appropriate legislation, policies and action in this regard
		10.4 Adopt policies, especially fiscal, wage and social protection policies, and progressively achieve greater equality
		10.5 Improve the regulation and monitoring of global financial markets and institutions and strengthen the implementation of such regulations
		10.6 Ensure enhanced representation and voice for developing countries in decision-making in global international economic and financial institutions in order to deliver more effective, credible, accountable and legitimate institutions
		10.7 Facilitate orderly, safe, regular and responsible migration and mobility of people, including through the implementation of planned and well-managed migration policies
		10.a Implement the principle of special and differential treatment for developing countries, in particular least developed countries, in accordance with World Trade Organization agreements
		10.b Encourage official development assistance and financial flows, including foreign direct investment, to States where the need is greatest, in particular least developed countries, African countries, small island developing States and landlocked developing countries, in accordance with their national plans and programmes
		10.c By 2030, reduce to less than 3 per cent the transaction costs of migrant remittances and eliminate remittance corridors with costs higher than 5 per cent

PLANET	 **Goal 6. Ensure availability and sustainable management of water and sanitation for all**	6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all
		6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations
		6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally
		6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity
		6.5 By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate
		6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes
		6.a By 2030, expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies
		6.b Support and strengthen the participation of local communities in improving water and sanitation management

PLANET	 **Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all**	7.1 By 2030, ensure universal access to affordable, reliable and modern energy services
		7.2 By 2030, increase substantially the share of renewable energy in the global energy mix
		7.3 By 2030, double the global rate of improvement in energy efficiency
		7.a By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology
		7.b By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support

PLANET	 **Goal 12. Ensure sustainable consumption and production patterns**	12.1 Implement the 10-year framework of programmes on sustainable consumption and production, all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries
		12.2 By 2030, achieve the sustainable management and efficient use of natural resources
		12.3 By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses
		12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment
		12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse
		12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle
		12.7 Promote public procurement practices that are sustainable, in accordance with national policies and priorities
		12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature
		12.a Support developing countries to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production
		12.b Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products
		12.c Rationalize inefficient fossil-fuel subsidies that encourage wasteful consumption by removing market distortions, in accordance with national circumstances, including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts, taking fully into account the specific needs and conditions of developing countries and minimizing the possible adverse impacts on their development in a manner that protects the poor and the affected communities

PLANET	 **Goal 13. Take urgent action to combat climate change and its impacts**	13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries
		13.2 Integrate climate change measures into national policies, strategies and planning
		13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning
		13.a Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly $100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible
		13.b Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities

PLANET	 **Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development**	14.1 By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution
		14.2 By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans
		14.3 Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels
		14.4 By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics
		14.5 By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information
		14.6 By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the World Trade Organization fisheries subsidies negotiation
		14.7 By 2030, increase the economic benefits to Small Island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism
		14.a Increase scientific knowledge, develop research capacity and transfer marine technology, taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries, in particular small island developing States and least developed countries
		14.b Provide access for small-scale artisanal fishers to marine resources and markets
		14.c Enhance the conservation and sustainable use of oceans and their resources by implementing international law as reflected in UNCLOS, which provides the legal framework for the conservation and sustainable use of oceans and their resources, as recalled in paragraph 158 of The Future We Want
PLANET	 **Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss**	15.1 By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements
		15.2 By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally
		15.3 By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world
		15.4 By 2030, ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development
		15.5 Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species
		15.6 Promote fair and equitable sharing of the benefits arising from the utilization of genetic resources and promote appropriate access to such resources, as internationally agreed
		15.7 Take urgent action to end poaching and trafficking of protected species of flora and fauna and address both demand and supply of illegal wildlife products
		15.8 By 2020, introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems and control or eradicate the priority species
		15.9 By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts
		15.a Mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems
		15.b Mobilize significant resources from all sources and at all levels to finance sustainable forest management and provide adequate incentives to developing countries to advance such management, including for conservation and reforestation
		15.c Enhance global support for efforts to combat poaching and trafficking of protected species, including by increasing the capacity of local communities to pursue sustainable livelihood opportunities

PROSPERITY	 **Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all**	8.1 Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7 per cent gross domestic product growth per annum in the least developed countries
		8.2 Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors
		8.3 Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services
		8.4 Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead
		8.5 By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value
		8.6 By 2020, substantially reduce the proportion of youth not in employment, education or training
		8.7 Take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour, including recruitment and use of child soldiers, and by 2025 end child labour in all its forms
		8.8 Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment
		8.9 By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products
		8.10 Strengthen the capacity of domestic financial institutions to encourage and expand access to banking, insurance and financial services for all
		8.a Increase Aid for Trade support for developing countries, in particular least developed countries, including through the Enhanced Integrated Framework for Trade-Related Technical Assistance to Least Developed Countries
		8.b By 2020, develop and operationalize a global strategy for youth employment and implement the Global Jobs Pact of the International Labour Organization
PROSPERITY	 **Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation**	9.1 Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all
		9.2 Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries
		9.3 Increase the access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including affordable credit, and their integration into value chains and markets
		9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities
		9.5 Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending
		9.a Facilitate sustainable and resilient infrastructure development in developing countries through enhanced financial, technological and technical support to African countries, least developed countries, landlocked developing countries and small island developing States
		9.b Support domestic technology development, research and innovation in developing countries, including by ensuring a conducive policy environment for, inter alia, industrial diversification and value addition to commodities
		9.c Significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet in least developed countries by 2020

PROSPERITY	 **Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable**	11.1 By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums
		11.2 By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons
		11.3 By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries
		11.4 Strengthen efforts to protect and safeguard the world's cultural and natural heritage
		11.5 By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations
		11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management
		11.7 By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities
		11.a Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning
		11.b By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels
		11.c Support least developed countries, including through financial and technical assistance, in building sustainable and resilient buildings utilizing local materials

PEACE	 **Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels**	16.1 Significantly reduce all forms of violence and related death rates everywhere
		16.2 End abuse, exploitation, trafficking and all forms of violence against and torture of children
		16.3 Promote the rule of law at the national and international levels and ensure equal access to justice for all
		16.4 By 2030, significantly reduce illicit financial and arms flows, strengthen the recovery and return of stolen assets and combat all forms of organized crime
		16.5 Substantially reduce corruption and bribery in all their forms
		16.6 Develop effective, accountable and transparent institutions at all levels
		16.7 Ensure responsive, inclusive, participatory and representative decision-making at all levels
		16.8 Broaden and strengthen the participation of developing countries in the institutions of global governance
		16.9 By 2030, provide legal identity for all, including birth registration
		16.10 Ensure public access to information and protect fundamental freedoms, in accordance with national legislation and international agreements
		16.a Strengthen relevant national institutions, including through international cooperation, for building capacity at all levels, in particular in developing countries, to prevent violence & combat terrorism & crime
		16.b Promote and enforce non-discriminatory laws and policies for sustainable development

CROSS-CUTTING SDG	17 PARTNERSHIPS FOR THE GOALS  **Goal 17. Strengthen the means of implementation and revitalize the global partnership for sustainable development**	17.1 Strengthen domestic resource mobilization, including through international support to developing countries, to improve domestic capacity for tax and other revenue collection
		17.2 Developed countries to implement fully their official development assistance commitments, including the commitment by many developed countries to achieve the target of 0.7 per cent of ODA/GNI to developing countries and 0.15 to 0.20 per cent of ODA/GNI to least developed countries; ODA providers are encouraged to consider setting a target to provide at least 0.20 per cent of ODA/GNI to least developed countries
		17.3 Mobilize additional financial resources for developing countries from multiple sources
		17.4 Assist developing countries in attaining long-term debt sustainability through coordinated policies aimed at fostering debt financing, debt relief and debt restructuring, as appropriate, and address the external debt of highly indebted poor countries to reduce debt distress
		17.5 Adopt and implement investment promotion regimes for least developed countries
		17.6 Enhance North-South, South-South and triangular regional and international cooperation on and access to science, technology and innovation and enhance knowledge sharing on mutually agreed terms, including through improved coordination among existing mechanisms, in particular at the United Nations level, and through a global technology facilitation mechanism
		17.7 Promote the development, transfer, dissemination and diffusion of environmentally sound technologies to developing countries on favourable terms, including on concessional and preferential terms, as mutually agreed
		17.8 Fully operationalize the technology bank and science, technology and innovation capacity building mechanism for least developed countries by 2017 and enhance the use of enabling technology, in particular information and communications technology
		17.9 Enhance international support for implementing effective and targeted capacity-building in developing countries to support national plans to implement all the sustainable development goals, including through North-South, South-South and triangular cooperation
		17.10 Promote a universal, rules-based, open, non-discriminatory and equitable multilateral trading system under the World Trade Organization, including through the conclusion of negotiations under its Doha Development Agenda
		17.11 Significantly increase the exports of developing countries, in particular with a view to doubling the least developed countries' share of global exports by 2020
		17.12 Realize timely implementation of duty-free and quota-free market access on a lasting basis for all least developed countries, consistent with World Trade Organization decisions, including by ensuring that preferential rules of origin applicable to imports from least developed countries are transparent and simple, and contribute to facilitating market access
		17.13 Enhance global macroeconomic stability, including through policy coordination and policy coherence
		17.14 Enhance policy coherence for sustainable development
		17.15 Respect each country's policy space and leadership to establish and implement policies for poverty eradication and sustainable development
		17.16 Enhance the global partnership for sustainable development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the sustainable development goals in all countries, in particular developing countries
		17.17 Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships
		17.18 By 2020, enhance capacity-building support to developing countries, including for least developed countries and small island developing States, to increase significantly the availability of high-quality, timely and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other characteristics relevant in national contexts
		17.19 By 2030, build on existing initiatives to develop measurements of progress on sustainable development that complement gross domestic product, and support statistical capacity-building in developing countries

Annex IV: Electricity Sector Paper

Recommendation/ Intervention	SDG Target	SCAN TAB	SDG	SDG Target (blue = primary target alignment)	SCAN Category	Action	Link +/-	Description of Link	Primary Source
a- Increasing the production The plan aims to increase the production in order to cover the total electricity demand by EDL and stop counting on private generators in 2020. Based on an annual growth rate of 3%, the peak electricity demand in 2020 can be estimated at 3780 MW.	3.4 By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being 7.1 By 2030, ensure universal access to affordable, reliable and modern energy services 7.3 By 2030, double the global rate of improvement in energy efficiency 7.b By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support 8.2 Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors 8.4 Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead 9.1 Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all 9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities 11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management	Electricity & Heat	3.4	By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being	Increase energy efficiency	Power generation efficiency improvement (when using coal, oil, gas)		Higher efficiency can reduce air, water and soil pollution (e.g. less fuel needed) and related non-communicable diseases. This benefit occurs only when efficiency is applied to polluting energy sources, such as fossil fuels and bioenergy (however, increased Capacity even if more energy efficient doesn't necessary mean net reduction in pollution ghg emissions)	SCAN
		Electricity & Heat	3.9	By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	Increase energy efficiency	Power generation efficiency improvement (when using coal, oil, gas)		Higher efficiency can reduce air, water and soil pollution (e.g. less fuel needed) and related non-communicable diseases. This benefit occurs only when efficiency is applied to polluting energy sources, such as fossil fuels and bioenergy.	SCAN
		Electricity & Heat	6.3	By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally	Increase energy efficiency	Power generation efficiency improvement (when using coal, oil, gas)		Water thermal and non-thermal pollution. All types of energy efficiency improvements lead to reduction in discharge of thermal or polluted water, due to reduced requirement for generation	SCAN
		Electricity & Heat	6.4	By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity	Increase energy efficiency	Power generation efficiency improvement (when using coal, oil, gas)		All types of energy efficiency improvements lead to reduction in water usage for energy production if applied to water-intensive power plants.	SCAN
		Electricity & Heat	7.1	By 2030, ensure universal access to affordable, reliable and modern energy services	Increase energy efficiency	Power generation efficiency improvement (when using coal, oil, gas)		Energy efficiency and related reduction in energy demand can help increase energy security by reducing energy imports in countries that rely on trade for energy supply.	SCAN
		Electricity & Heat	7.3	By 2030, double the global rate of improvement in energy efficiency	Increase energy efficiency	Power generation efficiency improvement (when using coal, oil, gas)		Contributes to increasing energy efficiency in power generation	SCAN
		Electricity & Heat	7.b	7.b By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support	Increase energy efficiency	Power generation efficiency improvement (when using coal, oil, gas)		Improving generation efficiency contributes to providing modern and sustainable energy services	LOCAL EXPERT
		Electricity & Heat	8.1	Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7 per cent gross domestic product growth per annum in the least developed countries	Increase energy efficiency	Power generation efficiency improvement (when using coal, oil, gas)		Indirect link: Increasing efficiency in power generation could contribute to sustain economic growth by improving productivity.	SCAN

	17.17 Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships	Electricity & Heat	8.2	Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors	Increase energy efficiency	Power generation efficiency improvement (when using coal, oil, gas)		Improvements in efficiency improve productivity by increasing economic output per unit of energy. Related industry and supply chain development could also support higher productivity	SCAN
		Electricity & Heat	8.3	Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services	Increase energy efficiency	Power generation efficiency improvement (when using coal, oil, gas)		Indirect link: Investment in energy efficiency supports productive activities, job creation, supply chain development, innovation, and enterprise development	SCAN
		Electricity & Heat	8.4	Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead	Increase energy efficiency	Power generation efficiency improvement (when using coal, oil, gas)		Increased energy efficiency supports more efficient use of resources and reduces environmental harm from energy use	SCAN
		Electricity & Heat	9.1	Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all	Increase energy efficiency	Power generation efficiency improvement (when using coal, oil, gas)		Efficiency improvements in power generation installations contribute to having sustainable and resilient infrastructure that supports economic development and human well-being.	SCAN
		Electricity & Heat	9.2	Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries	Increase energy efficiency	Power generation efficiency improvement (when using coal, oil, gas)		Supply side energy efficiency would support sustainable industrialisation through more resource efficient power supply	SCAN
		Electricity & Heat	9.4	By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities	Increase energy efficiency	Power generation efficiency improvement (when using coal, oil, gas)		Improved efficiency helps upgrade infrastructure and increase sustainability and resource-efficiency of industries as well as adopting cleaner technologies	SCAN
		Electricity & Heat	9.5	Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending	Increase energy efficiency	Power generation efficiency improvement (when using coal, oil, gas)		Indirect link: Improved efficiency upgrades the technological capabilities of the power sector	SCAN
		Electricity & Heat	11.6	By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management	Increase energy efficiency	Power generation efficiency improvement (when using coal, oil, gas)		Energy efficiency contributes to reducing the environmental impact of cities as less fuel is needed for the same amount of power generated (e.g. reduced air pollution).	SCAN

		Electricity & Heat	12.2	By 2030, achieve the sustainable management and efficient use of natural resources	Increase energy efficiency	Power generation efficiency improvement (when using coal, oil, gas)		Energy efficiency reduces energy demand and related resources needed for power generation.	SCAN
		Electricity & Heat	14.1	By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution	Increase energy efficiency	Power generation efficiency improvement (when using coal, oil, gas)		Improved energy efficiency in fossil power plants will reduce fuel combustion and thus reduce thermal and non-thermal water pollution potentially entering the marine environment.	SCAN
		Electricity & Heat	15.1	By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements	Increase energy efficiency	Power generation efficiency improvement (when using coal, oil, gas)		Improved energy efficiency can support sustainable use of freshwater ecosystems through reduction in water usage for energy production, predominantly from fossil fuel power plants.	SCAN
		Electricity & Heat	15.5	Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species	Increase energy efficiency	Power generation efficiency improvement (when using coal, oil, gas)		Energy efficiency helps reduce degradation of natural habitats by reducing the requirement for energy generation and its related negative impacts (in systems with polluting and water intensive power plants)	SCAN
		Electricity & Heat	17.17	17.17 Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships	Increase energy efficiency	Power generation efficiency improvement (when using coal, oil, gas)		Increased production will rely on effective public-private partnerships thus expediting implementation	LOCAL EXPERT
Transmission & Distribution b- Transmission The transmission grid will be expanded and fixed to absorb the expected new production, particularly completing the ring in Mansourieh, the line of Bikfaya-Faytroun-Halat in Juret Bedran, Bared-Halba line, Qobayat-Hermel line, and Tyre-Wadi Jilo line. The northern ring in Beirut, the first part of the first southern ring in Beirut, as well as other projects included in annex 6 will be completed. These projects contribute to reducing technical losses (4% currently) on the transmission grid and thus increasing EDL revenues. This is shown in the master plan of the transmission sector endorsed by the Council of Ministers in 2017 (annex 6). c- Distribution As previously mentioned, any approach to resolve the electricity problem must start by reducing losses, which might result in high revenues for EDL.	3.4 By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being 7.1 By 2030, ensure universal access to affordable, reliable and modern energy services 7.3 By 2030, double the global rate of improvement in energy efficiency 7.b By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support 8.4 Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed	Electricity & Heat	3.4	By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being	Increase energy efficiency	Reduction in transmission and distribution losses		Reduced transmission and distribution losses can reduce air, water and soil pollution (e.g. less fuel needed) and related non-communicable diseases. This benefit occurs only when efficiency is applied to polluting energy sources, such as fossil fuels and bioenergy.	SCAN
		Electricity & Heat	3.9	By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	Increase energy efficiency	Reduction in transmission and distribution losses		Reduced transmission and distribution losses can reduce air, water and soil pollution (e.g. less fuel needed) and related non-communicable diseases. This benefit occurs only when efficiency is applied to polluting energy sources, such as fossil fuels and bioenergy.	SCAN
		Electricity & Heat	6.3	By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally	Increase energy efficiency	Reduction in transmission and distribution losses		Water thermal and non-thermal pollution. Transmission and distribution improvements lead to reduction in discharge of thermal or polluted water, due to reduced requirement for generation	SCAN
		Electricity & Heat	6.4	By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity	Increase energy efficiency	Reduction in transmission and distribution losses		Transmission and distribution improvements lead to reduction in water usage and reduced discharge of polluted water, due to reduced requirement for generation	SCAN

countries taking the lead 9.1 Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all 9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities 17.17 Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships	Electricity & Heat	7.1	By 2030, ensure universal access to affordable, reliable and modern energy services	Increase energy efficiency	Reduction in transmission and distribution losses		Reduction in energy losses and related reduction in energy demand can help reduce energy imports in countries that rely on trade for energy supply	SCAN
	Electricity & Heat	7.3	By 2030, double the global rate of improvement in energy efficiency	Increase energy efficiency	Reduction in transmission and distribution losses		Reducing energy losses contributes to increasing energy efficiency	SCAN
	Electricity & Heat	7.b	By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support	Increase energy efficiency	Reduction in transmission and distribution losses		Transmission and distribution improvements contributes to providing more efficient, reliable and modern energy services	LOCAL EXPERT
	Electricity & Heat	8.1	Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7 per cent gross domestic product growth per annum in the least developed countries	Increase energy efficiency	Reduction in transmission and distribution losses		Indirect link: Increasing efficiency by reducing losses could contribute to sustain economic growth by improving productivity.	SCAN
	Electricity & Heat	8.2	Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors	Increase energy efficiency	Reduction in transmission and distribution losses		Improvements in transmission efficiency improve productivity by increasing economic output per unit of energy. Related industry and supply chain development could also support higher productivity	SCAN
	Electricity & Heat	8.3	Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services	Increase energy efficiency	Reduction in transmission and distribution losses		Indirect link: Investment in transmission efficiency supports productive activities, job creation, supply chain development, innovation, and enterprise development	SCAN
	Electricity & Heat	8.4	Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead	Increase energy efficiency	Reduction in transmission and distribution losses		Increased transmission efficiency supports more efficient use of resources and reduces environmental harm from energy use	SCAN
	Electricity & Heat	9.1	Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all	Increase energy efficiency	Reduction in transmission and distribution losses		Increased efficiency in transmission and distribution infrastructure contributes to having sustainable and resilient infrastructure that supports economic development and human well-being.	SCAN
	Electricity & Heat	9.2	Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries	Increase energy efficiency	Reduction in transmission and distribution losses		Improved T&D efficiency would support sustainable industrialisation through more resource efficient power supply	SCAN

		Electricity & Heat	9.4	By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities	Increase energy efficiency	Reduction in transmission and distribution losses		Improved transmission and distribution helps upgrade infrastructure and increase sustainability and resource-efficiency of industries as well as adopting cleaner technologies	SCAN
		Electricity & Heat	9.5	Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending	Increase energy efficiency	Reduction in transmission and distribution losses		Indirect link: Improved transmission and distribution upgrades the technological capabilities of the power sector	SCAN
		Electricity & Heat	11.6	By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management	Increase energy efficiency	Reduction in transmission and distribution losses		Reducing energy losses contributes to reducing the environmental impact of cities as less fuel is needed for the same amount of power generated (e.g. reduced air pollution).	SCAN
		Electricity & Heat	12.2	By 2030, achieve the sustainable management and efficient use of natural resources	Increase energy efficiency	Reduction in transmission and distribution losses		Reducing losses reduces energy demand and related resources needed for power generation.	SCAN
		Electricity & Heat	14.1	By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution	Increase energy efficiency	Reduction in transmission and distribution losses		Improved transmission and distribution will reduce fuel combustion and thus reduce thermal and non-thermal water pollution potentially entering the marine environment.	SCAN
		Electricity & Heat	15.1	By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements	Increase energy efficiency	Reduction in transmission and distribution losses		Improved transmission and distribution can support sustainable use of freshwater ecosystems through reduction in water usage for energy production, predominantly from fossil fuel power plants.	SCAN
		Electricity & Heat	15.5	Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species	Increase energy efficiency	Reduction in transmission and distribution losses		Improved transmission and distribution helps reduce degradation of natural habitats by reducing the requirement for energy generation and its related negative impacts (in systems with polluting and water intensive power plants)	SCAN
		Electricity & Heat	17.7	17.17 Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships	Increase energy efficiency	Reduction in transmission and distribution losses		Improved transmission and distribution will rely on effective public-private partnerships thus expediting implementation	LOCAL EXPERT
Fuel Sourcing d- Natural gas One of the main points of the strategic transformation of electricity production is using	3.4 By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being	Electricity & Heat	3.4	By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being	Reduce emissions intensity	Other technologies: Gas		Gas powered plants can reduce air pollution and thus non-communicable diseases when displacing more polluting energy sources (e.g. coal).	SCAN

natural gas which helps increasing production efficiency in current and future plants, in a way to make savings worth hundred millions USD for the Lebanese treasury, in addition to reducing significantly the pollution resulting from production plants. The diversification of fuel sources by bringing storage stations and using floating storage regasification units is now a project that reached the phase of proposals opening. The Ministry is currently working with Poten & Partners on assessing the technical proposals and will then assess the financial proposals to submit a final report to the Council of Ministers to take the appropriate decision as per the decided timeline. The Ministry expects to receive the first LNG shipment in the first quarter of 2021. The project is expected to reduce EDL's deficit significantly.	3.9 By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being 7.1 By 2030, ensure universal access to affordable, reliable and modern energy services 8.1 Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7 per cent gross domestic product growth per annum in the least developed countries 8.2 Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors 8.4 Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead 9.1 Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all 9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities 11.3 By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries	Electricity & Heat	3.4	By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being	Reduce emissions intensity	Other technologies: Gas	Gas burning in power generation plants leads to air pollution from e.g. NOx	SCAN
		Electricity & Heat	3.9	By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being	Reduce emissions intensity	Other technologies: Gas	Gas powered plants can reduce air pollution when displacing more polluting energy sources (e.g. coal).	SCAN
		Electricity & Heat	3.9	By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	Reduce emissions intensity	Other technologies: Gas	Gas extraction can lead to soil and water pollution with various chemicals. Furthermore, gas extraction and transportation pose risk of leakage, while burning in generation plants leads to air pollution.	SCAN
		Electricity & Heat	6.3	By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally	Reduce emissions intensity	Other technologies: Gas	Water thermal and non-thermal pollution. Gas-fired power plants require water for cooling, leading to thermal water pollution	SCAN
		Electricity & Heat	6.4	By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity	Reduce emissions intensity	Other technologies: Gas	Significant water use for cooling in thermal generation	SCAN
		Electricity & Heat	7.1	By 2030, ensure universal access to affordable, reliable and modern energy services	Reduce emissions intensity	Other technologies: Gas	Investments in modern gas power plants can contribute to having modern and reliable energy services	SCAN
		Electricity & Heat	8.1	Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7 per cent gross domestic product growth per annum in the least developed countries	Reduce emissions intensity	Other technologies: Gas	Indirect link: Investing in gas power plants could contribute to economic growth, through job creation and by supporting new industrial activity	SCAN
		Electricity & Heat	8.2	Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors	Reduce emissions intensity	Other technologies: Gas	Indirect link: Deployment of new energy technologies can support economic productivity by creating new industrial activity, supply chain development, and innovation	SCAN
		Electricity & Heat	8.3	Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services	Reduce emissions intensity	Other technologies: Gas	Indirect link: Investment in gas technology supports productive activities, job creation, supply chain development, innovation, and enterprise development	SCAN
		Electricity & Heat	8.4	Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead	Reduce emissions intensity	Other technologies: Gas	Gas can support increased resource efficiency and reduce environmental damage from GHGs when displaying other conventional (more GHG intensive) energy sources	SCAN

Electricity & Heat	8.4	Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead	Reduce emissions intensity	Other technologies: Gas		Gas can increase environmental impacts of the power sector when displaying cleaner or less GHG-intensive energy sources (e.g. hydro power).	SCAN
Electricity & Heat	8.5	By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value	Reduce emissions intensity	Other technologies: Gas		Building new gas-fired power plants may lead to job losses from displaced alternative power generation activity	SCAN
Electricity & Heat	8.5	By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value	Reduce emissions intensity	Other technologies: Gas		Building new and modern gas-fired power plants can support full employment through creation of decent jobs	SCAN
Electricity & Heat	9.1	Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all	Reduce emissions intensity	Other technologies: Gas		Development of gas power plants and related infrastructure would lock-in the country to limited resources.	SCAN
Electricity & Heat	9.1	Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all	Reduce emissions intensity	Other technologies: Gas		Development of gas power plants and related infrastructure creates reliable energy infrastructure that supports human well-being (by reducing GHG emissions).	SCAN
Electricity & Heat	9.2	Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries	Reduce emissions intensity	Other technologies: Gas		Gas power plants may lead to early retirement of fossil fuel power plants, supporting sustainable industrialisation through increased sustainability of power supply.	SCAN
Electricity & Heat	9.2	Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries	Reduce emissions intensity	Other technologies: Gas		Development of gas power plants and related infrastructure would lock-in the country to limited resources. Gas also still contributes with GHG emissions, decreasing sustainability of the power supply.	SCAN
Electricity & Heat	9.4	By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities	Reduce emissions intensity	Other technologies: Gas		Development of gas power plants and related infrastructure would lock-in the country to limited resources.	SCAN
Electricity & Heat	9.4	By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities	Reduce emissions intensity	Other technologies: Gas		Switching to gas can improve the sustainability of the power industry by reducing its emissions of GHGs and other air pollutants	SCAN

Electricity & Heat	9.5	Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending	Reduce emissions intensity	Other technologies: Gas		Indirect link: Implementing new and modern gas technology can upgrade the technological capabilities of the power sector	SCAN
Electricity & Heat	11.2	By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons	Reduce emissions intensity	Other technologies: Gas		Indirect link: When displacing more polluting sources, gas reduces the amount of GHG and air pollutants from power generation, contributing to having sustainable transport systems (for share of electric vehicles).	SCAN
Electricity & Heat	11.2	By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons	Reduce emissions intensity	Other technologies: Gas		Indirect link: Burning gas in power stations leads to GHG emissions, decreasing sustainability of the transport sector (for share of electric vehicles).	SCAN
Electricity & Heat	11.3	By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries	Reduce emissions intensity	Other technologies: Gas		Indirect link: When displacing more pollutant sources, gas reduces the amount of GHG and air pollutants from power generation, contributing to having sustainable cities (cleaner electricity consumed in buildings).	SCAN
Electricity & Heat	11.3	By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries	Reduce emissions intensity	Other technologies: Gas		Indirect link: Burning gas in power stations leads to GHG emissions, decreasing sustainability of cities (for electricity consumed in buildings).	SCAN
Electricity & Heat	11.6	By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management	Reduce emissions intensity	Other technologies: Gas		Burning gas in power stations leads to GHG emissions, thus contributing to the environmental impact of cities (e.g. increased GHG emissions and air pollutants from power generation).	SCAN
Electricity & Heat	11.6	By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management	Reduce emissions intensity	Other technologies: Gas		When displacing more pollutant sources, gas can contribute to reducing the environmental impact of cities by reducing the amount of GHG and air pollutants from power generation.	SCAN
Electricity & Heat	14.1	By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution	Reduce emissions intensity	Other technologies: Gas		Gas-fired power plants require water for cooling, leading to thermal water pollution if waste water is not cooled before discharge. This can contribute to water thermal pollution potentially entering the marine ecosystem.	SCAN
Electricity & Heat	15.1	By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements	Reduce emissions intensity	Other technologies: Gas		Gas power plants may negatively impact water ecosystems through water use and thermal water pollution	SCAN

		Electricity & Heat	15.5	Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species	Reduce emissions intensity	Other technologies: Gas		Construction and operation of gas power plants may cause local environmental pollution	SCAN
		Electricity & Heat	15.5	Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species	Reduce emissions intensity	Other technologies: Gas		Use of gas power plants can improve local air and water pollution if displacing more polluting alternatives	SCAN
Renewable Energies This policy commits to launching, supporting and reinforcing all public, private and individual initiatives to adopt the utilization of renewable energies to reach 12% of electric and thermal supply. a. Complete a wind atlas for Lebanon and launch IPP wind farms with the private sector (2010). (Policy paper for the electricity sector, 2010)	3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination 7.1 By 2030, ensure universal access to affordable, reliable and modern energy services 7.2 By 2030, increase substantially the share of renewable energy in the global energy mix 8.3 Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services 8.4 Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead 9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities 12.2 By 2030, achieve the sustainable management and efficient use of natural resources 17.17 Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships	Electricity & Heat	1.4	By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance	Reduce emissions intensity	Renewable energy: Wind		Could reduce land and resource access for dependent communities as installations require large land areas.	SCAN
		Electricity & Heat	2.3	By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment	Reduce emissions intensity	Renewable energy: Wind		Indirect link: Could compete for land ownership and resource access with dependent communities.	SCAN
		Electricity & Heat	3.4	By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being	Reduce emissions intensity	Renewable energy: Wind		Wind power can reduce air, water and soil pollution and thus non-communicable diseases when displacing polluting energy sources, such as fossil fuels and bioenergy.	SCAN
		Electricity & Heat	3.4	By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being	Reduce emissions intensity	Renewable energy: Wind		Noise and intermittent shadows can impact mental health. This impact only occurs if turbines are placed in the vicinity of inhabited buildings.	SCAN
		Electricity & Heat	3.9	By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	Reduce emissions intensity	Renewable energy: Wind		Wind power can reduce air, water and soil pollution and contamination when displacing polluting energy sources, such as fossil fuels and bioenergy.	SCAN
		Electricity & Heat	6.3	By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally	Reduce emissions intensity	Renewable energy: Wind		Wind power can reduce thermal and non-thermal water pollution when fossil fuel generation plant is displaced	SCAN
		Electricity & Heat	6.4	By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity	Reduce emissions intensity	Renewable energy: Wind		Wind power uses almost no water in its operation	SCAN
		Electricity & Heat	7.1	By 2030, ensure universal access to affordable, reliable and modern energy services	Reduce emissions intensity	Renewable energy: Wind		Investments in renewables generate modern and sustainable energy services and can increase energy security in countries that rely on imports for energy supply	SCAN

Electricity & Heat	7.2	By 2030, increase substantially the share of renewable energy in the global energy mix	Reduce emissions intensity	Renewable energy: Wind		Increasing wind installations contributes to increasing the share of renewables in the global energy mix	SCAN
Electricity & Heat	8.1	Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7 per cent gross domestic product growth per annum in the least developed countries	Reduce emissions intensity	Renewable energy: Wind		Indirect link: An increase in renewables could contribute to sustained economic growth, through job creation, avoided dependence on limited or imported resources and through creation of new industrial activity	SCAN
Electricity & Heat	8.2	Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors	Reduce emissions intensity	Renewable energy: Wind		Indirect link: Deployment of new energy technologies can support economic productivity by creating new industrial activity, supply chain development, and innovation	SCAN
Electricity & Heat	8.3	Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services	Reduce emissions intensity	Renewable energy: Wind		Indirect link: Investment in renewables supports productive activities, job creation, supply chain development, innovation, and enterprise development	SCAN
Electricity & Heat	8.4	Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead	Reduce emissions intensity	Renewable energy: Wind		Wind energy supports increased resource efficiency and reduces environmental damage vs economic growth powered by conventional energy sources	SCAN
Electricity & Heat	8.5	By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value	Reduce emissions intensity	Renewable energy: Wind		Deploying wind energy can support full employment through creation of decent jobs	SCAN
Electricity & Heat	8.5	By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value	Reduce emissions intensity	Renewable energy: Wind		Deploying renewable energy may lead to job losses from displaced alternative power generation activity	SCAN
Electricity & Heat	9.1	Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all	Reduce emissions intensity	Renewable energy: Wind		Deployment of wind power supports development of sustainable, reliable and resilient infrastructure	SCAN
Electricity & Heat	9.2	Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries	Reduce emissions intensity	Renewable energy: Wind		Deployment of renewables supports sustainable industrialisation through increased sustainability of power supply and development of sustainable industries related to renewable energy project construction and operation	SCAN

Electricity & Heat	9.4	By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities	Reduce emissions intensity	Renewable energy: Wind		Deployment of wind power upgrades infrastructure, increases sustainability of industry, increases resource-efficiency and supports adoption of clean technologies	SCAN
Electricity & Heat	9.5	Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending	Reduce emissions intensity	Renewable energy: Wind		Indirect link: Deploying wind power upgrades the technological capabilities of the power sector and other relevant sectors	SCAN
Electricity & Heat	11.2	By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons	Reduce emissions intensity	Renewable energy: Wind		Indirect link: Increasing wind power will lead to an increase in share of renewables, which contributes to having sustainable transport systems (for share of electric vehicles).	SCAN
Electricity & Heat	11.3	By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries	Reduce emissions intensity	Renewable energy: Wind		Indirect link: Deployment of wind power supports sustainable urbanisation.	SCAN
Electricity & Heat	11.6	By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management	Reduce emissions intensity	Renewable energy: Wind		Deploying wind energy can contribute to reducing the environmental impact of cities by reducing the amount of GHG and air pollutants from power generation.	SCAN
Electricity & Heat	12.2	By 2030, achieve the sustainable management and efficient use of natural resources	Reduce emissions intensity	Renewable energy: Wind		Using wind for power generation contributes to sustainable management and efficient use of natural resources.	SCAN
Electricity & Heat	14.1	By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution	Reduce emissions intensity	Renewable energy: Wind		When displacing fossil fuel power plants, wind can reduce thermal and non thermal water pollution potentially entering the marine environment.	SCAN
Electricity & Heat	14.1	By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution	Reduce emissions intensity	Renewable energy: Wind		Marine life may be affected by ocean power equipment, as sediments may be redistributed due to the installed infrastructure. Also construction and operation may lead to pollution from vehicle use etc.	SCAN
Electricity & Heat	15.1	By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements	Reduce emissions intensity	Renewable energy: Wind		Wind power can contribute to sustainable use of freshwater ecosystems as this technology uses almost no water in its operation.	SCAN
Electricity & Heat	15.5	Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species	Reduce emissions intensity	Renewable energy: Wind		Wind power can help reduce degradation of natural habitats through reduced air and water pollution and reduced water consumption, if displacing more polluting or intensive alternatives	SCAN

		Electricity & Heat	15.5	Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species	Reduce emissions intensity	Renewable energy: Wind		Wind turbines and related infrastructure such as service roads and power lines may degrade the natural habitat. Wind turbines may affect birds.	SCAN
		Electricity & Heat	17.7	Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships	Reduce emissions intensity	Renewable energy: Wind		Effective implementation of wind turbine technology will require effective public-private partnerships	LOCAL EXPERT
Renewable Energies This policy commits to launching, supporting and reinforcing all public, private and individual initiatives to adopt the utilization of renewable energies to reach 12% of electric and thermal supply. b. Start a pre-feasibility study on Photovoltaic (PV) farms. (Policy paper for the electricity sector, 2010)	3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination 7.1 By 2030, ensure universal access to affordable, reliable and modern energy services 7.2 By 2030, increase substantially the share of renewable energy in the global energy mix 7.b By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support 8.3 Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services 8.4 Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead 9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities 12.2 By 2030, achieve the sustainable management and efficient use of natural resources	Electricity & Heat	1.4	By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance	Reduce emissions intensity	Renewable energy: Solar PV		Could reduce land and resource access for dependent communities as installations require large land areas.	SCAN
		Electricity & Heat	2.3	By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment	Reduce emissions intensity	Renewable energy: Solar PV		Indirect link: Could compete for land and resource access with dependent communities.	SCAN
		Electricity & Heat	3.4	By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being	Reduce emissions intensity	Renewable energy: Solar PV		Solar PV can reduce air, water and soil pollution and thus non-communicable diseases when displacing polluting energy sources, such as fossil fuels and bioenergy.	SCAN
		Electricity & Heat	3.9	By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	Reduce emissions intensity	Renewable energy: Solar PV		Solar PV can reduce air, water and soil pollution and contamination when displacing polluting energy sources, such as fossil fuels and bioenergy.	SCAN
		Electricity & Heat	6.3	By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally	Reduce emissions intensity	Renewable energy: Solar PV		Solar PV can reduce thermal and non-thermal water pollution when fossil fuel generation plant is displaced	SCAN
		Electricity & Heat	6.4	By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity	Reduce emissions intensity	Renewable energy: Solar PV		Solar PV uses considerably less water than thermal alternatives (including thermal renewables)	SCAN
		Electricity & Heat	7.1	By 2030, ensure universal access to affordable, reliable and modern energy services	Reduce emissions intensity	Renewable energy: Solar PV		Investments in renewables generate modern and sustainable energy services and can increase energy security in countries that rely on imports for energy supply	SCAN
		Electricity & Heat	7.2	By 2030, increase substantially the share of renewable energy in the global energy mix	Reduce emissions intensity	Renewable energy: Solar PV		Increasing solar installations contributes to increasing the share of renewables in the global energy mix	SCAN

Electricity & Heat	7.b	By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support	Reduce emissions intensity	Renewable energy: Solar PV		Solar energy contributes to providing modern, affordable and sustainable energy services	LOCAL EXPERT
Electricity & Heat	8.1	Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7 per cent gross domestic product growth per annum in the least developed countries	Reduce emissions intensity	Renewable energy: Solar PV		Indirect link: An increase in renewables could contribute to sustained economic growth, through job creation, avoided dependence on limited or imported resources and through creation of new industrial activity	SCAN
Electricity & Heat	8.2	Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors	Reduce emissions intensity	Renewable energy: Solar PV		Indirect link: Deployment of new energy technologies can support economic productivity by creating new industrial activity, supply chain development, and innovation	SCAN
Electricity & Heat	8.3	Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services	Reduce emissions intensity	Renewable energy: Solar PV		Indirect link: Investment in renewables supports productive activities, job creation, supply chain development, innovation, and enterprise development	SCAN
Electricity & Heat	8.4	Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead	Reduce emissions intensity	Renewable energy: Solar PV		Solar PV supports increased resource efficiency and reduces environmental damage vs economic growth powered by conventional energy sources	SCAN
Electricity & Heat	8.5	By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value	Reduce emissions intensity	Renewable energy: Solar PV		Deploying solar PV can support full employment through creation of decent jobs	SCAN
Electricity & Heat	8.5	By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value	Reduce emissions intensity	Renewable energy: Solar PV		Deploying solar PV may lead to job losses from displaced alternative power generation activity	SCAN
Electricity & Heat	9.1	Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all	Reduce emissions intensity	Renewable energy: Solar PV		Deployment of solar PV supports development of sustainable, reliable and resilient infrastructure	SCAN

Electricity & Heat	9.2	Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries	Reduce emissions intensity	Renewable energy: Solar PV		Deployment of renewables supports sustainable industrialisation through increased sustainability of power supply and development of sustainable industries related to renewable energy project construction and operation	SCAN
Electricity & Heat	9.4	By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities	Reduce emissions intensity	Renewable energy: Solar PV		Deployment of solar PV upgrades infrastructure, increases sustainability of industry, increases resource-efficiency and supports adoption of clean technologies	SCAN
Electricity & Heat	9.5	Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending	Reduce emissions intensity	Renewable energy: Solar PV		Indirect link: Deploying solar PV technology upgrades the technological capabilities of the power sector and other relevant sectors	SCAN
Electricity & Heat	11.2	By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons	Reduce emissions intensity	Renewable energy: Solar PV		Indirect link: Increasing solar PV will lead to an increase in share of renewables, which contributes to having sustainable transport systems (for share of electric vehicles).	SCAN
Electricity & Heat	11.3	By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries	Reduce emissions intensity	Renewable energy: Solar PV		Indirect link: Deployment of solar PV supports sustainable urbanisation.	SCAN
Electricity & Heat	11.6	By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management	Reduce emissions intensity	Renewable energy: Solar PV		Deploying solar PV can contribute to reducing the environmental impact of cities by reducing the amount of GHG and air pollutants from power generation.	SCAN
Electricity & Heat	12.2	By 2030, achieve the sustainable management and efficient use of natural resources	Reduce emissions intensity	Renewable energy: Solar PV		Using solar PV for power generation contributes to sustainable management and efficient use of natural resources.	SCAN
Electricity & Heat	14.1	By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution	Reduce emissions intensity	Renewable energy: Solar PV		When displacing fossil fuel power plants, solar PV can reduce thermal and non thermal water pollution potentially entering the marine environment.	SCAN
Electricity & Heat	15.1	By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements	Reduce emissions intensity	Renewable energy: Solar PV		Solar PV can contribute to sustainable use of freshwater ecosystems as it uses considerably less water than thermal alternatives (including thermal renewables)	SCAN
Electricity & Heat	15.1	By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements	Reduce emissions intensity	Renewable energy: Solar PV		Solar PV can take up large areas of land, and may impact terrestrial ecosystems during construction or operation	SCAN

		Electricity & Heat	15.5	Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species	Reduce emissions intensity	Renewable energy: Solar PV		Solar PV can help reduce degradation of natural habitats through reduced air and water pollution and reduced water consumption, if displacing more polluting or intensive alternatives	SCAN
		Electricity & Heat	15.5	Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species	Reduce emissions intensity	Renewable energy: Solar PV		Solar PV may lead to degradation of natural habitats through development and operation of infrastructure and land usage.	SCAN
Renewable Energies This policy commits to launching, supporting and reinforcing all public, private and individual initiatives to adopt the utilization of renewable energies to reach 12% of electric and thermal supply. c. Encourage public and the private sectors to adopt incineration technologies to produce electricity from waste (Policy paper for the electricity sector, 2010)	7.1 By 2030, ensure universal access to affordable, reliable and modern energy services 7.2 By 2030, increase substantially the share of renewable energy in the global energy mix 7.b By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support 8.3 Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services 8.4 Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead 9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities 11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management	Electricity & Heat	1.2	By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions	Reduce emissions intensity	Renewable energy: Bioenergy		Biofuels production can lead to land price increase, with impact on food prices which could reduce food access.	SCAN
		Electricity & Heat	1.4	By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance	Reduce emissions intensity	Renewable energy: Bioenergy		Reduced land and resource access for dependent communities. As opposed to similar impacts from other renewable resources, these impacts occur upstream, at the stage of crop cultivation and biomass plantation and collection. These impacts do not apply to biogas from waste.	SCAN
		Electricity & Heat	2.1	By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round	Reduce emissions intensity	Renewable energy: Bioenergy		Biofuels production can lead to land price increase, with impact on food prices which could reduce food access	SCAN
		Electricity & Heat	2.3	By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment	Reduce emissions intensity	Renewable energy: Bioenergy		Indirect link: Could compete for land and resource access with dependent communities. These impacts could occur upstream, at the stage of crop cultivation and biomass plantations. These impacts do not apply to biogas from waste.	SCAN
		Electricity & Heat	2.3	By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment	Reduce emissions intensity	Renewable energy: Bioenergy		Indirect link: Can create new market opportunities for farmers (production and sale of bioenergy crops in addition to food crops). Could also contribute to improving agriculture productivity and income through agricultural knowledge and practices that can be transferred to crops for other purposes (e.g. food).	SCAN
		Electricity & Heat	2.4	By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality	Reduce emissions intensity	Renewable energy: Bioenergy		Extensive monocultures can limit biodiversity and intensive use of nutrients for biofuel crops and may affect soil quality and lead to soil degradation. Ecosystems conversion for bioenergy production may occur. These impacts do not apply to waste-to-energy and biomass.	SCAN

municipal and other waste management 12.2 By 2030, achieve the sustainable management and efficient use of natural resources 12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle 17.17 Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships	Electricity & Heat	3.4	By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being	Reduce emissions intensity	Renewable energy: Bioenergy		Reduced SOx and NOx emissions to air and related non-communicable diseases. However, PM emissions may be comparable to fossil fuels, depending on the quality of fuels	SCAN
	Electricity & Heat	3.4	By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being	Reduce emissions intensity	Renewable energy: Bioenergy		Potential increase in air pollution depending on the displaced energy source (e.g. if gas) and on the biofuels quality. Additional potential supply chain impacts on air, water and soil from agriculture e.g. fertilizer use	SCAN
	Electricity & Heat	3.9	By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	Reduce emissions intensity	Renewable energy: Bioenergy		Reduced SOx and NOx emissions to air and related non-communicable diseases. However, PM emissions may be comparable to fossil fuels, depending on the quality of fuels	SCAN
	Electricity & Heat	3.9	By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	Reduce emissions intensity	Renewable energy: Bioenergy		Potential increase in air pollution depending on the replaced energy source (e.g. if gas) and on the biofuels quality. Additional potential Lifecyle impacts on water and soil quality from fertilizer use in supply chain	SCAN
	Electricity & Heat	6.1	By 2030, achieve universal and equitable access to safe and affordable drinking water for all	Reduce emissions intensity	Renewable energy: Bioenergy		Increased water use for irrigation for bioenergy crop cultivation may reduce local community access to drinking water sources due to water withdrawals	SCAN
	Electricity & Heat	6.3	By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally	Reduce emissions intensity	Renewable energy: Bioenergy		Non-thermal water pollution. Increase in fertilizer run off from bioenergy crop cultivation. Does not apply to wood and waste energy.	SCAN
	Electricity & Heat	6.4	By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity	Reduce emissions intensity	Renewable energy: Bioenergy		Increased water use for irrigation of bioenergy crops, biofuel processing and for cooling in power plant operation	SCAN
	Electricity & Heat	7.1	By 2030, ensure universal access to affordable, reliable and modern energy services	Reduce emissions intensity	Renewable energy: Bioenergy		Renewables can help reduce energy imports in countries that rely on trade for energy supply.	SCAN
	Electricity & Heat	7.2	By 2030, increase substantially the share of renewable energy in the global energy mix	Reduce emissions intensity	Renewable energy: Bioenergy		Increasing bioenergy contributes to increasing the share of renewables in the global energy mix	SCAN

Electricity & Heat	7.b	7.b By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support	Reduce emissions intensity	Renewable energy: Bioenergy		Increasing bioenergy contributes to technology upgrading and providing modern energy services	LOCAL EXPERT
Electricity & Heat	8.1	Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7 per cent gross domestic product growth per annum in the least developed countries	Reduce emissions intensity	Renewable energy: Bioenergy		Indirect link: An increase in renewables could contribute to sustained economic growth, through job creation, avoided dependence on limited or imported resources and through creation of new industrial activity	SCAN
Electricity & Heat	8.2	Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors	Reduce emissions intensity	Renewable energy: Bioenergy		Indirect link: Deployment of new energy technologies can support economic productivity by creating new industrial activity, supply chain development, and innovation	SCAN
Electricity & Heat	8.3	Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services	Reduce emissions intensity	Renewable energy: Bioenergy		Indirect link: Investment in renewables supports productive activities, job creation, supply chain development, innovation, and enterprise development	SCAN
Electricity & Heat	8.4	Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead	Reduce emissions intensity	Renewable energy: Bioenergy		Bioenergy supports increased resource efficiency and reduces environmental damage from GHGs vs economic growth powered by conventional energy sources	SCAN
Electricity & Heat	8.4	Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead	Reduce emissions intensity	Renewable energy: Bioenergy		Biofuels production can have significant impacts on ecosystems, water bodies and biodiversity if not carefully implemented. This does not apply to waste-to-energy.	SCAN
Electricity & Heat	8.5	By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value	Reduce emissions intensity	Renewable energy: Bioenergy		Deploying bioenergy can support full employment through creation of decent jobs	SCAN
Electricity & Heat	8.5	By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value	Reduce emissions intensity	Renewable energy: Bioenergy		Deploying renewable energy may lead to job losses from displaced alternative power generation activity	SCAN
Electricity & Heat	9.1	Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all	Reduce emissions intensity	Renewable energy: Bioenergy		Deployment of bioenergy systems supports development of sustainable, reliable and resilient infrastructure	SCAN

Electricity & Heat	9.1	Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all	Reduce emissions intensity	Renewable energy: Bioenergy		Bioenergy deployment could lead to competition with food supply or increased lifecycle emissions if non-sustainable feedstocks are used	SCAN
Electricity & Heat	9.2	Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries	Reduce emissions intensity	Renewable energy: Bioenergy		Deployment of renewables supports sustainable industrialisation through increased sustainability of power supply and development of sustainable industries related to renewable energy project construction and operation	SCAN
Electricity & Heat	9.4	By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities	Reduce emissions intensity	Renewable energy: Bioenergy		Deployment of bioenergy upgrades infrastructure, increases sustainability of industry, increases resource-efficiency and supports adoption of clean technologies	SCAN
Electricity & Heat	9.4	By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities	Reduce emissions intensity	Renewable energy: Bioenergy		Cultivation of bioenergy crops may compete with food production and also lead to pollution and other environmental damage, reducing the sustainability of the power sector if non-sustainable feedstocks are used	SCAN
Electricity & Heat	9.5	Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending	Reduce emissions intensity	Renewable energy: Bioenergy		Indirect link: Deploying bioenergy upgrades the technological capabilities of the power sector and other relevant sectors	SCAN
Electricity & Heat	11.2	By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons	Reduce emissions intensity	Renewable energy: Bioenergy		Indirect link: Bioenergy can generate sustainable electricity, which is a prerequisite for sustainable electric transport systems.	SCAN
Electricity & Heat	11.3	By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries	Reduce emissions intensity	Renewable energy: Bioenergy		Indirect link: Deployment of bioenergy can support sustainable urbanisation.	SCAN
Electricity & Heat	11.6	By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management	Reduce emissions intensity	Renewable energy: Bioenergy		Deploying bioenergy can contribute to reducing the environmental impact of cities by reducing the amount of GHG and air pollutants from power generation. Further, biogas (waste-to-energy) production reduces food waste and also reduces risk of potential leakage of methane from landfills.	SCAN
Electricity & Heat	12.2	By 2030, achieve the sustainable management and efficient use of natural resources	Reduce emissions intensity	Renewable energy: Bioenergy		Using bioenergy for power generation can contribute to sustainable management and efficient use of natural resources, especially when using waste biomass.	SCAN

Electricity & Heat	12.4	By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment	Reduce emissions intensity	Renewable energy: Bioenergy		Using bioenergy (waste-to-energy) for power generation can contribute to reducing the amount of waste being released to air, water or soil.	SCAN
Electricity & Heat	12.5	By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse	Reduce emissions intensity	Renewable energy: Bioenergy		Bioenergy and biogas (waste-to-energy) production makes productive use of food waste	SCAN
Electricity & Heat	12.6	Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle	Reduce emissions intensity	Renewable energy: Bioenergy		Encouraging companies to adopt renewable energy contributes to more sustainable practices in the private sector	LOCAL EXPERT
Electricity & Heat	14.1	By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution	Reduce emissions intensity	Renewable energy: Bioenergy		When displacing fossil fuel power plants, bioenergy can reduce thermal and non thermal water pollution potentially entering the marine environment.	SCAN
Electricity & Heat	14.1	By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution	Reduce emissions intensity	Renewable energy: Bioenergy		Bioenergy can lead to non-thermal water pollution potentially entering the marine environment, especially from increased use of fertilizer in bioenergy crop cultivation. This does not apply to wood and waste energy.	SCAN
Electricity & Heat	15.1	By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements	Reduce emissions intensity	Renewable energy: Bioenergy		Bioenergy crop cultivation may have negative impacts on local water ecosystems through water use and polluted water from fertilizer use. Biofuel production also takes up large areas of land and may lead to land-use conversion.	SCAN
Electricity & Heat	15.2	By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally	Reduce emissions intensity	Renewable energy: Bioenergy		Bioenergy could negatively impact sustainable forest management and attempts to halt deforestation due to bioenergy crop cultivation, or deforestation may occur through collection of wood fuel (depending on feedstocks being used)	SCAN
Electricity & Heat	15.3	By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world	Reduce emissions intensity	Renewable energy: Bioenergy		Bioenergy can lead to intensive use of nutrients for biofuel crops and extensive monocultures may lead to soil degradation.	SCAN
Electricity & Heat	15.5	Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species	Reduce emissions intensity	Renewable energy: Bioenergy		Bioenergy can help reduce degradation of natural habitats through reduced air and water pollution and reduced water consumption, if displacing more polluting or intensive alternatives	SCAN

		Electricity & Heat	15.5	Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species	Reduce emissions intensity	Renewable energy: Bioenergy		Bioenergy can cause degradation of natural habitats through supply chain and operation of plants. Cultivation of bioenergy crops can lead to soil, water, and air pollution from fertilizer use and burning. Biofuel production also takes up large areas of land and may lead to land-use conversion. Monocultures reduce biodiversity. These impacts do not apply to wood and waste energy. Operation of bioenergy thermal plants may lead to increased local air pollution.	SCAN
		Electricity & Heat	17.7	Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships	Reduce emissions intensity	Renewable energy: Bioenergy		Encouraging companies to adopt renewable energy requires effective public-private partnerships	LOCAL EXPERT
Renewable Energies This policy commits to launching, supporting and reinforcing all public, private and individual initiatives to adopt the utilization of renewable energies to reach 12% of electric and thermal supply. d. Encourage all individual and private initiatives to produce hydro power; even micro-hydro. (Policy paper for the electricity sector, 2010)	3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination 6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes 7.1 By 2030, ensure universal access to affordable, reliable and modern energy services 7.2 By 2030, increase substantially the share of renewable energy in the global energy mix 7.b By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support 8.3 Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services 8.4 Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed	Electricity & Heat	1.4	By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance	Reduce emissions intensity	Renewable energy: Small-hydro		Small-hydro can also conflict with land access of communities in the placement area.	SCAN
		Electricity & Heat	2.3	By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment	Reduce emissions intensity	Renewable energy: Small-hydro		Indirect link: Small-hydro can also conflict with land access of communities in the placement area.	SCAN
		Electricity & Heat	3.4	By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being	Reduce emissions intensity	Renewable energy: Small-hydro		Hydropower can reduce air, water and soil pollution and thus non-communicable diseases when displacing polluting energy sources, such as fossil fuels and bioenergy.	SCAN
		Electricity & Heat	3.9	By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	Reduce emissions intensity	Renewable energy: Small-hydro		Hydropower can reduce air, water and soil pollution and contamination when displacing polluting energy sources, such as fossil fuels and bioenergy.	SCAN
		Electricity & Heat	6.1	By 2030, achieve universal and equitable access to safe and affordable drinking water for all	Reduce emissions intensity	Renewable energy: Small-hydro		Hydropower plants and related infrastructure may reduce access to drinking water for local communities	SCAN
		Electricity & Heat	6.3	By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally	Reduce emissions intensity	Renewable energy: Small-hydro		Small-hydro can reduce thermal and non-thermal water pollution when fossil fuel generation plant is displaced	SCAN

countries taking the lead 9.2 Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries 11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management 12.2 By 2030, achieve the sustainable management and efficient use of natural resources 12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle 15.1 By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements 15.4 By 2030, ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development 17.17 Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships	Electricity & Heat	6.4	By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity	Reduce emissions intensity	Renewable energy: Small-hydro		Potential negative impact on water scarcity of local communities due to restricted water access	SCAN
	Electricity & Heat	6.4	By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity	Reduce emissions intensity	Renewable energy: Small-hydro		Small hydro (e.g.. run of river) uses very little water compared to thermal alternatives	SCAN
	Electricity & Heat	6.6	By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes	Reduce emissions intensity	Renewable energy: Small-hydro		Some natural areas are inundated to make space for the water reservoirs and the original route of the river may be changed. Furthermore, in case of having dams, these lead to sediment deposition and interfere with freshwater wildlife.	SCAN
	Electricity & Heat	7.1	By 2030, ensure universal access to affordable, reliable and modern energy services	Reduce emissions intensity	Renewable energy: Small-hydro		Renewables can help reduce energy imports in countries that rely on trade for energy supply.	SCAN
	Electricity & Heat	7.1	By 2030, ensure universal access to affordable, reliable and modern energy services	Reduce emissions intensity	Renewable energy: Small-hydro		Climate change can cause large variations in water availability for power generation across regions and even within regions, reducing reliability of energy services	SCAN
	Electricity & Heat	7.2	By 2030, increase substantially the share of renewable energy in the global energy mix	Reduce emissions intensity	Renewable energy: Small-hydro		Increasing small-hydro energy contributes to increasing the share of renewables in the global energy mix	SCAN
	Electricity & Heat	7.b	7.b By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support	Reduce emissions intensity	Renewable energy: Bioenergy		Increasing bioenergy contributes to technology upgrading and providing modern energy services	LOCAL EXPERT
	Electricity & Heat	8.1	Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7 per cent gross domestic product growth per annum in the least developed countries	Reduce emissions intensity	Renewable energy: Small-hydro		Indirect link: An increase in renewables could contribute to sustained economic growth, through job creation, avoided dependence on limited or imported resources and through creation of new industrial activity	SCAN
	Electricity & Heat	8.2	Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors	Reduce emissions intensity	Renewable energy: Small-hydro		Indirect link: Deployment of new energy technologies can support economic productivity by creating new industrial activity, supply chain development, and innovation	SCAN

Electricity & Heat	8.3	Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services	Reduce emissions intensity	Renewable energy: Small-hydro		Indirect link: Investment in renewables supports productive activities, job creation, supply chain development, innovation, and enterprise development	SCAN
Electricity & Heat	8.4	Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead	Reduce emissions intensity	Renewable energy: Small-hydro		Small-hydro power supports increased resource efficiency and reduces environmental damage vs economic growth powered by conventional energy sources	SCAN
Electricity & Heat	8.5	By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value	Reduce emissions intensity	Renewable energy: Small-hydro		Deploying small-hydro can support full employment through creation of decent jobs	SCAN
Electricity & Heat	8.5	By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value	Reduce emissions intensity	Renewable energy: Small-hydro		Deploying renewable energy may lead to job losses from displaced alternative power generation activity	SCAN
Electricity & Heat	9.1	Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all	Reduce emissions intensity	Renewable energy: Small-hydro		Deployment of hydro power supports development of sustainable, reliable and resilient infrastructure	SCAN
Electricity & Heat	9.2	Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries	Reduce emissions intensity	Renewable energy: Small-hydro		Deployment of renewables supports sustainable industrialisation through increased sustainability of power supply and development of sustainable industries related to renewable energy project construction and operation	SCAN
Electricity & Heat	9.4	By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities	Reduce emissions intensity	Renewable energy: Small-hydro		Deployment of hydro power upgrades infrastructure, increases sustainability of industry, increases resource-efficiency and supports adoption of clean technologies	SCAN
Electricity & Heat	9.5	Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending	Reduce emissions intensity	Renewable energy: Small-hydro		Indirect link: Deploying hydropower upgrades the technological capabilities of the power sector and other relevant sectors	SCAN

Electricity & Heat	11.2	By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons	Reduce emissions intensity	Renewable energy: Small-hydro		Indirect link: Increasing small-hydro will lead to an increase in share of renewables, which contributes to having sustainable transport systems (for share of electric vehicles).	SCAN
Electricity & Heat	11.3	By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries	Reduce emissions intensity	Renewable energy: Small-hydro		Indirect link: Deployment of small-hydro supports sustainable urbanisation.	SCAN
Electricity & Heat	11.6	By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management	Reduce emissions intensity	Renewable energy: Small-hydro		Deploying small-hydro can contribute to reducing the environmental impact of cities by reducing the amount of GHG and air pollutants from power generation.	SCAN
Electricity & Heat	12.2	By 2030, achieve the sustainable management and efficient use of natural resources	Reduce emissions intensity	Renewable energy: Small-hydro		Using small-hydro for power generation contributes to sustainable management and efficient use of natural resources.	SCAN
Electricity & Heat	14.1	By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution	Reduce emissions intensity	Renewable energy: Small-hydro		When displacing fossil fuel power plants, small-hydro can reduce thermal and non thermal water pollution potentially entering the marine environment.	SCAN
Electricity & Heat	15.1	By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements	Reduce emissions intensity	Renewable energy: Small-hydro		Small-hydropower can contribute to sustainable use of freshwater ecosystems as it uses considerably less water than thermal alternatives (including thermal renewables).	SCAN
Electricity & Heat	15.1	By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements	Reduce emissions intensity	Renewable energy: Small-hydro		Small-hydropower may negatively impact water ecosystems. Some natural areas are inundated to make space for the water reservoirs and the original route of the river may be changed. Dams lead to sediment deposition and interfere with freshwater wildlife.	SCAN
Electricity & Heat	15.4	By 2030, ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development	Reduce emissions intensity	Renewable energy: Small-hydro		If built in mountain areas, small-hydropower could negatively impact the ecosystem as natural areas are inundated to make space for the water reservoirs and the original route of the river may be changed. Furthermore, dams can lead to sediment deposition and interfere with freshwater wildlife.	SCAN
Electricity & Heat	15.5	Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species	Reduce emissions intensity	Renewable energy: Small-hydro		Small-hydropower can help reduce degradation of natural habitats through reduced air and water pollution and reduced water consumption, if displacing more polluting or intensive alternatives	SCAN

		Electricity & Heat	15.5	Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species	Reduce emissions intensity	Renewable energy: Small-hydro		Small-hydropower can lead to degradation of natural habitats. Natural areas are inundated to make space for the water reservoirs and the original route of the river may be changed. Furthermore, dams can lead to sediment deposition and interfere with freshwater wildlife.	SCAN
		Electricity & Heat	17.7	Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships	Reduce emissions intensity	Renewable energy: Small-hydro		Encouraging the adoption of small-hydro requires effective public-private partnerships	LOCAL EXPERT
Demand Side Management/ Energy Efficiency This policy commits to the preparation and spreading of the culture for proper electricity use; adoption of national programs focused on demand side management as the basis for: effective energy use; peak shaving; load shifting; and demand growth control in order to save a minimum of 5% of the total demand. a. Adopt the Energy Conservation law and institutionalize the Lebanese Center for Energy Conservation (LCEC) and launch a national plan for energy conservation in 2010. (Policy paper for the electricity sector, 2010)	4.7 By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development 7.1 By 2030, ensure universal access to affordable, reliable and modern energy services 7.3 By 2030, double the global rate of improvement in energy efficiency 7.b By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support 12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle 16.6 Develop effective, accountable and transparent institutions at all levels	Buildings	3.4	By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being	Changing activity	Urban planning for EE		Reduces air pollution, reduces water pollution (run-off) and improves mental health and well-being due to decreased urban heat island effect and increased green spaces	SCAN
		Buildings	3.9	By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	Changing activity	Urban planning for EE		Reduces air pollution and reduces water pollution (run-off)	SCAN
		Buildings	4.7	By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development	Changing activity	Urban planning for EE		Increased knowledge and a culture shift can lead to behavior change and decrease in demand	LOCAL EXPERT
		Buildings	6.3	By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally	Changing activity	Urban planning for EE		Reduces water pollution (run-off)	SCAN
		Buildings	7.1	By 2030, ensure universal access to affordable, reliable and modern energy services	Changing activity	Urban planning for EE		Increased knowledge and a culture shift can lead to behavior change and decrease in demand	LOCAL EXPERT
		Buildings	7.b	By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support	Changing activity	Urban planning for EE		Technological improvements can reduce demand	LOCAL EXPERT
		Buildings	7.3	By 2030, double the global rate of improvement in energy efficiency	Changing activity	Urban planning for EE		Increased knowledge and a culture shift can lead to behavior change and decrease in demand	LOCAL EXPERT

Buildings	8.2	Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors	Changing activity	Urban planning for EE		Increases economic productivity, contributes to technological and infrastructure upgrading, and supports economic diversification and innovation	SCAN
Buildings	8.3	Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services	Changing activity	Urban planning for EE		Supports decent job creation and entrepreneurship, and formalisation of small enterprises through support for e.g. EE retrofit programmes	SCAN
Buildings	8.4	Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead	Changing activity	Urban planning for EE		Increases resource efficiency and contributes to decoupling growth from environmental degradation	SCAN
Buildings	8.8	Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment	Changing activity	Urban planning for EE		Reduces unsafe jobs by reducing mining (e.g. for coal used for building heating)	SCAN
Buildings	9.1	Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all	Changing activity	Urban planning for EE		Supports development of sustainable and resilient infrastructure and supports human well-being (better quality living environments)	SCAN
Buildings	9.2	Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries	Changing activity	Urban planning for EE		Supports sustainable industrialisation through creation of demand for more energy efficient construction methods and building products	SCAN
Buildings	9.4	By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities	Changing activity	Urban planning for EE		Supports upgrading and retrofitting of industries, increased resource efficiency, and adoption of environmentally sound technologies through urban planning to support energy efficient buildings and behaviour	SCAN
Buildings	9.5	Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending	Changing activity	Urban planning for EE		Supports R&D and upgrading of industrial capabilities by creating demand for new energy efficient building methods and materials and energy efficient technologies	SCAN
Buildings	11.3	By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries	Changing activity	Urban planning for EE		Contributes to sustainable urbanisation and sustainable human settlement planning	SCAN

Buildings	11.4	Strengthen efforts to protect and safeguard the world's cultural and natural heritage	Changing activity	Urban planning for EE		Improves ecosystem and habitat conservation due to more green spaces, reduced pollution and land use activities	SCAN
Buildings	11.5	By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations	Changing activity	Urban planning for EE		Reduces the number of deaths and the number of people affected by disasters by reducing exposure to extreme temperatures e.g. through more efficient buildings and better, cheaper to run appliances	SCAN
Buildings	11.6	By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management	Changing activity	Urban planning for EE		Reduces impact of cities through more green spaces, reduced pollution and more efficient land and energy use	SCAN
Buildings	12.2	By 2030, achieve the sustainable management and efficient use of natural resources	Changing activity	Urban planning for EE		Increases resource efficiency through planning to enable energy efficient cities	SCAN
Buildings	12.4	By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment	Changing activity	Urban planning for EE		Contributes to reduced air pollution and reduces water pollution (run-off)	SCAN
Buildings	12.6	Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle	Changing activity	Urban planning for EE		Can support companies to adopt sustainable practices e.g. through urban planning to create energy and land efficient commercial / industrial zones	SCAN
Buildings	14.1	By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution	Changing activity	Urban planning for EE		Green building and green urban planning also typically reduces water pollution (run-off)	SCAN
Buildings	15.1	By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements	Changing activity	Urban planning for EE		Supports conservation and sustainable use of water ecosystems through more sustainable urban planning, more green spaces and reduced run-off pollution	SCAN
Buildings	15.5	Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species	Changing activity	Urban planning for EE		Reduces degradation of natural habitats through more green spaces, reduced pollution and more efficient land use	SCAN
Buildings	16.6	Develop effective, accountable and transparent institutions at all levels	Changing activity	Urban planning for EE		Sound policy and legislative frameworks are a means to developing more effective, accountable, and transparent institutions	LOCAL EXPERT

Demand Side Management/ Energy Efficiency This policy commits to the preparation and spreading of the culture for proper electricity use; adoption of national programs focused on demand side management as the basis for: effective energy use; peak shaving; load shifting; and demand growth control in order to save a minimum of 5% of the total demand. b. Widely spread the use of Compact Fluorescent Lamp (CFL), starting in 2010, with the aim of banning energy guzzling devices in the future d. Encourage the use of energy saving public lighting (Policy paper for the electricity sector, 2010)	1.2 By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions 3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination 4.7 By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development 7.1 By 2030, ensure universal access to affordable, reliable and modern energy services 7.3 By 2030, double the global rate of improvement in energy efficiency 11.3 By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries 12.2 By 2030, achieve the sustainable management and efficient use of natural resources 12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment	Buildings	1.2	By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions	Increase energy efficiency	Energy efficiency		Increases energy access and reduces energy expenditure	SCAN
		Buildings	3.4	By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being	Increase energy efficiency	Energy efficiency		Reduces air pollution and improves mental health and well-being due to decreased urban heat island effect	SCAN
		Buildings	3.9	By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	Increase energy efficiency	Energy efficiency		Reduces air pollution	SCAN
		Buildings	4.7	By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development	Increase energy efficiency	Energy efficiency		Shifting consumer behavior through the spreading awareness of proper electricity use	LOCAL EXPERT
		Buildings	6.4	By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity	Increase energy efficiency	Energy efficiency		Reduces water use from energy generation	SCAN
		Buildings	6.6	By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes	Increase energy efficiency	Energy efficiency		Supports conservation of water ecosystems due to reduced water use from energy generation	SCAN
		Buildings	7.1	By 2030, ensure universal access to affordable, reliable and modern energy services	Increase energy efficiency	Energy efficiency		Decreases energy poverty due to improved energy affordability, increases energy security due to decreased imports and greater reliability, and improves access to modern and sustainable energy services	SCAN
		Buildings	7.3	By 2030, double the global rate of improvement in energy efficiency	Increase energy efficiency	Energy efficiency		Increases energy efficiency	SCAN
		Buildings	8.2	Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors	Increase energy efficiency	Energy efficiency		Increases economic productivity, contributes to technological and infrastructure upgrading, and supports economic diversification and innovation	SCAN
		Buildings	8.3	Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services	Increase energy efficiency	Energy efficiency		Supports decent job creation and entrepreneurship, and formalisation of small enterprises through support for e.g. EE retrofit programmes	SCAN

Buildings	8.4	Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead	Increase energy efficiency	Energy efficiency		Increases resource efficiency and contributes to decoupling growth from environmental degradation	SCAN
Buildings	8.5	By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value	Increase energy efficiency	Energy efficiency		Supports decent job creation and productive employment (e.g. EE retrofit programmes)	SCAN
Buildings	8.8	Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment	Increase energy efficiency	Energy efficiency		Reduces unsafe jobs by reducing mining (e.g. for coal used for building heating)	SCAN
Buildings	9.1	Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all	Increase energy efficiency	Energy efficiency		Supports development of sustainable and resilient infrastructure and supports human well-being (better quality living environments)	SCAN
Buildings	9.2	Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries	Increase energy efficiency	Energy efficiency		Supports sustainable industrialisation through creation of demand for more energy efficient construction methods and building products	SCAN
Buildings	9.4	By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities	Increase energy efficiency	Energy efficiency		Supports upgrading and retrofitting of industries, increased resource efficiency, and adoption of environmentally sound technologies through more efficient (industrial) buildings and appliances	SCAN
Buildings	9.5	Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending	Increase energy efficiency	Energy efficiency		Supports R&D and upgrading of industrial capabilities by creating demand for new energy efficient building methods and materials and energy efficient technologies	SCAN
Buildings	11.1	By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums	Increase energy efficiency	Energy efficiency		Reduces access to affordable housing (more expensive to buy/rent once retrofitted for EE; payback period can be long)	SCAN
Buildings	11.1	By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums	Increase energy efficiency	Energy efficiency		Improves access to adequate housing (energy efficient) and reduces energy poverty by increasing affordability	SCAN
Buildings	11.3	By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries	Increase energy efficiency	Energy efficiency		Improved energy efficiency contributes to sustainable urbanisation	SCAN
Buildings	11.4	Strengthen efforts to protect and safeguard the world's cultural and natural heritage	Increase energy efficiency	Energy efficiency		Improves ecosystem and habitat conservation due to reduced pollution	SCAN

		Buildings	11.6	By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management	Increase energy efficiency	Energy efficiency		Reduces impact of cities through more efficient energy use and reduced pollution (from energy generation/consumption)	SCAN
		Buildings	12.2	By 2030, achieve the sustainable management and efficient use of natural resources	Increase energy efficiency	Energy efficiency		Increases resource efficiency through more energy efficient buildings and appliances	SCAN
		Buildings	12.4	By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment	Increase energy efficiency	Energy efficiency		Contributes to reduced air pollution through reduced fuel consumption	SCAN
		Buildings	12.6	Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle	Increase energy efficiency	Energy efficiency		Can support companies to adopt sustainable practices e.g. through energy efficiency retrofit schemes	SCAN
		Buildings	15.1	By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements	Increase energy efficiency	Energy efficiency		Improves conservation of water ecosystems and improves ecosystem and habitat conservation due to reduced pollution	SCAN
		Buildings	15.5	Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species	Increase energy efficiency	Energy efficiency		Reduces degradation of natural habitats through reduced pollution	SCAN
Demand Side Management/ Energy Efficiency This policy commits to the preparation and spreading of the culture for proper electricity use; adoption of national programs focused on demand side management as the basis for: effective energy use; peak shaving; load shifting; and demand growth control in order to save a minimum of 5% of the total demand. c. Increase the penetration of Solar Water Heaters (SWH) and devise innovative financing schemes in collaboration with the banking sector to achieve the slogan “A solar heater for each household”. (Policy paper for the electricity sector, 2010)	3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination 4.7 By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture’s contribution to sustainable development 7.1 By 2030, ensure universal access to affordable, reliable and modern energy services 7.2 By 2030, increase substantially the share of renewable energy in the global energy mix 7.b By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and	Electricity & Heat	3.4	By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being	Reduce emissions intensity	Renewable energy: Solar heating		Solar heating can reduce air, water and soil pollution and thus non-communicable diseases when displacing polluting energy sources, such as fossil fuels and bioenergy.	SCAN
		Electricity & Heat	3.9	By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	Reduce emissions intensity	Renewable energy: Solar heating		Solar heating can reduce air, water and soil pollution and contamination when displacing polluting energy sources, such as fossil fuels and bioenergy.	SCAN
		Electricity & Heat	6.3	Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species	Reduce emissions intensity	Renewable energy: Solar heating		Solar heating can reduce thermal and non-thermal water pollution when fossil fuel generation plant is displaced	SCAN
		Electricity & Heat	6.4	By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity	Reduce emissions intensity	Renewable energy: Solar heating		Contributes to water-use efficiency when replacing electric water heating (reduced generation from water intensive thermal power plants)	SCAN

countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support 8.4 Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead 11.3 By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries 12.2 By 2030, achieve the sustainable management and efficient use of natural resources	Electricity & Heat	7.1	By 2030, ensure universal access to affordable, reliable and modern energy services	Reduce emissions intensity	Renewable energy: Solar heating		Solar heating contributes to increasing access to basic affordable and modern energy services. Further, investments in renewables can increase energy security in countries that rely on imports for energy supply.	SCAN
	Electricity & Heat	7.2	By 2030, increase substantially the share of renewable energy in the global energy mix	Reduce emissions intensity	Renewable energy: Solar heating		Increasing solar heating installations contributes to increasing the share of renewables in the global energy mix	SCAN
	Electricity & Heat	7.b	By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support	Reduce emissions intensity	Renewable energy: Solar heating		Solar energy is an example of a technology upgrade that provides modern energy services	LOCAL EXPERT
	Electricity & Heat	8.1	Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7 per cent gross domestic product growth per annum in the least developed countries	Reduce emissions intensity	Renewable energy: Solar heating		Indirect link: An increase in renewables could contribute to sustained economic growth, through job creation, avoided dependence on limited or imported resources and through creation of new industrial activity	SCAN
	Electricity & Heat	8.2	Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors	Reduce emissions intensity	Renewable energy: Solar heating		Indirect link: Deployment of new energy technologies can support economic productivity by creating new industrial activity, supply chain development, and innovation	SCAN
	Electricity & Heat	8.3	Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services	Reduce emissions intensity	Renewable energy: Solar heating		Indirect link: Investment in renewables supports productive activities, job creation, supply chain development, innovation, and enterprise development	SCAN
	Electricity & Heat	8.4	Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead	Reduce emissions intensity	Renewable energy: Solar heating		Solar heating supports increased resource efficiency and reduces environmental damage vs conventional water heating	SCAN
	Electricity & Heat	8.5	By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value	Reduce emissions intensity	Renewable energy: Solar heating		Deploying solar heating can support full employment through creation of decent jobs	SCAN
	Electricity & Heat	8.5	By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value	Reduce emissions intensity	Renewable energy: Solar heating		Deploying solar heating may lead to job losses from displaced alternative power generation activity	SCAN

Electricity & Heat	9.1	Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all	Reduce emissions intensity	Renewable energy: Solar heating		Deployment of solar heating supports development of sustainable, reliable and resilient infrastructure	SCAN
Electricity & Heat	9.2	Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries	Reduce emissions intensity	Renewable energy: Solar heating		Deployment of renewables supports sustainable industrialisation through increased sustainability of power supply and development of sustainable industries related to renewable energy project construction and operation	SCAN
Electricity & Heat	9.4	By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities	Reduce emissions intensity	Renewable energy: Solar heating		Deployment of solar heating upgrades infrastructure, increases sustainability of industry, increases resource-efficiency and supports adoption of clean technologies	SCAN
Electricity & Heat	9.5	Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending	Reduce emissions intensity	Renewable energy: Solar heating		Indirect link: Deploying solar heating technology upgrades technological capabilities	SCAN
Electricity & Heat	11.3	By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries	Reduce emissions intensity	Renewable energy: Solar heating		Indirect link: Deployment of solar heating supports sustainable urbanisation.	SCAN
Electricity & Heat	11.6	By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management	Reduce emissions intensity	Renewable energy: Solar heating		Solar heating can contribute to reducing the environmental impact of cities by reducing the amount of GHG emissions and air pollutants compared to other traditional technologies.	SCAN
Electricity & Heat	12.2	By 2030, achieve the sustainable management and efficient use of natural resources	Reduce emissions intensity	Renewable energy: Solar heating		Using solar for water heating contributes to sustainable management and efficient use of natural resources.	SCAN
Electricity & Heat	14.1	By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution	Reduce emissions intensity	Renewable energy: Solar heating		When displacing electric water heating, solar heating can reduce thermal and non thermal water pollution potentially entering the marine environment.	SCAN
Electricity & Heat	15.1	By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements	Reduce emissions intensity	Renewable energy: Solar heating		Solar heating can contribute to sustainable use of freshwater ecosystems when replacing traditional electric water heating	SCAN
Electricity & Heat	15.2	By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally	Reduce emissions intensity	Renewable energy: Solar heating		Solar heating could help displace wood fuel use, contributing to reducing deforestation	SCAN

		Electricity & Heat	15.5	Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species	Reduce emissions intensity	Renewable energy: Solar heating		Solar heating can help reduce degradation of natural habitats through reduced air and water pollution and reduced water consumption, if displacing more polluting or intensive alternatives. Solar water heaters may also reduce local deforestation	SCAN
Tariffs Tariffs have not been increased since 1994. On that account, the implementation of all of the above projects under the current tariff will lead to an increase of EDL's the financial deficit. It is therefore necessary to increase the tariff to nullify this deficit in 2020. The proposal of increasing the tariffs means not increasing the total electricity cost above the total cost currently paid by the citizens to EDL and private generators together.	7.1 By 2030, ensure universal access to affordable, reliable and modern energy services 17.1 Strengthen domestic resource mobilization, including through international support to developing countries, to improve domestic capacity for tax and other revenue collection	General	1.1	By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than $1.25 a day	Pricing	Carbon and energy pricing interventions		Carbon pricing or reduction of fossil fuel subsidies could lead to increased consumer energy prices, which can disproportionately affect lower-income groups	SCAN
		General	1.1	By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than $1.25 a day	Pricing	Carbon and energy pricing interventions		Special tariffs adopted for low-income customers can help offset the potential increase in energy prices	LOCAL EXPERT
		General	1.2	By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions	Pricing	Carbon and energy pricing interventions		Carbon pricing or reduction of fossil fuel subsidies could lead to increased consumer energy prices, which can disproportionately affect lower-income groups	SCAN
		General	1.2	By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions	Pricing	Carbon and energy pricing interventions		Special tariffs adopted for low-income customers can help offset the potential increase in energy prices	LOCAL EXPERT
		General	1.4	By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance	Pricing	Carbon and energy pricing interventions		Carbon pricing or reduction of fossil fuel subsidies could lead to increased consumer energy prices, which can disproportionately affect lower-income groups	SCAN
		General	1.4	By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance	Pricing	Carbon and energy pricing interventions		Special tariffs adopted for low-income customers can help offset the potential increase in energy prices	LOCAL EXPERT
		General	1.5	By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters	Pricing	Carbon and energy pricing interventions		Carbon pricing or reduction of fossil fuel subsidies could lead to increased consumer energy prices, which can disproportionately affect lower-income groups. Also could reduce resilience if. E.g., AC is more expensive and used less by poor in heat waves	SCAN
		General	1.5	By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters	Pricing	Carbon and energy pricing interventions		Special tariffs adopted for low-income customers can help offset the potential increase in energy prices	LOCAL EXPERT

General	2.1	By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round	Pricing	Carbon and energy pricing interventions		Increased energy prices could flow through to increased food prices (both producer and retailer)	SCAN
General	6.1	By 2030, achieve universal and equitable access to safe and affordable drinking water for all	Pricing	Carbon and energy pricing interventions		Increased energy prices could flow through to increased water prices; water companies could also pass on carbon price costs to consumer prices	SCAN
General	7.1	By 2030, ensure universal access to affordable, reliable and modern energy services	Pricing	Carbon and energy pricing interventions		Increasing tariffs might increase consumer energy prices, reducing access to affordable energy	LOCAL EXPERT
General	7.1	By 2030, ensure universal access to affordable, reliable and modern energy services	Pricing	Carbon and energy pricing interventions		Increased capacity for revenue collection can lead to energy price increases, however, special tariffs adopted for low-income customers can help offset the potential increase in energy prices and potentially expand access- in this case the linkage may be positive rather than negative	SCAN
General	8.2	Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors	Pricing	Carbon and energy pricing interventions		increase in energy costs can also negatively impact employment and job creation	LOCAL EXPERT
General	8.2	Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors	Pricing	Carbon and energy pricing interventions		Increased capacity for revenue collection can finance technology and infrastructure upgrading potentially creating jobs and improving productivity	LOCAL EXPERT
General	8.3	Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services	Pricing	Carbon and energy pricing interventions		The increase in energy costs can also negatively impact employment and job creation.	LOCAL EXPERT
General	8.3	Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services	Pricing	Carbon and energy pricing interventions		Increased tariffs and capacity for revenue collection can finance technology and infrastructure upgrading potentially creating jobs and improving productivity (positive linkage).	LOCAL EXPERT
General	9.1	Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all	Pricing	Carbon and energy pricing interventions		Increased tariffs could lead to increased energy prices which could reduce affordable access to infrastructure	LOCAL EXPERT

General	9.1	Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all	Pricing	Carbon and energy pricing interventions		Increased tariffs and capacity for revenue collection can provide the resources necessary to develop quality, reliable, sustainable and resilient infrastructure,	LOCAL EXPERT
General	9.2	Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries	Pricing	Carbon and energy pricing interventions		Increased tariffs and capacity for revenue collection can finance technology and infrastructure upgrading potentially creating jobs and improving productivity (positive linkage). Whereas, the increase in energy costs can also negatively effect the rate of industrialization.	LOCAL EXPERT
General	9.2	Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries	Pricing	Carbon and energy pricing interventions		Increased tariffs and capacity for revenue collection can finance the technology and infrastructure needed to accelerate growth in industry	LOCAL EXPERT
General	10.1	By 2030, progressively achieve and sustain income growth of the bottom 40 per cent of the population at a rate higher than the national average	Pricing	Carbon and energy pricing interventions		Increased tariffs and capacity for revenue collection can drive up food, energy and water prices up which can disproportionately affect the bottom 40% in income terms	LOCAL EXPERT
General	10.1	By 2030, progressively achieve and sustain income growth of the bottom 40 per cent of the population at a rate higher than the national average	Pricing	Carbon and energy pricing interventions		Special tariffs adopted for low-income customers can help offset the potential increase in energy prices	LOCAL EXPERT
General	11.1	By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums	Pricing	Carbon and energy pricing interventions		Special tariffs adopted for low-income customers can help offset the potential increase in energy prices - in this case the linkage may be positive rather than negative	LOCAL EXPERT
General	11.2	By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons	Pricing	Carbon and energy pricing interventions		Increased capacity for revenue collection can raise energy prices negatively affecting the affordability of transport systems	LOCAL EXPERT
General	17.1	Strengthen domestic resource mobilization, including through international support to developing countries, to improve domestic capacity for tax and other revenue collection	Pricing	Carbon and energy pricing interventions		Increasing electricity tariffs might encourage users to reduce energy consumption	LOCAL EXPERT

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