

ENERGY

Awareness Awards

2nd edition

WINNING PROJECTS

2018-2019



ORGANIZED BY



*Empowered lives.
Resilient nations.*

SUPPORTED BY



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Certificate of Appreciation

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ABOUT THE EAA

ENERGY

Awareness Awards

Following the successful results of the 1st Edition in 2016, the United Nations Development Programme (UNDP) and IPT Energy Center (IPTEC) organized the 2nd edition of the Energy Awareness Awards (EAA) under the patronage of the Ministry of Energy and Water (MoEW).

The EAA is a program that recognizes significant contributions of both the public and private sectors including businesses, youth startups, entrepreneurs and academia in integrating sustainable practices within their fields and promoting energy sustainability in Lebanon. The initiatives included Solar Energy Systems, Eco-friendly lighting solutions, Eco-friendly transport solutions, Recycling solutions and many others.

The 2nd edition of the EAA was launched in 2019 and gathered many applications submitted in four different categories: Private sector, Academia, Youth Innovation and Entrepreneurship, and Local Government Initiatives (Municipalities), in addition to identifying one Public Sector Initiative. These categories fall within the themes of Renewable Energy, Energy Efficiency and Conservation, Mitigation of Climate Change and Innovation in Energy.

An independent panel of experts reviewed the applications and chose the winning projects according to the following criteria:

- Originality/Innovation and Added Value Impact
- Sustainability, Scale-up, and Replicability
- Collaborations and Synergies
- Marketability (for ideas presented under category III - Youth Innovation and Entrepreneurship)

The distribution of the awards took place on September 27th 2019 in the framework of the International Beirut Energy Forum (IBEF) 2019. Under the patronage of HE the Minister of Energy and Water Mrs. Nada Boustani khoury, at Le Royal Hotel – Dbayeh.

For more info visit: www.lb.undp.org or www.iptgroup.com.lb/ea

ABOUT THE ORGANIZERS



*Empowered lives.
Resilient nations.*

UNDP is on the ground in more than 170 countries and territories, bringing global perspective and local insights together to help empower lives and build resilient nations. It serves in many respects as the operational arm of the United Nations at the country level.

UNDP addresses a range of critical development issues, meeting the diverse and often shifting challenges facing the people it serves, from combating and adapting to climate change, to fighting poverty and inequality, from protecting the environment to promoting good, inclusive governance. In Lebanon, UNDP's work spans across five intervention areas: Social and Local Development, Democratic Governance, Crisis Prevention and Recovery, Energy and Environment, and Response to the Syrian Crisis.



IPT Energy Center (IPTEC) is a specialized research center in Lebanon established by IPT on July 2012 under Registration Notice 590. IPT Energy Center (IPTEC) is a specialized research center in Lebanon that carries out scientific projects, social and environmental activities and programs and awareness campaigns falling within the scope of IPT's CSR in the field of energy conservation and the efficient use of energy, reduction of environmental pollution resulting from the use of energy sources and the promotion of the use of clean, alternative and renewable energy solutions.

The center is behind many pivotal projects on energy sustainability and environmental protection and has been engaged in agreements with national and international institutions to promote sustainable development in the energy sector. IPTEC also contributed to the publishing of a number of studies and reports and sponsored several programs in its field of expertise.

NOTE FROM THE ORGANIZERS



Mrs. Celine Moyroud
Resident Representative of UNDP
Lebanon

The United Nations Development Programme (UNDP) supports countries in working towards the Sustainable Development Goals (SDGs) across the world, including Lebanon. Given the magnitude of challenges faced, achieving the SDGs requires the partnership and engagement of the private sector, civil society, academia and government. The Energy Awareness Awards (EAA) aims at promoting such an effort, specifically in the sustainable consumption of energy resources and awareness raising on energy-related matters. The EAAs are a unique opportunity to recognize efforts put forth by the Lebanese private and public sector, civil society and the youth in reducing their energy footprint and integrating sustainable practices within their respective fields. In this

sense, the EAAs contribute to SDG Goal 7: Affordable and Clean Energy. At UNDP, we pledge to promote smart and innovative solutions that address both access to energy supply and emissions reduction from energy use. Our participation in the EAAs is based on our strong belief that the renewable energy and energy efficiency sectors are integral components to the development of Lebanon in sustainable and equitable manner. UNDP will continue to support the development of the energy technology but more importantly to raise awareness in all matters related to energy sustainability and climate change.

Today, renewable energy constitutes a growing but relatively small part of the Lebanese energy mix. Efforts lead by the Ministry of Energy and Water but also pushed forward by various partners in the sector such as, international donors, the private sector, academia, municipalities and NGOs are creating the moment for more climate-friendly sources and approaches to traditional energy use. This year's applicants of the EAAs showed that solar systems in Lebanon are being embraced as cheap alternatives to conventional energy sources. The solar systems are being integrated, in all sectors, with the existing power supply systems, to provide cheap and continuous electricity. Additionally, the applicants showcased the importance of innovations in energy efficiency that provide cheap and sustainable solutions for water and space heating, and clean alternatives to solid waste collection.

I take this opportunity to thank each person involved in developing the awards and assessing the submitted applications. In addition, I would like to congratulate this year's winners on their outstanding achievements in their respective fields. I hope that this will set an example in the Lebanese industry and create an incentive for others to follow the path of sustainability.



Dr. Toni M. Issa
IPTEC President

Social Responsibility is a core objective for IPT that has proven since the establishment of IPT Energy Center (IPTEC) that the private sector can play a role in social development and help achieving sustainability in line with its initial role contributing to economic development and growth.

From here comes our belief in participating in the process of social development in a way that brings together our interests and the interests of the community within which we operate. The protection of the environment, the rejection of any action that may harm the society and the consideration of public interest when making business are among our main targets closely related to our commercial activity in the oilfield services, opting for challenges directly associated with energy, oil & gas.

For this purpose, IPT Energy Center (IPTEC) in collaboration with governmental institutions and international organizations, takes initiatives to face serious energy related environmental problems and seeks practical solutions. Through many activities and campaigns of which the "National Campaign for Air Pollution Reduction in Lebanon through efficient energy use in Land Transportation" launched in 2012 with the support of the Ministry of Environment (MoE), ESCWA, and UNDP. This initiative comprised research activities, capacity building workshops and dissemination campaigns to promote public awareness on air pollution reduction and the efficient energy use.

Further to this initiative, we signed a cooperation agreement with UNDP to collaborate in the field of sustainable and renewable energy. The agreement warrants the achievement of IPTEC objectives through supporting topics related to the Center's main activities including the support and promotion of sustainable and renewable energy-related activities and projects. It is in this framework that we organized the 1st and 2nd edition of the Energy Awareness Awards (EAA) as an unprecedented initiative in Lebanon.

We believe that the EAA successfully shed light on the efforts of many institutions who completed projects in the field of renewable energy and energy efficiency and conservation. More importantly, it constituted an excellent platform to exchange experience and to explore the many environmental and economic benefits associated with these projects. IPTEC would like to thank the organizers, the jury members and all who participated this year, and congratulates the winners on their hard work. Looking forward to a third edition of the EAA and to more success stories in sustainable energy for an improved environmental quality and public health in Lebanon.

PANEL OF EXPERTS



Mr. Charles Arbid
President of the Economic and Social Council of Lebanon



Mr. Pierre Khoury
General Director of LCEC



Mrs. Ray Bassil
UNDP Goodwill Ambassador for Youth and Gender



Dr. Hassan Harajli
UNDP CEDRO Project Manager



Mr. Vahakn Kabakian
UNDP Climate Change Project Manager



Mr. Noritaka Hara
UNDP Programme Analyst

PRIVATE SECTOR CATEGORY



ZMERLY & CO SARL



ECOSYS SAL



CERTIFICATE OF APPRECIATION

- CHEHAB INDUSTRIAL & MEDICAL GASES SAL
- GEMAYEL FRERES SAL
- LIBAN CABLES SAL
- DEMCO STEEL INDUSTRIES SAL



Project Title

Zmerly's Energy Management Program

EAA Theme

Renewable Energy and Energy Efficiency & Conservation

Project Description

Zmerly & Co is a company based in Tripoli that offers solutions in heating and solar energy. Zmerly has achieved the "Near to Zero Energy" in the company's building, which is powered by a 7.5 kWp solar photovoltaic (PV) system. Heating in the whole building is provided by solar thermal panes and air/water heat pump. A number of demand-side measures has also been installed, including the installation of high efficiency LED lights, underfloor heating/cooling systems, and smart control system for heating. The company has reduced its energy consumption by 70% since 2016. In addition, Zmerly has been providing professional training to engineers, students, technicians from all over Lebanon (more than 900 trainees in 2018), including school dropouts and unemployed youth at their Academy for free.



Project Title

ECOsyst Headquarter: Installation of Roof & Partial Façade PV System

EAA Theme

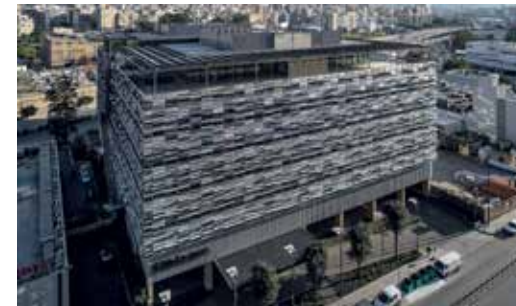
Renewable Energy and Energy Efficiency & Conservation

Project Description

ECOsyst is a provider of world-class renewable energy & power solutions, for corporate, government institutions and homes. Our offering includes: Solar Photovoltaic solutions, hybrid energy, and Wind solutions, and related electronic components. In addition ECOSys offers DC Telco power solutions as well as industrial batteries for reserve power.

Conceived to save energy, structured to provide the best work conditions, the HOLCOM /ITG Headquarters is a solar powered building that represent the group's growing achievement in its continuous growth and quest for quality.

The solar energy is provided by a roof top installation of 118KW of Polycrystalline Photovoltaic (PV) panels, on an area of 1,250 m², in addition to a 100 m² of solar thin film vertical façade in the internal court yard. The solution is totally integrated with EDL and the generators, without any batteries. In summary this will result in a total energy saving of 180 MWh production/yr, and in CO₂ savings of 106 tons/yr.





Project Title

Installation of Photovoltaic System at the Existing CIMG Facility

EAA Theme

Renewable Energy

Project Description

Chehab Industrial & Medical Gases (CIMG) offers services and support across three separate divisions: gas, medical systems and home care. CIMG has installed in total 1,000 kWp solar photovoltaic (PV) systems at CIMG facility. Previously, CIMG relied completely on its private diesel-powered generators for its electricity needs as there was no alternative source of energy. A substantial amount of diesel was consumed every year (> 4 million liters) since the industry has an energy-intensive process (cryogenic air separation). After the installation of the system, CIMG reduced its emission by 700 tCO₂ per year while saving USD \$147,150, mainly from the diesel costs.



Project Title

Shifting to Renewable Energy and Energy conservation: PV Installation; LED Lighting and Fuel Temperature Control

EAA Theme

Renewable Energy and Energy Efficiency & Conservation

Project Description

Gemayel Freres s.a.l is a cardboard paper recycling industry in Lebanon. Based on the recommendations of the facility energy audit, Gemayel Freres installed a photovoltaic (PV) system, lighting retrofit, and fuel tank temperature control to do further steps towards energy conservation. First, a 300 kWp of hybrid solar system was installed. As for lighting energy efficient solution, LED lights and induction lights were installed. Fuel tank temperature control was also installed to improve the steam system. These initiatives reduced 687 tCO₂ emissions per year while saving on the operational costs of the industry.





Project Title

Photovoltaic Project

EAA Theme

Renewable Energy

Project Description

Liban Cables offers expertise in cables and cabling systems in Lebanon. Consuming around 12,000 MWh of energy each year, more than 90% of which is provided by diesel generators, the cost of electricity is one of the primordial challenges and main component of the monthly expenses at Liban Cables. To address this, Liban Cables has installed 600 kWp of solar systems producing up to 800 MWh of electricity. These systems have helped Liban Cables save up to 8% on its electricity bills while minimizing the greenhouse gas emissions annually by 751 tons.



MEMBER OF DEMCO GROUP



Project Title

Demco Energy: PV Installation

EAA Theme

Renewable Energy

Project Description

Demco Steel Industries s.a.l provides marketing and purchasing services for steel wholesalers and retailers as well as developers and contractors in Lebanon and abroad. Before the project, Demco was consuming 50% of its electricity from the national grid (EDL supply) and 50% from diesel generators. To reduce its energy consumption and add value to the environmental aspect of the facility, Demco installed solar PV systems on the roof of their facility. The system has saved 1,163 tCO₂ per year while reducing diesel and EDL bills, translating to lower cost of production.



ACADEMIA CATEGORY



ECOLE DON BOSCO KAHALE



THE INTERNATIONAL SCHOOL OF CHOUEIFAT



CERTIFICATE OF APPRECIATION

- CARBON CLEANER

ACADEMIA CATEGORY



Project Title

Renewable Energy and Sustainable Development

EAA Theme

Renewable Energy and Energy Efficiency & Conservation

Project Description

Don Bosco School Kahale has undertaken various energy saving and awareness initiatives. The school has installed approximately 250 solar street lighting in 2 villages (Kahaleh and Araya) with awareness campaign. A solar photovoltaic (PV) system was also installed for the Don Bosco school campus. In addition, vulnerable families in the villages of Kahaleh and Araya were provided with solar power systems or solar water heater (SWH) systems. Don Bosco has also provided trainings on basic and advance PV systems installation and maintenance. For women empowerment, Don Bosco provided training and support in establishing business with BLC bank to women with innovative ideas in environmental initiatives. Furthermore, in partnership with Universite Saint Joseph (USJ), Don Bosco organized the competition in innovative ideas.



ACADEMIA CATEGORY



Project Title

Installation of PV System for The International School of Choueifat for Green School Certification Programme

EAA Theme

Renewable Energy

Project Description

Sacotel has designed and implemented an On-and-Off-grid PV solution (421 KW) for the International School of Choueifat Campus, which is a member of the SABIS school network. The school has 1,543 students and 158 teachers. Capitalizing on this, the International School of Choueifat and Sacotel expanded their initiative from energy efficiency to a more holistic approach covering waste management, green spaces, energy efficiency, water efficiency, health and safety and sustainability education in order to get Green Schools Certification. Students of all ages were involved in this project and were educated on the environmental and economic advantages of renewable energy. The project became the corner stone of the school's efforts that let them reach the platinum green school awards.



ACADEMIA CATEGORY



Project Title

Tool that Calculates Carbon Footprint of Academic Institutions

EAA Theme

Mitigation of Climate Change

Project Description

Carbon Cleaner is a group of four civil engineering students working on their final year project with the assistance of their academic advisor from Notre Dame University (NDU). The project has developed a tool that calculates emissions produced every year from a campus. This tool would support in defining the most effective way to reduce carbon emissions. By using the tool, universities can determine and publish the carbon footprint of their campuses thereby raising awareness among students and the public.



YOUTH INNOVATION & ENTREPRENEURSHIP CATEGORY



NASRALLAH ENGINEERING SARL



LIVE LOVE LEBANON



CERTIFICATE OF APPRECIATION

- HICING
- ROOF AND ROOTS

YOUTH INNOVATION & ENTREPRENEURSHIP CATEGORY



Project Title

Energy Saving Water Heater Tank with Variable Capacity

EAA Theme

Energy Efficiency & Conservation and Innovation in Energy

Project Description

Nasrallah Engineering has developed an innovate energy saving water heater tank with variable capacity which only heats the amount of water that is needed in the tank and not the entire tank. This technology can be integrated with existing solar water heater systems to improve its performance and save energy consumption by up to 80%. Furthermore, Nasrallah has acquired an international patent by Canada and WIPO for this technology.





Project Title

Live Love Recycle: E-Bike Recycling Collection with Mobile Application

EAA Theme

Energy Efficiency & Conservation

Project Description

Live Love Recycle is an environmental and social project to help counter the garbage crisis in Lebanon. It is a recyclable collection service based on a mobile phone application through which residents of Beirut can order on demand pick-ups for their recyclables. The service now covers 5,000 households and has created 15 full-time employment opportunities and 436 part-time jobs. Approximately 100 tons of recyclables are collected per year and sold to sorting facilities. The project is now using bicycles for the collection of recyclables from households; this increases pick-up responses and decreases greenhouse gas (GHG) emissions.



ShareTaxi/Driver
Mobile Application



Project Title

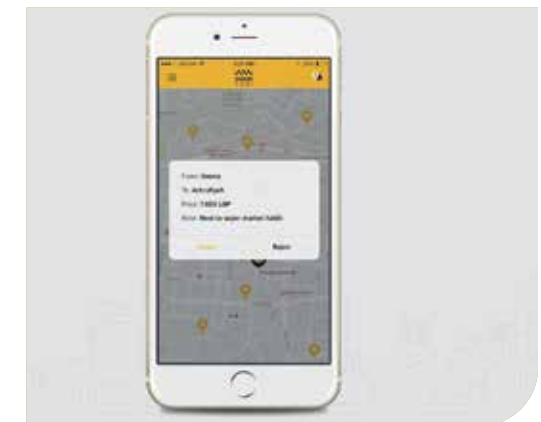
Shared Taxi

EAA Theme

Energy Efficiency & Conservation

Project Description

The project has proposed a shared taxi application. Through this application, passengers share their taxi journeys so that more than one passenger travels in a taxi (car pools). This will reduce greenhouse gas (GHG) emissions by reducing the emission of taxi rides.





Project Title

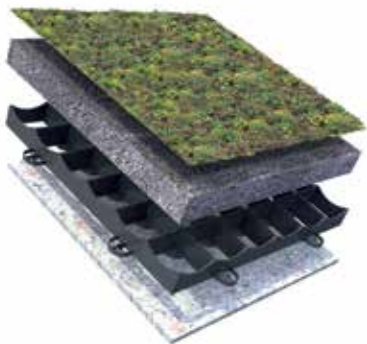
Green roof system

EAA Theme

Energy Efficiency & Conservation and Mitigation of Climate Change

Project Description

The project combines the green roof concept with rainwater harvesting for residential buildings, an innovation in the type of soil used and the inclusion of a water tank for water harvesting. The idea also creates green spaces in urban areas, bringing about CO₂ reduction.



LOCAL GOVERNMENT CATEGORY



HAMMANA MUNICIPALITY



ANDAKET MUNICIPALITY



CERTIFICATE OF APPRECIATION

- AINATA AL ARZ MUNICIPALITY
- BCHAALAH MUNICIPALITY



Project Title

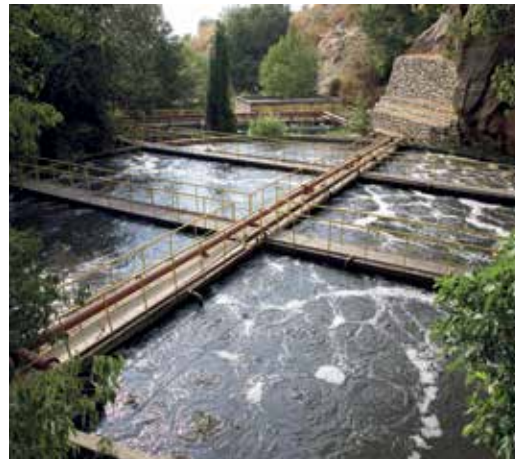
Installation of Renewable Energy System for The Waste Water Treatment Plan

EAA Theme

Renewable Energy and Energy Efficiency & Conservation

Project Description

The Municipality of Hammama has installed a renewable energy system which consists of a 45 KW solar photovoltaic (PV) system with 190 KWH batteries for the municipal waste water treatment plant. This system replaces traditional electricity supply from EDL and the diesel generator. It therefore reduces the environmental impact of the treatment plant and reduces the cost of operating the wastewater treatment plant. The installed solar PV power system reduces diesel burning and reduces CO₂ emission by 72.525 tCO₂-eq per year.



Project Title

Briquette Production Facility From Forestry and Agricultural Residues for Sustainable Heating

EAA Theme

Energy Efficiency & Conservation and Mitigation of Climate Change

Project Description

The Municipality of Andakhet has implemented a briquette production facility that converts forestry and agriculture residues to biomass briquettes for household heating. The plant produces 450 tons of briquettes per year and provides the residents of Andkhet with affordable heating fuel while reducing the risk of forest fires by improving forest management through seasonal pruning.





Project Title

Smart Solar Street Lighting

EAA Theme

Renewable Energy and Energy Efficiency & Conservation

Project Description

The Municipality of Ainata Al Arz has installed smart street lighting and management systems using a smart software platform. The system allows the municipality to wirelessly control and monitor the operation of the speakers, surveillance cameras, WiFi, screen and LED lights. These lights are expected to operate 12 hrs/day, coupled with batteries and solar panels (50 W LED with 80W PV and 40 amph Li-ion batteries). The project benefits the 2,000 inhabitants of the village.



Project Title

Bridging the Energy Gap: Solar PV Installation and Prepaid Utility Payment System

EAA Theme

Renewable Energy and Energy Efficiency & Conservation

Project Description

Bechaaleh Municipality, in partnership with the private company (E24), has installed a solar photovoltaic (PV) system (350 kWp) with a backup battery at the municipal level, equipped with pre-paid utility payment system. 250 households in the municipality are now benefiting from this project with access to 24/7 electricity while reducing the consumption of diesel fuel and lowering greenhouse gas (GHG) emissions.



PUBLIC SECTOR INITIATIVE

Recognition Award



The Lebanese Standards Institution (LIBNOR)

The Lebanese Standards Institution (LIBNOR) is a public institution attached to the Ministry of Industry. It was established in 1962 by a law, giving it solely the authority to issue, publish, and amend national standards and to authorize the use of the Lebanese Conformity Mark proving the compliance of products to Lebanese standards.

LIBNOR has been working on several activities related to energy and environment that contribute to sustainable development. First, LIBNOR, in collaboration with the International Organization for Standardization (ISO), has implemented a 4-year project (MENA STAR) to enhance Lebanon's participation in international trade while increasing international competitiveness. The activities include awareness raising and capacity building on use of International standards in environment, energy and water sector. Second, LIBNOR has established technical committees working on the development of National Standards related to Energy and Environment in different areas. This has led to the development of several standards granted the mandatory status by decrees from the Council of Ministers. LIBNOR is also actively participating in the international standardization activities within ISO, where Lebanese experts through LIBNOR technical committees are working on the development of international standards. Finally, LIBNOR has launched its training center in mid-2015 and is delivering free training courses to all stakeholders from the public and private sectors on different topics including management systems, food safety, business skills and with a special focus on Social Responsibility (ISO26000) and Energy and Environment.

