JinkoSolar Launches Tiger Pro 580Wp, the Most Powerful Utility Solar Panel

Recently, JinkoSolar officially launched the world’s most powerful utility solar panel – the Tiger Pro series – as well as a full stack portfolio.

“We have been making steady progress since we announced our technical roadmap and high power product strategy last year,” said Kangping Chen, CEO of JinkoSolar. “Everything is moving forward according to plan, from R&D to product launch. And today we delivered on our goals, with the release of Tiger Pro series. For the first time in the industry, the panel power is bounces to 580Wp, and the average P-Type mono module efficiency upgraded to 21.6%.”

JinkoSolar has disclosed the planned specs at its investor conference held in Haining China last year. After six months of ongoing development, now the Tiger Pro delivers on its performance goals. For 72 cell version, it delivers max power of 78 cell version it delivers up to 580Wp. In addition to its unrivaled generation performance, Tiger Pro series feature better temperature efficiency, lower degradation and optimized Voc. This new series panels deliver more abundant, affordable and adaptable range with a broad array of inverters and tracking systems which are critical to make Tiger Pro development easier and its deployment more pervasive and accessible, and to ensure the best LCOE.

What Tiger Pro Benefits You
* Dramatically reduces installation time and costs.
* Uses the least amount of land and BOS components with the highest possible WP.
* Highly compatible with mainstream inverters and mounting system.
* Premium new warranty guarantees your generation over 25 years.

As the robust and vibrant ecosystem grows more important than ever, support for all scenarios is essential for enabling pervasive application. Tiger Pro offers two design versions, 72 cell and 78 cell, both available in mono facial and bifacial, which can readily adapt to different deployment needs. Matchable inverters can be central or string type, mounting structures can be 1P, 2P tracker or fixed mounting. Tiger Pro bifacial featuring lighter weight allows EPC and installers to construct the solar farms with ease and more quickly.

Our new Tiger pro module delivers a significantly higher power output and an easy performance boost that does not require much extra effort for customers to install,” said Ali Hamam, Head of Sales MENA of JinkoSolar.

“[This is another step forward for us in terms of technology and demonstrates our ability to innovate advanced technologies reinforcing our leading position in manufacturing excellence].”

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Following the success of the 2017, 2018 and 2019 editions we present to you the 2020/2021 edition in a time of economic challenges, amidst a pandemic that has affected all economic sectors in Jordan and the rest of the world. Despite this situation, the Energy, Water & Environment (EWE) sectors in Jordan are resilient as projects continue and new opportunities emerge.

This publication is also resilient and well established as the first and only directory for these sectors in Jordan, including detailed profiles of companies, project fact sheets and the most comprehensive listings in the country of EWE companies and organizations.

Who’s Who in EWE is also undergoing a ‘digital transformation’ through its website features (www.jordanewe.com), along with the launch of social media channels (Facebook, Instagram and LinkedIn) and through mailshots to our extensive database of EWE clients and professionals. Added digital value is provided to participating companies by promoting their company profiles through search engine marketing and promoted social media posts. The website already generates many leads and sales opportunities for participating EWE companies.

Thousands of print copies of this book continue to be distributed free of charge at local, regional and international events; through professional associations; and directly delivered to a list of CEOs and General Managers of Jordan’s top companies in all major sectors, Governmental and Non-Governmental Organizations.

MediaScope looks forward to receiving your feedback anytime and we hope that you benefit from Who’s Who in Jordan’s Energy, Water & Environment (EWE) 2020/2021.

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About the Ministry of Energy and Mineral Resources

The Ministry of Energy and Mineral Resources was established in 1984 and entrusted with administering and organizing the energy sector in a way that achieves the national objectives.

In light of the restructuring process, the responsibilities of the ministry were amended to include the comprehensive planning process of the energy and mineral resource sector, and setting the general plans and ensuring their implementation in a way that achieves the general objectives of the sector; the most important of which is providing energy, in its various forms, for the development process and organizing its affairs; in addition to the optimum utilization of natural resources complying with international best practices.

Vision: Achieving a secure sustainable supply of energy and optimal utilization of natural resources.

Mission: Setting and developing the appropriate policies and legislations to achieve a secure sustainable supply of energy and that the optimum utilization of natural resources complies with international best practices.

Core Values: Teamwork Spirit, Knowledge Dissemination and Use, Integrity and Transparency, Excellence and Entrepreneurship, Loyalty and Affiliation.

Natural Gas Directorate

Through the Natural Gas Directorate, the Ministry of Energy and Mineral Resources is seeking to achieve the strategic goal of increasing the contribution of natural gas in the total energy mix. This will be achieved through the development of local sources of natural gas; expanding the use of natural gas in power generation and industries; and securing additional sources of natural gas to the Kingdom. To achieve this strategic goal, the Natural Gas Directorate follows up and manages gas projects and programs across the Kingdom.

Oil Shale in Jordan

Jordan has more than 70 billion tons of sub-surface proven reserves of oil shale, which is more than 7 billion ton oil-equivalent. The national strategy for the energy sector has included Oil Shale as an alternative energy source to contribute about 12% of the energy mix in the Kingdom in 2025.

The Government has adopted a Commercial Legal Framework and an Environmental Legal Framework within the contracts with the investing companies to govern and control oil shale exploitation projects with the help of the relevant international consultancy firms. A national exploration program has been scheduled and implemented to investigate new potential areas for investment throughout the Kingdom for new exploitation projects, for both the deep seated resource and the surface resource to produce both oil and electricity.

The Government is currently adopting a three-track approach to handle Oil Shale resource exploitation which includes In Situ for the deep Oil Shale to produce oil, Surface Retorting for the mined Oil Shale to produce oil, and Direct Burning of Oil Shale for Electricity Generation.

Renewable Energy

Jordan has been exploring opportunities to develop renewable and energy-efficient sources of power in order to reduce the country’s reliance on imported fossil fuels and to reduce Jordan’s greenhouse gas emissions. Jordan targets the share of renewable energy in the country’s generated electricity to be 20% by 2020.

In terms of installed capacity, the “Jordan 2025” plan targets an increase in the share of renewable energy in Jordan’s installed electrical capacity from 1.5% in 2014 to 25% by 2025. As a result, the government has established various policy and regulatory frameworks to support renewable energy generation in the Kingdom.

In 2012, the Renewable Energy and Energy Efficiency Law was passed. Pursuant to this law, investors may identify and propose potential electricity production projects including wind, solar and waste-to-energy projects, to the Ministry of Energy and Mineral Resources for consideration. In addition to the various large-scale power projects underway in the Kingdom, the government supports small-scale renewable electricity generation projects and permits the sale of surplus electricity generated at a fixed tariff. As a result of this, Jordan now has more than 730 MW of installed wind and power projects (including small scale projects). These projects produces more than 7% of the total consumed electricity in Jordan. The total current contracted capacity is around 1736 MW. The total installed capacity by 2021 is expected to reach 20%.
Jordan Renewable Energy and Energy Efficiency Fund (JREEEF)

Jordan Renewable Energy and Energy Efficiency Fund (JREEEF) was created in 2012 by the EE and RE Law N°13/2012. The Fund is established according to the By-Law No. 49/2015 as an entity under the Ministry of Energy and Mineral Resources (MEMR). The basic purpose of JREEEF is to provide the necessary funding for the deployment of renewable energy sources and the rationalization of energy consumption, including small renewable energy facilities. It supports any program and the financial mechanisms allowing RE and EE users and investors to access financing from banks, local and international financial institutions.

The main JREEEF objectives are to support government in reducing the financial burden on consumers and the national economy, resulting from energy imports and subsidies to the energy sector. In addition, the fund aims to promote the development of a domestic industry as well as to open up new markets. A set of financial and technical support products have been developed including revolving credit, grants, loan guarantees, technical support and equity financing.

JREEEF focuses on funding decentralized renewable energy systems and has programs covering the following sectors:

- **Household programs:** Solar Water Heater (SWH), LED energy saving lamps, Solar PV systems.
- **Small and Medium Enterprises (SME’s):** Includes EE activities for the industrial sector for small and medium factories, and tourism sector for 4 stars hotels.
- **Schools program:** King Abdullah’s initiative for heating schools, implementing energy efficiency and renewable energy actions.
- **Public and governmental institutions:** Conducting the energy audits in governmental buildings, Solar PV systems for Public CBO’s and implementing solar PV systems for municipalities and health centers.
- **Worship places:** Installation of solar PV systems for worship places including mosques and churches.
- **Agriculture sector:** Implementing solar PV systems for small farms.
- **Awareness and capacity building programs.**

In order to implement these programs, JREEEF in collaboration with several development partners, pursues a number of funding mechanisms including financing programs developed with the support of the Central Bank in cooperation with commercial banks and Jordanian companies. The fund also provides loan guarantee services on behalf of these institutions, to guarantee loans and to provide the necessary financing for enterprise projects and factories at a zero interest rate.

In 2019, **HANANIA Energy** manufactured, supplied and installed 20,000 Solar Water Heaters, to citizens throughout the Kingdom with 50% grant from the Jordan Renewable Energy & Energy Fund/Ministry of Energy and Mineral Resources (JREEEF/MEMR), in cooperation with 150 local CBOs along with the Civil Consumer Organization (all branches), Veterans Affairs Department, Retired Professional Association, Jordan Engineers Association and the project was funded by the European Union.

Today, 30% grant is available for all citizens.

With the support of AUB School of Business/Enterprise Growth Reading Program, funded by USAID Jordan Competitiveness Program, we have measured our competitiveness rank for 2014 and calculated our market share for SWH’s in Jordan; the finding concluded that we served larger sized accounts than all other competitors combined with a 75% of the total market share.

Around the end of the year 2019, **HANANIA Energy** has started implementing projects to install Solar PV Systems at 1,351 homes in Irbid, Karak and Mafraq governorates, with a capacity of 2 kilowatts. This project (Fils Al Reef) is funded by the Ministry of Energy and Mineral Resources, Jordan, which aims to reduce poverty by cutting down electricity bills. 227 homes are still under construction in Karak governorate which is scheduled to finish at the end of 2020 beginning of 2021.

Trust is a major and important contributor for business. **HANANIA Energy** is very well trusted in Jordan, we operate with integrity and honesty. We provide the right solar solution and we do not use low-quality products.

www.hanania.jo
About the Ministry of Water and Irrigation

The water sector in Jordan is considered to be one of the vital and important sectors. It deals with the reality that Jordan is the country which represents the most critical water case worldwide. Taking into consideration the great importance of water and how it is linked to social security, political and economic, Jordanian government cabinets have paid the greatest of attention towards water issues seeing as Jordan is known to be one of the poorest countries worldwide in water supply. As such, there has been a focus and concentrated attention on the water sector since His Majesty Abdullah II Bin Al Hussein ascended to the throne of the Hashemite Kingdom of Jordan.

Over the past years the Ministry of Water and Irrigation, including its water authority and the Jordan Valley Authority, have taken large strides towards dealing with this reality, and have prepared for several scenarios through strategies to address growing water demand; especially after the Syrian refugee crisis, which raised the demand for water by more than 21%. As a result, the National Water Strategy of 2016-2025, along with the accompanying policies and the investment program have been implemented to cope with this increase in demand and are in line with the Jordan 2025 document (Jordan Vision).

Water Security is one of the most important aspects of this strategy, aiming to achieve sustainability of water sources, improving the efficiency and the level of water, and sanitation services for customers to reach 80% by 2025; while focusing on expansion in the use of treated water to substitute freshwater for drinking purposes.

Accordingly, the ministry seeks to provide new sources of fresh water, to exceed 187 million cubic meters, as well as implementing the water supply strategy for the northern governorates till the year 2028. This occurs in line with bringing forward the project of supplying the water of Wadi Araba, to secure 30 million cubic meters annually by the year 2019 at a cost of 125 Million Dollars. In addition, there is the project of the Red-Dead conveyance, which aims to protect the Dead Sea water as well as provide desalination. The Ministry has already succeeded in achieving the first seawater desalination project in Aqaba, with an annual capacity of 5 million cubic meters.

The Ministry is strengthening the principle of integrated water resources management to achieve sustainable development goals for the water sector (SDGs). the management of the water sector is working to reduce gas emissions resulting from global warming and to increase the competencies of plants specialized in the wastewater treatment plants. Up to 31 plants operate according to these strategies covering the center, north and south governorates.

In addition to expanding the number of stations and increasing the proportion of sewerage users from about 63% to 80%, the aim is to provide greater quantities of pure drinking water through the increase of the quantities of recycled water used from about 94 million cubic meters, to a total of 240 million cubic meters in 2025. This will result in increasing the irrigated plots in a number of areas, achieving economic development as well as providing progress in the life style of large segments of people side-by-side with the expansion of the storage of dams and raising their capacity to reach 400 million cubic meters. Effective policies to harvest rain water and expansion in reliance on alternative energy assist the Ministry in reducing overall energy consumption by 15% and will increase the share of renewable energy in the water sector by about 10%. The use of solar energy could provide savings of more than JD 40 million annually.

That’s not all, but the ministry also works on developing the Wadi Araba area into an attractive area for tourism, industry and investment.

The water investment capitalizes on areas of improvement according to the government’s Water Strategy to encourage efficient use of natural resources, to augment water supply, to expand wastewater treatment and to minimize water losses. The current five prospective investment opportunities are:

1. Aqaba-Amman National Conveyance project (AAWDC Project): To enhance the Kingdom’s national water security by producing potable water through desalination at the Gulf of Aqaba and transferring 150MCM/Year of additional water to Amman.
2. As Samra Treatment Plant (3rd phase/2nd expansion): To expand the capacity of the plant by an additional treatment capacity of 100,000 CM per day and to establish a solar power plant with 10 MW capacity.
3. Non-Revenue Water (NRW) Reduction: To reduce physical and commercial water losses in Amman.
4. Hisban Brackish Water Desalination 10-15 MCM/Year: The project aims to augment water sources by 10-15 million cubic meters per year (through the drilling of 10 wells) and to develop solar energy to provide about 15MW.
5. Al Ghabawi Wastewater Septic Tank Facility Project: The project aims to construct a new septic 25-tank facility to replace and relocate an existing facility currently co-located at Ain Ghazal. The capacity will be 25,000 cubic meters per day located at Al Ghabawi.

In the same context, and with a view to reduce water losses to approximately 30% by 2025, the ministry has implemented a large number of water projects which include the construction of new pumping stations, distribution networks and subsectors of the National Water Carrier system; which all leads to water empowerment to face the challenges, developments and growing needs while lifting the cost recovery rate of operation and maintenance to 100% in 2021, as well as the proportion of the total cost recovery to 74% including a reduction of governmental subsidy for the water sector.
About the Ministry of Environment

The Jordanian Ministry of Environment is constantly seeking to protect the environment and to improve its components in a sustainable manner. Accordingly, the Ministry exerted efforts in maintaining the Jordanian environment in full collaboration with all the partners and the active entities in the environmental sector and in other cross-cutting sectors.

The Ministry of Environment's strategy (2020-2022) has been developed in a time when Jordan is witnessing various interior and exterior changes and challenges, especially the COVID-19 pandemic. This effort has also been conducted in response to the instructions of His Majesty King Abdullah II bin Al-Hussein in prioritizing the environment and granting it special care to ensure the development of the legislative frameworks; providing specialized skilled personnel and activating partnerships to protect the environment.

The Ministry’s vision is to be “a pioneering ministry in preserving environmental components toward sustainable development”.

Its mandate is that the Ministry is the competent authority in the protection of the environment in the Kingdom. Official and civil entities shall implement the legislations, instructions and decisions issued by the Ministry.

**Strategic Objectives**

1. Protect and sustainably use ecosystem services.
2. Prevention of pollution and to address its adverse impacts.
3. Address climate change.
4. Transition towards a Green Economy.
5. Disseminate environmental culture and promote sound environmental behavior.
6. Develop institutional performance and promote a culture of excellence, innovation and gender mainstreaming.

**Challenges**

- The increase in pollution levels due to the incremental growth in various sectors such as the transportation sector, the energy sector and the industrial sector; and the lack of commitment towards environmental standards.
- The degradation of ecosystems and the increasing desertification due to urbanization at the expense of farmlands, and violating forest lands and reserves. Finally, the absence of water resource management systems.
- The weak level of environmental awareness and environmental education within the local communities and the economic sectors.

**Main Projects**

- Rehabilitation of Ecosystems in the Badia 2011-2020, which aims to rehabilitate pastures, water resources and wildlife in the Badia, which was damaged by the Gulf War in 1990/91 because of the overgrazing resulting from the resorting of a large number of refugees with their sheep to the Jordanian desert.
- Improvement of Green Infrastructure in Jordan through Labor-Intensive Measures (cash for work) (2017-2022) through jobs, the upgrading and further development of a Green infrastructure.
- Improving Living Conditions in Poverty-Stricken Areas of Amman (2017 -2021) which aims for participatory design of Green Infrastructure in Amman.
- Reduction and elimination of POPs, which aims to reduce and eliminate pops and other chemical releases through implementation of environmentally sound management of E-waste and medical waste.
- Supporting Effective Governance for NDC Review and Implementation, NDC (2018-2020) which aims to contribute to achieving the NDC mitigation targets and low-emission development.
- National forestry project (2020-2030).
- Increase readiness to facilitate financing for climate change and green growth projects.
- Introduce an electronic tracking system for wastewater transport vehicles, engine oils and hazardous waste.

**Environment and Climate Change and transition towards a green economy**

Jordan is affected more intensely by this phenomenon rather than contributing to it, as is the case in many developing countries. The negative effects of global warming on Jordan include an increase in temperature; expansion in areas affected by drought; loss of some natural ecosystems; migration and habitat degradation; deforestation; a rise in the incidences of forest fires; fluctuation of rainfall; recurring heat waves; a decrease in the amount of water available (groundwater and surface) as a result of the decline in water flows, which in turn impacts food security.

Jordan’s greenhouse gas emissions total approximately 28.7 million tons per year, or 0.06% of global emissions. The annual amount of CO2 emissions per capita amounted to approximately 4.41 tons at the end of 2016 and this figure is expected to rise to 5.59 tons by 2030.

In 2016, Jordan submitted its Nationally Determined Contributions (NDCs) to the United Nations Framework Convention on Climate Change (UNFCCC) secretariat. The NDC document stipulates a reduction of emissions of 14% by 2030, of which 1.5% are unconditional contributions to the availability of funding at a cost of USD 0.5 billion, while 12.5% are contingent upon the availability of funding totaling USD 5.2 billion. To accelerate the implementation of its NDC, the Government of Jordan (GoJ) unveiled its NDC Action Plan in April 2019.

Jordan has been taking solid action to support green growth transformation. In 2017, the Cabinet approved the National Green Growth Plan, which established green growth as a top national priority. Jordan’s green growth vision – economic growth which is environmentally sustainable and socially inclusive – puts a strong emphasis on the importance of building resilience. This is needed for Jordan’s economy to be able to absorb external shocks such as the negative consequences of COVID-19, and the ability to restore itself and continue growing.

The Green Growth National Action Plan 2021-2025 has been launched recently for the main six sectors (energy, waste, water, transport, agriculture and tourism). The development of this plan lies at the heart of the continuous efforts and ambitions to support environmental and climate action in Jordan, while also achieving sustainable economic growth objectives and the green recovery of COVID-19 pandemic.
The Jordan Environment Fund (JEF)

The Jordan Environment Fund (JEF), was established in 2009 under the provisions of the Environment Protection Law of the Ministry of Environment, with a mandate to help Jordan advance its national goals for environmental protection and sustainable development. JEF is governed by its own bylaw (No. 18 for the year 2018) through its Board of Directors, which comprises of representatives from the public and private sector. The Fund’s mandate includes:

a. Support activities that contribute to environmental protection and conservation, and development of environmentally friendly practices.

b. Initiatives that promote resource efficiency, to contribute to sustainable development.

c. Contribute to raising environmental awareness, including use of cleaner production technology.

d. Focus on priority national sectors and provide support to enable fulfilment of environmental requirements.

e. Promote cooperation and knowledge transfer with national, regional and international entities with similar mandates to coordinate activities in support of environmental protection.

JEF works with beneficiaries from the public, private and NGO sectors, with the objective of achieving tangible impact on Jordan’s environment and society, including youth, women and vulnerable communities. JEF also seeks to attract climate and environmental finance to Jordan. JEF is strategically placed to serve as an implementation arm for the Ministry of Environment in delivering key environmental strategies and plans, including:

- Sustainable Development Goals (SDGs), (in particular environmental SDGs 4, 6, 7, 9, 11, 12, 13,14,15 and 17).
- RIO Conventions, among other key environmental conventions and agreements.
- Nationally Determined Contributions under the Paris Agreement (both Climate Change Adaptation and Mitigation sectors) and related action plans (e.g. NDC Action Plan, National Adaptation Plan).
- The National Green Growth Plan (including the six priority sectors of waste, energy, water, transport, tourism, agriculture).
- Sustainable Consumption and Production Action Plan.

Selected Achievements

JEF has supported a number of projects to date on a grant-financing basis, in diverse sectors and locations across Jordan, including:

- Deployment of drone technology to enable the Rangers (environmental police) to better monitor and address forest violations, as well as respond to fire hazards.
- Installation of GPS tracking systems on hazardous wastewater transportation tankers in order to track violators and take corrective measures.
- Awareness projects on waste management and recycling in cooperation with local NGOs and local organizations (including the Children’s Museum, Jordan Environment Society, Mafrak Association, and South Association in Maan).
- Annual, nation-wide anti-littering awareness campaigns (including distribution of 1000 bins in forests across the Kingdom, school plays, videos, dedicated Facebook page, social media messages…etc.).
- Tree-planting, and sustainable forest rehabilitation schemes in cooperation with key stakeholders (public, private and NGOs).
- Development of the first interactive gaming app to raise awareness of youth (ages 6-15) about waste reduction and recycling (EcoChamp).
- Supporting the publication of Jordan’s ‘Red List’ volumes in collaboration with the Royal Botanic Garden which detail Jordan’s endangered plant species.
- Translation of the first course on climate change to the Arabic language, available online through UNITAR, in collaboration with EDAMA.
EDAMA Association for Energy, Water & Environment

EDAMA in Arabic means sustainability. EDAMA Association is a Jordanian NGO established in 2009 in response to Jordan’s energy, environment, and water security needs. As a Business Association, EDAMA cultivates an environment where innovative solutions for energy and water independence and environmental conservation emerge.

Advancing Jordan’s movement towards a green economy and sustainable development is an ambitious and priority goal. To be achieved, robust knowledge hubs, multi-stakeholder dialogue avenues, and private sector mobilization are required. EDAMA’s niche is in providing a platform agile and inclusive enough to involve many public, private, NGO, research and innovation sector representatives. These key players together discuss and shape the future development of the energy, water and environment (EWE) sectors in Jordan.

The four main pillars of the association’s work:
• Advocacy and research
• Business development
• Education and capacity development
• Communication and networking

EDAMA - A Diverse and Unique Community:
EDAMA’s membership base is unique in its diversified services and sectors. It includes energy service providers, consulting firms, banks, telecoms and industrial companies. As members come from across the EWE sectors’ value chain, EDAMA can leverage its expertise to make a difference at the service provider and end consumer levels alike. To join EDAMA’s community, contact EDAMA at members@edama.jo

EDAMA hosts the only power breakfast networking events of the sector, bringing together the most important key players to discuss topics-of-the-hour and the most recent updates. The association facilitates access to a network of key figures and organizations in Jordan and around the world. It promotes significant discussions with top experts of the sector. Previous power breakfast events have tackled such issues as financing energy, technical solutions, urban planning and many others.

EDAMA’s Capacity Building department aims to bridge the skills and competencies gap in the energy, waste and environment sectors by providing the highest quality of capacity building and development programs offered to members and non-members. EDAMA’s mission is to host and provide quality educational courses and professional development opportunities relating to the energy, water, and environment (EWE) sectors in Jordan. For more info on the courses and activities provided by EDAMA, you can contact EDAMA at training@edama.jo

EDAMA Members:
• AES
• Abour Energy
• Adenium Energy Capital
• Airport Group
• Al Husainiyah Power Generation
• Al Jidara
• Al Kawared Brokerage
• AlCazar Energy
• Ali Sharif Zu’bi Advocates and Legal Consultants
• Alrai Renewable Energy
• Amman Asia Electric Power Company
• Aqaba Bulk Chemicals Co.
• Arab Bank PLC
• Arab Potash Co PLC
• Arabtech Jardaneh - Water and Environment
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• Attaratt power Co. / Enefit
• Atwan & Partners Attorneys and Legal Consultants
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• Bank of Jordan
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• City of Lights (E-RES)
• Clean Energy Concepts
• Consolidated Contractors Co
• E2E Integrated solution
• Eco Engineering and Energy Solutions
• EcoConsult
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• Fine Hygienic Holding
• Firas Balasmeh Corporation for Control Systems
• Fujieh Wind Power Company
• Housing Bank Trade and Finance
• HT-SOLAR-HT-SAAE
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• Jordan Bromine
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• Near East Group
• Orange - Jordan Telecommunication Company
• PanMed Energy
• Philadelphia Solar
• Price Water House cooper (PWC)
• Saed Karajah & Partners LLP
• Samra power Supply Co.
• Sanad Law Group in Association with Eversheds
• Scatec Solar
• Second Energy
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• Shamsuna Power Co.
• Spectrum International Investment
• T. Gargour Holding
• Tamkeen Leasing Co.
• Total Jordan
• TUV Austria
• Umniah Telecom
• United Pioneering Business
• VREEE
• Wattha Investment
• Wiosun for Renewable Energy
• Yellow Door Energy Limited - Jordan
• Zain Telecom - Jordan Mobile Telephone Services
About Jordan’s Clean Energy Sector

Jordan’s clean energy sector is witnessing “great momentum” and has attracted world-renowned companies with decades of experience to invest in projects in the Kingdom. Jordan ranks second in the region for creating a favorable environment for renewable energy and energy efficiency investments according to AFEX report, surpassed only by Morocco in renewables and a thriving Tunisia in energy efficiency. The main accomplishments of Jordan include the implementation of a subsidy removal plan, eliminating all subsidies for oil products; the adoption of the country’s first National Energy Efficiency Action Plan (NEEAP); the tendering and implementation of large scale Renewable Energy projects, the implementation of net-metering and wheeling schemes, and the formulation of minimum energy performance standards for household appliances.

There are four tracks for renewable projects in Jordan. The first one is the Direct Proposal Schemes carried out under rounds of competitive bidding through MEMR. The second is the Competitive Bidding Process, the third is the EPC Turn-Key projects, and the last is Small-Scale Renewable Energy Schemes (net metering and wheeling).

Jordan is placing heavy emphasis on solar and wind power projects. About 2,400MW Megawatts of wind and solar projects are expected to be developed in Jordan until 2021; 732MW Megawatts are currently operational already weighing 7% of the overall energy consumed in the country. In addition to the project development opportunities announced by the Government of Jordan for centralized power generation, a huge window of opportunity to generate distributed electricity for individual, commercial or industrial use exists under the net-metering and/or the wheeling schemes. Jordan leads the MENA region in net-metering and wheeling.

Jordan is progressing remarkably on sector enablers such as clean energy financing, training and certification as well as licensing and accreditation of service providers. The global, regional and local energy sector development carries tremendous opportunities for the private sector to innovate and grow. Understanding the diverse energy demand and consumption within various economic sectors opens the door for new and customized solutions. Eco-cities, energy storage, smart grids, green infrastructure, smart transportation, hybrid systems and green buildings are only a few of many untapped opportunities.

On another end, understanding the impact of energy on other significant sectors such as water, industry, tourism, agriculture, as well as its contribution to CO2 reduction holds huge potential for energy efficiency and renewable energy applications and for attracting additional financing for energy projects. Thus, companies would need to expand their research and development activities to come up with innovative and localized solutions for the increasing energy demand.

It would not be possible for the country to achieve its clean energy objectives, and thus more energy security, without developing a cluster of energy services companies that has the credibility and the ability to implement clean energy projects. Achieving this would require a market-based voluntary accreditation system that would boost the sector’s capabilities and quality of services. EDAMA Association is proud to be a founding member of the Coalition of Energy Service Associations (CESA), which is leading the development and implementation of the first private-sector driven voluntary accreditation framework that enables energy service providers to improve their performance and increase their competitiveness in a fast-growing market.

For more on Jordan’s clean technology sector development efforts, request a copy of EDAMA’s first Clean Tech sector report. Please contact EDAMA on info@edama.jo

Arab Renewable Energy Commission - AREC

AREC is the commission representing all stakeholders involved in Renewable Energy in the Arab World. It operates under the council of the Arab Economic Unit of the League of Arab States, as a non-profit organization founded in 2011 in Amman (Jordan) and recognized by Royal Decree. AREC is chaired by His Excellency Mr. Aziz Rabah, Minister of Environment and Sustainable Development of Morocco and it consists of 16 Arab countries as founders.

Arab countries are facing many challenges in adopting Renewable Energy (RE) and Energy Efficiency (EE) in their energy policies. Low awareness from the consumer side is also impeding civil society drivers to move faster to greener sources. Therefore, despite the energy map target of 10%-20% of the total energy demand from RE by 2020, the potential and benefits of RE are still not well recognized.

The Arab Renewable Energy Commission (AREC) intends to work towards facilitating and promoting the culture of RE and EE to support the development and use of RE in all aspects of life.

AREC mission:

To encourage the use of clean renewable energy in the Arab World by disseminating awareness and motivating investments due to its positive revenue on all Arab countries. AREC aims to promote meaningful ways for expanding the use of alternative energy sources rather than the use of non-renewable, and therefore it encourages activities and investments to develop the use of alternative sources, including conferences in all Arab areas aiming at bringing together the largest number of Arab States and their companies.

AREC activities:

1. Advise on renewable energy and various projects.
2. Training programs in the areas of green energy.
3. Establishment of a network with foreign companies and institutes working in the field of renewable energy.
4. The establishment of conferences, symposia and workshops in different regions.
5. Multilateral assistance in attracting investment to the region, in order to develop and expand the use of renewable energy.

AREC recurrent activities:

• Arab Renewable Energy Week.
• Arab Renewable Energy Forum.
• Green Generation and Green School Awards.

For more information, contact Eng. Mohammed Al Taani, General Secretary, at email address mntaani@gmail.com or phone number +962-7-77418782.
On February 21, 2019, REES held the “Renewable Energy in Jordan: Present and Future” forum. The forum was under the patronage of her Excellency the Minister of MEMR. It addressed the two main issues of energy burden on the national economy and the future of energy services companies in the ever-evolving energy market. The forum issued a list of recommendations, aiming at improving the state of renewable energy and energy efficiency services in the Kingdom. These recommendations were discussed at the highest ranks of the government and by chambers of industry and commerce. The REES forum for the year 2020 was planned on March 26 but was put on hold because of the COVID-19 pandemic.

In early 2020, REES started the establishment of an “Association of Energy Engineers (AEE)” energy chapter. The new AEE energy chapter held several workshops in the field of renewable energy and energy efficiency since the beginning of the year. The plan for the chapter is to offer the assortment of popular training courses usually conducted by AEE such as CEM®, CRM®, REP®, CEA®, EEP® and others.

REES Members:
- Al Manhal Renewable Energy.
- Almasa Switchgear System.
- Al Taeyseer for Trade and Industrial Inv. Ltd.
- Arab Technical Group (ATG).
- Arab Towers Contracting Company (ATCCO).
- Arbee-Electric for Engineering Industries.
- Arslan Engineering Systems (AES).
- Atlantis Solar Middle East Co.LTD.
- Attaqa Ashameleh for Electric Equipment Co.
- Bayt Alebdaa for Renewable Energy.
- Bensyan Engineering Technology Co.
- Billeh Electrical Mat.Co-Bemco
- Eco Engineering and Energy Solutions (ECOSOL).
- Edama Solar.
- Electric Technology Experts (Eletech).
- Engineering Almasar Company (EMC).
- Eta-Max Energy and Environmental Solutions.
- Gamma Energy &Technology L.L.C.
- Gazania Solar Systems.
- Generators for Solar Energy.
- IDHAL for Solar Energy Solutions Est.
- Izzat Mariji Group (IMG).
- Jet Contracting.
- JUSOOR for Renewable Energy.
- kingdom for Engineering Tech.
- Madhoun Electronics and Trade.
- Mazen Dajani &Co.
- Merouen Green Solutions Co.
- Meteor Solar.
- Middle East Solar Stores.
- Mustakbal clean tech.
- Sima Industries for Renewable Energy W.I.I
- Spitak Trading Company.
- The Contractor for Energy.
- Tracking Solar Systems.
- Wiosun for Renewable Energy Ltd.

For more information, you can contact REES at 079-9417272 or at CEO@REES-JO.com.

The Jordan Environmental Union

The Jordan Environmental Union, or JEU, is a coalition of 10 of Jordan’s largest and longest running environmental NGOs who specialize in issues ranging from managing Jordan’s nature reservations, promoting food sovereignty and alternative transportation methods in Jordan’s municipalities, towns and villages to combating desertification.

JEU Mission and Vision

Environmental citizenship is a key tool to achieve societal development good governance. JEU’s vision is to become a leading advocate for environmental sustainability that can be a conduit for economic and social development, as well as stakeholder engagement and transparent dialogue. Its mission is to create resourceful coordination and cooperation mechanisms among member NGOs to achieve effective engagement and participation in solving national environmental challenges and issues. JEU members are building their current capabilities in science-based research of environmental issues facing Jordan. In order to, promote environmental sustainability policies, JEU believes that science backed research is key to fostering meaningful dialogue and change.

JEU Values and Goals:

JEU believes in advocating for change and building alliances and networks of understanding between decision-making bodies, regulatory institutions, fellow NGOs and public entities. Its goals include:
- Creating new environmental governance mechanisms and improving existing environmental governance processes in a manner that ensures the institutionalization of stakeholder involvement in environmental decision-making processes.
- Developing a legal mechanism that permits third sector organizations to have a public input on proposed laws, regulations, and rules pertaining to environmental matters, as well as mandating government agencies to respond publicly to all input from all sources.
- Acting to protect the environmental rights of all people in Jordan, including the protection of land, water, and air and safeguarding the ecosystems and their life support services.
- Establishing the legitimacy and credibility of environmental NGOs.

JEU Strategic Direction

In order to achieve its goals and the overarching mission of effective stakeholder engagement and citizenship, JEU focuses on the following strategies:
- Building networks and alliances with NGOs to build capabilities, and formulate environmental development strategies that can be used for policy formulation.
-Forging partnerships with national and international public and private entities to promote local development projects.
- Legislation, regulation, and litigation measures backed by scientific research.

JEU Members:

Board Members (2019-2022): Omar Al Shoshan (MIRRA), Omar Tahboub (JGBC), Raouf Dabbas (JoFoE), Ismail Atay (ECESS), Mohammad Al Awaidah (DECS).
The building and construction sector is responsible for 39% of all carbon emissions worldwide, with operational emissions (from energy used to heat, cool and light buildings) accounting for 28%. The remaining 11% comes from embodied carbon emissions that are associated with materials and construction processes throughout the whole building lifecycle. With the Jordanian population growing 87% by over a decade, and the capital’s population increasing at an annual rate of approximately 2.5%, the demand for buildings is higher than ever calling for immediate and urgent action towards implementing the concept of green buildings and the green built environment.

Amidst the increase of urban areas, negative impacts must be reduced or eliminated by the building’s design, construction or operation, and to create positive impacts on the climate and natural environment in addition to preserving precious natural resources and improving people’s quality of life. To address such issues, the Jordan Green Building Council (Jordan GBC), a non-profit and non-governmental organization and member-based association, took on its shoulders the responsibility of promoting awareness and advocating for the adoption of Green Building Practices and Green Built Environment actions. With the asset of being part of a global network of 73 Green Building Councils, under the umbrella of the World GBC, the councils aim together to transform the built environment towards sustainability and to reach 40% less carbon emissions by 2030, and its elimination by 2050. In addition to the natural resource preservation and the creation of co-benefits including improved health and wellbeing, a strong and fair society, and a prosperous economy by championing local and global leadership and empowering communities to drive change.

The Jordan GBC drives such change by providing internationally certified training programs, and generating sustainable project and business opportunities for its members to be a part of. Furthermore, the Jordan GBC provides a powerful, collaborative platform of active members and partners on a local, regional and international level; who share interests and encounter similar challenges and opportunities in the green buildings sector. This platform enables networking opportunities, maximizes business, exchanges knowledge, and generates new ideas to achieve results faster and more effectively, allowing members to be at the frontline across all segments of the building sector, for a green and sustainable industry and economy.

Vision: A healthy, sustainable and resource efficient environment that is affordable and available to all individuals and local communities.

Mission: To increase and spread awareness about the green built environment, by encouraging the adoption of green concepts and practices through planning, designing and developing the green built environment in Jordan.

Values: To recognize healthy and sustainable environment as a human right because of its positive impact on human life and effective improvements in society, culture and economy.

Corporate Members

- Platinum Members:
  - Arab Technical Group Co
  - BDO Jordan
  - Capital Bank of Jordan
  - Dar Al-Handashah Consultants
  - Jordan Commercial Bank
  - Majid Al Futtaim Holding
  - The Housing Bank for Trade and Finance

- Gold Members:
  - Al Bouca’i’s Engineering and Consulting Bureau
  - Al Sa’adah College Schools
  - Consolidated Consultants Engineering and Environment
  - Laswi and Zalloum Law firm
  - Shu’aa Energy

- Silver Members:
  - Abolin Co.
  - Abu Assi Cont. Est.
  - Arab Center for Engineering Studies (ACES)
  - Adaa Sustainable Development Consultants
  - AJB High Tech Ltd.
  - Al Maida Industrial
  - Al-Ridwan Schools
  - Al- Saraya for Housing Projects and Investments
  - Amtar Eng. Co.
  - Arab Italian Waterproofing and Insulation Industries Co.
  - Arab Technical Construction Co.
  - Aramex International
  - Assarai Engineering Firm
  - AWJ Water Engineering Co.
  - Babel Contracting Company
  - Building Doctor DMCC
  - Cambridge Engineering
  - Consolidated Contractors Company Limited Jordan
  - Creator for Certifications Services (TUV)
  - CWET
  - DON CONSTRUCTION PRODUCTS (DCP)
  - E2E
  - Eco Engineering and Energy Solutions (ECO SOL)
  - Eco Structures International
  - Energy International
  - Eng. Fathi Faraj Allah for Building and Contracting
  - ETA-Max Energy and Environmental Solutions

- Eyalf Industrial ltd.-Ata Rabah
- Faris & Faris Architects
- Faris Bagaaen Architects, Engineers, Consultants
- Hanania Solar Systems
- Hand Over
- Hassan Abu Assi
- Holy Rock Engineering Office-Consultant Engineers
- Horizons for Green Development
- Inside Out Design
- Islamic Cultural Society
- Ittihad Insulating Glass Company
- Izzat Marji Group
- JOECO LLC
- Jordan Land Magazine
- Jordan Sipes Paints Co.
- M.A. Abu-Eisheh & Bros Contracting Co.
- MAP Architects & Engineers
- Marsa Architects and Engineers
- MINERVA for Engineering Studies and Consulting Ltd
- Moka’aab Construction Company
- Mostaqbal Engineering and Environmental Consultants
- Najjar Industrial Trading Company
- Northern Cement Co.
- Petra Engineering Industrial Co.
- Pivot Jordan for Renewable Energy
- Prefabricated Buildings Co.
- Qatrina Cement Company
- Quantum Jordan
- Ruq‘ Al Handasa
- Sabee Al Handasah Consultant Engineers
- Sada Business Solutions
- SatchNet
- SEEDS Platform Co.
- Specialty Hospital
- Sterling BIM
- The Jubilee Institute
- The Royal Society for the Conservation of Nature
The Friedrich-Ebert-Stiftung (FES) Climate and Energy Project in Jordan brings together government representatives with civil society organizations and provides policy recommendations based on research. Battling against climate change and promoting a socially just energy transition are at the core of this Amman-based project. With its partner organizations and environmental activists, FES promotes the concept of climate justice. FES trains its partners, civil society organisations, in climate diplomacy and takes them to climate summits and world climate negotiations. FES supports research and policy advising in the energy and climate change sector and works on local solutions for adaptation and energy efficiency on the ground. FES is striving to enable the attainment of climate justice, by preparation, inclusion and cooperation in the region.

In Jordan, FES advocates for an energy transition into renewable energy, challenging the fossil fuel driven economies of many of the MENA countries and encouraging the exploration of the enormous economic potential of solar and wind energy with a daily average of nine hours of sun. Not only businesses and investors should benefit from the energy transition, but also citizens, households and municipalities. Thus, FES searches solutions for a just transition in the energy sector ensuring both, the protection of the planet and the people.

Examples of partners in Jordan are the Jordan Green Building Council, EDAMA, JREEF, CSBE, the Royal Scientific Society (RSS) and the Ministries of Energy and Environment, among others. In cooperation with EDAMA, FES is giving inputs for the discussion around the Jordanian energy strategy and lobby for decentralized solar power. Decentralized solar power combines energy transition with social justice, reducing poverty and the democratization of the energy sector. In its work towards 100 percent renewable energy in Jordan, FES explores new renewable sources such as the biomass in project with RSS.

Friedrich-Ebert-Stiftung (FES) is the oldest political foundation in Germany with a rich tradition in social democracy dating back to its founding in 1925. The FES office in Amman was established in 1986, while the project on Energy and Climate in Jordan was introduced in 2013. FES shares the core values of social democracy – freedom, justice and solidarity. As a non-profit institution, FES organizes its work autonomously and independently.

Check out the FES website for more information and publications: https://www.fes-jordan.org/topics/climate-energy/
Al-Manhal Renewable Energy Company

Facts
Establishment Year: 2014  
Number of Staff: 30

Services
• Solar System Design  
• Solar System Simulation  
• Solar System Consultant  
• Solar System Implementation  
• UPS Systems  
• UPS Monitoring Systems  
• Diesel Generators  
• Data Center Services  
• Micro Data Center Services

Clients
Armed Forces, Governmental,  
Banks, Telecommunications,  
Hospitals, Private sectors.

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Al-Manhal Renewable Energy Company (MRE) has been a division of Al-Manhal Data Protection and Support (MDPS-1990) with over 27 years of experience. In 2014, MRE became an independent company.

MRE specializes in renewable energy systems, such as solar on-grid, solar off-grid, wind turbines and biogas systems.

MRE is fully equipped to meet all customer requirements and provides integrated services that will facilitate a qualitative leap into the field of energy. MRE is privileged to have an exceptional staff who are experts in their fields.

MRE is proud of being a leading Jordanian company that provides energy solutions specializing in the supply and installation of electrical protection systems (e.g. UPS and Generators), power-outage blocker devices and renewable energy systems.

The team at MRE is dedicated to achieving one goal which is the protection of data and equipment from critical energy problems for both organizations and for individuals. The task is to offer the best-quality solutions, services and products to all.

MRE’s market primarily consists of power protection consumers. It is made up of people who are not only looking for communication and network equipment protection, but also crucial information about power supply interruption.

Recently, MRE has endeavored to provide renewable energy systems to customers who are looking for eco-friendly solutions.

MRE strives to resolve the most critical issues facing its clients. This means understanding customer needs in each type of business served, and providing effective solutions in a timely manner with reliable, high-performance security products.

Al-Manhal Renewable Energy’s aim is to provide data and equipment protection to all customers in all sectors who are looking for more control over their businesses. This much-needed security is particularly aimed at company managers and other decision-makers.

Omar M.T. Zeitoun  
CEO  

Ahmad AlHyari  
General Manager  

Selected Projects

Key Staff

Sister Company

Partners
Developers & EPC Contractors

Associated Transtech Contracting (ASTRACO)

Facts
Establishment Year: 1986
Number of Staff: 260

Selected Project
- Taj Mall & Safeway 8.01 MW PV Plant
- Carrefour Project 1.8 MW PV Plant
- Jordan Hospital Project 1.8 MW PV Plant
- JABRI 1.2 MW PV Plant
- Decommissioning And Reclamation Project (Josco)
- OHL 50 MW PV Plant
- Amman Strategic Reserve Terminal for Petroleum Products (ASTPP)
- SunEdison (20.5 MW) PV Plant
- Operation and Maintenance Works for SunEdison (20.5 MW) PV Plant
- Al-Abayt University (3.3 MW PV Plant)
- Queen Alia International Airport Phases I & II & III
- Shams Ma’an (52.5 MW) PV Plant
- SAMRA PHASE III ADD ON PV Plant
- Jordan IPP I Power project (140 MW)
- Jordan IPP3 Power Project (580 MW)
- Amman Simple Cycle Power Plant - Phase III (280 MW)
- Amman East Power Plant IPP I (380 MW)
- Rehab Combined Cycle Power Plant (300 MW)
- AYLA Sea Water Replenishment (O&M Services)
- JABRI Jordan Hospital PV Plants (O&M Services)

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ASTRACO was founded in 1986 as an Electro-Mechanical and Instrumentation works contractor for the Jordan market and expanded in the MENA region. The scope of activities cover Industrial, Power Generation, Infrastructure, specialized building services and Renewable Energy projects. Its extensive growth and development in many sectors has led to a high level of experience, competence and efficiency resulting in an impressive number of successes.

ASTRACO employs more than thirty engineers of various specialties and maintains a core of more than four hundred highly qualified supervisors and technicians.

The company has grown to become one of the foremost engineering and contracting firms in Jordan. ASTRACO yearly turnover is around USD 20 million.

One of the unique features of ASTRACO is its ERP projects planning and scheduling methodology which is fully integrated with the company resources management and financial systems.

ASTRACO maintains a strong Quality Control department and assigns a QA/QC manager for each project. ASTRACO has ISO9001 certification and exercises strict quality control procedures governed by continuous internal audits.

The company recognizes that high standards of Health, Safety and Welfare are an integral element of efficient business management objectives and contribute to the operational efficiency and profitability of the company.

ASTRACO’S management considers HSE as an undertaking and responsibility which is of equal importance to production and quality. It has therefore secured ISO 14001:2005 and ISO 45001:2018 Certificates. Employees of ASTRACO have a duty of care to themselves and others by avoiding hazards, preventing accidents and co-operating with the company by complying with all instructions and recommendations on health and safety.

ASTRACO has maintained excellent relationships with international “EPC” contractors including Technip–France, Doosan Heavy Industrials and Construction Co. (South Korea), Hanwha Engineering and Construction Co. (South Korea), SNC Lavalin (Canada), JBP Overseas Ltd., Lotte Engineering, JBP Construction Company, OHL Industrial–Spain and METKA (Greece), ASTRACO has a very high standing with local and International Developers and Investors including SunEdison (USA), Nuqul Group–Jordan, AES (USA), ZARA Holding (Jordan), Central Electricity Generating Co. (Jordan), Samra Electric Power Generation Company, First Solar–USA, ALCAZAR Energy (UAE).

ASTRACO has developed a fabrication workshop covering on area of (1000 m2) and an open yard (8,000 m2) equipped with necessary equipment for fabrication of tanks, stacks, silos, piping spools, platforms and supports ...etc.

ASTRACO maintains a quality system at its workshop to ensure that the items fabricated meet clients’ requirements. A dedicated Quality Engineer and Inspectors are available during all stages of fabrication to fulfil these requirements.

ASTRACO has associate and sister companies which are Twilight Light Metal Industries, ASTGULF and Clean Energy Concepts.

Twilight Light Metal Industries is wholly owned by ASTRACO and provides valuable support for the company projects. The company specializes in the manufacturing and fabrication of engineered products.

ASTGULF was established in Jordan to offer complete EPC services in Chemical, Chemical & Petrochemical as well as Heavy Industry Projects and expanded in the neighboring countries.

Clean Energy Concepts (CEC) was established in 2009. This company is a developer for renewable energy projects and operates in Jordan and the MENA region. CEC was one of the successful developers to sign a Power Purchase agreement for a 10MW PV solar plant with Jordan’s National Electric Power Co. (NEPCO), which has been put into operation. ASTRACO is a major shareholder in this company.

Selected Projects
- Shams Ma’an 50 MW Solar PV Plant
- Samra Phase III Add on (50 MW)
- OHL 50 MW PV Plant
- Jordan IPP I Power project (580 MW)
- Al Albayt University Solar PV Plant (3.3 MW)

Certifications & Awards

Associate & Sister companies

Key Staff
Eng. Samir Kattan
Managing Director

Sameeh Daas
CFO

Eng. Amer Kattan
Renevable Energy Manager

Eng. Baider Owais
QA/QC Manager

Eng. Adel Hassan
Project Manager
Bayt Al-Ebda’a is a renewable energy company committed to making a difference in the fight for the environment. The company aims to achieve this by directly sourcing the best quality renewable energy solutions.

Bayt Al-Ebda’a only purchases proven and tested quality components from reputable suppliers; providing customers with the tools to join the fight for the environment by reducing their carbon footprint and achieving totally sustainable solar power.

Bayt Al-Ebda’a is a local leader in the solar energy market in the Kingdom and has served up to 200 clients. The company offers a full-service portfolio for solar projects of all scales that includes technical consulting, and installation and maintenance service.

The goals of Bayt Al-Ebda’a are to meet its client’s objectives by leveraging quality, performance, price competitiveness and history. These constitute the company’s strength and commitment to warranty.

Bayt Al-Ebda’a achieves excellence in operations. It’s mission is to provide its customers with eco-friendly and cost effective solutions, while constantly developing its capabilities in the field of renewable energy, focusing on the main goal of being number one in the field, embracing ethical values and honest working principles, creating and implementing plans for the future.

It’s vision is innovation and development. Bayt Al-Ebda’a believes that the planet is the legacy of mankind, and there’s only one. The extensive use of fossil fuel energy has caused irreversible damage. The more humans wait, the worse it will get. Bayt Al-Ebda’a belief in the sustainability of renewable energy, as a clean source, is the reason why it is fully committed to contribute to innovation and growth in renewable energy across the globe.

The values of Bayt Al-Ebda’a as a pioneer of new technologies are Quality, Safety, Responsibility, Humanity and Excellence.

Bayt Al-Ebda’a is committed to providing the best service for its clients. The team of expert engineers and technical professionals works on your project stage-by-stage. Most importantly, Bayt Al-Ebda’a understands that each of its clients’ projects is unique. So, to deliver on the promise of uncompromising service, Bayt Al-Ebda’a follows a special strategy for each client to suit the specifics of each project.

Bayt Al-Ebda’a is distinguished by a strong management team, commanding extensive solar experience. The core team comprises dynamic individuals with passion and dedication who are instrumental in developing the status and profile of the company as a local leader in the kingdom. The company’s continued success depends on every employee, from back-end to the front office. Due to their relentless pursuit of excellence and commitment to high standards, the Bayt Al-Ebda’a team has helped translate the company’s goals into substantial accomplishments over the years. Every member of the team believes strongly in the vision and core values of the company.

Bayt Al-Ebda’a aims is to be dedicated to providing adequately sized, professionally designed and installed photovoltaic electric systems to its clients.
ETA-max Energy & Environmental Solutions

Facts

Establishment Year: 2011
Number of Staff: 40
Total Installed Capacity: 35 MW

Services

• Engineering
• Procurement
• Construction
• Operation & Maintenance
• Energy Auditing
• Energy Management (ISO: 50001)
• Training

Projects

• University of Jordan (UoJ) – 13.6 MWp
• Jordanian Ice Soda & Pepsi Co. (JICE) – 1.8 MWp
• Fresh Fruits – 1.7 MWp
• Razi – 1 MWp
• Cowater – 1 MWp
• Royal Academy of Culinary Arts – 255 kWp
• 400+ Residential, Commercial, Government & Industrial Projects

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ETA-max Energy & Environmental Solutions was established in 2011 with a vision to transform the society towards a more efficient, sustainable, and environment-friendly life style.

ETA-max is a regional leader in the development of turn-key solar photovoltaic systems which provide safe, reliable, maintenance-free and environment-friendly sources of power with a typical life cycle of 25 years.

Since establishment, ETA-max has worked hard to earn the trust of the local market and has been able to provide its services to an impressive and diverse list of clients.

With more than 35 MW of installed capacity, and another 7 MW under construction, ETA-max is among the top tier renewable energy EPCs in Jordan.

Today, after nine interesting years of hard work and dedication, ETA-max is in the right position to offer its hard-gained experience to contribute to the development of emerging solar markets in the region.

In addition to its core business model as an EPC for solar PV systems, ETA-max has a well-established reputation in providing energy auditing and energy management solutions; and in designing and conducting tailored capacity building programs in energy management and renewable energy.

The company has a successful track record in this regard with clients in the Kingdom of Saudi Arabia, United Arab Emirates, Kuwait, Oman and in Jordan.

ETA-max brings its experience, expertise, creativity and commitment not only to achieve its clients’ goals, but to exceed their expectations through self-set standards of professional services.

ETA-max always aims at and sustains genuine partnerships with its clients, associates and colleagues to open the door for expanded opportunities for better services and continuous development.

ETA-max in Numbers

+A300 PV Projects

+A60 Auditing Projects Implemented

+A600 Engineers Trained

Awards

2016 Best Innovative Energy Project ME Region

Accredited for PV Projects 0 - 125 kWp
Accredited for PV Projects 200 kWp – 2.5 MWp

Selected Projects

Abu Eid & Partners Co. (559 kWp) - Water Well
Nurridar (715 kWp)
Almas for Bottled Water (544 kWp)
Social Security Corporation - Amman (151 kWp)
Nutridar (715 kWp)
Al Riyadh Invest. Companies Group (926 kWp)

Certificates

• 7 Certified Energy Managers (CEM)
• 3 Certified Energy Auditors (CEA)
• 3 Energy Efficiency Practitioners (EEP)
• 3 Renewable Energy Professionals (REP)
• 1 Business Energy Professional (BEP)
• 1 Certified Measurement & Verification Professional (CMVP)
• 1 Certified Carbon Reduction Manager (CRM)
• 1 LEED Green Associate

Key Staff

Prof. Mohammad Dado
CEO

Eng. Rabee Sawaqed
Technical Manager

Eng. Osama Al-Masri
Operations Manager

Eng. Jameel Darwesh
Sales & Design Manager
FB GROUP

Firas Balasmeh Corporation for Control Systems (FB GROUP), is a Jordanian individual corporation operating from Jordan since 2010.

FB GROUP is run by a professional team of well experienced and multi-disciplinary engineers. The company works as a system integrator that provides services for business organizations which need to find quality vendors of reliable solutions and services, as trusted allies.

Services provided are turnkey solutions, design, engineering, supplying, installation, commissioning, testing, training, and operation and maintenance.

FB GROUP has six core business lines which are Renewable Energy Solutions, Hydrometric & Environmental Solutions, Industrial Automation, Education & Training Solutions, Power & Energy Solutions, Communication & Advance Systems.

FB GROUP penetrated the Renewable Energy Sector in 2013, and now is considered one of the top five sector leaders in Jordan; capable of executing EPC, O&M as well as BOT contracts. The company’s track record is around 13 MW installed and operated iconic projects, in addition to taking part in developing IPP / PPA projects with the total capacity of 235 MW.

FB GROUP designs, develops and delivers innovative renewable energy solutions that produce an optimum system; making sure of providing quality and cost effective services to its valuable clients, not only in Jordan, as the company explores opportunities of renewable energy projects and expands its reach to the whole MENA region, especially KSA, Lebanon, Iraq, Libya and the United Arab Emirates.

The vision of FB GROUP is to successfully advance renewable energy into the Jordanian market, working with developers to make the process commercially viable for all concerned. From that belief, FB GROUP has engrossed itself with all what renewable sources have to offer for producing energy.

FB GROUP is especially focused on providing integrated network systems and services, which include providing detailed specification of proposed solutions, developing, pre-engineering, design, integration, upgrade, modifications, installations, testing and commissioning, training and operation, and maintenance.

FB GROUP designs, develops and delivers innovative renewable energy solutions that produce an optimum system; making sure of providing quality and cost effective services to its valuable clients, not only in Jordan, as the company explores opportunities of renewable energy projects and expands its

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Facts
Establishment Year: 2010
Number of Staff: 25

Services
• Pre-Engineering
• Design
• Integration
• Upgrade / Modification for Existing Systems
• Supplying, Installation, commissioning, testing
• Operation and Maintenance
• Training
• Auditing

Business Lines
• Renewable Energy Solutions.
• Hydrometric, Environmental Solutions Process & Instrumentations Solutions.
• Education & Training Solutions.

Selected Projects
- The Hashemite University (4MWp)
- German Jordanian University (2.11 MWp)
- Al Hussien Bin Talal University (3MWp)
- Civil Defense Directorate (1.077 MWp)
- Irbid Specialist Hospital (774.9KWp)

Partners
- Solar
- Schletter
- Campbell Scientific

Certificate

Key Staff
- Dr. Firas Balasmeh
  Chief Executive Officer
- Eng. Merissa Crook
  General Manager
- Eng. Areen Momani
  Administration & HR Manager
- Eng. Tasneem Rawashdeh
  Senior Architect
- Eng. Batool Ayasra
  Technical Support Engineer
HANANIA Energy

Developers & EPC Contractors

Facts

Establishment Year: 1973
Number of Staff: 102

Products

• Solar power systems using Photovoltaic Technology.
• Solar BIPV Systems.
• Solar Water Heaters.
• Solar Domestic Hot Water Systems.
• Solar Swimming pool & Jacuzzi Heating Systems.
• Solar Heating using Air Collectors.
• Solar Air-conditioning.
• Energy Efficiency Services.

Markets

Jordan, GCC, MENA.

Ideal Solar Energy Co. Ltd. / HANANIA Energy

Ideal Solar Energy Co. Ltd. is the owner of the trade name ‘HANANIA Solar Systems’ and of the trade marks ‘HANANIA’ and ‘HANANIA Energy’.

HANANIA Energy is a family owned company established in 1973 and is proud to be Jordan’s oldest, most reputable solar system manufacturer and service provider of different types of solar thermal systems and solar photovoltaic systems. With over 47 years of experience, the company continually refined and improved its products, thereby preserving its reputation as a solar energy leader and retaining its position by offering customers unsurpassed value.

Over the past years, HANANIA Energy has undertaken major solar housing projects for the public and private sectors in Jordan and abroad; in addition to numerous residential, industrial and commercial customized solar utilizations.

HANANIA Energy provides many concerns including safety, durability, reliability, installation, performance, operation and maintenance. A solar system is a long-time investment that will save you money and energy for many years. HANANIA Energy systems will provide insurance against energy price increases, help reduce dependence on foreign oil and are an investment in everyone’s future. An ultimate peace of mind warranty and the longest, most comprehensive in the industry.

The company’s products have won a number of International awards for their efficiency and durability which sets them apart and ahead of all other products on the market. HANANIA Energy strategy has always been to build up its reputation for product quality and service. The engineers, manufacturing personnel and commercial engineer designers are highly qualified individuals who are dedicated to providing the best, most advanced, solar products possible. Most of the staff have been with the company since its inception.


The company has also obtained Prestigious certification awards including ISO14001:2004, “Golden Arch of Europe”, “American Award for Quality and Efficiency Star of Leadership”, “EN ISO9001:2008 in Quality Award”, and the “Asia Golden Eagle Award for Technology”.

HANANIA Energy has a highly impressive and large list of references.

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Awards

Selected Projects

Partners & Associations

• Jordan Renewable Energy Society (JRES) - Member
• Amman Chamber of Industry - Board Member
• American Chamber of Commerce in Jordan (AMCHAM) - Member
• Small and Medium Enterprises Association - Member
• Jordan Europe Business Association - Member
• Jordan EDAMA Association - Member
• Jordan Green Building Council - Member
• Jordan Green Building Council - Member

Certificates

• JICA Kaizen Practice
• Florida Solar Energy Center (Heliocol Product Certification)
• Solar Rating & Certification Corporation (Heliocol Product Certification)
• European Test EN129756 – Solar Thermal Systems
• Royal Scientific Society of Jordan (Test Certificate)
• ISO 14001:2004
• ISO 9001:2008
• ISO 45001:2018
• ISO 50001:2018

Factories

Sahab Industrial Zone

Key Staff

George Hanania
General Manager

Eng. Imad Hanania
Assistant General Manager

Samer Hanania
Deputy General Manager

Joanna Hanania
Assistant General Manager
Izzat Marji Group (IMG)

Izzat Marji Group (IMG) is one of the top companies in Jordan providing Renewable Energy Systems and Energy Efficiency Services for Jordan and the region. Until this moment, IMG has served more than 500 electricity consumers in Jordan, Dubai and Kuwait totaling over 38 MW in its pipelines. Additionally, IMG has provided several services related to energy efficiency such as Energy Audits, Energy Modeling, Thermal Imaging, Consultancy services for green buildings (LEED, JBG) and ISO 50001 Energy Management System to optimize energy performance and cut costs, in order to increase profitability.

To achieve excellence and cement its leading position within the local and regional markets, IMG attracts, retains, and engages with the most talented human resources, establishing a qualified and knowledgeable team that specializes in different areas of expertise to offer top-notch, innovative solutions and services to its customers. The Group views its team as the cornerstone of its outstanding performance and success, and thus invests heavily in their personal and professional development, while creating a positive work environment that fosters trust, familiarity, and cooperation.

IMG provides fully-integrated solutions for the successful implementation of solar photovoltaic projects, as IMG is able to perform a full service EPC at every step of the value chain including Engineering, Procurement & Purchasing, Project Management, Construction and Commissioning along with offering complete operational and maintenance services to protect your asset and to maximize your return. IMG covers all market segments including Industrial sector, Commercial sector, Residential sector, Educational sector, Health sector, Governmental Sector and Hotels Sector. As a part of its commitment to deliver added value, the group continuously moves forward to adapt to its clients’ requirements, considering the market’s trends.

For the past three decades, IMG’s top priority has been to effectively serve its customers and emerge as a benchmark for excellence within the construction industry, by delivering premium products and integrated solutions, carrying out proper installation, and offering reliable services with unparalleled expertise.

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Developers & EPC Contractors

**Facts**
- Establishment Year: 1953
- Number of Staff: 150+

**Products**
- Caterpillar generator sets (Diesel, Gas, BioGas)
- Caterpillar Microgrid & PV systems
- Caterpillar Machines

Caterpillar products include Gas Generator Sets capable of operating on a wide range of gases and biogases, besides micro grid solutions consisting of Solar Panels, Wind Turbines, Storage Batteries, Advanced Controllers and Standby Gensets.

The dedicated and customer focused Service and Support at JTEC covers the whole life cycle of the equipment. It starts with the selection process to best match equipment to fulfill your requirements at the lowest cost, and continues after installation, start-up operation management, maintenance management, repair management and eventually the complete rebuild or replace options.

In addition to the Caterpillar Dealership, JTEC is the authorized dealer in Jordan for world class brands including John Deere Agricultural Tractors & Combiners, Sandvik Crushers, Sullair Air Compressors and Allmand Light Towers.

**Projects**
- Union for the Mediterranean
- IJ Global Project Finance ME

**Awards**
- UI Global Project Finance ME Renewables Deal of the Year 2013.
- Union for the Mediterranean (UPM) labeled project since 2014.

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Developers & EPC Contractors

The Jordan Wind Project Company PSC (JWPC) is proud to have developed Jordan and the region’s first and largest privately-sponsored utility scale wind farm, the 117 MW Tafila Wind Farm located in the southern governorate of Tafila, Jordan.

JWPC is owned by a consortium of three prestigious and experienced international partners; Abu Dhabi Future Energy Co. (MASDAR), Tamasuk Holding Company (ABGI) and Arab Petroleum Investments Corporation (APICORP).

Generating an impressive 390 GWh per year, the Tafila Wind Farm supplies the Kingdom with a notable 3.5% of its electricity needs. In addition, the clean power generated by the Wind Farm is produced at substantially lower costs, and saves the emission of 224,000 tons of carbon dioxide annually that would otherwise be produced through conventional electricity generation.

JWPC’s Tafila Wind Farm has indeed placed Jordan on the renewable energy map of the world, and contributed to reducing the Kingdom’s reliance on imported fossil fuels. JWPC has set a precedent for future investments in renewable energy, by being the first privately sponsored utility scale renewable energy developer to negotiate and sign an off-take agreement (PPA) with the Kingdom’s national distributor and single buyer, the National Electric Power Company (NEPCO). In November 2013, JWPC’s financing, technical, environmental and legal contracts and agreements served as templates for other projects to come.

JWPC’s 117 MW Tafila Wind Farm was the first renewable energy power plant to connect to the national grid and begin commercial operations (COD) on September 16, 2015, and is now in its sixth year of operations.

JWPC’s Tafila Wind Farm has become a landmark hub for various academic, professional and official visitors. JWPC also has extensive CSR initiatives and programs that serve to support the local community.

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**Key Staff**
- **Amin Amireh** General Manager
- **Tamer Nasr** Prime Products Sales Manager

**Brands**
- CAT
- John Deere
- Sandvik
- Sullair
- Allmand

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**Key Staff**
- **Samer S. Judeh** Chairman of the Board
- **Michel Jallad** Wind Farm Manager
- **Ismail Nahhas** Commercial Manager

**Project Images**
Kawar Energy PSC

Kawar Energy PSC is a renewable energy solutions provider since 2008, that offers specialized services in Photovoltaic solar design, engineering, procurement, construction (EPC), operation and maintenance (O&M) as well as a comprehensive (BOT) offering to finance, build and operate large projects for long terms.

Kawar Energy is a member of Kawar Group, a Jordanian corporation founded in 1955 with business interests in multi-disciplines including shipping, transport, tourism, ICT, healthcare, infrastructure and energy.

The group ranks among the top privately-held corporations in the region, and among the 20 most favored organizations to work for in Jordan by virtue of its founders, entrepreneurial spirit and global business network.

Their expertise stems from deep-rooted knowledge of technology, engineering and scientific principles, coupled with local and regional practical experience and with solid knowledge of location-specific topography, solar irradiation and detailed meteorological parameters across the Middle East. This empowers them to produce commercially-viable system designs and fast-deployable solutions.

Kawar Energy enjoys the largest share of the solar PV distributed energy market in Jordan leveraging a decade of highly acclaimed projects.

Kawar Energy cultivates an accumulated portfolio of more than 220MW of EPC & DBOT Projects, serving several types of clients spanning commercial, industrial, educational, recreational and residential facilities; accumulating thousands of GWh of produced electricity from millions of installed PV panels resulting in hundreds of thousands of tons of reduced CO2 emissions.

The spectrum of Kawar Energy’s professional pre-sale services include initial environmental impact assessment, grid impact and geotechnical studies; in addition to permitting and attainment of approvals and land leasing.

Their core competencies are in engineering and design; and cover the installation, operation and maintenance services for the entire life-cycle of Kawar Energy’s own PV solar plants as well as those of third parties’ plants. These services include remote monitoring and control, system performance analysis, on-site inspections and preventive and corrective interventions.

The in-depth knowledge and expertise in solar electric photovoltaic (PV) technology uniquely positions Kawar Energy to design and engineer top-of-the-line systems.

Kawar Energy does not assemble parts to build capacity, but optimizes and engineers best-of-breed components into a system capacity, designed to maximize energy output, safely and reliably for more than 20 years.

Facts
Establishment Year: 2008
Number of Staff: 50
Installed Capacity: 220MW

Selected Projects
• Shams Ma’an, 66.6MW largest utility scale single axis tracker in the MENA region.
• Orange, 36.7MW largest private to private wheeling project in Jordan.
• SESAME, 7MW The world’s first large accelerator complex to be fully powered by RE.
• Ayfa, 9.13MW largest sea-water pumping plant powered by solar energy in Jordan.
• Yarmouk University, 3.2MW largest solar PV rooftop in Jordan.
• Al Quds College, 1.06MW largest solar PV car-park in Jordan.
• Loyalty Support Services, 4.5MW largest solar hybrid system in Jordan.
• Dead Sea Spa Hotel, 2.8MW world’s largest solar PV system under sea-level.
• Al Balqa University, 7MW largest university to be powered by solar energy in Jordan.

Customers
Top Institutions: Public, commercial, financial, industrial, healthcare, educational, NGOs and hospitality sectors.

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Selected Projects

Service
• Supply: Major Component Procurement including Modules, Inverters, Racking; Balance of System, Medium Voltage Equipment & Solutions; Customized Inverter Outdoor Inverter Skid Solutions.
• Construction: Construction Management, Supervision, Quality Control and Performance Testing, Safety policy, Medium-voltage, Commissioning, Customer Orientation and Training.
• Financing: Corporates and individuals with limited access to capital; enabling them to invest in renewable energy solutions through a broad range of long and short term loan options; with financial facilitation services that guarantee access to turnkey financing solutions.
• Equity Investment: Kawar Energy (via Kawar Investment) engages as an equity investor in mega and utility scale renewable energy projects; bringing deep expertise, longstanding relationships and strategic insight to the investments.

Contract Types
• DBOT: Design, Build, Operate and Transfer
• EPC: Engineer, Procure and Construct
• O&M: Operations and Maintenance

Operation Partner
Shams Ma’an Power Generation Company

Key Staff
Hanna Zaghloul
CEO
Ismael Nabhan
Design and Bidding Manager
Tareq Murad
Business Development & Strategic Projects
Mahmoud Salama
Operation & Maintenance Manager
Ghaith Khzai
PMO Manager
Raed Azaz
Operations Manager
Mustakbal clean tech (MCT)

Founded in 2009, Mustakbal clean tech (MCT) is an owner-managed company that specializes in developing turnkey photovoltaic (PV) energy solutions in the Middle East and North Africa (MENA) region. The company’s approach is to offer technology solutions that are based on sound and specialist engineering and economics; offering world class customer support and after sales service; and working with likeminded partners and customers.

With over 50 years of combined experience, MCT’s team is highly specialized, qualified and valued in delivering A-class PV solutions in the market.

MCT’s customers and partners are reputable commercial companies, non-governmental organizations and esteemed private clients. To date, MCT has installed over 400 PV projects with a total capacity of more than 70 MWp in Jordan and has executed projects of over 50MW capacity in the MENA region.

MCT adheres to the highest engineering standards and quality. MCT does not compromise! MCT has an efficient and productive installation team specializing in installing PV systems to internationally recognized quality and finishing standards.

Moreover, MCT provides “round the clock” monitoring and operation and maintenance support, ensuring that the plants are performing and maintained according to clients’ expectations throughout the year. MCT’s dedicated O&M support team performs all the required preventative maintenance activities according to manufacturer recommendations.

Also MCT has teamed up with local and international partners to enhance the quality of the projects it delivers. Enerparc AG is a German international PV developer that specializes in the development of large scale Mega Watt projects. To date, Enerparc has installed over 4,800Mwp of PV projects around the world of which 3,100MW are operated and owned by Enerparc.

Moreover, MCT has teamed up with Masannat Engineering and Contracting Company (MECCO), which is a class 1 building contractor in Jordan. MECCO carries out projects in various fields across the Kingdom from the construction of family homes to the construction of large scale industrial complexes. In recent years, MECCO has constructed over 20MWp of PV projects in partnership with Mustakbal.

When investing in PV, a 25-year lifetime is considered; therefore the solar power plant should operate with minimal intervention throughout. Mustakbal clean tech (MCT) has the experience, capability and fundamental means to undertake and execute projects with a 100% satisfaction guarantee.

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Philadelphia Solar (PS) is a specialized solar company that was established in 2007, with a built up area of 14,200 m² and a startup capital of 25 million USD.

PS was the first photovoltaic (PV) panel manufacturer company in the MENA region, with an annual PV production capacity of 10 MWp. By expanding its production lines, the company now has an annual PV production capacity of 500 MWp to be the largest operating factory in EMEA; in addition to the new automated steel production lines to manufacture corrosion resistance steel mounting structures with an annual capacity of 300 MWp.

PS mono and poly crystalline PV panels are produced by state of the art fully automated robotic production lines using the latest equipment and Electroencephalogram (EL) in-line inspection machinery.

PS products are suitable to be used for most electrical power applications and have excellent durability to prevailing weather conditions. Some of PS product features include having positive power tolerance up to 3% extra output, excellent low light performance, salt and mist ammonia resistance to endure coastal and agricultural environments, and high technical loads (certified to withstand high wind load of 2400 pa and snow load of 5400 pa).


PS Magnelis steel mounting structures are exceptional. The new metallic steel coating provides surface protection in a variety of applications against long-term wear and tear. The unique coating offers a combination of attributes such as having the best corrosion resistance performance which is up to 10 times better than the galvanized steel. It is also considered to be the most cost-effective alternative to the post galvanized processed steel. One of its main features is “self-repairing protection for cut edges”, which helps protect exposed cut edges with a thin zinc-based protection film with magnesium, which prevents corrosive reaction.

As a manufacturer and an engineering, procurement and construction (EPC) contractor of photovoltaic systems, PS has successfully accomplished many EPC projects in many countries such as Egypt, KSA, Lebanon and Palestine, with another over 150 MWp of references in Jordan.

PS offers its customers turnkey working systems. From viability studies and obtaining the necessary administrative permits to project design, engineering, construction, commissioning and monitoring; PS does it all.

Other types of services PS offers includes operation and maintenance (O&M), On/Off site training programs, outstanding technical support and after sales service to customers and partners world-wide.

Philadelphia Solar (PS) exports serve more than 47 countries worldwide.
Spitak Trading Company

Spitak Trading Company is a whole sales supplier and solution provider for PV systems and photovoltaic business offering a complete solutions for both sections including PV modules, PV inverters, PV mounting structure, PV DC Cables, Kodak products, Epson products, and photo printing consumables.

SPITAK Trading Co. was established in 2014 by Mr. Viken Salbashian.

The company is characterized by its internationally well-known agencies covering the Jordanian Market. Presently 15 well-trained and highly qualified employees are working with consistency and sincerity to achieve best services to clients.

The Company’s mission is to provide the Jordanian Market with a high quality brand with very special services.

SPITAK is one of the first companies in the market to provide such services. These services include stock availability; short and adequate delivery periods for big projects; before-sales services; a team that helps provide the most adequate design software and other details to ensure that the product will serve well; during-sales services whereby the team will help installers in their first inverter installation as well as support any related issue; after-sales services which includes trouble-shooting procedures, service inverters and exchange procedures.

Spitak has become the main distributor for top manufacturers of PV modules and inverters in the world including Fronius, Trina Solar, Ameri Solar and HIS.

Fronius inverters are the number one inverters in the world in 2017, 2018 and 2019 as announced by Clean Energy Review. Trina Solar is one of the top five manufacturers of PV modules in the world. Ameri Solar is an American/Chinese company specialized in PV solar modules. HIS is one of the top DC cable manufacturers.

In 2019, Spitak won the best dealer for Fronius inverters in the Middle East. Spitak is a Fronius ‘Service Partner Plus’ in Jordan, and is one of the distinguished companies authorized to perform maintenance for the inverters.

Spitak Trading Company

Facts
Establishment Year: 2014
Number of Staff: 15

Services
- PV Systems
- Operation & Maintenance
- Technical Support
- Distribution
- Logistics

Products
- PV Module
- On Grid Inverter
- DC Cables

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Key Staff
Viken Salbashian
President

Eng. Zaid Al.Helo
Vice President
Marketing

Partners
Fronius
TrinaSolar
Ingeteam
Sharp

Awards
Certificate

Partners
Fronius International GmbH

Spitak Trading Company
Toshima for Renewable Energy is an eco-friendly energy solutions provider established by a professional team in 2014, with a head office in Jordan. The company specializes in renewable energy systems including photovoltaic systems, managing energy audit projects, and Operations & Maintenance.

Toshima Renewable Energy is committed to contributing to sustainable development. It works towards achieving its goal of protecting the environment and benefiting society by giving people the power of energy independence, with maximum savings and convenience, through integrated and energy efficient solutions for the environment. The main goal is to preserve the environment by producing clean, sustainable and efficient energy in order to ensure the "green future" of all mankind.

Toshima is one of the leading installers of thin film modules in Jordan, in addition to using poly-crystalline and mono-crystalline modules.

Toshima for Renewable Energy takes extra steps to ensure that every job is completed to the highest standards.
Yellow Door Energy (YDE)

Yellow Door Energy (YDE) is a leading sustainable energy partner for businesses in Jordan, providing Build-Own-Operate-Transfer (BOOT) solar, storage and energy efficiency solutions.

The company’s projects enable customers to reduce energy costs, improve power reliability and lower carbon emissions.

In January 2019, YDE announced it raised $65 million from global investors IFC, Mitsui, Equinor, APICORP and Adenium.

The company’s customers come from different industries and their projects range in size from 300 kW to 18 MW. Select customers include Carrefour Jordan/Majid Al Futtaim, Umniah, and Classic Fashion among others.

Thanks to Jordan’s wheeling regulation, these customers receive solar power from YDE’s solar parks located outside city centers.

As the BOOT solar provider, Yellow Door Energy invests in, designs, constructs, commissions, operates and maintains the solar parks.

In the UAE, YDE’s customers include Unilever and Nestlé Middle East.

YDE was founded in 2015 as an investment from Adenium Energy Capital, a leading Middle East solar investor that has developed and financed over 300 MW of solar PV assets worldwide.

As the market-leading solar developer, YDE is an active member of EDAMA Jordan, Middle East Solar Industry Association (MESIA) and Clean Energy Business Council (CEBC).

YDE representatives regularly speak at industry conferences to share best practices in developing successful solar projects in the MENA region.
PanMed Energy is a Limited Liability Company owned by Panmed Trading and Investment. It is registered in Amman, Jordan under the Company Registry number 23951, at the Jordanian Ministry of Trade and Industry.

PanMed Energy is among the leading Jordanian firms specialized in energy services. The company provides financial, technical, regulatory and environmental services to address the challenges of developing energy in Jordan and the region. It advises international groups operating in the energy sector seeking to enter the Jordanian and Middle Eastern markets. PanMed Energy equally serves as a project developer. It has implemented major renewable energy and energy efficiency projects in Jordan and the region.

Panmed Energy is the founding partner in MEDGRID, a French based company, which is an alliance of twenty-one companies including AREVA, ALSTOM GRID, EDF, ABENGOA, TAQA, ARABIA etc. MEDGRID was established within the framework of the Solar Plan of the Union for the Mediterranean, to study the technical and economic feasibility of the Mediterranean grid interconnection master plan. Panmed Energy performed a study for MEDGRID for the eight countries electrical interconnections (Egypt - Israel – Jordan – Lebanon - Palestinian Territories – Syria); which is considered as a main interconnection link between the MENA region and Europe.

Panmed Energy represents Tractebel Engineering/Engie (TE) in Jordan and Palestine. It served as a subcontractor in the Arab Gas Pipeline project, in advisory services for the Ministry of Energy and Mineral Resources.

In January 2017, Panmed Energy formed a Partnership with Free Energia, Italy, Panmed Free. The company invests in projects in the MENA region in the area of Energy Efficiency and Renewable Energy. Panmed Free will also trade in GAS, LNG and LPG.

PanMed Energy registered a special purpose company PanMed Energy Solutions, which will specialize in new energy solutions such as Hydrogen and Fuel Cell for clients in the MENA region and Europe.

Selected Projects

- Zara Solar (111 MWp) with 100% Shareholding, COD in Q3 2019.
- Falcon Ma’an (23 MWp) with 50% Shareholding, COD in 2016.
- Shamsuna (10 MWp) with 100% Shareholding, COD in 2016.
- 130 MWp Solar PV under Investment.

Affiliations

- Sponsor: Al Sharjah, The Society for the Protection of Trees
- Member: EDAMA Association
- Member: Jordanian Society for Renewable Energy (ESTEDAMA)
- Member: Jordan-French Chamber of Commerce & Industry in Jordan (CAFRA)
- Member: The American Chamber of Commerce in Jordan (AmCham-Jordan)
- Partner: Armoush Tourist Investment Co. Ltd.

Key Staff

Shermine Dajani
CEO/Founder

Riyad Kanaan
Senior Consultant

Catalyst Investment Management "Catalyst", based in Jordan, is the first Arab MENA region private equity fund manager specialized in the Energy (technology, renewables and efficiency) and the Water sectors. It is uniquely structured to have a positive strategic and financial impact on the Arab region.

Catalyst Investment Management (CIM) was established in 2006 and began investing in solar, water and oil/gas efficiency technology companies in 2007. It was the region’s first energy and water technology / venture capital fund, with investments in the Levant, North Africa, and the Gulf (GCC).

In 2011, Catalyst began its project development activities, being the lead developer for the 23MWp Solar PV project, Falcon Ma’an Solar Power (Jordan Round 1); and then launched CMCF in 2016.

CMCF has over $57M USD in equity and is backed primarily by European Government investors. CMCF developed, owns and operates two Government and one Private Sector PV Power Plant of 44MWp total in Jordan. It is, additionally, currently investing in 130MWp of Solar PV Projects in the region. With 174MWp in total up to date, Catalyst has the ambition to pursue additional 500MWp over the next 5 years.

Catalyst/CMCF’s principles of responsible investing are embedded in its Environmental, Social and Governance (ESG) Framework, which provides the structure and guidance for its investment team as well as its portfolio companies.

Key Staff

Ennis Rimawi
Managing Director

Angelika Cerny
Sr. Analyst & ESG Officer

Razan Armouti
Systems and Admin Engineer

Selected Projects

- Falcon Ma'an (23MWp)
- Shamsuna (10MWp)
- Zara - Taibeh Site (11MWp)
Noble Energy (NASDAQ: NBL) is an independent oil and natural gas exploration and production company committed to meeting the world’s growing energy needs.

The company operates a high-quality portfolio of assets onshore in the United States and offshore in the Eastern Mediterranean and off the west coast of Africa.

Founded more than 85 years ago, Noble Energy is guided by its values, its commitment to safety, and respect for stakeholders, communities and the environment.

For more information on how the Company fulfills its purpose of “Energizing the World, Bettering People’s Lives®”, visit www.nblenergy.com.

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Elite Energy & Engineering (EEE) is a consulting company that provides renewable energy projects with full technical, contractual and financial solutions.

EEE was established for the purpose of energy conservation. EEE is fully capable of providing engineering and technical advisory services in wind energy, solar energy, and other renewable energy sources.

EEE guarantees the ability to provide professional services in terms of project consulting and testing, starting from the earlier stages such as feasibility, design, until the project management, supervision, testing & commissioning, and system operation.

The EEE team has collected academic and practical experiences in the field of renewable energy, gained from local and international levels. The team has worked on cumulatively more than 550MW PV and wind projects in consulting, supervision, testing and commissioning. The performance record shows the capability to perform the project tasks, ensuring high-quality standards while demonstrating a competitive edge and qualified skills in the technical and operational parts of the RE projects.

EEE is competent in providing renewable energy services including consulting in Renewable Energy projects, owner’s engineer, load measurements, RE project design & installation supervision, RE project testing & commissioning, thermal imaging services, RE project operation & maintenance, contracts review & administration, project management & logistics service, projects design & economic analysis.

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**Selected Projects**

- AM solar plant 50 MWp
- Orange training center 14 MWp
- Lafarge solar plant 15 MWp
- SESAME solar plant 7 MWp
- Irbid city center solar plant 6 MWp
- Bank alEtihad 1.6 MWp
- Eagle PV plant 11 MWp
- Grand east hotel 1 MWp

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**Core Operational Areas**

- Onshore
  - DJ Basin
  - Permian Basin
  - Eagle Ford Shale
  - Midstream
  - Eastern Mediterranean
  - West Africa
  - Exploration
  - Cameroon
  - Colombia
  - Gabon
  - Newfoundland

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**Key Staff**

Ahmad Altawafsheh
CEO & Renewable Energy Consultant

Osama Adwan
Projects Manager

Laith Basha
COO & Renewable Energy Consultant
Royal Scientific Society (RSS)

RSS provides a wide range of sustainable solutions in the different fields of EWE through two centres; the National Energy Research Centre (NERC) and the Water and Environment Centre (WEC). These are part of the Technologies for Sustainable Development Pillar.

The National Energy Research Centre (NERC) was established in 1972 for the purpose of research, development and training in the fields of renewable energy and energy efficiency. The centre works on areas from solar thermal energy, photovoltaic and geothermal, to wind energy, bioenergy and energy efficiency. NERC is involved in different donors’ programs for the development of new energy efficiency technologies. NERC carries out techno-economic feasibility studies, energy audits, measurements and verification and performance measurements. NERC also operates energy testing labs. The centre is accredited according to ISO 9001:2015, ISO/IEC 17025: 2017 by UKAS and JAS.

NERC has developed and supervised more than 40 photovoltaic projects since the issuance of the Renewable Energy Law in 2012, with a total capacity of 30 MWp. It has also developed 173 photovoltaic projects for schools, 320 photovoltaic projects for farms and has 122 MWp in the pipeline. In addition, a wind energy project with a capacity of 1.65 MW is installed and has been running since 2014. Around 52 GWh is being produced annually with an annual CO2 reduction of 30,000 tons. In addition, more than 300 detailed energy audit studies for the public and private sectors were conducted.

The Water and Environment Centre (WEC) was established in 1989 to be a reference point contributing in the protection of water and environment, and public health and safety, as well as participating in addressing the global environmental challenges. WEC, supported by RSS accredited laboratories, provides high class technical consultations and studies. It promotes the adoption of sound and best practices conforming the concept of sustainable development. Throughout the last decade, WEC has collaborated with various national ministries as well as international agencies. The centre is certified according to ISO 9001:2015. Additionally, the Environment Monitoring and Research Central Unit and the Air Studies Division are also accredited according to ISO/IEC 17025:2017 by UKAS and JAS.

WEC, via the cleaner production (CP) unit, helps industries improve production while reducing their consumption of resources and has already carried out more than 70 CP studies and followed up implementations that resulted in a saving of around 140 thousand cubic meters per year, and avoidance of around 8700 and 13,300 tons per year of waste and CO2 emissions respectively. Also, WEC annually conducts around 250 stack emission and 150 working area air quality measurements for the local industries. WEC conducted more than 50 environmental impact assessment and environmental audit studies, in addition to many specialized studies in the areas of chemical management, hazardous material management, quantitative risk assessment, life cycle assessment, responsible production and eco-innovation. WEC plays a vital role in the protection of Jordan’s scarce water resources and introducing innovative conservation measures and tools through providing the relevant ministries with assessment of around 200 water sources, by collecting and analyzing around 1800 samples annually. Over the past 3 years, WEC has contributed to the conservation of about half a million cubic meters of water.

WEC operates an online real time monitoring system for surface water with 13 stations located on Yarmouk, and Zarqa Rivers in addition to King Abdullah Canal and inlet and outlet of King Talal Dam. WEC contributes to protecting the ambient air quality (AAQ), through 11 fixed monitoring stations operating in the different areas of Jordan to the Ministry of Environment as part of the national AAQ monitoring network.
Al Masoudia Electrical Industries Co. Ltd. (MASEICO)

Facts
Establishment Year: 1992 (Saudi Arabia), 2015 (Jordan).
Number of Staff: 56

Products
- Solar Structure and mounting systems.
- Hot Dip Galvanized Steel.
- Rack and support systems.
- Stainless Steel (304, 316).
- Aluminum sheets and Extruded Alloys.

Solutions
- Cable Trays and Ladders.
- Cable Glands and Lugs.
- Grounding and Lightening Systems.
- Junction Box.
- Solar Structures.
- Rack and Support Systems.
- Hot Dip Galvanizing.

Manufactured Products
- Hot Dip Galvanized steel, Pre- Galvanized steel, Stainless steel (304, 316), aluminum sheets and extruded alloys.

The factory covers an area of 15000 m² with CNC machines and high tech production lines. Products that are manufactured and supplied include Hot Dip Galvanized steel, Pre- Galvanized steel, Stainless steel (304, 316), aluminum sheets and extruded alloys.

The factory products cover many solutions, of various dimensions and even special designs such as Cable Trays and Ladders, Cable Glands and Lugs, Grounding and Lightening Systems, Junction Boxes, Solar Structures, Rack and Support System, and Hot Dip Galvanizing.

Products are being manufactured using the latest developed computerized machines and technology; guided by the required ISO certification and developed ERP and production systems.

MASEICO is a Jordanian factory that competes internationally and is one of the leading factories to provide high quality products at a competitive price, with 25 years of manufacturing experience.

The advantages of MASEICO systems include single-source solutions that aid in reduction of overall total project costs, a streamlined production process, a wider selection of components, heavy duty steel with corrosion protection, using less steel without sacrificing strength, pre-assembled components are available, quick response and efficient communication, all tested and approved based on the Jordanian Building Code.

MASEICO is a proven leader in manufacturing cable management systems and power products.

Certifications
- TÜV
- ATEX
- EN
- BS
- IEC
- UL

Key Staff
- Eng. Mazen Abu Jubara Chairman of the Board
- Eng. Emran Waqad Deputy General Manager
- Mohammad Hasan Sales and Marketing Manager
- Fakhry Alkhatib Supply Chain Manager
- Omar Abu Jubara General Manager

Clients

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Located in Amman, Jordan, Sanad Law Group in association with Eversheds Sutherland has been operating since 2004, led by Managing Partner Ghaleb Al-Faraj, Regional Partner Tawfiq Tabbaa, and with Partners, Nadim Kayyali, Lana Habash, Iyad Zawaideh, and Hani Kurdi. The Amman office team represents a diverse range of clients, from large multinational and regional corporations to small and medium businesses, NGOs, investors and entrepreneurs; benefitting from being part of the Eversheds Sutherland network, this has enabled the group to offer a seamless cross-border service on multi-jurisdictional matters.

The Amman team is locally and internationally trained and qualified, and experienced in Jordanian, UK, US and international law. The firm has the largest, most experienced team of clean energy experts who advise on all aspects of renewable energy technologies; having advised on over 40 GW of renewable energy projects across the globe and specializing in onshore and offshore wind, solar, biomass, hydro, waste to energy, CDM projects and biofuels.

Eversheds Sutherland has acted for a significant number of developers and funders in the MENA region and in Jordan, where the firm advised on 10 of the 12 solar projects in round 1 and 2 of the 4 solar projects in round 2, and currently advising on a round 3 project.

Eversheds Sutherland was awarded ‘Solar Project Finance Advisor of the Year’ at the 2015 MENASOL Awards. It is one of a collection of energy, finance and law firms that are collectively scaling up solar energy as part of a new Solar Energy Standardisation Initiative launched by The International Renewable Energy Agency (IRENA), which aims to harmonise project documentation and procedures.

Eversheds Sutherland has the largest, most experienced team of clean energy experts who advise on all aspects of renewable energy technologies; having advised on over 40 GW of renewable energy projects across the globe and specializing in onshore and offshore wind, solar, biomass, hydro, waste to energy, CDM projects and biofuels.

Eversheds Sutherland is one of a few firms which advise across the full project lifecycle in clean energy, from securing the development rights to project finance, to subsequent disposal/decommissioning.

Banks and financial institutions play a critical role in the growth of the energy, water and environment (EWE) sector. For banks participating in this publication, this section provides an editorial opportunity to provide details regarding their energy related services, the client’s need being met by the solution offered, the timeline of kick-off and delivery, project photos and more information. It is a valuable and unique source of such details on these projects.

Eversheds Sutherland was awarded 'Solar Project Finance Advisor of the Year' at the 2015 MENASOL Awards. It is one of a collection of energy, finance and law firms that are collectively scaling up solar energy as part of a new Solar Energy Standardisation Initiative launched by The International Renewable Energy Agency (IRENA), which aims to harmonise project documentation and procedures.
Shamsuna Solar Power PV Plant

Project Facts
Project Size: 10 MW
Project location: Aqaba
Operating Date: 2016
No. of PV Modules: 40,320
PV Modules Type: Poly crystalline 250 Wp
Each Inverter Type: Central Inverter.
Mounting Structure: Fixed structure.

Shamsuna is a 10 MW PV project that has been operational since February 2016, located within the Aqaba Special Economic Zone (ASEZ).

Lying within the sun-intensive Solar Belt, and with a yearly Global Horizontal Irrandiance (GHI) sum of up to 2400 kWh/m², Shamsuna’s Aqaba Project has ideal conditions for solar energy production. Shamsuna signed a 20 year-long Power Purchase Agreement (PPA) with the National Electric Power Company (NEPCO) in March of 2014.

The project area is around 180 dunums. The closest community is located in the City of Aqaba, with the Main Port Area at a distance of more than 14 km north of the project site. The project has an emissions reduction of approximately 12,100 tons of CO2 annually.

Catalyst MENA Clean Energy Fund is a 100% Shareholder of Shamsuna since June 2018.

Jabri 1.2 MW PV Power Plant

Project Facts
Client: Yellow Door Energy
Project Location: Al Balqa Governorate
Project Launch Date: June, 2019
Project Completion Date: September, 2019
Specifications:
• DC name plate capacity of 1.2 MWp.
• 10 ABB 100 KW String Inverters.
• Control Room.
• Security Surveillance System.
• 57 Schletter Solar Fixed Mounting Structures

Since 1986 ASTRACO has contributed to the strategic energy and power generation vision of Jordan and the neighboring MENA countries. In continuation to its well-known record in conventional power generation projects execution ASTRACO has an impressive presence in the Renewable Energy Sector since 2015.

ASTRACO provides high consideration to its corporate social responsibility strategy which is implemented through ASTRACO’s keen commitment to developing local communities in any of its project areas, with a strong belief of its valuable input to delivery of project’s goals and objectives.

The project is executed on a plot of land in Al Balqa Governorate, where, despite of the tough terrain, ASTRACO has successfully managed to complete the project as an EPC contractor within the scheduled duration maintaining excellent safety and environment standards; maintaining highest quality standards to deliver on time and meet the client schedule an objectives of the project.

This solar park will generate 2,145 megawatt-hours of clean energy in its first year of operation, equivalent to reducing carbon emissions by 1,500 tonnes.

ASTRACO adapts a sustainable strategy that assures its presence with a continued growth as a leading EPC contracting company in the power generation and renewable energy market.

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The Zara Solar Power PV Project is a Private Wheeling project servicing a hospitality group in Jordan.

The project consists of the design, engineering, procurement, construction and operation of a PV power plant with two different sites.

The sites are in Karak and Irbid Governorates, producing a total capacity of 11.2 MW. The power generated will cover half of the electricity demand by the hotels of the group. The project area in Karak is approximately 110,000 m². The project site in Irbid is approximately 100,000 m².

The total project has an emissions reduction estimated to be 13 tons of CO₂ annually.

Catalyst Investment Management - Jordan is a 100% Shareholder of Zara Solar Power.

ETA-max Energy and Environmental Solutions provided INVESTBANK with a turn key solution for the design, procurement, installation, and commissioning of a wheeling ground mount PV system with a capacity of 717 kWp to cover the electricity consumption of INVESTBANK branches in Amman and Zarqa.

The plant was commercially operated in February 2018 and produces 1.3 GWh annually. It saves up to 335,000 JOD/yr, with a payback period of less than 2 years.

Such an investment is very feasible for the banking sector, due to the high electricity tariff applied on banks.
ETA Max Energy and Environmental Solutions provided Jordan Ice & Aerated Water Co. (JICE) with a turnkey solution of design, procurement, installation, and commissioning of an on-grid roof top PV system with a capacity of 1.8 MWp on the rooftops to provide the manufacturing plant with electricity and to cover 90% of its electricity consumption.

The PV system generates 1.8 GWh of electricity annually and saves up to 170,000 JOD/yr with a payback period of less than 4 years.

In parallel to implementing a renewable energy system in the plant, ETA Max Energy and Environmental Solutions conducted a detailed energy audit in both facilities which covered all mechanical and electrical systems. It resulted in 20% overall savings in the energy consumption. This project represents a good model of the combination between energy efficiency and renewable energy.

ETA Max Energy and Environmental Solutions provided Veterinary & Agricultural Products Manufacturing Co. (VAPCO) and Agro-Chemicals Industries Ltd. (AGROCHEM) with a turnkey solution of design, procurement, installation, and commissioning of an on-grid roof top PV system with a capacity of 1.8 MWp to provide the manufacturing plant with electricity and to cover 90% of its electricity consumption.

The PV system generates 3.2 GWh of electricity annually and saves up to 290,000 JOD/yr with a payback period of less than 4 years.

The project is a successful example of utilizing large rooftops of industrial plants in energy production resulting in savings for the industry.
**Project Fact Sheet**

### 1.1 MWp Solar Energy Plant for the Civil Defense Directorate (CDD)

**Project Facts**
- **Project Size:** 1.1 MWp
- **Commercial Operation Date:** 13.09.2017
- **Main Components:**
  - Solar modules: Jinko Solar
  - Mounting structure: Schletter GmbH
  - Inverter: KACO Energy
  - AC / DC Cables: Cabelco
  - Medium Voltage: ABB
  - Power Transformer: ABB
  - Delivery Station: ABB
  - SCADA System: Opto 22
  - Automatic Weather Station: Campbell Scientific
  - Cleaning Machine: MM Spray
- **Payback period:** 3 years and 7 months (43 months)

The project, located in Al Hasa, Tafileh, South of Jordan, is realized as a ground mounted solar plant, contracted as a Build, Operate, Transfer “BOT” contract for 43 months, for the value JOD 1,075,000 on Wheeling basis; connected to the medium voltage overhead lines of the electricity utility, Electricity Distribution Company (EDCO).

The project’s main target was to cover complete electricity consumption of CDD’s workshop and centers located in the south of Jordan; specifically in Karak, Tafileh, Ma’an and Aqaba providing them with net-zero energy. FB GROUP’s scope, as the main contractor, included but was not limited to financing, designing, approvals obtaining, supplying, installing, connecting, and operation of the plant components; until the final handover. That is as well as operation and maintenance for the BOT period plus 12 months, for a total of 55 months.

The project is connected to the grid through medium voltage connection. Due to the fact that the solar plant is constructed to cover the loads of the CDD’s southern facilities according to the wheeling methodology and that the nearest point of common coupling is 11 km away, the procedure implemented to ensure the most reliable and professional communication is to connect the main distribution board of the plant (MDB) to the low voltage side of the transformer, which has a capacity of 1.6 KVA in order to transform the voltage from 0.400 KV to 33 KV. The transformer is connected to a 33 KV delivery station which has an auxiliary transformer to feed the auxiliary loads. It is connected to a 33KV auto-recloser, and then to the point of common coupling.

Being a BOT contracted project, FB GROUP is the party responsible for the operation and maintenance of the project for the BOT period (43 months) plus one year; total 55 months, starting from COD until April 12, 2022. FB GROUP’s scope for O&M includes Remote Monitoring and Controlling, Corrective Maintenance, Preventive Maintenance, Solar modules cleaning, and Reporting.

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**Project Images**

- [Project Image 1](image1)
- [Project Image 2](image2)
- [Project Image 3](image3)
- [Project Image 4](image4)

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**A Project By**

FB

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**Project Fact Sheet**

### Ajloun Castle

**Project Facts**
- **Location:** Ajloun
- **No. of Panels:** 136 – AC 50 / DC 55 Canadian panels 405 Wp
- **Area:** 300 sq2
- **Capacity:** 55 kW
- **Project Scope:** PV & Insulation
- **System Type:** Photovoltaic
- **Operation Date:** 2020

Situated in the Northwest of Jordan, the Ajloun Castle is placed on a hilltop called Jabal Auf, since the 12th Century.

This project is 55Kwp ground mounted PV System utilizing Mono-crystalline solar PV panels with a power of 405Wp each.

The system covers 100% of electricity consumption. The project is under construction.

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**Project Images**

- [Project Image 1](image1)
- [Project Image 2](image2)
- [Project Image 3](image3)
- [Project Image 4](image4)

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**A Project By**

Hanania
Wheeling project, Giza - Airport Street

The Giza region is one of the areas of the Greater Amman Municipality, and it is located in the Southern part of the Jordanian capital Amman.

This project, by HANANIA Energy, is a 500kwp PV System utilizing 1,190 Mono-crystalline solar PV panels with a power of 415Wp each.

It will become operational during 2021.

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Aqaba Container Terminal (ACT)

Aqaba Container Terminal (ACT) is Jordan’s only container port and the second busiest on the Red Sea.

This project is a 96kwp PV System utilizing Mono-crystalline solar PV panels with a power of 405Wp each.

The system covers 100% of electricity consumption. The project is under construction.

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Izzat Marji Group has successfully designed, supplied, installed, and commissioned a large-scale solar photovoltaic system for Societe General Bank (SGBJ). The system capacity is 1.01 MW, with an annual generation of 1,521,846 kWh.

This system avoids more than 1,032 tons of carbon dioxide and saves JD 430,000 annually. The power plant was constructed on harsh terrain with elevation. However, Izzat Marji Group took on this challenge and succeeded in building this plant.

The power plant is transmitting electricity to the grid through the wheeling mechanism and is producing enough electricity to cover the majority of SGBJ branches electricity consumption. The operation and maintenance is being handled by Izzat Marji Group for the upcoming years.

The operation and maintenance arm of Kawar Energy will be handling the O&M of Orange solar farms for the next 20 years. The company is committed to ensure savings for all three solar plants through a comprehensive suite of O&M services which include a detailed annual maintenance plan (AMP) that includes preventive, corrective and predictive maintenance, close monitoring and high-quality performance using advanced monitoring and analysis tools. This is performed through a team of asset managers, certified engineers, qualified electricians, specialized performance and data analysts, services, safety, and quality personnel along with qualified contractors. O&M Control center of Kawar Energy is monitoring all site related activities, power generation, performance ratio, specific yield, faults, warnings, and error messages both remotely and fast action on-site service.

The Orange solar PV farms project provides a great social impact on the young community in the local area and is aligned with Kawar Energy's corporate social responsibility that aims to support the Jordanian community by increasing job opportunities for youth by developing skills in the required fields and by providing training compliant with international standards. Kawar Energy has 10 years of combined experience of building and maintaining a record of over 220MW of installed photovoltaic solar systems. The company maintains the largest solar project portfolios in Jordan for more than 150 companies and facilities across the Kingdom. The company ensures the safety of all maintenance activities performed at the site and is committed to high standards of Health, Safety and Environment (HSE).
In line with the national strategy agenda to promote sustainable and affordable energy in Jordan, Kawar Energy is proud to announce the full implementation of Orange Jordan’s solar farms project, Jordan’s largest solar wheeling project. Kawar Energy completed the design, engineering, procurement, construction, testing and commissioning of three independent photovoltaic (PV) power plants totaling 36.7 MWp in capacity. They are currently in operation by NEPCO’s, JEPCO’s and IDECO’s grids.

Orange Jordan Solar Farms are the largest projects servicing a telecom provider in Jordan. Kawar Energy has set an extraordinary record regarding the duration from the beginning of construction to the completion of the plant. All three power plants are injecting electricity to the grid through the wheeling mechanism and are producing enough electricity to cover a significant portion of Orange Jordan’s total electricity consumption. Solar power will sustainably offset a portion of Orange Jordan’s energy consumption, leading to a more eco-friendly telecom industry in the Kingdom and a positive impact on Orange Jordan Telecom’s operations.

Given the ever-increasing global importance of renewable energy projects, Kawar Energy is proud to have been chosen as the EPC and O&M contractors of the largest private-to-private solar PV wheeling project in Jordan. The company’s commitment to safeguard Jordan’s environment will undoubtedly be manifested by the prevention of 34,000 tons of CO2 emissions every year.

Abdali Medical Center project is one of the wheeling projects installed by Philadelphia Solar, enabling this medical center to better serve its patients by establishing a reliable source of clean energy that covers the center’s consumption of electricity and, as a result, access to a secure energy source which is a critical component to the hospital’s ability to deliver sustainable and reliable health care.

This project is the largest PV system installed for a single medical center in the world. The system consists of 25,090 Philadelphia Solar Polycrystalline panels of 325 Wp each and Philadelphia Solar Mounting Structure solutions. The capacity of the system is 8.2 MWp.
Al Badiya Storage Expansion (23MWp/12.6 MWh)

Project Facts
- Expansion info:
  - Project Capacity: 12.6 MWh.
  - No. of PV panels: 34,350 panels.
  - PV panels type: Polycrystalline 320 Wp each.
  - Mounting structure: PS trackers.
  - Commercial Operating Date (COD): 18th February, 2019.
- First company to own a solar-power plant combined with an energy-storage systems in the MEA (Middle East and Africa) region.

This project includes an expansion of 11 MWp which consists of approximately 34,350 of Philadelphia Solar PV panels (320 Wp each), a tracking system which is locally made by Philadelphia Solar, and a 12.6 MWh Lithium Ion energy storage system (Tesla Powerpack). The total size of the storage power plant combined with the first phase is 23 MWp. The new power plant’s purpose is to enhance the grid by power peak shaving and power shifting to increase the stability of the grid and support the grid at peak load hours. Additionally it will also enhance the availability of energy during the daytime hours.

Tesla was selected to provide a 3mw/12.6mwh powerpack system to be paired with the 11mw second phase of the solar park in AlMafraq. The powerpack will perform multiple functions including renewable firming, ramp rate control, avoiding curtailment and proven network frequency support.

Al Badiya power generation station is a specialized power generation company, solely owned by Philadelphia Solar. The company was established on the 25th of November, 2013, with an area of 450,000 m2 and a startup capital of 22.5 million USD, and total current investment of 42 million USD.

ZamZam Plastic industries (ZPI)

Project Facts
- Total Capacity: 345 KWP
- No. of Panels Used: 1045 Poly-crystalline PV Panel Fixed as Ground mount and 475 PV Panels fixed as Roof top
- Inverters Used: ECO 27 and ECO 25 by Fronius
- No. of Inverters: 11 (6 inverters ECO 27 and 5 inverters ECO 25)

ZamZam Plastic industries (ZPI) is a state-of-the-art plastic converting facility based in Al Ramthah, to the North of the Hashemite Kingdom of Jordan. The company was established in 2001.

ZPI’s core value is quality production, and this is reflected in every facet of the organization. The factory is 4000sqm equipped with the most advanced technology, sourced from Europe’s leading machine manufacturers.

In 2019, the management decided to install a photovoltaic system of 345 KWP to utilize renewable energy as a source of electricity.

This system consists of 1045 Poly-crystalline PV Panels and 11 Inverter ECO 27 by Fronius International.

This system is divided into two main zones. The first contains 570 PV Panels and 6 inverters (ECO 27 Fixed as Ground mount) while the second one contains 475 PV Panels and 5 inverters (ECO 25 fixed as Roof top) which are all connected under net metering regulations.
Jorsal

Jorsal is one of Jordan’s largest manufacturers of fitted kitchens, sliding wardrobes, and high quality residential and office furniture (through its brand CRYSTAL Furniture).

Today, it is recognized by consumers as one of the country’s best-known suppliers in those segments. Therefore the management decided to depend on renewable energy, by installing a photovoltaic system with a total capacity of 180 KWP.

This plant consists of 546 polycrystalline panels and 5 Inverters by Fronius International which are considered to be the Number 1 Inverters in the world for the years 2017, 2018 and 2019.

The system is fixed to the roof top of the factory and its connected according to the net metering regulation. Now this system covers 100% of the factory consumption, by generating over 280 MW annually.

Project Facts

- Total Capacity: 180 kW
- No. of Panels Used: 546 polycrystalline panels
- Inverters Used: Fronius
- No. of Inverters: 5
- Annually generates: 280 MW

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Classic Fashion Solar Park

Yellow Door Energy is the solar developer for Classic Fashion’s solar park, located in Al-Mafraq, Jordan. Commissioned in March 2020, with a capacity of 5.5 MWp, the solar park will generate over 12,500 megawatt-hours of clean energy in the first year of operation, reducing carbon emissions by 8,750 tonnes.

As the build-own-operate-transfer (BOOT) solar provider, Yellow Door Energy invested in, designed, built, commissioned and will operate and maintain the solar park.

Classic Fashion is the largest apparel manufacturer in the Middle East and has over 14,000 machines and 27,000 employees, producing over 350,000 to 400,000 garments per day. The solar park with Yellow Door Energy enables Classic Fashion to reduce its electricity costs and simultaneously achieve its sustainability and environmental targets.

Project Facts

- Location: Al-Mafraq, Jordan
- Capacity: 5.5 MWp
- Solar Park Area: 143,000 square meters
- Project Benefits:
  - Significant reduction in electricity costs
  - 12,500 megawatt-hours of clean energy in Year 1
  - 8,750 tonnes of carbon emissions reduced
- Commissioning Date: March, 2020

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Capital Bank is a leader in Jordan in lending for renewable and alternative energy. The bank has financed several clean energy projects for over 20 years including hotels, schools, universities and various entities from the private sector.

Capital Bank was the premier bank in financing the first field in Jordan that generates 10 megawatts of electric power from solar power, the first manufacturer for photovoltaic solar panels used to produce energy for the Irbid Electricity Company, and the first storage PV station using lithium batteries storing 10MW.

Capital Bank offers financing solutions to establish and support renewable energy projects through the Central Bank of Jordan Financing Programs at a fixed interest rate for 10 years, which include construction and installation of generating units of solar energy; construction and installation of generating units of wind power; purchase and installation of energy-saving equipment.

Capital Bank has also signed an agreement with the Jordan Renewable Energy and Energy Efficiency Fund (JREEEF) and the Jordan Loan Guarantee Corporation (JLGC) to finance renewable energy projects. The agreements will help speed up the implementation of projects supported by JREEEF by providing the necessary funds to individuals and small- and medium-sized enterprises, mostly in the industrial and tourism sectors. The funding is presented without interest or commission, and the only requirement for borrowers is to repay the actual value of the loan within a maximum of six years for companies or 18 months for solar heater loans. This move comes in line with Capital Bank’s commitment to ensure the necessary funding for the exploitation of renewable energy sources and the rationalization of energy consumption within Jordan.

The bank also provides financial and consulting financial solutions to enable citizens to obtain their needs by providing financing for environmentally friendly and appropriate projects and products at lower costs. The bank promotes environmental behaviors and stimulates the various sectors to adopt a sustainable approach to the environmental preservation, including the financing of hybrid vehicles that operate with electricity, and the launch of its “Sun product” to finance renewable energy systems for individuals and companies to install renewable energy systems. The bank implemented funds for electric power generation projects by using cells in the form of Islamic financing (Istisna’a contract) in accordance with the provisions and principles of Islamic Sharia; in addition to the bank signing joint cooperation agreements to support renewable energy projects with the Renewable Energy Fund and Energy Rationalization / Ministry Energy and Mineral Resources to finance home solar heaters and with the Jordanian Loan Guarantee Corporation to insure the risks of renewable energy financing for individuals, government institutions, small and medium enterprises (SMEs). The bank also contributed to support the installation and operation of solar energy units to generate electricity for multiple institutions (schools, mosques, etc.) to cover their needs from electrical energy with clean, inexpensive technology.

Capital Bank is a leader in Jordan in lending for renewable and alternative energy. The bank has financed several clean energy projects for over 20 years including hotels, schools, universities and various entities from the private sector.

Capital Bank was the premier bank in financing the first field in Jordan that generates 10 megawatts of electric power from solar power, the first manufacturer for photovoltaic solar panels used to produce energy for the Irbid Electricity Company, and the first storage PV station using lithium batteries storing 10MW.

Capital Bank offers financing solutions to establish and support renewable energy projects through the Central Bank of Jordan Financing Programs at a fixed interest rate for 10 years, which include construction and installation of generating units of solar energy; construction and installation of generating units of wind power; purchase and installation of energy-saving equipment.

Capital Bank has also signed an agreement with the Jordan Renewable Energy and Energy Efficiency Fund (JREEEF) and the Jordan Loan Guarantee Corporation (JLGC) to finance renewable energy projects. The agreements will help speed up the implementation of projects supported by JREEEF by providing the necessary funds to individuals and small- and medium-sized enterprises, mostly in the industrial and tourism sectors. The funding is presented without interest or commission, and the only requirement for borrowers is to repay the actual value of the loan within a maximum of six years for companies or 18 months for solar heater loans. This move comes in line with Capital Bank’s commitment to ensure the necessary funding for the exploitation of renewable energy sources and the rationalization of energy consumption within Jordan.

The bank also provides financial and consulting financial solutions to enable citizens to obtain their needs by providing financing for environmentally friendly and appropriate projects and products at lower costs. The bank promotes environmental behaviors and stimulates the various sectors to adopt a sustainable approach to the environmental preservation, including the financing of hybrid vehicles that operate with electricity, and the launch of its “Sun product” to finance renewable energy systems for individuals and companies to install renewable energy systems. The bank implemented funds for electric power generation projects by using cells in the form of Islamic financing (Istisna’a contract) in accordance with the provisions and principles of Islamic Sharia; in addition to the bank signing joint cooperation agreements to support renewable energy projects with the Renewable Energy Fund and Energy Rationalization / Ministry Energy and Mineral Resources to finance home solar heaters and with the Jordanian Loan Guarantee Corporation to insure the risks of renewable energy financing for individuals, government institutions, small and medium enterprises (SMEs). The bank also contributed to support the installation and operation of solar energy units to generate electricity for multiple institutions (schools, mosques, etc.) to cover their needs from electrical energy with clean, inexpensive technology.

Jordan Islamic Bank continued to adopt alternative energy provision projects in its headquarters, to be the first Jordanian bank that entered solar energy into its business since 2013 and to benefit from electric power generation by using those solar cells on the roofs of its branches and through the power station that has run in the bank’s bonded center since 2018 to generate electricity from solar energy. It covers part of the electricity consumption in the bank’s branches and offices in the central governorates (Amman, Zarqa, Madaba, Salt) with a generating capacity of 2.7 MWP, which is fed from solar cells that are installed on the roofs of buildings and/or the station. The bank has replaced the traditional lighting units with “energy-saving” lighting units, which are characterized by a long operating life, low maintenance costs, a better lighting level, less heat emission and almost no UV radiation; which limits the negative effects resulting from human exposure to lighting and is the most energy-saving. The bank uses its central air-conditioning systems equipped with the energy-saving “VRF” system, and water saving supplies have been installed in the bank’s buildings since 2015.

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Jordan Islamic Bank is the first Jordanian bank to utilize solar energy to generate electricity, since 2013. The bank’s strategic sustainability plan aims to rely on renewable energy for 50% of the bank’s consumption for the next five years, protecting the environment and reducing negative impact.

Jordan Islamic Bank continued to adopt alternative energy provision projects in its headquarters, to be the first Jordanian bank that entered solar energy into its business since 2013 and to benefit from electric power generation by using those solar cells on the roofs of its branches and through the power station that has run in the bank’s bonded center since 2018 to generate electricity from solar energy. It covers part of the electricity consumption in the bank’s branches and offices in the central governorates (Amman, Zarqa, Madaba, Salt) with a generating capacity of 2.7 MWP, which is fed from solar cells that are installed on the roofs of buildings and/or the station. The bank has replaced the traditional lighting units with “energy-saving” lighting units, which are characterized by a long operating life, low maintenance costs, a better lighting level, less heat emission and almost no UV radiation; which limits the negative effects resulting from human exposure to lighting and is the most energy-saving. The bank uses its central air-conditioning systems equipped with the energy-saving “VRF” system, and water saving supplies have been installed in the bank’s buildings since 2015.

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Jordan Kuwait Bank (JKB)

Jordan Kuwait Bank (JKB) is one of the largest banks funding the energy sector in the local market. Its energy portfolio includes all major energy companies in Jordan.

Further, and since the enacting of the Jordanian Renewable Energy Law and with the view of promoting the development of clean energy, JKB has adopted a clear strategy through its Project Finance and Syndications department to include financing terms suitable for long-term renewable energy projects to finance projects in the renewable energy sector at various levels whether at the company level or the stakeholders’ level. Since then, JKB has been at the forefront of providing required financing for these projects leading the way in the local market.

JKB offers project financing terms necessary for the development of large renewable energy projects including long tenor (15+ years), high leverage up to (75%) and competitive pricing.

JKB has contributed over USD 60 million of financing to renewable energy projects, spread over a number of projects including equity financing for these projects. Notably, JKB participated in arranging the required financing for the largest wheeling sector project in Jordan implemented by the private sector in the form of a 37MW electricity generating project for private consumption. JKB completed the financing of the project in partnership with the European Bank for Reconstruction and Development which is one of the largest international banks involved in financing renewable energy projects.

Jordan Kuwait Bank (JKB) was one of the first banks in Jordan to establish its own solar power plant to cover its electricity needs, which led to reducing electricity costs by 85%.

Facts
- A pioneer among banks in Jordan to establish its own solar power plant
- Over USD 60 million of financing to renewable energy projects
- Financed largest wheeling sector project in Jordan for private consumption
- Financing terms offered:
  - Long tenor (15+ years)
  - High leverage up to (75%)
  - Competitive pricing
- Specialized Project Finance team also experienced in working with DFIs

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<th>Address</th>
<th>Website</th>
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<tbody>
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