

White Paper

Accelerating Private Finance for the Arab Renewable Energy Transition

14 October 2020

Acknowledgements

This white paper was prepared jointly by CEBC and the 'SDG Climate Facility Project: Climate Action for Human Security', with Karen R. Ziegler¹, Dustin S. Schinn² and Ahmed S. Elbermbali³ as lead authors under the guidance of Nasser Saidi⁴, Sujala Pant⁵ and Kishan Khoday⁶. The authors are grateful to: Denis Korchunov, Raed Bkayrat, Mateo Salomon, Mohammed Hassan Bellachhab and Oliver Waissbein for their valuable inputs and comments on the initial draft. The paper incorporates the discussions by participants of two webinars conducted jointly by CEBC, UNDP and the 'SDG Climate Facility Project: Climate Action for Human Security' in September 2020.

Disclaimer

The views expressed in this publication are those of the author(s) and do not necessarily represent those of the United Nations, including UNDP, or the UN Member States.

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Introduction

According to the United Nations Framework Convention on Climate Change (UNFCCC), climate finance refers to local, national or transnational financing—drawn from public, private and alternative sources of financing—that seek to support mitigation and adaptation actions that will address climate change.

To support developing countries’ efforts towards effective climate action, it is important for relevant stakeholders to recognise their financial needs as well as to understand how available financial instruments can be mobilized and used towards their climate ambition.

While climate finance includes both mitigation and adaptation, this discussion paper focuses on renewable energy finance in the context of strengthening human security in the Arab region. Renewable energy systems entail numerous benefits for various Sustainable Development Goals (SDGs) and the 2030 Agenda for Sustainable Development. In addition to the more obvious contribution to SDG 7, which focuses on access to affordable, reliable, sustainable and modern energy for all, and to SDG 13 on climate action, renewable energy finance can also make critical contributions to several other SDGs including by alleviating poverty, fighting hunger, and increasing access to health services, education and clean water.



Figure 1: Renewable energy entails benefits for multiple SDGs

The multi-faceted benefits from renewable energy for sustainable development and human security are especially true for fragile and conflict-affected settings where renewable energy can fill critical gaps in electricity supply and provision of services to vulnerable communities. For example, solar-powered water purification for clean drinking water, hydro-pumps for irrigation, electricity access for schools and health clinics, as well as reduced electricity costs and reliance on fossil fuels leading to increased savings and community resilience. This nexus between climate action and human security culminates in an emerging concept of “climate security” that aims to address the question of how climate and renewable energy finance can be directed to fragile and conflict-affected contexts that are usually perceived as high-risk by traditional investors.

It will be difficult for the public sector, whether through international development assistance, public climate finance, or through domestic budgets, to meet the finance gap that currently exists vis-à-vis countries' ambitions under the Paris Agreement. The role of the private sector, and particularly private investors, becomes increasingly important. From initial experiences of renewable energy finance deals in the Arab region as highlighted in this paper it is important to communicate the viability of renewable energy as a worthwhile investment, by reducing the information barrier and perceived risks to potential investors, whether in fragile or more stable Arab States. Opportunities for excellent return on investment exist across the Arab region, especially for solar and wind power, including in fragile states. However, opportunities need to be promoted among investors by presenting promising entry points and providing policy and financial incentives that open markets for private investments, including through blended finance.

This white paper seeks to facilitate knowledge sharing between public and private actors to accelerate private investments in renewable energy systems in the Arab States, with a focus on fragile and crisis contexts. It seeks to stimulate dialogue among technical experts and policy-makers in the Arab States, international development actors, commercial finance players and renewable energy owner operators, in order to explore how renewable energy investment opportunities in high-risk, volatile environments such as fragile and conflict-affected settings, can become attractive enough to expand from niche investors to mainstream financial actors. The two objectives of the paper are to: (i) Stimulate discourse for governments and policy-makers to learn about the barriers

currently preventing private investments in renewable energy, complemented by case studies of successful investment deals with private sector participation; and (ii) facilitate investors' engagement with public authorities to learn about policy change and potential for return on investments in renewable energy systems in emerging markets, fragile and crisis settings.

There are lessons from the implementation of projects in conflict-affected areas that can be applied in the rest of the region and vice-versa.

Potential for Renewable Energy Finance in Arab States

The Arab region comprises a diverse set of development contexts ranging from Gulf Cooperation Council (GCC) countries to highly fragile and crisis-affected countries. Arab States also comprise the most water scarce and food import dependent region in the world. These vulnerabilities have contributed to various forms of social unrest, exacerbated conflicts, and driven mass-displacement of vulnerable people within countries and across borders.

In the Arab region and indeed globally, climate action falls far short of what is needed under a 1.5 °C scenario. The Intergovernmental Panel on Climate Change (IPCC, 2018) estimates that USD 1.6 trillion to \$3.8 trillion in supply-side renewable energy investments are needed annually between 2016 and 2050 in order to achieve the transition to a low-emission world.

An assessment of the global climate finance landscape estimates that climate finance flows increased to \$546 billion in 2018, up from \$342

billion in 2013.⁷ Most of that, an estimated average of \$326 billion per year during 2017 and 2018, is private climate finance.⁸ Overall, \$337 billion, i.e. the majority of climate finance at the global level, was for renewable energy generation.⁹ This represents a notable development that led to cost reductions in renewable energy technologies and provides an important economic basis for scaling up renewable energy in Arab States. However, only \$14 billion of the \$546 billion of climate finance in 2018 flowed in the Middle East and North Africa region,¹⁰ despite the region including some of the most potent areas for solar PV along with being highly vulnerable when it comes to climate impacts.

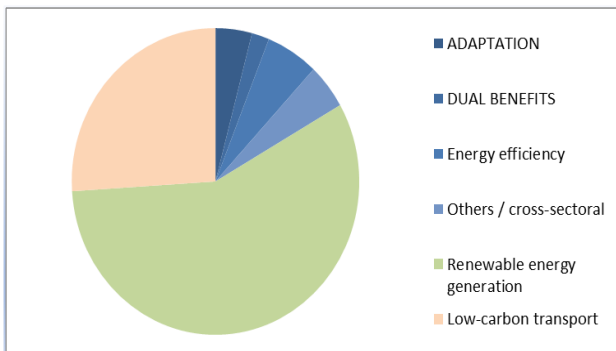


Figure 2: Climate Finance Flows 2013-2018 (Source: Climate Policy Initiative)

The potential for solar radiation in the Arab States is among the highest in the world, between 1900 to 2600 kWh/m²/year, providing a solid foundation of supply to promote returns on renewable energy finance to meet a burgeoning demand.¹¹ The economic potential for solar PV in the Arab region is, accordingly, very high: A recent World Bank assessment of the Levelized Cost of Energy (LCOE), a metric

describing how much it costs to produce a unit of energy, shows that the typical large-scale, ground-mounted PV power plant in the Arab region allows electricity generation at around \$0.06-\$0.12 per kWh. Jordan’s average LCOE, for instance, is \$0.08 while that value for the United Kingdom in comparison is \$0.15.¹² This potential has recently started to translate into increased investments as Arab States have doubled their renewable energy capacity in just two years.¹³

Countries in the region have increased their ambitions for renewable energy capacity from 6.2 giga watts (GW) in 2019 to an envisaged 190 GW by 2035. The most ambitious country plan is presented by Djibouti, which intends to cover 100 percent of energy needs with renewables by 2035.¹⁴ Another outstanding example is Yemen, where over \$2 billion worth of solar panels and batteries have entered the country since the crisis erupted. These have proven to be the only available option to access energy for several years due to the partially destroyed national electricity grid system.¹⁵

The Arab region is split between hydrocarbon rich countries like the GCC and hydrocarbon energy import-dependent countries like Jordan and Morocco, which has affected the countries’ energy consumption patterns and independence. Access to primary energy sources beyond hydrocarbon also varies widely across the Arab region. Decreasing exports of oil and gas, and lower international market prices has pushed some of the governments across the GCC to activate reductions in the energy and water subsidies and kick off energy

⁷ B. Buchner et al. (2019): [Global Landscape of Climate Finance](#). Climate Policy Initiative.

⁸ Ibid.

⁹ Ibid.

¹⁰ Ibid.

¹¹ ESMAP. 2020. [Global Photovoltaic Power Potential by Country](#). Washington, DC: World Bank.

¹² Ibid.

¹³ Regional Center for Renewable Energy and Energy Efficiency (RCREEE) and UNDP (2019): [Arab Future Energy Index \(AFEX\) Report](#).

¹⁴ Ibid.

¹⁵ [Solar energy systems value chain](#) (2020). Study published by UNDP Yemen.

efficiency programs as well as embark on some of the largest utility scale solar plants in the world. At the same time, energy import-dependent countries are looking to reduce the expenses related to hydrocarbon imports by integrating cost-effective renewable energy into the energy mix, open local markets to energy service companies (ESCOs) and to liberate retail electricity tariffs from any government subsidies.

The countries in the Arab region not affected by crisis are afflicted with citizen disconnects between the cost of their energy consumption and the value of that energy; this makes mitigation through replacement with renewables a key piece to countries achieving their 2030 targets. While many stock exchanges in the region are not yet at the same level of engagement as their counterparts in North America, Europe or South East Asia vis a vis SDGs, Environmental, Social and Governance (ESG) there is a growing consideration of these issues which will further drive stable Arab countries to include value drivers beyond profit and loss. This will encourage more renewable energy investment in listed companies in these countries to achieve targets provided that

regulations and access to other instruments, such as carbon trading, keep pace.

Many countries in the Arab region can be characterized as fragile or suffering from active or protracted crises. These countries have significant energy demand but often lack the infrastructure, policies, and resources to meet those needs. Population growth and increasing energy demand combined with socioeconomic drivers of fragility and conflict are expected to continue to characterize the region in the coming decades. Decoupling growth and recovery from hydrocarbon-based energy consumption will hence be one of the fundamental challenges for Arab economies. This will need to be accompanied by measures that ensure future growth is inclusive through access to reliable and affordable low-emission energy for the most vulnerable and poorest communities in order to leave no-one behind and eradicate poverty hand-in-hand with fostering climate action. Figure 3, while highlighting GCC countries as the main consumers of energy in the Arab region, also hints to the gap in access to energy that exists in fragile and crisis-affected countries in the region. It will be critical to ensure that these

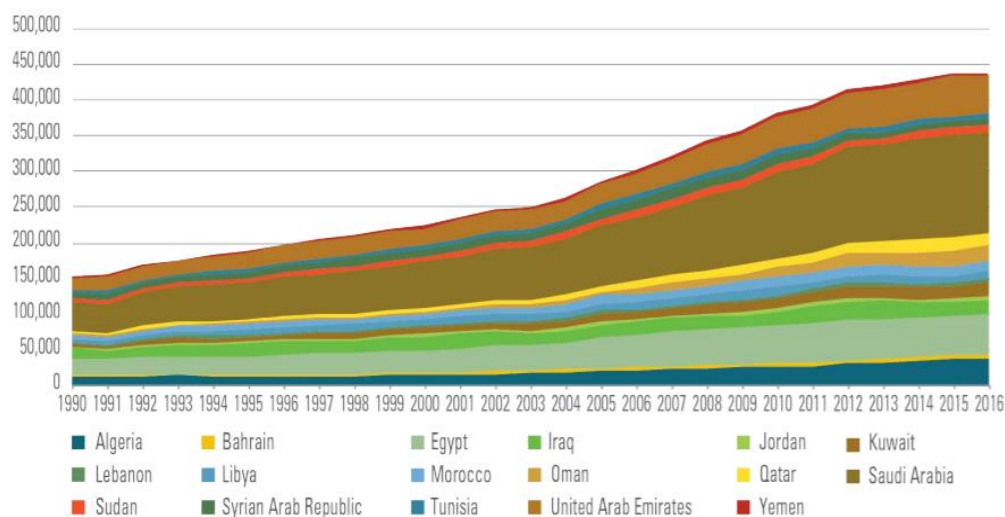


Figure 3: Historical total final energy consumption in the Arab region by country, 1990-2016 (ktoe), (IEA, 2018)

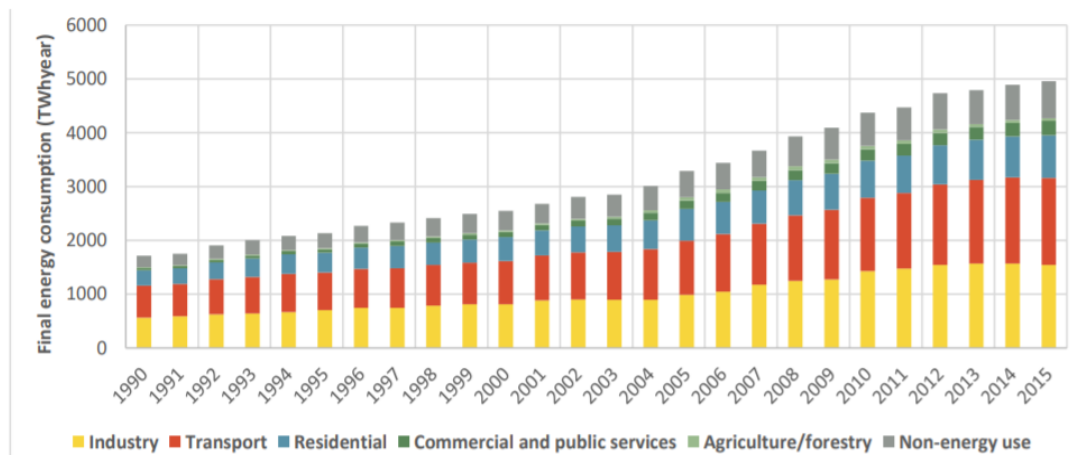


Figure 4: Total final energy consumption in the Arab region, 1990-2015 (IEA, 2017)

countries recover in a climate-friendly manner and ‘build back better’. to ensure that future growth is inclusive through access to reliable and affordable low-emission energy for the most vulnerable and poorest communities in order to leave no-one behind and eradicate poverty hand-in-hand with fostering climate action. Figure 3, while highlighting GCC countries as the main consumers of energy in the Arab region, also hints to the gap in access to energy that exists in fragile and crisis-affected countries in the region. It will be critical to ensure that these countries recover in a climate-friendly manner and ‘build back better’.

As the population grows in the region, energy consumption will increase at levels that are financially unsustainable for governments that subsidize fuel oil or other hydrocarbon-based energy generation. These subsidies are already putting pressure on government budgets, and impact other social services such as access to potable water, education and health care. As discussed earlier in this white paper, governments in the GCC are starting to reduce energy and fuel subsidies, which further increases competitiveness of renewable energy

in these countries. Figure 4 presents the annual variation and distribution of total final energy consumption (TFEC) in the Arab region over the period 1990-2015. The Arab region has seen a significant increase in energy consumption, with an average annual growth rate of 10 percent in TFEC since 1990. In 2015, the Arab region consumed almost 5,000 terawatt hours of energy to meet its economies’ needs.

As a response to the COVID-19 pandemic and concurrent drop in oil prices, some countries are inclined to suspend or revise downward the financing of renewable energy investments. There are, however, two possible pathways of post-crisis recovery for the Arab region: One that follows global outlooks in which renewables demand is expected to increase because of low operating costs and preferential access to many power systems.¹⁶ The other one would follow a more pessimistic scenario where recently observed oil price drops lead to a continuation of entrenched extractive industry interests in some Arab States as well as, among others, increasing corruption in hydrocarbon

¹⁶ See, for instance, International Energy Agency (IEA), April 2020: [Global Energy Review 2020](#).

rich countries, potentially leading to misplaced public incentives.

For example, the Kuwait National Petroleum Company halted in July 2020 the Al-Dabdada solar plant which was expected to provide 15 percent of the country's electricity needs. Lebanon's investment in solar was already behind schedule at the end of 2019 and the recent national default on debt and dissolution of parliament, exacerbated by the recent explosion in Beirut, might further delay decisions about the future of renewables in the country due to competing policy agendas and potentially limited fiscal space.¹⁷ As such, there are multiple challenges related to renewable energy finance and its reliance on public investors in the Arab region. On the other hand, renewable energy technologies in many instances have become economically competitive and can provide sufficient return on investment to be attractive to private investors even in countries with perceived or actual high-risk environments. The COVID-19 crisis amplifies these challenges by being a focus of convergence for the gaps in private financing and available public funds to allocate in 2020 and 2021, if not beyond.

Barriers to Scaling up Finance

Existing key barriers to scaling up private climate finance in the region include, but are not limited to, the following:

- **High cost of capital due to perceived or actual risks** of investing in developing countries generally, and crisis-affected countries specifically, including lack of long-term market stability or predictability, frequent high-level

political turnover, and actual or perceived potential for conflict;

- **Difficulties in transferring technologies and solutions** to fragile contexts, including barriers to market entry and deployment due to outdated regulatory frameworks and policies, bureaucratic and trade barriers, and currency volatility;
- **Low awareness among investors** about suitable renewable energy solutions that are effectively deployable when political stability is not guaranteed, and which are financially viable to deliver return to investors while providing cross-cutting climate-security and SDG benefits to society at large;
- **Lack of access to finance for micro-, small- and medium-sized enterprises** that offer tailored renewable energy solutions with cross-cutting SDG benefits for developing countries generally, and fragile and conflict-affected situations in particular; and
- **Political economy of transitioning** from an extractive industry to renewable energy options among oil and gas-producing countries, even in fragile and conflict-affected settings where socio-economic benefits of renewable energy production should exceed benefits resulting from hydrocarbon extraction;
- **Difficulties connecting** (micro) scaled renewable energy solutions to existing grids;
- **Lack of industrial or commercial storage** to meet citizen consumption

¹⁷ Some early progress made on the topic, as per the August 2020 United Nations Country Team (UNCT) Flash Appeal, includes that the Beirut explosion response priority 1.11 comprises "Provision

of renewable energy solutions (solar systems) for the affected health facilities to replace generators."

patterns, especially in regions where citizens are not engaged to moderate consumption to align with climate mitigation needs;

- [Access to primary resources](#) for renewable energy infrastructure comes from outside the Arab region forcing reliance on international trade which may be limited by international sanctions, poor credit ratings, or government currency insolvency.

Opportunities to Catalyze Transformational Change

While hosting the world's largest levels of solar radiation, only seven percent of power in the region today is from renewable energy, a lost opportunity for building resilience of communities and improving energy access for human security. Energy security is a vital element to address poverty and human security in the region, with low-emission technologies emerging as a cost-effective solution for poor and vulnerable communities in remote locations or urban slums, as well as conflict-affected areas.

Opportunities exist for different tracks of private finance for renewable energy generation, including primarily project-level market rate lending by commercial banks and project-level equity by commercial banks and corporate actors. Balance sheet debts and equity may also be suitable to fragile and crisis contexts depending on available corporate interest and strategy.

A key realisation that has emerged in this regard is a lack of coherence between humanitarian and development agendas, which have traditionally been addressed relatively independent of each other. Renewable energy,

however, can entail benefits for both agendas, for instance in circumstances of fragile and crisis settings. The question which arises is, how can investment opportunities that can catalyze finance at scale for renewable energy technologies that benefit the poorest and most vulnerable communities in these fragile and crisis settings, be promoted?

Off-grid solar companies in developing country contexts, in particular non-crisis contexts, have proven to be financially viable for instance when using pay-as-you-go tariffs via mobile phone apps. Pay-as-you-go allows customers, in particular at the household or village level, to pay for solar systems over time, and the provider can exercise remote control to shut down systems in case of late payments. These systems may under certain circumstances also be suitable in fragile and crisis contexts, especially where other options for reliable and affordable energy supply are lacking.

Countries like Yemen (see below) demonstrate that in some cases, off-grid solar technologies are operated not *despite* crisis but, at least in part, *driven by* the crisis, given that off-grid solar can provide reliable energy supply in situations where communities are cut off from traditional, central grids. Smaller off-grid solar modules can also provide energy even with modest investments. New financing models and public-private partnership with multilateral or governmental actors are needed to ensure that these systems become available as quickly as possible in crisis and post-crisis environments to bridge the humanitarian and development agendas.

Examples of success stories and readily scalable renewable energy investment cases can be found in various Arab States. While many of the investment examples below are not directly dependent on private finance, the

implementation of large projects suggest that the risks associated with barriers to market entry are being addressed. Detailed examples shared by CEBC members and participants in the two webinars at the beginning of September 2020 can be found in Appendix A – Case Studies. Relevant examples of success include:

1. Transformation of the electricity tariff mechanisms in [Egypt](#), including the use of reverse auctions to cut the cost per kWh by almost 300 percent. This encouraged the building of Benban through climate finance investments lead by ERBD and GCF, along with some secondary private financing¹⁸. (See Appendix A)
2. Aero Fresh Farms in the [United Arab Emirates \(UAE\)](#) secured venture capital financing to expand its business as it addresses the food security issues in the country.¹⁹
3. In [Sudan](#), a GEF-UNDP project resulted in the establishment and capitalization of a National solar PV Fund and coordinated loan facility, with the support of eleven local commercial banks for lending to farmers for solar-PV pump equipment. The project also established a Solar Lab attached to the Sudanese Standard Meteorology Organization. Demand for solar PV pumps has increased drastically since and the Council of Ministers decided to

exempt the solar systems from customs and duties.

4. In [Yemen](#), reports indicate that over \$2 billion worth of solar panels and batteries have entered the country since the crisis erupted, including pico systems, solar home systems, solar-hydro pumps, and mini-grid systems for homes, schools, health clinics and more.²⁰ In that sense, solar systems can represent a flexible and readily deployable option to provide energy to conflict-affected areas and regions.
5. In [Algeria](#), Sonolgaz’s tender for private investment in solar projects in 2018 was met with limited success due to the local content requirement but the process nevertheless served as a pilot that is expected to build an ecosystem to leverage learnings which will open up the market to foreign investors. The subsequent Tafouk 1 solar project will still have local content requirements but has been granted exemptions from import duties and been given other fiscal breaks.^{21 22}
6. In the [UAE](#) the Mohamed bin Rashid Al Maktoum Solar Park is a consortium between the Dubai government, Masdar, and EDF Energies Nouvelles, with international contractors delivering the project.²³
7. Private investments in ESCOs across the region such as in the [UAE](#) and [Saudi](#)

¹⁸ <https://www.greencimate.fund/news/climate-finance-drives-down-renewable-price-in-egypt-by-half>

¹⁹ <https://www.ft.com/content/cac48190-9d8a-11e9-9c06-a4640c9feebb>

²⁰ [Solar energy systems value chain](#) (2020). Study published by UNDP Yemen.

²¹ <https://www.pv-magazine.com/2019/06/17/limited-success-for-algerias-150-mw-pv-tender/>

²² <https://www.pv-magazine.com/2020/05/29/algeria-plans-4-gw-of-solar-tenders/>

²³ <https://www.dewa.gov.ae/en/about-us/media-publications/latest-news/2019/03/mohammed-bin-rashid-al-maktoum-solar-park>

Arabia working closely with Super ESCOs that are set up by the government and provided a pipeline of projects based on government buildings and facilities.

This leaves some key questions unanswered, including whether private finance needs to build a market, rather than just serve a market in the Arab region. Also, how will countries encourage market forces to build responses to climate insecurity in their countries? How can citizen-led entrepreneurial activities addressing renewable energy solutions with cross-cutting socio-economic benefits for enhanced climate security solutions be more effectively supported by private finance?

Ingredients to Accelerate Private Renewable Energy Finance in Arab States

A number of key contributing factors have emerged that help accelerate private renewable energy finance in the Arab region. These include: (1) Data and information to minimize actual and perceived risks to investors; (2) innovative finance models and partnerships; (3) communication and agenda-setting.

This white paper has provided qualitative evidence of successful renewable energy investment deals that can provide investment templates to inform similar deals in the future and help policy-makers with understanding the barriers to, and opportunities for, renewable energy finance at scale and associated benefits for sustainable development. In addition, quantitative evidence through repeatable relevant data regarding potential returns on investment, and dialogue between investors

and renewable energy operators and owners in the Arab region can help reduce risk barriers to investors. The quantitative evidence must be able to withstand external scrutiny which requires initial projects to be transparent about the return on investment and other relevant metrics such as cost per megawatt installed and cost per kWh produced.

The 'Derisking Renewable Energy Investment' (DREI) is an example of an innovative, quantitative tool to assist policy-makers in developing countries to systematically identify barriers and associated risks related to private renewable energy investments. DREI further assists policy-makers in putting in place packages of targeted public interventions that address the identified risks by reducing, transferring or compensating for risk.²⁴ There also needs to be a certain level of certainty that the repeatability or improvement upon the metrics is likely, which requires governments to use publicly scrutinized power generation contracts and other fiscal terms such as taxation.

Targeted private finance at scale will only happen when various actors involved in the climate-security nexus are mobilized to cooperate, including partners from banking, equity, insurance, impact investors, multilateral development banks, philanthropists, and other alternative sources of finance. Potential financiers of renewable energy solutions with benefits for the climate-security nexus need clear data and information, tailored regulatory frameworks, financial products and services, and a pipeline of bankable investment projects. Financial models such as pay-as-you-go tariffs for solar PV, or for payback from other industries, such as pharmaceutical research or

²⁴ For further information about DREI, please refer to: <https://www.undp.org/content/undp/en/home/librarypage/environment/>

[energy/low_emission_climateresilientdevelopment/derisking-renewable-energy-investment.html](https://www.undp.org/content/undp/en/home/librarypage/environment/energy/low_emission_climateresilientdevelopment/derisking-renewable-energy-investment.html)

FMGS, are worth investigating to build a model that works for an industry that does not have a commodity cost input since irradiation and wind are free.

Public sector authorities need to establish the right enabling environment to encourage and enhance private sector engagement, through conducive laws and regulations, and transparent and clearly articulated policy incentives. De-risking investments by accessing public domestic or international climate finance, can be an important leverage to boost investor confidence. Compliance with emerging international standards and through recognized sustainable finance frameworks could also help address governance issues. Moreover, governments play a key role in supporting the piloting, testing and demonstrating of business models, technologies and partnerships before commercial viability.

Risk transfer mechanisms play an important role in the Arab States, given that renewable energy technology risk for utility scale projects has now largely been overcome, yet political and currency risks still represent important barriers in the region, which is increasing the cost of capital. Currency risk can be addressed by innovative initiatives such as TCX Fund which seeks to hedge currency risks.²⁵ This of course comes at a cost, which however may be absorbed by projects with high IRR. As for political risks, established guarantee

mechanisms such as the World Bank's MIGA continue to be well-placed to address them.

Part of the 'finance challenge' lies in the fact that climate, development, humanitarian and finance professionals do not speak the same language. Climate professionals might view solar solutions purely as a climate change mitigation approach, while humanitarian actors might understand it as an emergency relief option that can be used as an energy source in remote areas to help cool and store life-saving medicine by powering fridges. It is important to distil and disseminate knowledge and information that can help reduce actual and perceived risk to potential investors. Knowledge exchange between various professions involved in the climate-security nexus, including on finance, can spur coordinated action on the ground and reduce knowledge and information barriers to potential investors.

Finally, accelerating private renewable energy finance comes from consumer demand. Whether the consumer is residential or commercial, supply follows demand and when citizens and commercial entities actively demand clean energy, space will open up for private finance to be leveraged. Governments and development agencies need to build the foundations of system fairness for deploying renewable energy in lieu of non-renewable

²⁵ See www.tcxfund.com

Energy. Ultimately, private finance will flourish at sustainable rates when a community demands access that governments cannot meet. Yemen is an example of energy demand where the government transferred the ability to meet this need to the private sector and the private sector determined that the best return on investment to the incumbent demand was associated with a solar solution.

Outlook Towards Catalyzing Renewable Energy Transformation in Arab States

Technical assistance by development organizations can help countries meet the aforementioned pre-conditions and contributing factors to accelerate the renewable energy transition in the Arab States in a way that brings multiple benefits for sustainable development. The SDG Climate Facility project, for instance, will organize Climate Investment Forums to facilitate “match-making” between project developers,

private investors and commercial finance institutions, concessional finance and guarantee providers, and relevant government authorities to design bankable climate projects with benefits across the SDGs.

The project will also provide technical assistance to commercial financial institutions to develop financial products and services that support impact-based approaches for climate-security nexus finance. Organizations such as CEBC in the Arab region are also working directly with financiers and project owners to find solutions that advance renewable energy installations through the sharing of rewards and risks associated with value drivers that go beyond a straight return on capital.

Ultimately, progress on catalyzing renewable energy technologies for enhanced climate security in Arab States will be measured by collective actions by those who seek to be drivers of change.

About the CEBC

The Clean Energy Business Council-CEBC, is a non-profit, non-governmental membership association based in Abu Dhabi Global Market (ADGM) dedicated to promoting clean energy including renewables, energy efficiency, smart grid, energy storage and clean energy technology and solutions for the environmental sector. CEBC provides a unique all-inclusive platform bringing together leading local and international organisations participating in the clean energy sector in the Middle East and North Africa. Its mission is to drive the development of appropriate and much needed regulation and policy to support the growth of this vital sector. The CEBC is the only clean energy industry group to cover the MENA region.

CEBC is a leading forum for local, international corporations and government entities focused on the development and deployment of clean energy in the MENA region. CEBC promotes constructive dialogue and collective action by all stakeholders in order to guide public policy and private investment in the region's nascent clean energy sector. As the only clean energy industry group to cover the MENA region energy, CEBC constantly strives to provide its members with updates on the latest developments in clean energy policy, research, and technology and opportunities to grow their organizations and network with high-level industry players.

About the “SDG Climate Facility project: Climate Action for Human Security”

Focused on the nexus between climate action and human security, the SDG Climate Facility Project: Climate Action for Human Security in the Arab States, seeks to enhance the capacity of regional and national institutions to effectively take climate action in a way that brings benefits across SDGs. The project promotes integrated solutions that also contribute to crisis prevention and recovery efforts, and aims to mobilise and scale up climate finance – public and private – to enable countries to put in practice the integrated approach. Towards that aim, the Project aims to foster partnerships across the public and private spheres. Underlying these objectives is the intention to establish an SDG-Climate Facility, which will take forward the nexus approach and agenda beyond the life-cycle of the project.

The project currently brings together multi-lateral institutions in the region such as the League of Arab States (LAS) and the Arab Water Council (AWC), and leading UN system partners active on climate actions in the region, including the UN Development Programme (UNDP), the UN Environment Finance Initiative (UNEP-FI), the UN Human Settlement Programme (UN-Habitat), the UN Office for Disaster Risk Reduction (UNDRR), and the World Food Programme (WFP). The project is expected to run until December 31, 2022, and is generously supported by Sweden.

APPENDIX – Case Studies

The Abu Dhabi Global Market (ADGM) Sustainable Finance Agenda

As a leading International Financial Centre (IFC) and regulator, ADGM has placed sustainable finance at the forefront of its strategic agenda, aiming to establish a robust and innovative hub that will efficiently channel investment into various sustainability-focused facets. As such, the ADGM Sustainable Finance Agenda, published in January 2019, sets a roadmap for the development of a sustainable finance hub that supports capital formation, as well as the creation and issuance of products, that aim to catalyze the achievement of the UAE's economic, social and environmental objectives. Its four key pillars include:

Regulation – The UAE Guiding Principles on Sustainable Finance, a first-of-its-kind initiative based on the United Nations Agenda for Sustainable Development, was published to address the need for clarity surrounding sustainable finance and ESG factors, in support of advancing the country's sustainability priorities. These Guiding Principles serve as a catalyst in the achievement of the UAE's sustainable priorities and represent the first step to the introduction of further policies, rules and regulations, in line with the UAE's ongoing initiatives and global best practices. ADGM is currently conducting a survey of its registered entities to better understand the degree of implementation of these Guiding Principles by each entity. The survey will assess both the extent of actions taken in this regard, as well as the challenges faced by financial institutions concerning sustainability risk management and governance, which will naturally reflect the current implications of the COVID-19 crisis and the nation's subsequent recovery agenda.

Collaboration – Promoting sustainable development and finance requires effective national and international cooperation to achieve synergistic relationships, thus resulting in positive outcomes. ADGM, through its consultative working group on sustainable finance, has actively promoted impactful dialogue between a variety of national and international stakeholders, including UAE authorities, commercial organizations and industry standard-setters. In 2019, ADGM spearheaded the launch of the Abu Dhabi Sustainable Finance Declaration, which saw its inaugural round of signatories in 2019 during the Abu Dhabi Sustainable Finance Forum (ADSFF) and a second round of signatories in 2020, including leading UAE authorities and entities, such as the Ministry of Climate Change and Environment (MOCCA), the Central Bank of the UAE (CBUAE), and the Abu Dhabi Securities Exchange.

Awareness – Greater awareness and acceptance of sustainable development and finance is crucial in mobilizing efforts and resources towards the achievement of

these goals. To this end, ADGM is raising the level of knowledge, awareness, and acceptance of sustainable finance through the introduction of events, education and training programs, as well as ongoing support of efforts to develop expertise in this area. ADGM launched the ADSFF, the first event in Abu Dhabi focused on advancing the adoption of sustainable finance in the region, as part of the renowned Abu Dhabi Sustainability Week. As part of its efforts to ensure a brighter and more sustainable future for generations to come, nurturing talent and caliber is a vital aspect, which ADGM is continuously driving. The ADGM Academy (ADGMA) announced the launch of the region's first Certificate in Sustainable Finance, in partnership with the London Institute of Banking & Finance (LIBF). Offered through the ADGMA's School of Sustainable Finance and developed by the LIBF, the qualification is set to address the sustainable imperative by examining banking and finance from the 'ground up', reviewing industry assumptions around markets, forecasting, risk, credit, investment and more.

Ecosystem – ADGM is continuously developing a sustainable finance ecosystem with a diversity of institutions, product offerings and services to support capital formation and deployment of financing to scale up the nation's sustainable finance efforts. ADGM will soon be issuing a State of Sustainable Finance Report, alongside the Ministry of Climate Change and Environment (MOCCA), outlining the extensive progress that ADGM, as well as its key partners and stakeholders, have and continue to make on the sustainable finance front. The report also serves as a call to action to promote the ongoing implementation of sustainable best practices in Abu Dhabi, the UAE, and the wider region.

Dentons & Co : lbri-2 photovoltaic (PV) solar independent power project (IPP)

The lbri-2 PV IPP project, to be developed on a BOO (build, own, operate) basis, will utilise solar PV technology to generate 500MWac of renewable power. At peak generation capacity, the plant output will be enough to supply an estimated 33,000 homes with electricity and will offset 340,000 tonnes of carbon dioxide emissions a year. Located around 300km west of Muscat, lbri-2 PV IPP will contribute towards increasing power supplies in the Sultanate.

The power project, financed on a 70:30 debt-to-equity ratio, has received \$275 million in senior debt funding from a group of six lenders. The lending consortium includes the Asian Infrastructure Investment Bank (AIIB), Bank Muscat, Riyad Bank, Siemens Bank, Standard Chartered Bank and Warba Bank.

International Company for Water and Power Projects (ACWA Power) is the lead investor in the project with a 50 percent stake, Gulf Investment Corporation (GIC) will have a 40 percent stake and Alternative Energy Projects Co (AEPC) will control the remaining 10 percent.

The plant will become the largest utility-scale solar photovoltaic park in Oman. This is a landmark project as it is not only the largest renewables project in Oman but will be the first renewables IPP for AIIB (the Beijing-headquartered international multilateral development bank) in the region with a consortium of international and regional banks. Providing funding from China into the Middle East as part of the One Belt One Road initiative, this transaction marks the first time to see a new multilateral development bank in this sector in the region. AIIB familiarized themselves with the Oman legal framework and documentation structure. With this template now formed, it can be expected that project investments will increase and could be a major source of funding for the future in a liquidity constraint environment.

The transaction closed during the midst of the Covid-19 pandemic, proving that with a confident and tenacious attitude, success can still be achieved during a particularly challenging environment.

Dentons advised the ACWA Power led sponsor consortium, in agreement with the Oman Power and Water Procurement Company (OPWP) in relation to the conventional and Islamic financing of the Project. Dentons led on drafting in respect of a number of facilities with different finance parties, which together comprised the primary and EBL financing for this unique project. The Dentons Finance team was led

by partner Udayan Mukherjee, with assistance from counsel Michelle Teng, senior associate Carina Onzer, associate Annabel Vincent and trainee Asila Al Hinai. Partner Mhairi Main Garcia led on the project documents.

Dentons' Oman office also advised on the local law aspects, led by partners Sadaf Buchanan and Andrew Figgins, with assistance from counsel Justine Harding and paralegal Safa Al Bulushi.

Derisking Renewable Energy Investment in Tunisia²⁶

Tunisia requested UNDP and GEF support (\$ 4 million) for a project that began implementation in 2016 to achieve the Tunisia Solar Plan's 2030 investment targets.

UNDP's Derisking Renewable Energy Investment (DREI) framework was used to design a menu of policy and financing derisking instruments to enhance the renewable energy market in Tunisia. Through this project and an earlier wind utility-scale project, UNDP has been instrumental in supporting the government on

- the overall regulatory framework for utility-scale renewables;
- setting and increasing ambition on national renewables targets;
- establishing a new, independent power market regulator;
- technical assistance and financial support for operationalization of the energy transition fund;
- building capacity and organizational restructuring of the national energy agency.

In 2019, the World Bank classified Tunisia as one of the 'top three countries in the world for its innovation in policies and regulations for renewable energy', along with Egypt and UAE. In 2018, the government launched a successful auction scheme to engage private sector investment for 130 MW in wind energy, to be installed by 2021. This has subsequently been followed up in 2019 by a successful 500MW scheme for utility-scale solar energy.

²⁶ The full case study can be found online:

[https://www.undp.org/content/dam/undp/library/Environment%20and%20Energy/Climate%](https://www.undp.org/content/dam/undp/library/Environment%20and%20Energy/Climate%20Strategies/DREI%20Tunisia%202018%20Full%20Results%20(English)%20(Aug%202018)%20(FINAL).pdf)

[20Strategies/DREI%20Tunisia%202018%20Full%20Results%20\(English\)%20\(Aug%202018\)%20\(FINAL\).pdf](https://www.undp.org/content/dam/undp/library/Environment%20and%20Energy/Climate%20Strategies/DREI%20Tunisia%202018%20Full%20Results%20(English)%20(Aug%202018)%20(FINAL).pdf)

Majid Al Futtaim: Carrefour Jordan Power Purchase Agreement

Founded in 1992, Majid Al Futtaim remains the leading shopping mall, communities, retail and leisure pioneer across the Middle East, Africa and Asia. A remarkable business success story, Majid Al Futtaim started from one man's vision to transform the face of shopping, entertainment and leisure to 'create great moments for everyone, every day'. It has since grown into one of the United Arab Emirates' most respected and successful businesses spanning 16 international markets, employing more than 44,000 people, and obtaining the highest credit rating (BBB) among privately held corporates in the region.

At Majid Al Futtaim, our Dare Today, Change Tomorrow sustainability strategy supports us in driving change across our business to ensure that we can reach our future goals. We want to play our part and we're committed to driving positive change. Our broad geographic reach, 44,000 employees and scale of operations across our Operating Companies, means we must live up to our responsibility to make a positive impact. We're proud that we were the first company headquartered in the Middle East, and one of only a few globally, to commit to becoming Net Positive. By 2040, we're committed to producing more clean water than we use, and to eliminating more CO2 from the atmosphere than we emit. We continue to invest in the transition to clean energy by expanding our own renewable energy generation and introducing power purchasing agreements. By listing the world's first benchmark corporate Green Sukuk, we've demonstrated our long-term commitment to financing our existing and future investments in renewable power, energy efficiency and green buildings. As our business continues to grow, we've found ways to adapt and reduce our impact, ensuring we manage our sites as sustainably as possible. We are proud to have reached 29 green certified buildings (LEED, BREEAM or equivalent) and 2.5 million square meters of space with green credentials. As part of our Net Positive commitment, in 2019 we continued to invest in renewable energy. Our shopping malls generated nearly 14 million kWh of renewable energy and we have introduced power purchasing agreements at Majid Al Futtaim – Retail Jordan and Carrefour Dubai Festival City.

In 2019, Majid Al Futtaim signed a 17-megawatt build-own-operate-transfer (BOOT) agreement with Yellow Door Energy, a leading commercial solar developer, to provide solar power across Carrefour stores located in Jordan's cities Amman, Zarqa, Madaba and Al-Salt, due for completion by the end of 2020. Through the BOOT agreement, Yellow Door Energy invests in, designs, constructs, commissions, and operates and maintains the solar park. Located east of Amman, the solar park spans 366,000 square meters and comprises of 300,000 solar panels. The power purchase agreement will supply 29 gigawatt-hours of clean energy in its first year of operation to fully cover the electricity demand of the majority of Majid Al Futtaim – Retail stores in Jordan.

This is a step to inspire and transition global retailers and multi-nationals towards sustainable energy alternatives.

The project was made feasible due to the regulatory frameworks and policies placed by the Jordanian government. One framework being that Jordan allows for off-site renewable energy generation whereby benefits are obtained from this energy through Energy Wheeling, a process that permits the transportation of electrical energy outside grid boundary and is a vital regulation that allowed for the implementation of this project. The Carrefour Jordan solar energy project shall contribute to the Sustainable Development Goals, reduce global CO2 emissions and mitigate climate risks. The workforce within the project has obtained invaluable experience that will aid in the further ease of future implementation of renewable energy within Jordan. We have never been prouder of our employees as they adapt, reskill and help provide vital services to our communities and societies.

The coronavirus pandemic has presented another global challenge, alongside the climate crisis that we were already facing. We know that no single government, organization or business can fix these problems alone, and with unprecedented calls



for action, we must work together to continue to live in harmony with our environment whilst operating resilient businesses. We recognize the challenging times we're all facing, and we know there is a great deal of work ahead of us. Still, we are committed to do even more in the coming year to support our people and planet, as we continue to lead the way in our region.

Yellow Door Energy: Solar Park for Classic Fashion in Jordan

Yellow Door Energy is the leading sustainable energy provider for businesses, serving commercial and industrial customers in the Middle East and South Asia. The company signed a 5.5 megawatt-peak build-own-operate-transfer (BOOT) solar agreement with Classic Fashion to bring solar power to 20 of its garment manufacturing factories in the Hashemite Kingdom of Jordan. Through the solar agreement, Classic Fashion switched to clean energy without any upfront investment. As the solar developer, Yellow Door Energy was responsible for investing in, designing, building, commissioning, operating and maintaining the solar park. Under Jordan's solar wheeling regulation, Yellow Door Energy purchased Jordanian desert land, build a solar photovoltaic (PV) power plant, and "wheel" or transport the electricity to the grid for Classic Fashion's usage. Solar wheeling is especially useful for businesses which want to switch to solar but have limited space on their premises for rooftop or carport solar.

Classic Fashion Apparel Industry Ltd. Co. is the largest apparel manufacturer in the Middle East with annual turnover of \$600 million in 2019. The company was established in 2003 in Al-Hassan Industrial Estate, Jordan. Today it has over 30,000 employees in 20 factory facilities, accounting for 30 percent of Jordan's total garment exports. The company is a vendor to retailers such as Walmart, Adidas, Armani, Under Armour, JCPenney, Target, others.²⁷

Cost saving is one of the main motivations for Classic Fashion as the BOOT agreement with Yellow Door Energy will save the garment maker more than 30% in electricity bills in the first ten years. Savings will enable the garment maker to become more competitive, invest in innovation, and empower its employees, especially its women empowerment programs²⁸. Meeting global retailers' clean energy obligations is another motivation. Sustainable supply chain requirements of its global customers are met by the use of solar power. "Since 2015, we have been working on various projects connected with the United Nations' SDGs and the Jordan Government's Vision 2025 program. Clean energy is an integral part of our sustainability strategy, thus we have established a strategic partnership with Yellow Door Energy" said Ramdas Shreedharan Nair, CEO of Classic Fashion.

²⁷ Source: Classic Fashion's corporate website:

<https://www.classicfashionapparel.com/factory.php>

²⁸ Source: Classic Fashion's various women empowerment programs:

<https://www.classicfashionapparel.com/sustainability.php>

²⁹ Source: YDE Sustainable Energy Asset Management System (SEAMS), data up-to-date as of September 8, 2020

Since commissioning, the 5.5 megawatt-peak solar park has generated 3,900,000 kilowatt-hours of clean energy²⁹. On an annual basis, over 12,500,000 kilowatt-hours or clean energy are expected to be generated, enough to make 8.3 million pairs of jeans³⁰ and equivalent to reducing carbon emissions by 8,750 tones. The solar park started operating in February 2020 and was officially commissioned in May 2020, with the delay due to COVID-19 restrictions. Since May, the solar park has been fully operational.

Located in Al-Mafraq, Jordan, the solar park spans an area of 143,000 square meters. The land purchased by Yellow Door Energy was not developed, thus Yellow Door Energy brought the necessary infrastructure prior to construction. This entailed building roads to the solar park, contacting utilities companies to bring water and electricity to the region, and digging a 7km fiber optic cable to bring internet. The infrastructure costs were included as part of the project development costs. The surrounding community of 300-400 Bedouins benefited from all the installed facilities. The park also created jobs among the local community as Yellow Door Energy hired three technicians, seven security guards and three cleaners to help maintain safety and security in the area.

Significant upfront investment was required to purchase the land, bring infrastructure, and build the solar park. Up until now, the Classic Fashion solar park has been 100 percent equity financed. Additionally, various financial incentives from the Jordanian government promoted the development of the solar park. These incentives include removal of customs fee on equipment, mainly solar panels, imported into the Kingdom, exemption of sales tax, and the provision of a significant 50% discount on income tax. The tax exemptions and reductions would not have been applicable had the solar park been built in the middle of an urban center.

Various lessons were learned during the development of the solar park for Classic Fashion. Efficiencies in terms of both time and cost can be improved for the development of the next solar park, as Yellow Door Energy gained a more in-depth understanding the workings of the utilities, contractors, procurement teams, and other stakeholders. For future projects, Yellow Door Energy can further reduce the

³⁰ Source: Newsweek, making a pair of jeans requires 1.5 kilowatts of energy,

[https://www.newsweek.com/2019/09/20/real-cost-blue-jeans-labor-environment-fashionopolis-book-extract-](https://www.newsweek.com/2019/09/20/real-cost-blue-jeans-labor-environment-fashionopolis-book-extract-1457027.html#:~:text=Traditionally%2C%20finishing%20a%20pair%20of,and%205%20ounces%20of%20chemicals)

[1457027.html#:~:text=Traditionally%2C%20finishing%20a%20pair%20of,and%205%20ounces%20of%20chemicals](https://www.newsweek.com/2019/09/20/real-cost-blue-jeans-labor-environment-fashionopolis-book-extract-1457027.html#:~:text=Traditionally%2C%20finishing%20a%20pair%20of,and%205%20ounces%20of%20chemicals).

cost of construction and provide more discounts to the off-taker, enabling it to become more cost competitive and reinvest savings back into its business.

ACWA Power: Benban PV in Aswan, Egypt

The Project aims to Build, Own & Operate PV plants in the Benban Solar Complex (1.5GW), with a total capacity of 165.5MWp. Its objective is to represent one of the first utility-scale renewable projects in Egypt, and to contribute in supporting Egypt's Government to achieve its renewable energy target by 2020. Once operational the project has a commercial term of 25 years.

The main achievements of the Benban PV Project are to be able to use state-of-the-art PV technology and to secure financing of the projects in the challenging environment of Egypt. This transaction represents also one of the first direct lending from a Chinese commercial lender (ICBC). The project delivers around 320GWh/y of solar energy to the Egyptian grid.

Indeed, this project falls under the Feed-in-tariff program initiated by the Government of Egypt back in 2016. The project was structured to allow international financing and bankability on a non-recourse basis to the sponsors. The main success factors revolved around the successful implementation of the regulatory framework and the management of the Solar Complex (total of 32 developers concurrently undertaking construction of their respective projects). Involvement of the local community through training and participation in the construction & operation of the project was another key aspect that allowed the smooth implementation of the projects.

There were no missing elements in terms of government policy or financing. However, one of the key unknowns of the project were about properly estimating the interfaces with the other developers, which caused minor delays in executing the project.

In terms of sustainable development benefits, the project has allowed the value chain of the solar PV industry to flourish in Egypt. Each MW of installed capacity creates 13 sustainable jobs in the industry, most of it from local labor (more than 70 percent local integration). ACWA Power projects save around 156,000 Tons of CO2 every year. ACWA Power has also conducted a number of training and CSR activities for the benefit of the local community, which made them long term participating in the successful operation of the projects.

Standard Chartered: DEWA Noor Energy 1 Case Study

The Noor Energy 1 (DEWA Phase IV Solar IPP), is on track to becoming the world's largest single site concentrated solar power plant . The plant is under the stewardship of Dubai Electricity and Water Authority ("DEWA") alongside International Company for Water and Power Projects ("ACWA Power") as the lead technical partner as well as the Silk Road Fund ("SRF"), (together, the "Sponsors").

As the mandated lead arranger and the lead documentation bank of Noor Energy 1 of the Mohammed bin Rashid Al Maktoum ("MBR") Solar Park, Standard Chartered Bank helped the Sponsors raise \$2.4 billion in debt financing for this monumental project, playing an integral role in its implementation. The \$4.32 billion project is being funded with a maximum ~60:40 senior debt / equity ratio, including base equity, mezzanine financing and early revenues, wherein the senior debt has been procured using USD-denominated term loans from a club of Chinese, regional and international lenders, with Standard Chartered as the lead structuring and documentation bank. The senior debt has been structured using a mini-perm structure whereby, if the senior debt is not refinanced by a pre-set target refinancing date, a mandatory cash sweep will be triggered to ensure that the senior debt is fully amortized a set number of years prior to the final maturity date. Noor Energy is the first power project in the region to be structured around a partial termination regime under a Power Purchase Agreement ("PPA").

In keeping with its deep legacy in the UAE, Standard Chartered was keen to contribute its international expertise and repute to the progression of this project, which served as an integral element to the achievement of the UAE's overarching sustainability strategy. The bank is a demonstrated corroborator in the financing of leading, large-scale projects across the UAE and wider Middle East, spanning across bond issuances to ventures in the energy sector.

Initially, DEWA had issued a Request for Proposals and invited bids for the development of a 200MW Concentrated Solar Power plant. In response to DEWA's RFP, ACWA Power, Saudi Arabia's leading investor, developer, and operator of power generation, submitted an alternative bid for a 700MW CSP project, alongside the base bid, which was awarded to them in September 2017. In 2018, 250MW of additional photovoltaic capacity was added to the project, taking the overall capacity to 950MW. The overall LCOE remained at \$ 7.3 cents/kWh, even after factoring the market-driven interest rate increases from September 2017 to date.

The Noor Energy 1 project is part of a 35-year PPA with DEWA and is being constructed under a lump sum, fixed price, turnkey EPC contract with Shanghai

Electric Group Company (SEGEC), whom, amongst other responsibilities, will provide a credit wrap over the sub-contractors. The Project will be developed over a site with a total area of 43km² and, once constructed, will be the largest single site CSP project in the world. Also, at a total investment of \$4.3 billion, Noor Energy 1 is the largest limited recourse project financing in the Emirate of Dubai, as well as the largest regional investment into the renewable sector for a single project.

The fourth phase of the MBR Solar Park is the first CBI-certified renewable energy project financing in the GCC region and features state-of-the-art technologies, including a CSP central tower, CSP parabolic trough and solar photovoltaic panels based on the Independent Power Producer model. The transaction is also one of the largest Belt and Road initiative projects and boasts the involvement of various Chinese equity investor, lenders, and EPC contractors.

Once completed, Noor Energy 1 will contribute significantly towards the achievement of the Dubai Integrated Energy Strategy 2030, which seeks to secure a sustainable supply of energy for the emirate of Dubai by diversifying energy supply sources, thereby reducing Dubai's total energy consumption by 30 percent by 2030. What's more, the project once completed (in 2022), will provide clean energy to over 320,000 residences in Dubai, reducing 1.6 million tons of carbon emissions a year