

Annual Review

2018



Electrifying communities for a sustainable future

PARTNER ORGANIZATIONS



AWARDS AND RECOGNITION



"Winner, Business of the Year, 2018"



"Global Energy Awards Finalist, 2018"



"Highly Commended Finalist Renewables Category, 2017"



"PV Solar Company of the Year UAE, 2017"



"Leading UAE Renewable Energy Company, 2017"

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Letter from the CEO

Martin Haupts

A year of delivery, and evolving our growth momentum for new markets

In short, 2018 was a year of delivery and growth for Phanes Group. It was the year we delivered on the business model we've put in place over previous years to establish Phanes Group as a leading end-to-end solar provider in the Middle East, North Africa, and sub-Saharan Africa. We made significant progress on the African continent in particular, and also set the foundation for expansion across the Commonwealth of Independent States (CIS) and Central Asia.

Accordingly, we have continued to strengthen our team, processes, and projects to achieve another of our core objectives of the past year. That is, to begin implementing our Independent Power Producer (IPP) business model and lead as one of the key players in our field, focused on emerging markets. This growth continues to push us towards the realization of our ambition to electrify new markets for a sustainable future. The milestones we reached during 2018 demonstrate how.

In Malawi's Central Region, our 26 MW project with the Electricity Supply Corporation of Malawi (ESCOM) was at a very advanced stage towards financial close by the end of 2018, marking a significant moment for our first major project in sub-Saharan Africa. Meanwhile, our African pipeline continued to expand with a successful project bid in Zambia, where we were selected as one of ten developers to be shortlisted for the 100 MW GET FiT tender. In Tunisia, we were shortlisted for the Ministry of Energy, Mines and Renewable Energy's tender for 500 MW of solar PV. Our specialized team, emphasis on bankability, and end-to-end strategy provides us with a real advantage when pursuing opportunities in new markets, where the necessary framework and infrastructure are often still evolving. Our success competing with larger industry heavyweights in markets such as Zambia and Tunisia points to our effectiveness. Our mini-grid pilot project in Boki, Niger continues to prove the

strength of our holistic business model in the area of rural electrification. The pilot reached completion in 2017, by which point our team on the ground had electrified 120 houses, one school, a health center, and a mosque. This project also shows the viability of our modular approach to rural electrification. It comprises a system of building blocks such as mini-grids, solar home systems, and containerized solutions that are designed and produced to meet the specific requirements of the target location. Progress is now well underway to scale up our mini-grid solutions across Niger in close collaboration with the country's rural electrification authority, L'Agence Nigérienne de Promotion de l'Electrification en Milieu Rural.

Today, Africa represents approximately 65 percent of Phanes Group's global activity, but as we look beyond the continent to new markets of interest, this figure will change as our presence also grows in other high-potential markets. Off the back of our success in MENA and sub-Saharan Africa, 2018 saw us lay the groundwork for growth along the 'Silk Road', including CIS and Central Asia. The business case is strong for our target markets that include Kyrgyzstan, Ukraine, Pakistan, Bangladesh, Kazakhstan, Georgia, Mongolia, Uzbekistan and Afghanistan, that strive to see renewables make up 15 to 30 percent of their energy mix. However, this figure stands at approximately five percent today, which makes the opportunity abundantly clear. Solar PV is the logical choice to make up this shortfall, being a competitive source of energy, and already in 2018 we took significant strides forward. We signed our first agreement with the government of Kyrgyzstan and have identified a site for potential development. The challenges posed by CIS and Central Asia differ from Africa because here, adequate energy infrastructure is the main issue to overcome, rather than grid access and grid capacity in general, as we see in Africa. I'm pleased to say that our agility makes us well equipped to navigate the hurdles presented by these differing environments.

Alongside market growth, 2018 also saw us launch the second Phanes Group Solar Incubator initiative – a fundamental pillar in our CSR activities and the strengthening of our brand across markets. The incubator – even in only its second edition – has become a brand on its own among local developers, business partners, and talent, and shows our

commitment to helping achieve electrification across the African continent. We were honored to work again alongside our partners, Hogan Lovells, responsAbility, RINA Consulting, and Solarplaza for a second year, and also welcome the ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE) to support the aims of this year's Solar Incubator. The winning project is located in Senegal, and we're determined to bring it to life alongside the winner of the 2018 competition, Mbaye Hadj.

Reflecting on another year where we closed in a solid financial position and carried significant

forward momentum into 2019, I'm proud of the team's achievements, which led to Phanes Group being recognized at the prestigious 2018 Gulf Capital Business Awards as winner of the main category of "Business of the Year".

Spurred by this industry recognition, we're working toward our goal of seeing at least three projects reach financial close in 2019, and bringing online more megawatts in the next year than in the past five years combined. In doing so, we'll step closer towards our target of managing a portfolio totaling 1 GW by 2024. As a leading medium-sized solar PV developer following a strategy towards becoming an IPP, Phanes Group is well equipped to reach this target and beyond. ●



“We have continued to strengthen our team, processes, and projects to achieve another of our core objectives of the past year [...] to begin implementing our Independent Power Producer business model.”

Our mission, vision, and values

The principles guiding our operation across markets



Our Mission

We are committed to delivering on our promise of providing clean, accessible energy to markets that need it most, transforming communities and economies positively through impactful development

Our Vision

To be the leading solar development partner in the markets we serve



Our Values



AGILE

We are built to be quick and efficient, where others cannot be



TRUSTED

A track record of trusted, long-standing relationships that stand the test of time



PERSISTENT

We are restless in our ambition. We believe there is always more to be done and achieved



VALUE-DRIVEN

We find the technical and financial solutions that make most sense for every project and every environment



OPEN-MINDED

We thrive off challenges - no project is too big, small or complicated



CONSCIOUS

We strive to have a positive environmental, social, and economic impact in the communities we serve

Introducing Phanes Group

Electrifying new markets for a sustainable future

Phanes Group is an international solar energy developer and investment manager strategically headquartered in Dubai, UAE. Since the company's inception in 2012, we have expanded our market reach, technical capabilities, and talent pool towards our goal of becoming a leading end-to-end solar PV player with an Independent Power Producer (IPP) business model. Today, we have a growing portfolio of solar PV investments and developments spanning multiple geographies, with a focus

on new markets. Globally, our clean power contribution exceeds 70 MW, with more than 2.5 GW currently in our pipeline or at the planning stage. We take a holistic approach to solar PV, uniting the competencies and expertise necessary to oversee and deliver the entire solar project value chain. From project selection and development to construction and financing, and asset management and monetization, we unlock value through our integrated approach. As a new markets specialist, this business model allows us

THE MANAGEMENT TEAM

Back row, left to right: **Malik Bencherchali** (Managing Director, Business Development), **Christos Katsaros** (Head of Legal Department), **Martin Haupt** (CEO), **Alessandro Ortu** (Head of Project Development), **Charis Mitrelias** (CFO)
Front row, left to right: **Thomas Baier** (Head of Structured Finance), **Andrea Haupt** (COO), **Stefanos Lialios** (Head of Project Execution)



A solid organizational structure across all functions

to adapt to fast-changing environments where the necessary regulatory frameworks and physical infrastructure are often still being developed. Our focus lies on the Middle East, North Africa, and CIS and Central Asia, as well as sub-Saharan Africa – each a market with attractive business opportunities and a strong need for clean energy. To strengthen our presence in sub-Saharan Africa and CIS and Central Asia in particular, we've established a satellite office in Abuja, Nigeria, and are planning to open a regional hub in Almaty, Kazakhstan, in 2019. A pillar of our business is the strong relationships we have with local partners and the communities we serve. This

is because we believe it is crucial to thoroughly understand the markets we operate in to deliver projects to the highest standards while maximizing the positive impact we create on the ground. This approach enabled us to further strengthen our Africa footprint during 2018, and begin to build our presence in CIS and Central Asia as we move through our next phase of growth. In line with our holistic approach to solar, we are focused on developing both on- and off-grid projects. As we continue to grow, we are convinced the integration of different solutions tailored to specific needs will become more and more critical to our mission: bringing comprehensive energy solutions to the economies that need it most. ●

Becoming a leading Independent Power Producer (IPP)

Since Phanes Group's founding in 2012, we have followed a clear strategic roadmap from our origins as an advisory boutique to become a leading solar Independent Power Producer (IPP) focused on emerging markets. Over the past seven years, Phanes Group has grown into an established end-to-end developer, EPCM (Engineering, Procurement, Construction Management) and O&M (Operations & Maintenance) provider with fully fledged origination and capital market capabilities.

Maintaining our momentum, we are delivering on our business model to further establish the company's footprint in sub-Saharan Africa. We have also laid a solid foundation in CIS and Central Asia, and continue to expand in the Middle East and North African markets.

In 2018, in line with our strategic plan to become a leading IPP in the 'MENA plus' (Middle East, North Africa and Central Asia) and sub-Saharan Africa

regions, we are stepping up investment in our utility scale project portfolio with 2.5 GW of projects in various stages of development. Two of these major projects with a total capacity of 90 MW reached Ready To Build (RTB) status in 2018, with an additional 300 MW expected to reach RTB status in 2019.

In 2018 Phanes Group invested over \$4.2 million in the development of its IPP pipeline. This represents a significant growth in invested capital compared to the previous year, while the Group continues to successfully grow its IPP pipeline investments at the same rate in 2019.

We have demonstrated proof-of-concept of our business model – building a successful track record of projects while developing a strong pipeline and creating a profitable organization. Looking forward, we continue to focus on the development of the core markets where our business model has the most opportunity for impact. ●



Phanes Group offices

- Headquarters: Dubai, UAE
- Group office locations: Abuja, Nigeria & Almaty, Kazakhstan (planned 2019)
- Key project locations

ANNUAL PROJECT DEVELOPMENT INVESTMENT (AMOUNTS IN USD '000)

	2016	2017	2018
Western Africa	1,304	1,628	1,550
Southern Africa	-	479	2,621
CIS & Central Asia	-	-	82
Other	563	12	2
Total	1,867	2,119	4,255
Growth (YOY)		13%	101%

Diversification of Business Model: Project developer and EPCM in 2015, EPC contractor in 2016, O&M in 2017 and IPP in the future

Audited Phanes Group Financials 2018

A CLEAR STRATEGIC ROADMAP TO BECOMING A LEADING IPP IN MENA & SUB-SAHARAN AFRICA

Milestones: Projects

Securitized 30 MW portfolio

1st UK rooftop project

Monte Plata construction
African market entry

UK portfolio complete
Monte Plata Phase 1 complete
Pipeline exceeds 1,000 MW
DP World construction
Nigeria portfolio

Rural electrification program Phase 1 in Niger, pilot project successfully deployed
Project wins in Ghana, Guinea, Conakry, Malawi
Launch of inaugural Phanes Group Solar Incubator

Pipeline exceeds 2.5 GW
Market entry: CIS & Central Asia
Project wins: Mali, Lesotho, Zambia, Mozambique, Kyrgyz. Rep.
Credit approval commitment for 46 MW in Malawi

2012 — 2013 — 2014 — 2015 — 2016 — 2017 — 2018

Advisory focus, capital markets

Addition of technical team, with 100% focus on PV

Launch of dedicated project development unit: PAG Renewable Energy Services

Strengthening of balance sheet through partnership with Neo Solar Power / General Energy Solutions

Added asset construction unit
Launch of satellite office in Nigeria

Added Operations & Maintenance (O&M)

Milestones: Corporate

Inception of distributed solar brand

FUTURE

Roll out business model in additional core markets following 'Silk Road' strategy

Independent Power Producer (IPP) business model



The projects, people, and processes guiding our development

While 2017 saw Phanes Group implement its business model in Africa, 2018 was the year we delivered tangible results across our projects. Our Africa footprint continued to expand into new countries, as we also made great progress with existing projects. We also extended our reach to include CIS and Central Asia, marking a new period of expansion for our organization. The global experience of our people and the continued refinement of our processes contributed positively to the achievements of 2018.

Projects

OUR EXPANDING GLOBAL FOOTPRINT POINTS TO THE STRENGTH OF PHANES GROUP'S HOLISTIC APPROACH TO SOLAR.

Today, Phanes Group is developing solar PV projects in 25+ focus markets in sub-Saharan Africa, and has established a presence in the CIS and Central Asia states with a strategic entry into Ukraine and Kyrgyzstan during 2018. Our key projects include:

AFRICA

- Niger, Boki rural electrification pilot, 28 KW
- Niger, rural electrification Phase II
- Niger, portfolio of on-grid sites, 35 MW
- Mozambique, Lichinga, 42.2 MW
- Mozambique, Dondo, 37.5 MW
- Nigeria, Sokoto, 66.1 MW
- Nigeria, Jigawa, 59.9 MW
- Guinea, Mambia, 54.3 MW
- Ghana, Dawa, 60 MW
- Malawi, Nkhotakota, 26 MW
- Mali, Bla, 92.9 MW
- Lesotho, Mohale's Hoek, 28.2 MW
- Lesotho, Mazenod, 49 MW

CIS & CENTRAL ASIA

- Ukraine, Ivano-Frankivsk, 107 MW
- Kyrgyzstan, Balykchy, 123 MW

BOKI, NIGER

Successfully completed in 2018, our off-grid project in Boki, Niger serves as proof of concept for our modular approach to rural electrification. Scaling up of this concept to start in 2019.

DP WORLD, DUBAI, UAE

Our Project Execution team brought the GCC's largest distributed project, the 23.2 MW DP World Solar Power Programme, to near completion at the end of 2018.

NKHOTAKOTA, MALAWI

In 2017, we were selected by the Electricity Supply Corporation of Malawi (ESCOM) as one of three companies to win a tender to develop solar PV projects totaling 47 MW across the country. Pre-construction works started at the end of 2018.

People

Our people are the core of our organization, and we continued to welcome new and highly experienced colleagues in 2018 to meet the demands of our expanding portfolio across different continents and countries.

We extended our Management Team with the addition of key roles. This included senior hires within our Project Development and Project Execution teams to help guide the successful development, design, execution, and delivery of our projects. We also integrated each of our department heads into our central Management Team to support our decision making and enable each department to have the strongest voice possible.

We also added new talent to our Structured Finance team, to strengthen the process of bringing several projects to financial close.

Processes and competencies

The foundation for our integrated business model is having all the necessary competencies and expertise in-house to oversee and deliver the entire solar PV project value chain – from project selection and development, to construction and financing, to asset management and monetization.

Corporate Social Responsibility (CSR) continues to be an increasingly integral part of Phanes Group's business model. Electrifying a school, medical center, mosque, or other critical infrastructure are just a few examples of the potential for positive social impact that our rural electrification initiatives bring to communities not reached by traditional utilities. To help empower local developers to realize projects of their own, we've launched the Phanes Group Solar Incubator. Through the initiative, we support promising CSR-focused projects with commercial and technical knowledge, as well as financing and development expertise.

Close coordination between our commercial and technical functions allows us to unlock added value and increase efficiency throughout the project development process.

We source the most suitable financial instruments to fund projects, while establishing new relationships and tightening existing ties with Development Finance Institutions. Together, our capital markets, structured finance, and investments expertise enable us to meet the bankability requirements needed to drive a project from its initial stage to successful commercial close.

Our Operations department created a separate IT function to help with our business needs. Strong and robust IT infrastructure is vital to ensuring stable operations and helps us mitigate risks for business continuity.



Realizing projects in new markets through deep financial expertise

One of Phanes Group's key differentiators has been its ability to demonstrate end-to-end expertise throughout the value chain. With this in mind, the company's in-house Structured Finance team has served as a key element to achieving project finance in evolving markets, with favorable conditions and within attractive timelines.

The ability to lead discussions and decisions on how to best structure deals has been an important strength for Phanes Group in building relationships.

Within my team, we have focused on building a diverse set of competencies that allow us to manage and control the financial aspects of diverse projects in a standardized fashion. This includes strategies for assessing opportunities, financial modeling, quick decision-making, and overseeing the due diligence process with investors. I see this as a uniquely crucial role within the solar industry, as no matter the changing tides of technology and pricing, the financial element of project development remains crucial.

Our capital markets and structured finance expertise enables us to meet the requirements needed to drive projects from their initial stages through to successful commercial and financial close. In many parts of the world, solar investment is still seen as volatile, given its link to national agendas, political environments, feasibility, and cost. Therefore, having the ability to demonstrate financial stability and consistency can quite often be the decisive factor in project success.

It is broadly agreed in the solar PV industry that projects backed and developed by an experienced team along with an established brand are significantly more attractive to investors than those that are not. This is what enables us to drive a project from conception to successful execution.

The expertise on how to structure projects in a bankable way has enabled us to attract both debt financing and equity capital. The growth of Phanes Group as a brand, coinciding with our track record of delivering stable, long-term yields, has allowed us to better approach the capital markets.

Typically, not every potential project moves forward in the solar PV field. Therefore, it is crucial that we increase the probability of success for banks and investors, who in return for their investments want to achieve stable and long-term financial performance, as well as certainty that financial close will be achieved. This is the benefit of a properly developed pipeline of bankable projects, and Structured Finance allows us to oversee and steadily manage that pipeline's progress, while also allowing us to increase the probability of project realization.

An example is our Malawi project, which is currently being brought to financial close. Structured Finance is leading the process, as is the case across our portfolio. Today, 229 MW of utility-scale and distributed solar PV power is being financed by Phanes Group globally.

While Structured Finance is one piece of a large puzzle, it remains one of the most fundamental requirements for realizing fully developed projects. ●

Thomas Baier
Head of
Structured
Finance



"The ability to lead discussions and decisions on how to best structure deals has been an important strength for Phanes Group in building relationships."

The dual benefits of storage technology: Lower cost, heightened dependability

Phanes Group's investment in storage and hybrid technology has mirrored the growing demand for the technologies among solar PV projects. Behind this demand is a recent fall in the cost of the infrastructure required to store energy generated from solar, resulting in storage capabilities becoming a source of competitive advantage among developers.

As a result, Phanes Group places a large focus on optimizing the storage and hybrid infrastructure we apply to our projects to deliver both cost and operational advantages for the project duration.

The calculation of a project's storage requirement is made early on, assisted by Oryx Solar System Solutions LLC, our in-house asset construction arm. Once the required storage capacity is known, Oryx calculates the energy yield achievable from the solar PV system configuration to make sure the yield meets the requirements.

Speed and accuracy in optimizing this calculation is an important differentiator for Phanes Group, as it can be a key factor in helping to negotiate the most favorable Power Purchase Agreements (PPA).

Our model for storage and hybrid can enable project owners to sell the energy generated by their solar PV installation to the national grid, should the national regulatory environment allow. By optimizing the system, we can ensure a development does not generate more energy than can be sold, which would represent a cost inefficiency and reduce the financial advantages gained.

A second financial advantage to optimized infrastructure derives from the cost savings that are achievable, particularly among rural electrification initiatives that rely on off-grid systems. With a hybrid system combining storage, solar, and diesel power, sites can lower the overheads associated with diesel

Dr. Rainer Gegenwart
Chief
Technology
Officer



consumption by reducing their dependency on this energy source.

Industrial sites in particular recognize the advantages of such a system as part of their energy infrastructure, because of their reliance on heavy fuel. For these developments, the system's hybrid controller manages diesel and solar PV energy usage based on demand, with the solar PV component given priority. Diesel energy is called upon for peak times and during hours of darkness, ensuring the fuel source is used only when necessary. As a result, long-term sites, such as manufacturers and food processors, can expect both financial savings and a significant reduction in the environmental impact of operations by the project's close.

In locations where on-grid infrastructure is unreliable, storage brings the additional advantages of resilience and availability. Should a grid outage occur, the site owner can turn to energy stored in the on-site batteries to prevent costly downtime, and remain operational until access to the grid returns. Meanwhile, in rural locations without grid access, battery storage is an absolute necessity if residents and businesses are to remain electrified during the hours of darkness. This is a major draw to the technology among our partners in Africa, where grid access is not certain and the remoteness of sites makes hybrid infrastructure a common requirement. ●

THE BENEFITS OF STORAGE AND HYBRID TECHNOLOGIES A hypothetical mining company in Zimbabwe combining solar PV with a diesel generator

1 With diesel as the sole energy source, the cost to power the mine totals **\$75,086,000** per annum, based on a diesel cost of \$1.2 per liter

Our hypothetical mine consumes **210,000,000 kWh per annum.**

2 Adding a hybrid system with PV input of 31.8 MW would contribute 63,600,000 kWh per annum to the total annual energy consumption, reducing the dependency on diesel power by an equivalent amount



3 At a cost of just \$0.1 / kWh for PV power, the implementation of the hybrid system would save 18.2 million liters of diesel per year, representing an avoided diesel cost of \$21.8 million and an annual net saving of

\$15,440,000

Project Execution

Where integration brings operational agility

Project Execution is one of the broadest components of a solar PV development as it comprises not only EPCM contracting (Engineering, Procurement, Construction Management) or alternatively, EPC contracting (Engineering, Procurement, Construction), but also technical analysis and operations and management. Therefore, execution connects the early stages of a project – assessment and design – to the operational phase, and eventually, the final stage of delivery.

Within Phanes Group's operating model, the Project Execution team is part of a wider multi-discipline Projects Team with numerous responsibilities. Within the execution function is Oryx Solar System Solutions LLC, our dedicated in-house asset construction arm that plays a fundamental role in ensuring projects are delivered on time and to the necessary standard of quality.

Another pillar of the Projects Team is our Chief Technology Officer (CTO) – a role we introduced in 2017. With this dedicated CTO function, we're more involved in a project from a technical perspective, enabling us to innovate and integrate new applications of solar PV technology within projects. Adding to these functions is the Project Development team, which holds responsibility for overseeing every stage of a site's delivery, from initial development through to realization and execution.

Combining these capabilities brings strength to Phanes Group's integrated, end-to-end approach by equipping us with the expertise, speed, and agility to adapt to the needs of our markets. Most importantly, with oversight across the entire project value chain, we can ensure pioneer projects will be bankable and eventually reach financial close. As a solar PV developer focused on emerging markets, these traits are important to maintaining our competitive strength.

As I've seen personally, our work in Africa

to date has demonstrated the need to be adaptable in order to overcome challenges and successfully deliver in new markets.

Specifically, we've found that effective project execution in such markets requires closer collaboration with the contractor in order to navigate the inevitable logistical and operational hurdles presented. For example, during the development of our off-grid pilot project in Boki, Niger, the task of delivering materials to the village was far more complex than we'd seen in more urbanized areas due to its remote location. Challenges like this have the potential to disrupt a project's delivery schedule, but with an integrated team embedded alongside the contractor, we were able to quickly find solutions that kept us on track.

Alongside efficiency, cost is another area where Project Execution has a strong influence towards successful project delivery. Within any market, falling energy tariffs apply financial pressure to site owners and Independent Power Producers (IPP). Where project execution is delivered in-house, this pressure can be eased by identifying and capitalizing on economies of scale. In addition, the decision over whether to sign an EPC or EPCM contracting agreement can bring further cost benefits. EPCM offers an opportunity for cost savings when compared to EPC because it passes the responsibility of construction over to a third party. However, EPC agreements do provide developers with greater oversight and day-to-day supervision of a project, and therefore more control over a development's success.

Ultimately, whether a solar PV project falls under the category of utility-scale or off-grid, the core requirements from the project execution function remain the same. Speed and agility enable developers like Phanes Group to quickly side-step issues and maintain momentum, delivering projects on time without sacrificing quality. ●

“
Alongside efficiency, cost is another area where Project Execution has a strong influence towards successful project delivery.”

Stefanos Lialios

Head of Project Execution



DP World Solar Power Programme installation at DP World's headquarters, Jebel Ali Free Zone, Dubai

Oryx Solar System Solutions LLC in focus

The value gained from integrated in-house asset construction capabilities

Launched in 2016, Oryx Solar System Solutions LLC is Phanes Group's dedicated asset construction arm.

Oryx comprises a highly experienced international team of engineering, design, construction, and project management experts for the construction and execution of solar PV projects.

The division provides Phanes Group with the competence to oversee the implementation of projects, ensuring quality and efficiency with tight risk management.

One of Oryx's pioneer projects is the DP World Solar Power Programme in our home market of Dubai. Oryx launched in the year prior to the start of the development's construction phase, and has been integral in executing the project from day one. Specifically, the Oryx team applied its expertise to a number of key tasks, including:

- Simultaneously providing technical evaluation and design for multiple sites of different batch-sizes and rooftop requirements
- Handling complex supply-chain demands for diverse building portfolios
- Closing the project finance gap, before achieving critical-mass
- Complex management of multiple sub-contractors
- Stakeholder management prior, during and after construction – including lenders, lenders' technical advisors (LTAs), utilities, government agencies, local authorities, contractors, and investors

As the GCC's largest distributed rooftop project, the DP World Solar Power Programme presented a unique challenge. The site needed to remain operational

during construction, while the system required extensive reconstruction of existing steel works that saw Oryx effectively rebuild the site's entire infrastructure.

To reach the close of phase one, 25 projects were completed, with 12 projects in progress simultaneously.

A blueprint for how distributed solar PV projects can provide the granular integration necessary to achieve a nation's renewable energy goals, the DP World Solar Power Programme also highlighted how in-house asset construction capabilities simplify project execution

Within an agile organizational framework, Oryx follows a templated approach to guiding the completion of tasks whereby the entire team understands every step in a consistent process.

Phanes Group's Nkhotakota Project in Malawi is a further example of Oryx's influence in guiding projects to successful close. The 26 MW ground-mounted solar PV project will boost Malawi's electricity infrastructure by providing power to the national grid under a Power Purchase Agreement (PPA).

The project required various technical developments and the completion of key studies towards financial close. As Malawi's first competitive power sector tender, it provided no equivalent to draw lessons from.

Oryx's work on the Nkhotakota Project and DP World Solar Power Programme underline the value Phanes Group gains from in-house asset construction expertise. ●

AFRICA 2018:

Further development
of our African footprint



**Malik
Bencherchali**

**Managing Director
Business Development**

Boki, Niger project connection

For Phanes Group, 2018 was a year of delivery, evolution, and growth. We made substantial development progress on the African continent with a significant tender win in Malawi – a project that is now fully developed. We also found promising new projects to support through our Solar Incubator initiative. We made further strides in business development, entering Zimbabwe, Mozambique, and Lesotho. Elsewhere, we continued to move forward with our on-grid utility-scale project development activities in Guinea and Mali, contributing to the advancement of each nation's energy infrastructure. Furthermore, our bids in Tunisia and Zambia were shortlisted for key tenders in their respective governments' energy development strategies – to be pursued further in 2019.

We continuously devoted greater attention and resources to expansion in sub-Saharan Africa, focusing on our utility-scale activities in Malawi, Zimbabwe, and Lesotho. Our tender win in Malawi saw us mobilize quickly in response to the government's invitation to bid, which came after energy sector reforms and a power market restructure. We are incredibly satisfied with the strong synergies formed within Phanes Group's internal teams during our continued growth phase. This robust collaboration process between departments helped maintain our momentum throughout the year, especially with complex tenders and tight deadlines.

However, these successes have not been without their challenges. As with all fast-growing industries with multiple players, coordination efforts can be tricky, and there is a need for clear and concise decision-making within local entities dealing with multiple stakeholders. We can showcase our expertise in building strategic relationships in such environments, our ability to evolve our end-to-end capabilities, and our eagerness to act as consultants to local entities.

As such, we continued to deepen our relationships with organizations such as Power Africa and ECREEE,

where knowledge is shared on selected business development activities within our respective markets. We also further collaborated on specific projects with Power Africa, which supports its official partners to stimulate market activity and provides access to financial support for project developments.

Phanes Group's business model of engaging local communities remained integral – we always look for their support and engagement, and consider their backing as our first milestone win in every country, whether the project is on- or off-grid. We also continued to hire local talent and sub-contractors to ensure job creation on the ground.

In 2019, we are aiming to strengthen our position in West Africa by bringing projects in Mali and Guinea to financial close, adding 150 MW to our portfolio. With a healthy pipeline of several other projects, we are confident of meeting our ambitious targets and bringing them to fruition. Resources and development will continue to

be centered on the Southern Africa region with a particular focus on Mozambique and Lesotho. However, we also expect to see strong growth in the corporate and industrial segments across sub-Saharan Africa, in conjunction with the already growing off-grid space. We will continue our efforts to approach mining and corporate industrial entities with our solar PV and hybrid solutions. Doing so will enable them to benefit from alternative, sustainable, clean and cost effective energy sources as a substitute to their current reliance on fossil fuels and diesel-powered generators.

Overall, 2018 demonstrated our resilience in very competitive African markets. We continued to build on our successes, expanding our reach across the continent and scaling up our team's strength to deploy clean energy across the continent where it is needed most. Backed by strong partnerships and a robust, proven business model, we look ahead to 2019 with confidence. ●



We made substantial development progress on the African continent with a significant tender win in Malawi – a project that is now fully developed."



Mini-grid installation, Boki rural electrification project

Socio-economic growth through renewable energy

The African opportunity

Solar PV is a critical part of the future energy mix for a rapidly developing continent



Mini-grid installation, Boki rural electrification pilot



Boki village dwellings

With nearly half of Africa lacking access to electricity, a ratio that jumps to nearly 100 percent in rural areas, the opportunities for both on- and off-grid renewable power are enormous. To put numbers to the scale involved, the African Development Bank (AfDB) expects to spend US\$20 billion on energy by 2030, and leverage another US\$80 billion from private sources. Among other interested parties, the United Nations understands the opportunity available. With a global view, the organization has designated its Sustainable Development Goal (SDG) number seven to affordable and clean energy. Focusing on Africa, in the UN's 2018 Policy Brief dedicated to achieving SDG 7 on the continent, advancements to the renewables space featured frequently among the priority actions outlined.

Meanwhile, countries across the continent recognize that inaccessible and unreliable energy is capping their growth, and that electricity generating capacity is a key enabler of socio-economic development.

While all possible energy sources are being leveraged, the International Energy Agency (IEA) reports that renewable energy capacity will grow the quickest, providing almost 30 percent of power demand by 2023, up from 24 percent in 2017.

LEVERAGING THE ENERGY GAP

Although clearly a major challenge, Africa's energy gap presents an opportunity for countries to leapfrog older, inefficient power technologies in both on- and off-grid settings. Countries, companies, and communities can leverage renewable energy for its ability to deliver reliable,

affordable, and clean energy. It helps countries address balance of payment concerns exacerbated by fossil fuel imports, and is an engine of job creation through the construction and maintenance of renewables infrastructure, particularly in rural areas.

Renewable energy, including solar PV, could provide up to 310 GW of the total 610 GW of electricity generating capacity required across the continent by 2030, according to the International Renewable Energy Agency (IRENA). That is seven times the current installed renewables capacity of 42 GW, most of which is hydropower.

The opportunities in Africa for solar energy are huge, with the continent's average solar irradiation rate the highest in the world, according to the Solar Energy Africa 2018 Report. Governments understand the

Africa's energy gap presents an opportunity for countries to leapfrog older, inefficient power technologies in both on- and off-grid settings."

opportunity that solar PV provides and have begun easing bureaucratic barriers, while putting in place policies and in some cases financial incentives to encourage investment in solar power. However, market challenges remain.

Collaborating on projects with multiple stakeholders can be slow, especially when transparency and coordination among parties is lacking.

A MORE ATTRACTIVE SOLAR ENVIRONMENT

In recent years, African nations have made important strides in setting overall power generation targets, as well as specific goals for rural electrification and renewable power supply. As a result, the continent has seen exponential growth in solar, according to IRENA. Capacity grew five-fold between 2013 and 2017, including big jumps in both on- and off-grid solar.

In 2018, a combination of new financing mechanisms, improved regulatory environments, and government initiatives helped continue that momentum. The significant participation of private investors,

including through Public Private Partnership (PPP) structures, is a clear sign of the opportunity and improving investment landscape in general.

Phanes Group was awarded an additional 21 MW as an extension to the original 26 MW Nkhotakota on-grid solar PV project that we had won the tender for in 2017. We also submitted a public tender in Zimbabwe, alongside government tenders in Lesotho, and Mozambique in 2018. Meanwhile, we were shortlisted for projects in Tunisia – which would be our first in North Africa – and Zambia, which would expand our Southern Africa reach.

As Africa continues to improve its attractiveness for solar PV developers, Phanes Group's work in bringing clean and affordable power to both urban and rural communities contributes to sustainable economic development across the continent. ●

Nkhotakota

MALAWI

A pioneering project, strengthening Malawi's developing energy infrastructure

In May 2017, Phanes Group was selected by the Electricity Supply Corporation of Malawi (ESCOM) as one of three companies to win a tender to develop solar projects totaling 70 MW across the country. Significantly, this was Malawi's first competitive tender within the power sector, attracting bids from 21 companies across the world.

Phanes Group has since been developing a 47 MW ground-mounted solar PV project in the town of Nkhotakota, located in Malawi's Central Region. We made significant progress with technical developments during the course of 2018, including the completion of key studies that led us towards a targeted financial close in 2019. We have already broken ground, with initial site preparations beginning in December 2018.

As part of Phanes Group's commitment to the communities where we operate, we collaborate with local non-governmental organizations (NGO's) and civil society groups in order to support local needs and assist developments for the future. This includes working with the Nkhotakota Youth Organization, Vision Fund Malawi, and the Pakachere Institute of Health and Development Communication.

The Nkhotakota project supports a significant push by the government to strengthen Malawi's electricity infrastructure. With a total installed capacity of 439 MW reaching just

15 percent of the population, Malawi is currently seeking solutions to a critical power shortfall. A protracted dry season and resulting droughts have made the country particularly vulnerable, as over 95 percent of total electricity generation relies on hydropower.

The new capacity added by Nkhotakota will contribute to the government's target of increasing power access to 30 percent by 2030, and support the diversification of the national energy mix. Significantly, as one of the first projects of its kind in Malawi, Nkhotakota will also serve as an example for future private investment into the country's power sector. ●

15%

Current electricity access rate in Malawi, with the government targeting an increase to 30% by 2030

439 MW

Malawi's total installed capacity

A drainage channel under development in Nkhotakota, Malawi



“The new capacity added by Nkhotakota will contribute to the government's target of increasing power access to 30 percent by 2030, and support the diversification of the national energy mix.”

47 MW

Installed power capacity (26 MW in phase one)

1 of 3

Developers selected under Malawi's first competitive tender within the power sector

21

Bids made for Malawi's first tender

Dondo & Lichinga

MOZAMBIQUE

Helping realize Mozambique's untapped solar energy potential

It is estimated that only 34 percent of Mozambique's population has access to electricity today, despite significant efforts in recent years to enhance electrification of the country. Between 2001 and 2016, Mozambique's electrification rate increased from just five percent to 26 percent, but a weak power distribution network and past regulatory hurdles have kept the country's power sector from reaching its full potential.

Although much work remains to address the country's energy shortfall, the sub-Saharan African nation does possess great potential for solar PV as part of its energy mix. Assessments of the region's economic, political, and infrastructural

feasibility have shown that Mozambique's irradiation rate varies between 1,785 and 2,206 kWh per m² annually, which could see the country generate more than 2.7 GW of solar energy.

There is significant potential for new power capacity driven by renewable energy, and the government has made the electrification of rural areas one of its priorities – establishing the Institute for Energy (Fundo de Energia, FUNAE) to drive these efforts. Increasing power demand from industrial applications also represents strong potential for the growth of the local renewables sector.

In line with our goal to bring clean energy to the African continent, Phanes Group

entered Mozambique's renewable energy market in 2017. Here, we're developing a pipeline of projects that contribute to the government's push to capitalize on the country's strong renewables potential, as outlined in its 2011 "Strategy for Renewable Energy Development" policy.

The most advanced of these projects in our portfolio is a 37.5 MW utility-scale on-grid solar PV project in the Dondo district of Mozambique's Sofala Province. We identified this project during our 2017 Solar Incubator program, despite it not being presented to our evaluation panel. Alongside Dondo, we also have a project in Lichinga of 42.2 MW in total within our pipeline. ●



Project site
Dondo, Mozambique

34%

Current access to electricity

37.5 MW

Installed power capacity (Dondo)

1.948 kWh

Per m² per year (Dondo)



Project site
Mohale's Hoek, Lesotho

28%

Population with access to electricity

28.2 MW

Utility-scale solar project
(Mohale's Hoek)

1.897 kWh

Per m² per year (Mohale's Hoek)

Mohale's Hoek & Mazenod

LESOTHO

Increasing electricity generation to support Lesotho's socio-economic development and power independence

The Mountain Kingdom of Lesotho boasts over 300 days of clear and bright sunlight per year, resulting in average annual irradiation levels between 5.25 and 5.53 kWh per m². Despite this potential for renewable power generation, only 28 percent of the nation's two million-strong population has access to electricity, most of which derives from coal-generated power imported from South Africa and Mozambique. In addition, a single hydro project providing 70 MW is Lesotho's sole source of locally-generated electricity, highlighting a need for greater energy independence.

The government of Lesotho has identified the lack of self-generated and affordable power as a critical constraint to the country's economic development. Consequently, the priority is to increase electricity access and power generation

in order to drive the population's socio-economic development, as well as the demands of its domestic industries.

In 2018, Phanes Group entered the market with a pipeline of projects that contribute to the country's target of providing power to 75 percent of the population and increasing renewable energy resources by 200 MW, each by 2020.

Projects under development include 28.2 MW and 49 MW grid-connected projects in Mohale's Hoek and Mazenod respectively, working with key local stakeholders including the Lesotho Energy Company (LEC) and Lesotho's Ministry of Energy. As part of each project, Phanes Group is contributing to community development activities alongside our local partner, to help further their work in establishing and supporting local cooperatives. ●

Mambia

GUINEA

Nurturing Guinea's solar opportunity

Until 2016, only 33.5 percent of the population in Guinea had access to steady electricity. Despite a rich natural irradiation rate of almost 1.944 kWh per m² per year, the nation faced one of the lowest electrification rates in the world.

With the Guinean government's renewed interest in the development of the nation's renewable energy sector, Phanes Group entered the market to capitalize on Guinea's solar power potential. We signed a Memorandum of Understanding (MoU) with the government authorities, and commenced the development of the Mambia Solar Plant, a 54.3 MW grid-connected plant

located in the country's Western region. This development was in line with our vision to further the country's renewables infrastructure.

Within the course of two years, we have achieved significant milestones in the Guinean solar market, such as facilitating local knowledge transfer, and developing the skills of local workers driving the construction and management of the plant. By completing the necessary technical, environmental, and social studies in the region, Phanes Group and the Mambia Solar Plant have played a key role in setting the renewable sector on a promising route, providing energy security and accelerating economic development. ●

“ Within the course of two years, we have achieved significant milestones in the Guinean solar market.”

33.5%

Current electricity access rate in Guinea

54.3 MW

Grid-connected plant (Mambia)

1.944 kWh

Per m² per year



Project site Mambia, Guinea



Project site Bla, Mali

Bla

MALI

Sparking long-term sustainable impact in Mali

Although Mali's power sector has made significant progress over the past 10 years, overall access to electricity remains low. The West African nation has an electricity access rate of 27 percent, yet demand is growing at 10 percent annually.

With renewable energy representing a strong solution to Mali's power shortfall, Phanes Group signed a Memorandum of Understanding (MoU) with Mali's Ministry of Energy in February 2018 to

build a solar PV project in the country's Ségou Region.

Following the MoU signing, we conducted thorough feasibility studies focused on grid, environmental, and evacuation factors to develop technical and financial proposals with the close support of local authorities.

The town of Bla in Mali's Ségou Region was identified as the project's home, chosen for its abundant year-round sunshine and the region's supportive

institutional and political framework.

Providing a total installed capacity of 92.9 MW, Phanes Group's Bla project aims to contribute to the government's commitment to increasing the provision of clean energy and diversify the national power sector.

To help the local renewable energy industry in Mali thrive in the long-term, we are also training local staff and technicians, building a strong foundation for sustained growth. ●



Energie du Mali office in Bla

27%

Current electricity access rate in Mali

92.9 MW

Capacity of the new solar PV project (Bla)

2.158 kWh

Per m² per year

The Boki rural electrification pilot project

Bringing positive impact to the community

In 2017, we completed our mini-grid pilot project in Boki, Niger – a significant milestone in the development of Phanes Group's rural electrification strategy.

The development has been operational since 2018, and represents a comprehensive approach to reaching communities not yet served by traditional utilities.

Working in partnership with Niger's rural electrification agency ANPER (L'Agence Nigérienne de Promotion de l'Électrification en Milieu Rural), we identified Boki as the ideal area for our pilot, with a strategic location and needs that are representative of the majority of communities throughout the country.

With an overall electrification rate of 25 percent, according to the International Renewable Energy Agency (IRENA), decreasing to five percent in its rural areas, Niger's government has recognized the importance of renewables as it seeks to strengthen its energy infrastructure.

As the country works to define the role clean energy will play in its development, we aim to continue supporting the process with examples of commercially viable solutions like the Boki project. The development now consists of a 28 kW mini-grid serving as a primary source of electricity for both communal areas and individual homes throughout the village. To date, 120 homes have been powered, as well as a medical center, school, and a place of worship.



Four street lamps have also been installed, making a safer community.

Together, these connections help to improve quality of life, providing power to support the village's educational and medical capabilities, and allowing for increased income-generating activities.

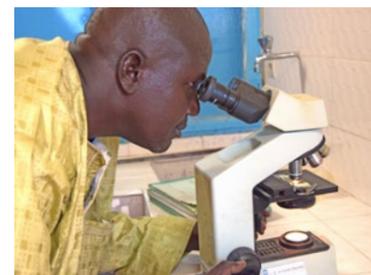
The Boki pilot also serves as a proof-of-concept for Phanes Group's modular approach to rural electrification. A key challenge of large-scale rural electrification programs lies in providing

both granular customization and mass-scale in a way that is still economically viable.

Our "building blocks" approach allows customization while achieving the economies of scale necessary to make our activities bankable. Leveraging our technical and project development expertise, we have created a system comprising modular solutions (e.g. mini-grids, solar home systems, containerized basic healthcare facilities, and containerized education centers) that can be produced on a mass



Boki village



Boki village entrance

To date, 120 homes have been powered, as well as a medical center, school, and a place of worship."

scale, while being combined according to the energy needs.

With Boki serving as a blueprint for rural electrification success, our next step is to roll out the program to more unserved and underserved areas, targeting other villages across Niger over the next three years. As of year-end 2018, we have identified, together with ANPER, 100 villages for the next phase, and continue to work closely together to ensure the successful expansion of the program. ●

BRINGING POSITIVE IMPACT TO THE COMMUNITY

EDUCATION

Before the implementation of the rural electrification project, school children could only attend classes in the daytime, which would often be cancelled in cases of extreme heat. With adequate lighting, children are now able to learn in the evening as well. Night classes have also been opened for adults.

ENTREPRENEURSHIP

The pilot project has enabled local entrepreneurs to launch businesses and support the local economy. A daily night market now exists in the village, alongside a welding shop and various household operations, such as those selling ice and chilled water.

HEALTHCARE

The local medical center can now continue operating at night, and is supported with the necessary power for critical equipment such as refrigerators for vaccines and other medication.

QUALITY OF LIFE

The installation of streetlights has increased mobility across public spaces in the evening, and power is now available for household electronics such as televisions, mobile phones, and fans. In the village, 15 refrigerators have also been installed, supporting access to fresh food throughout the day.

CIS AND CENTRAL ASIA

Building the Phanes Group footprint



Almaty, Kazakhstan



Martin Haupts

Chief Executive Officer

Since launching in 2012, Phanes Group has built a fast and agile business that has steadily expanded across diverse African markets. The Commonwealth of Independent States (CIS) and Central Asia are our next area of focus and form the base of our 'Silk Road' strategy for 2018/19. Here, electricity access is not the key issue as it is in Africa. Rather, affordability is the hurdle that underserved regions must overcome. Solar energy has shown itself to not only be a clean and commercially attractive solution to an electrification shortfall, but also one that can be affordable for the end user.

The International Renewable Energy Agency (IRENA) says that installed solar PV generating capacity in CIS and Central Asia, including Kyrgyzstan, Ukraine, Pakistan, Bangladesh, Kazakhstan, Georgia, Mongolia, Uzbekistan, and Afghanistan, was over 1 GW in 2017, whereas demand is set to reach at least 3.1 GW by 2020, as forecast by Inea Consulting Ltd.

Helping meet this energy demand are government-defined renewable energy targets in CIS and Central Asia countries that range between 15 and 30 percent, compared with an average current capacity of below five percent. However, challenges to solar power adoption remain, including various energy policies from country to country, different levels of economic development, an underdeveloped regulatory and financing landscape, and a lack of adequate energy infrastructure.

With a clear understanding of the market environment, we began our regional push with a strategic entry during 2018 into Ukraine and Kyrgyzstan.

Meanwhile, tenders submitted in Bangladesh and Afghanistan remained in progress, while new tenders were presented during the year in Kazakhstan and Georgia.

Building on the steps taken during 2018 and reflecting the strategic importance of the CIS and Central



Phanes Group's CEO Martin Haupts (right) and Abilbek Uulu Shumkarbek, Director, Investment Promotion and Protection Agency of the Kyrgyz Republic, June 2018

Asia region to Phanes Group, we are planning to establish a regional hub in Almaty, Kazakhstan, in 2019. This move will support our goal of seeing the region account for 30-40 percent of the 1 GW of new generating capacity we expect to deliver over the next five years. The Almaty hub will seek to enhance the presence of Phanes Group with local stakeholders, and build additional partnerships with regional governments.

Ultimately, the goal is to serve the energy needs of the region, whether that is greater energy independence in countries such as Ukraine, off-grid electricity access for remote regions in countries such as Afghanistan, or diversifying the energy mix across CIS and Central Asia.

Phanes Group is committed to bringing the many benefits of solar power to countless communities, numerous industries, and more than a dozen economies across this region of strategic significance. ●

Reflecting the strategic importance of the CIS and Central Asia region to Phanes Group, we are planning to establish a regional hub in Almaty, Kazakhstan, in 2019."

SELF-SUSTAINABILITY AND CSR

At the heart of our business model



Students in their electrified classroom, Boki, Niger



Andrea Haupt

Chief Operating Officer

Electricity helps create jobs and opportunities, powers schools and hospitals, enables local production, and attracts investment."

At Phanes Group, sustainability and corporate social responsibility (CSR) are embedded in the heart of our business model. From the initial assessment phase through to execution, our team analyzes every opportunity to maximize the positive environmental, economic, and social impact of our developments and works closely with the local communities. We place a strong emphasis on the potential of our projects to improve livelihoods within the communities we serve – prioritizing local job creation and skills transfer.

Phanes Group's CSR strategy also strives to extend our expertise to support promising solar PV projects by local developers. The Phanes Group Solar Incubator initiative is the vehicle we use to provide this support in the form of knowledge transfer, co-development, and access to funding, so local projects get the chance to come to fruition and make a difference to their communities and countries.

A characteristic that is very important to us and a key element of our CSR approach is our emphasis on self-sustainability. This is where long-term collaboration and partnerships with local project owners come into play to enable our partners to succeed in the long run. Electricity is a basic need, and by default has a positive impact on society and economic development.

Electricity helps create jobs and opportunities, powers schools and hospitals, enables local production, and attracts investment into the country. Renewable energy is not only clean and locally produced, it also reduces the dependency on costly imports. And especially, it can reach and make a difference to communities far from any conventional power infrastructure.

Our off-grid pilot project in Boki, Niger – which has connected 120 households, a school, and a medical center, amongst others – shows how such off-grid projects can help bring

improved healthcare, education, and a higher quality of life to areas that traditional utilities are not able to reach. Our experience in Boki has demonstrated that putting CSR at the heart of our strategy is a viable business model. We have seen that residents would be willing to pay for electricity at a profit-generating price, with their success then taking on a life of its own. To give an illustration – with a fairly priced connection to a mini-grid, a resident can make a profit charging their neighbors' devices. With this additional income, they can then invest in a refrigerator to generate even more profit by storing their neighbors' perishable items. By emphasizing profitability and sustainability in our projects, people can achieve independent long-term success, which we also see as success for us. It is a business model that benefits both sides.

The Phanes Group Solar Incubator was held for a second consecutive year in 2018. Working with a network of top-tier partners, the Incubator

initiative supports promising local developers with solar PV projects that emphasize a solid CSR element by providing commercial and technical knowledge. The initiative also provides the chance to co-develop projects with us to bring them to financial close. The second edition of the Solar Incubator attracted even more high-caliber talent than the first, and we look forward to seeing what the third edition will bring in 2019.

Finally, we take care to comply with the most stringent international standards in terms of environmental and social impact. Last year we engaged a full-time, dedicated employee to make sure we are meeting the highest international ESIA guidelines, and operate according to the World Bank framework. Our subsequent adoption of the International Finance Corporation (IFC) Impact Framework and our plan to adopt UN Sustainable Development Goals is a further reflection of our commitment to sustainability best practices. ●



Alessandro Ortu, Phanes Group's Head of Project Development gathering drone footage on site in Lichinga, Mozambique

Empowering local solar PV developers for local benefit

The initiative continues to support promising local solar PV developers with the expertise and network they wouldn't otherwise have access to



Ever since Phanes Group launched in 2012, we have been focused on identifying and developing commercially viable solar power projects. In our work over the years, we have found that in communities across sub-Saharan Africa, there are individuals and organizations with great solar PV concepts but not the necessary expertise in areas such as financing, project management, and technical know-how to develop a 'bankable' project.

Through the Phanes Group Solar Incubator, we have created an annual program to identify the best of these projects each year. We then work closely with the winner to bring the project to fruition by providing our end-to-end expertise in developing large- and small-scale solar power projects. Winners also benefit from our policy of collaboration with regional-focused counterparties, including local project owners, governments, and developers.

GOSSAS IN SENEGAL

Announced at this year's "Unlocking Solar Capital: Africa" conference in Kigali, Rwanda, our 2018 winner is Mbaye Hadj, the General Manager of Power Africa & Trade in Dakar, Senegal. His project seeks to develop a 30 MW solar plant in the town of Gossas, located 160 km east of the capital, Dakar. The plant is designed to deliver power to Senelec, Senegal's

national electricity company, through a power purchase agreement.

The new electricity capacity will help spur new business opportunities that weren't previously viable in the region due to low energy supply. Mr. Hadj, who is from Gossas, understands the challenges faced by the local community. His knowledge and commitment to the region, his passion for solar power, and his determination to bring the project to life helped convince the judges, as they made a difficult decision in selecting from three strong candidates.

Mr. Hadj will have the opportunity to enter into a partnership with Phanes Group through a long-term stake in the project to co-develop and bring it to financial close.

The collaborative phase of the project will begin with an intensive face-to-face workshop for Mr. Hadj in Dubai, UAE, where he will work with Phanes Group's team and its incubator partners to build the foundations to deliver a bankable project.

Mr. Hadj will gain commercial and technical know-how through training and workshops with experts in project management, project finance, project development and execution, legal and regulations, operations and



Project finalists, judges, and Phanes Group representatives during the 2018 Solar Incubator final

management, marketing, and CSR. After the workshop phase in Dubai, mentoring sessions will continue after Mr. Hadj has returned to Senegal.

ABOUT THE COMPETITION

The Phanes Group Solar Incubator, which has received project submissions totaling more than 1 GW from across 15 countries over the past two years, focuses on on-grid solar PV projects in sub-Saharan Africa with a capacity ranging from 10 to 100 MW. Eligible projects should have a strong CSR component that delivers impact to the local community, and applicants should

have experience in solar PV.

The Phanes Group Solar Incubator initiative facilitates project success by supporting developers, not only during the funding phase, but also throughout the project development and delivery stages. The goal is not only to provide funding but also to share knowledge and build solar PV project development skills in local communities across sub-Saharan Africa.

The 2018 Phanes Group Solar Incubator was launched in partnership with Hogan Lovells, responsAbility Renewable Energy Holding, RINA, and Solarplaza. ●

KEY APPLICATION REQUIREMENTS

- Project located in sub-Saharan Africa
- On-grid solar PV technology, with capacity from 10 MW to 100 MW
- Convincing CSR concept
- Candidates must have solar PV experience

QUICK FACTS

1 GW+

in applications received, from more than 20 countries

Now in its second year, the third annual Solar Incubator program opens in the second half of 2019

PAST & PRESENT CONTRIBUTORS

responsAbility
Renewable Energy Holding

Hogan
Lovells

RINA
Renewable Energy Holding

SOLARPLAZA

ECREEE
TOWARDS SUSTAINABLE ENERGY

AFRICAN DEVELOPMENT
BANK GROUP

PROPARCO
GROUPE AGENCE FRANÇAISE DE DÉVELOPPEMENT



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www.phanesgroup.com

Burlington Tower, Level 32, Office 3209
Business Bay, Dubai, UAE P.O. Box 212733
T: + 971 4 558 7450
info@phanesgroup.com