Desert-to-Power Initiative

1st Progress Report for the G5 Sahel Countries

December 2020
## Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tr>
<td>ABER</td>
<td><em>Agence Burkinabe d’Electrification Rurale/Burkina Faso</em> Rural Electrification Agency</td>
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<tr>
<td>ADF</td>
<td>African Development Fund</td>
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<tr>
<td>AfDB</td>
<td>African Development Bank</td>
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<td>AFD</td>
<td><em>Agence Francaise de Développement/French Development</em> Agency</td>
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<tr>
<td>AGF</td>
<td>African Guarantee Fund</td>
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<td>AIF</td>
<td>Africa Investment Forum</td>
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<td>COP26</td>
<td>United Nations Climate Change Conference of the Parties</td>
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<td>DtP</td>
<td>Desert-to-Power Initiative</td>
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<td>FCDO</td>
<td>Foreign, Commonwealth Development Office</td>
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<td>GCF</td>
<td>Green Climate Fund</td>
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<td>GMG</td>
<td>Grid-Mini-Grid</td>
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<td>HFO</td>
<td>Heavy Fuel Oil</td>
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<td>IPP</td>
<td>Independent Power Producer</td>
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<td>IRENA</td>
<td>International Renewable Energy Agency</td>
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<td>MDP</td>
<td>Market Development Programme</td>
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<td>PCOA</td>
<td>Put/Call Option Agreement</td>
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<tr>
<td>PPA</td>
<td>Power Purchase Agreement</td>
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<tr>
<td>SEforAll</td>
<td>Sustainable Energy for All</td>
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<td>SEFA</td>
<td>Sustainable Energy Fund for Africa</td>
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<tr>
<td>SHS</td>
<td>Solar Home Systems</td>
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<td>TSF</td>
<td>Transition Support Facility</td>
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Blessed with some of the highest levels of insolation in the world, the Sahel offers boundless potential to turn the sun into a veritable source of energy. That is why on 13 September 2019, at the G5 Sahel Summit in Ouagadougou, Burkina Faso, I announced the African Development Bank’s bold ambition to accelerate the development of grid-based and off-grid solar generation at unprecedented scale through our Desert-to-Power (DtP) Initiative. The Sahel faces tremendous challenges, including high levels of poverty, desertification, environmental degradation, unemployment and migration of many young men and women. The severe floods that hit Burkina Faso, Mali, Niger and other countries in the Sahel in early September 2020, evidence the fragility of the region.

In line with the Bank’s High 5 priority to Light Up and Power Africa, Desert-to-Power aims to generate 10 GW of solar energy by 2030 and
supply 250 million people in some of the poorest countries with green energy. At least 90 million people will be connected to electricity for the first time, enabling them to get out of poverty.

The initial focus for the Initiative are the G5 Sahel countries, where interventions will have the greatest impact. The G5 Sahel Heads of States present at the September 2019 Summit endorsed our ambition, as well as the overarching implementation plan. With their support—and following the appointment of the CEO of the Agence Marocaine de l’Energie Durable (MASEN), Mr Mustapha Bakkoury as the Chair of the Steering Committee—the Desert-to-Power implementation Taskforce was established to act as the one-stop coordinating unit for Desert-to-Power operations. The joint Taskforce, hosted by the Bank, has been working with countries, donors, and external partners to identify viable projects, mobilize finance and develop national as well as regional roadmaps to make the Desert-to-Power Initiative a huge success.

Several plans have already been approved, including the Djermaya 32 MW solar PV project in Chad, which will be the first Independent Power Producer (IPP) project in the country. In this regard, I am pleased that the Bank is on track to meeting the commitment it made at the G5 Sahel Summit to mobilize US$20 million for project preparation purposes. The Bank also recently held a successful Africa Energy Market Place (AEMP), focusing on the G5 Sahel countries and under the theme "Unlocking the solar potential of the G5 Sahel countries”. The event mobilized a broad coalition of technical and financial partners in support of the implementation of the DtP roadmaps.

Thanks to the strong engagement of the G5 Sahel countries and the support of our partners, we have made considerable progress over the past year, despite the COVID-19 pandemic forcing us to reprioritise the operations supported by the Bank. On the technical front, challenges that have hampered the progress of independent power producer projects have included, credit and currency risks as well as constraints related to tax and regulatory regimes. We will need sustained political goodwill and strong commitments from our partners to expedite the development of these important projects.

There is no time to lose. With the people of the Sahel in our hearts and on our minds, the African Development Bank is sparing no effort to accelerate the region’s access to sustainable, quality and affordable energy. As we pride ourselves on our collective achievements, I look forward to your continued support and collaboration.
Aside from the damaging impact the COVID-19 is leaving on our health and global economy, it can also be a blessing in disguise if we handle it in the right manner and refocus our efforts to the urgent needs of the Sahel region, in particular an increase in energy access.

The G5 Sahel countries are facing common challenges that require the improvement of energy infrastructure, regulatory framework, project development know-how, and funding adapted to project specificities. In addition, there is also a highly distorted perception of the risk of investing in Sahel countries that is not helping the cause of the G5 Sahel countries.

It is also important to note that southern countries have faced all these challenges differently, with varying degrees of success and at different points in time. This is why we believe that there are best practices that can be replicated from the experiences of some of the more advanced southern countries. Morocco, for instance, has noted some success in its flagship projects, which is why we have taken our responsibilities seriously by chairing the Steering Committee of the Desert-to-Power Initiative.

Ultimately, the Desert-to-Power objective, is in line with His Majesty King Mohammed VI's vision, to address all these
challenges by leveraging the south-to-south cooperation and implementing bankable projects that will contribute to the achievement of universal electricity access in the Sahel countries, by connecting more than 250 million people to electricity. The African Development Bank under the leadership of Dr. Akinwumi Adesina translated this spirit into a concrete action by taking this Initiative to enviable heights for the development of access to electricity in the Sahel region.

The G5 Sahel Summit held in Ouagadougou, Burkina Faso, on September 13, 2019, during which the Heads of State endorsed the Desert to Power concept, marked the official launch of this Initiative.

A year later, the Initiative’s governance has been refined, and roadmaps integrating urgent short-term and long-term national as well as regional projects for a sustainable and global access to electricity have been defined. Priority projects and reforms have been identified for all the G5 Sahel countries, such as access to electricity for 50,000 households in Burkina Faso, the electrification of six cities in Chad, the electrification of 160 villages in Mali, the hybridization of 46 diesel mini-grids in Mauritania and the hybridization of existing thermal plants and development of new capacities in Niger.

Time is of essence to accelerate the effective implementation of the roadmaps, while involving public institutions and the private sector in a more effective and accentuated manner, in support of the engagement of Energy Ministers of the G5 Sahel countries. Masen is also supporting this dynamic by mobilizing internal resources within the DtP Taskforce. From these synergies, economically viable and financially attractive projects for investors will emerge.

Leadership and regular monitoring at G5 Sahel Head of States level are important for success at country level. They are essential to initiate a sustained dynamic, based on a disruptive approach and guaranteeing the success of our actions and serving as a reference model for other Desert-to-Power countries.

Leadership and regular monitoring at G5 Sahel Head of States level are important for success at country level.
In accordance with the declaration made on September 13, 2019 in Ouagadougou, Burkina Faso, during the G5 Sahel Summit, and to honor the commitment made, the African Development Bank prepared a first progress report on the Desert-to-Power Initiative. The report highlights the activities undertaken and the steps taken in an unprecedented context, marked by the current COVID-19 pandemic and the severe flooding that has affected the Sahel region.
The African Development Bank (AfDB) in adherence with the declaration made on 13 September 2019 in Ouagadougou, Burkina Faso, at the G5 Sahel Summit and in honoring the commitment made, presents the first progress report under the Desert-to-Power Initiative. The report highlights the activities undertaken and the milestones achieved in the context of unprecedented times, with the ongoing COVID-19 pandemic and the severe floods that affected the Sahel region.

In September 2019, the G5 Sahel Heads of State endorsed the Initiative and its five priority intervention areas, (i) expanding grid-connected solar power generation capacity; (ii) strengthening and expanding national and regional grids; (iii) deploying decentralized energy solutions; (iv) improving the financial and operational capacity of public electricity operators; and (v) strengthening the enabling environment for increased private investment with capacity building as a crosscutting component for all interventions implemented under the Initiative. The endorsement not only illustrated the deep commitment at the executive level, but gave the Initiative the requisite traction to accelerate its implementation. In the past year, the Bank has facilitated the set-up of the Initiative’s key organs notably a dedicated joint Taskforce, the high-level Steering Committee and the nomination of national focal points from each G5 Sahel country. The organs have given room for closer collaboration among all stakeholders laying a firm foundation and setting the scene for the work that lays ahead.

The development and validation of the national roadmaps was a collective endeavor that saw the G5 Sahel countries work in collaboration with the Taskforce and its technical partner, the Tony Blair Institute. In addition to the national roadmaps, a draft regional roadmap has been developed for discussion and adoption in 2021. These strategic documents are aligned with the respective G5 Sahel Governments’ vision and strategy. It is on the basis of the identified country priorities that the Taskforce is in the process of mobilizing over USD 350 million in concessional financing including more than USD 20 million in grants in line with the pledge made by the African Development Bank towards project preparation needs for the countries in September 2019.

The aforementioned efforts have been undertaken in the midst of an unprecedented health crisis with the ongoing COVID-19 pandemic. As a result of the pandemic, Governments of the G5 Sahel countries have had to reclassify their priorities to cater for pressing issues related to the pandemic. Despite the challenges, the Bank has navigated through these unchartered waters to ensure that DtP’s objectives remain unaltered – if anything the crisis underscored the critical role of access to electricity for the provision of health services. In this regard, it is important to note that the G5 Sahel countries are benefitting from the Bank’s USD 10 billion COVID-19 Rapid Response Facility (CRF) and
are expected to benefit from a specific energy for health programme under development with financing from the Sustainable Energy Fund for Africa (SEFA).

The coming months will see the capacity of the Taskforce reinforced through staff recruitments and secondments and technical support from various partners.

With a reinforced team, key objectives for 2021 include inter alia, advancing the identified fast-track projects, accelerating resource mobilization efforts, enhancing private sector engagement and strengthening collaboration with like-minded initiatives and partners.

It is in this context and in the spirit of the Declaration made by the Heads of State of the G5 Sahel countries in September 2019 that the following key recommendations for consideration of the Heads of State are made:

• **Prioritization of Desert-to-Power operations with regard to the allocation of resources from the African Development Fund (ADF).** These resources will be the nucleus that will allow the DtP Taskforce to leverage significant additional resources from partners and climate funds.

• **Establishment of in-country implementation and coordination structure for DtP** that incorporates all energy sector players at the national level to strengthen coordination and avail opportunities for real-time information and homegrown expertise to better orient implementation;

• **Establishment of a common framework or protocol for private power generation** in order to alleviate the problems faced by Independent Power Producers (IPPs) and thus attract more investors to the region.

The development and validation of the national roadmaps was a collective endeavor between the G5 Sahel countries, the DtP Taskforce and its technical partner, the Tony Blair Institute.
This report is presented in accordance with the declaration made on 13 September 2019 in Ouagadougou, Burkina Faso at the G5 Sahel Summit on the obligation of the African Development Bank to report regularly to the G5 Sahel Heads of State on the progress of implementing the Desert-to-Power Initiative.
Desert-to-Power (DtP) is a flagship renewable energy and economic development initiative led by the African Development Bank (AfDB). It has a bold ambition to Light Up and Power the Sahel region by building electricity generation capacity of 10 GW through photovoltaic (PV) solar systems via public, private, grid and off-grid projects by 2030. Approximately 250 million people stand to benefit from the Initiative which covers 11 countries of the Sahel with an initial focus on the G5 Sahel countries: Burkina Faso, Chad, Mali, Mauritania and Niger.

The implementation of the Desert-to-Power Initiative in the G5 Sahel countries is based on a programmatic approach endorsed at the aforementioned Summit, with five priority intervention areas: (i) expanding grid-connected solar power generation capacity; (ii) strengthening and expanding national and regional grids; (iii) deploying decentralized energy solutions; (iv) improving the financial and operational capacity of public electricity operators; (v) strengthening the enabling environment for increased private investment with capacity building as a crosscutting component for all interventions implemented under the Initiative.

The Desert-to-Power Taskforce focuses on dialogue with the G5 Sahel countries to better prepare and implement priority projects.
1st Progress Report for the G5 Sahel Countries
The Bank established the Desert-to-Power Taskforce to drive the implementation of the Initiative. The core activities of the Taskforce include (i) Coordinating and facilitating efforts to assist the G5 Sahel countries to prepare and implement priority energy projects; (ii) Mobilizing technical and financial resources; and (iii) Serving as a repository to inform decision-making and fast-track project implementation.
A Steering Committee overseeing the work of the Taskforce was established in November 2019. On the recommendation of the President of the African Development Bank, Mr. Mustapha Bakkoury, Chief Executive Officer (CEO) of Masen with extensive experience in large-scale solar deployment, assumed the Chairmanship of the Initiative. Since then, the following key partner organizations have joined the Steering Committee at senior level alongside the Ministers of Energy of the G5 Sahel countries: Africa50, ACWA Power, the French Development Agency (AFD), the International Renewable Energy Agency (IRENA), the Sustainable Energy for All (SEforALL) Initiative and the USAID Power Africa Programme. The European Commission is participating in an observer capacity, and there is considerable interest from other stakeholders to become members of the Steering Committee.

With a view to ensure proper coordination and ownership from the G5 Sahel countries, the Ministers of Energy formally nominated DtP focal points. Thereafter, the Taskforce organized a workshop on 16 and 17 January 2020 with the participation of all five focal points. The meeting clarified the role of the focal points in facilitating the implementation of the Initiative and the collaboration with the Taskforce. Discussions were held on the development of DtP Roadmaps and priority projects were identified and thereafter included in the National Roadmaps.
Since its creation, the Steering Committee has convened twice, in November 2019 in South Africa and virtually, via videoconferencing in April 2020. In addition, a virtual Ministerial Meeting was held on 18 June 2020. (See Table 1 for details of the meetings.)
Objectives | Outputs
--- | ---
**1st Steering Committee Meeting**
November 2019 - South Africa
Familiarize members with the objective of the Initiative.
(i) Scope and role of the Steering Committee defined.
(ii) Initial work plan of the Taskforce discussed including importance of realizing synergies with other initiatives notably the Alliance Sahel.

**2nd Steering Committee Meeting**
April 2020, virtual via videoconferencing
Attended by over 40 representatives and senior officials of members and observers
Progress update on Taskforce activities, discussion on DtP draft national roadmaps and project analysis, in-country DtP implementation modalities and impact of COVID-19 on G5 Sahel Energy Sector and potential support to be mobilized in the context of the Desert-to-Power Initiative.
(i) Countries to send the Taskforce feedback on the draft national roadmaps;
(ii) Taskforce to develop a Regional Roadmap to enhance regional integration in the G5 Sahel countries’ energy sector;
(iii) Taskforce to organize a Ministerial Meeting before the end of June 2020
(iv) Membership to the Steering Committee to be discussed further with the G5 Sahel Ministers of Energy at the Ministerial Meeting
(v) Countries to revert to the Taskforce on any specific requests for support relating to the COVID-19 pandemic.

**1st Ministerial Meeting**
18 June 2020, virtual via videoconferencing
Attended by the Burkina Faso Minister of Energy and representative senior officials from Chad, Mali, Mauritania and Niger
Finalization of the national Desert-to-Power Roadmaps
Presentation of the outline of the Regional Desert-to-Power Roadmap;
Thematic discussion on critical issues for expedited development of solar PV projects for Independent Power Producers (IPPs) in G5 Sahel countries-
(i) Countries to officially validate the national DtP roadmaps through a formal communication to the Bank;
(ii) Countries to revert on the initial outline of the regional roadmap to be discussed further at a later meeting; and
(iii) A mandate for the Bank to proceed in developing standard principles regarding Independent Power Producers (IPPs) for subsequent Ministerial endorsement to address the critical issues for IPP development.
3 Development of the Strategic Implementation Framework
3.1. Development of the National Desert-to-Power Roadmaps

The Desert-to-Power national roadmaps provide an analysis of the electricity sector of all G5 Sahel countries. They describe the barriers and approaches to scale-up solar energy generation and access to electricity in the countries and provide strategic proposals for the implementation of DtP in line with the countries respective energy strategies. The development of the roadmaps included three key steps; (i) the initial drafting, followed by feedback from the countries, (ii) revision of the documents to align with the suggestions and recommendations of the countries; and (iii) the finalization and validation of the documents.

Numerous meetings and consultations with national focal points and sector players were an integral part of the first two steps of the development process. The third step, the finalization and validation of the five national roadmaps, was an important milestone for DtP. The roadmaps serve to:

- Provide an overview of the power sector, the Governments’ priorities, and existing initiatives and projects;
- Provide a first high-level quantification of the targets that DtP could pursue in each country;
- Identify the specific priority actions and projects that DtP can support in order to achieve these targets, throughout the value chain: generation, transmission, distribution and off-grid electrification; and
- Define technical assistance needs and identify the scope of DtP support required.
The roadmaps were developed in close collaboration with the countries through the coordination of the national focal points to ensure full alignment with the Governments’ vision and strategy and have also benefited from inputs from key partners for better coordination. The implementation of these roadmaps would bring valuable high-level development outcomes and financial benefits, as summarized below:

Initial simulations indicate that replacing Heavy Fuel Oil (HFO) generation with solar electricity would save the countries about US$ 1.8 billion by 2030. These savings would be achieved thanks to the installation of approximately 3.3 GW of on-grid solar capacity that would cover a minimum of 30% of the annual consumption of the five markets. In order to integrate this solar generation capacity on the grid, significant investments in transmission and distribution will have to be carried out, including in regional interconnections.

The DtP Taskforce quantified the effort required to achieve the aspirational target of universal access by 2030: about 6.3 million additional connections, equivalent to more than 30 million people in the G5 Sahel countries. Given that even if all the off-grid projects currently planned are executed, less than a third of the 2030 target will be achieved, the Sahel region will need more ambitious investment plans.

The validation process of the national roadmaps has been faced with some delays resulting from cabinet reshuffles and recent political instability in some of the G5 Sahel countries. Nevertheless all countries formally validated their respective roadmap: Mauritania’s validation letter was received in July 2020, Chad in September 2020, while Burkina Faso and Mali’s letters were received in early October 2020. Niger’s process was completed at the end of October 2020 as it was necessary to align the work on the Roadmap with the country’s new electrification strategy, the *Document de Politique Nationale d’Electricité* (DPNE).

The validated roadmaps provide a strong basis for the mobilization of resources from partners (e.g. 90% of the additional 3 GW still needs to be
funded) – the 2nd Steering Committee in April 2020 concluded that the DtP Taskforce should focus on an initial set of identified priority projects for resource mobilization purposes.

The Roadmaps, available on the Bank’s website will remain “living documents” that will be regularly updated alongside the implementation of the DtP Initiative based on the evolution of political and economic contexts and on changing Governments’ priorities.

The approved roadmaps constitute a solid basis for the mobilization of technical and financial resources.
3.2. Development of the Regional G5 Sahel Desert-to-Power Roadmap

Following the recommendation of the Steering Committee, the Taskforce embarked on developing a regional roadmap that will provide a blueprint for the elaboration of a Pan-Sahelian solar strategy. The document focuses on: (i) the rationale of a regional approach, (ii) the strategic propositions to implement Desert-to-Power (DtP) at regional level in line with all National Roadmaps and the DtP Initiative’s priority interventions.

The rationale behind the regional roadmap is based on key observations of the priorities identified at country-level as some of the projects have a regional dimension (such as the interconnections or large-scale solar parks with multiple off-takers) and would require a strong coordination effort from the earliest stages of development. Other projects would benefit from economies of scale, thus reducing their cost and accelerating the implementation, such as a Pan-Sahelian off-grid programme and a solar hybridization programme for existing thermal power plants that would also optimize the electrification of cross-border communities. Finally, there would be distinct benefits to harmonize procurement and capacity building processes to create a larger and integrated Sahelian energy zone, able to de-risk projects and attract the most competitive private companies. Accordingly, a G5 Sahel Regional Desert-to-Power Roadmap is under development along four proposed axes, notably:

1. Development of large-scale solar power plants for regional trade;
2. Realization of the Trans-Sahelian Backbone
3. Elaboration of a regional off-grid electrification programme
4. Hybridization of thermal power stations across the region.

Specifically, it is important to note that the G5 Sahel countries collectively face delays in implementing investments from Independent Power Producers (IPPs). It is in this context that the DtP Taskforce - in collaboration with the Africa Legal Support Facility (ALSF) and as part of the Axe 2 of the Regional Roadmap - is developing a protocol for the G5 Sahel countries that will provide more clarity to investors and address common issues that impede IPP investment in the region, notably land and grid connection issues, tax regime divergences, credit enhancement, currency risks and tariff structures. An initial step towards this endeavor was the presentation given by ALSF during the Ministerial Meeting on 18 June 2020.

3.3. Summary of Priority Projects and Reforms

For each country and at regional level, a set of key projects and reforms were identified that could be developed by the Initiative with a “fast-track” approach (in the next 2-3 years), while making sure that these actions do not overlap with existing support from other partners. Table 3 provides a snapshot of these projects:
Table 3 – Summary of priority projects and reforms in Desert-to-Power beneficiary countries

<table>
<thead>
<tr>
<th>Mauritania</th>
<th>Mali</th>
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<tr>
<td><strong>Projects</strong></td>
<td><strong>Reforms</strong></td>
</tr>
<tr>
<td>a) Hybridisation (solar + HFO) of power plant</td>
<td>a) Operationalisation of ARM (Regulatory Authority)</td>
</tr>
<tr>
<td>b) Cofinancing of rural electrification project</td>
<td>b) Update of grid code to be compatible with WAPP market</td>
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<tr>
<th>Burkina Faso</th>
<th>Niger</th>
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<tbody>
<tr>
<td><strong>Projects</strong></td>
<td><strong>Reforms</strong></td>
</tr>
<tr>
<td>a) Extension of distribution grid and new connections (POCEL)</td>
<td>a) Training of 5,000 young technicians and Sonabel engineers</td>
</tr>
<tr>
<td>b) Deployment of 50,000 Solar Home Systems</td>
<td>b) Update of grid code to be harmonised with regional regulation</td>
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<tr>
<th>Chad</th>
<th>Regional Road Map</th>
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<tr>
<td><strong>Projects</strong></td>
<td><strong>Reforms</strong></td>
</tr>
<tr>
<td>a) Financing priority solar power plants (IPP)</td>
<td>a) Master Plan and Solar Integration study</td>
</tr>
<tr>
<td>b) Mini-Grids in 60 villages</td>
<td>b) Strengthening of Regulatory Authority and Rural Electrification Agency</td>
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Implementation of initial Desert-to-Power Projects
4.1. Implementation status of ongoing Desert-to-Power Projects

To date, the Bank has approved a total of three DtP projects in the G5 Sahel countries that are currently being implemented:

Table 4: Projects approved as of August 2020 under the Desert-to-Power Initiative

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<thead>
<tr>
<th>Country</th>
<th>Projects</th>
<th>Project Description</th>
<th>Financing</th>
<th>Expected timeline</th>
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<tr>
<td>Burkina Faso.</td>
<td>Yeleen electrification project</td>
<td>Electrification project to connect 150 000 households (c. 945 K inhabitants) through 100 solar mini-grid and 100 000 Solar Home Systems. Innovation with concession system to provide energy service in rural areas.</td>
<td>Co-financing with African Development Fund (ADF), Green Climate Fund (GCF), and the European Union (EU).</td>
<td>Ongoing pre-selection of developers for the design, procurement and construction of mini-grids and procurement and installation of Solar Home Systems (SHS). Selection process expected to be completed by end 2021 if no further delays are incurred.</td>
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<tr>
<td></td>
<td>Yeleen on-grid</td>
<td>Generation and network extension project (public) with the construction of 4 solar plants of a total capacity of 52 MW; 40 MW in Ouagadougou with 10 MWh storage capacity including a network extension, and 10 MW split between 3 province cities (Dori, Diapaga, Gaoua)</td>
<td>Co-financing with African Development Fund (ADF), Agence Francaise de Developpement (AFD), and the European Union (EU)</td>
<td>Ongoing selection of companies for the construction of the solar power plants, the installation of the energy storage system and the construction of transmission lines is expected to be completed by Q4 2021 if no further delays are incurred</td>
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<tr>
<td>Chad.</td>
<td>Djermaya solar plant</td>
<td>32 MW solar plant in N’Djamena including 4 MWh of battery storage system to stabilize the network. The evacuation infrastructure includes an 18 km long 33kV double circuit overhead transmission line, two 33 / 90kV transformers at the Lamadj substation and a 4 MWh battery system for stabilizing the network. The project objective is twofold: (i) increase the country’s electricity production capacity in a sustainable and environmentally friendly manner and (ii) modernize the electricity transport system by renovating the line connecting Djermaya to N’Djamena (changing cables and receiving transformer). The project will be the first to be carried out by an independent power producer and will constitute an important foundation for the economic and social development of the Republic of Chad.</td>
<td>AfDB loan, ADF PRG</td>
<td>The Project gained significant momentum in December 2020 with the financing of Power Purchase Agreements (PPA), Put/Call Option Agreements (PCOA) and a fiscal agreement. Sponsors and lenders are finalizing the negotiation of finance documentation with the objective to sign in Q3 and reach final close in Q4 2021. The project is expected to start generating power after a twelve month construction period.</td>
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In addition to the afore-mentioned pilot Desert-to-Power projects, there is also a push to advance earlier approved projects, such as the Segou 33 MW solar IPP in Mali, towards financial close by Q4 2021.

4.2. Challenges related to approved Desert-to-Power Projects

Key deliverables associated with project preparation and implementation of approved DtP projects have been delayed, or postponed as a result of the ongoing COVID-19 pandemic on the one hand, or challenges relating to the nature of the project in the case of projects driven by Independent Power Producers (IPP).

With regard to the COVID-19 pandemic, the Bank, right from the onset of the pandemic, put in place strict travel restrictions. As a result, field missions were cancelled with interaction with stakeholders restricted to on-line meetings. For projects that were in an advanced implementation phase, such as the Djermaya Project in Chad, the online meetings have proceeded without difficulty. However, the subsequent phases that require in-depth discussions with stakeholders, such as the socio-economic studies and supervision missions, have been postponed, pushing the expected completion date to 2023 from the earlier planned 2022.

The pandemic has also forced governments to reclassify their priorities to focus squarely on safeguarding their populations and putting in place measures to curb the spread of the disease. Consequently, funds that were previously destined for the energy sector have been reallocated to more pressing priorities.

Other non-COVID-related challenges can be linked to cabinet reshuffles and political instability that have delayed discussions with key government stakeholders. The relative novelty of the IPP concept in the region is yet another hurdle notably in relation to credit and currency risks as well as constraints related to tax and regulatory regimes.

Despite the delays, the Bank and other partners rolled out emergency responses and availed funds for financial relief preparedness and response assistance.
Desert-to-Power will produce 10 GW of solar energy by 2030 and green energy to 250 million people living in G5 Sahel countries.
Mobilizing financial and technical resources in favour of the G5 Sahel countries is a top priority for the DtP Taskforce. It is also to be recalled that the Bank made a commitment to mobilize USD 20 million from the Bank’s own resources. Currently, the Taskforce is working on securing funds for project preparation from various sources including the Bank’s internal funds such as the Sustainable Energy Fund for Africa (SEFA), the Transition Support Facility (TSF) and the African Development Fund (ADF).
Targeted external sources include the Green Climate Fund (GCF) and co-financing opportunities from the Initiative’s partners for identified project opportunities. Cumulatively, the ongoing resource mobilization efforts are expected to draw over USD 350 million in concessional financing.

5.1. Ongoing Resource Mobilization Efforts
The following is a list of successful and ongoing proposals for financial assistance towards project preparation:

- **ADF 14/Transition Facility Fund (TSF) Pillar III Grant**: A USD 2.78 million grant approved in May 2020 by the Bank for Chad, Mali and Niger. The grant comprises two components (i) technical assistance to countries for project preparation activities; and (ii) project management.

- **ADF 15 Regional Envelope**: A proposal of over USD 6 million for project preparation across the G5 Sahel countries was prioritized under the 2020 ADF-15 regional envelope and approved by the Bank’s Board of Directors in Q1 2021. The funds are earmarked for project preparation support for critical interconnections, support to the regional solar parks programme and the roll-out of decentralized energy solutions. The Taskforce is working with both the ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE) and the West African Power Pool (WAPP) as implementing partners. This project will strengthen regional integration and help to address fragility notably in rural communities.

- **The Desert-to-Power Technical Assistance Programme**: A technical assistance programme to expand solar energy generation in the G5 Sahel countries for USD 5.05 million was approved by the Bank’s Board in Q4 2020, financed by the Sustainable Energy Fund for Africa (SEFA). The programme seeks to (i) pave the way for the development of solar projects through variable renewable energy (VRE) grid integration studies and (ii) support the deployment of a regional hybridization programme for reducing the use of high emitting fossil fuel generation (notably diesel) across the G5 Sahel. This technical assistance programme will also incorporate activities under an additional USD 0.95 million SREP Mali grant to cover detailed feasibility studies for the hybridization of selected thermal power plants.

The Green Climate Fund support for the Desert to Power G5 Sahel Facility:
**USD 350 million**
will contribute to addressing the challenges faced by the G5 Sahel countries.
• **The Green Climate Fund:** The G5 Sahel DtP Financing Facility is a large-scale programme developed together with the Green Climate Fund (GCF), which will address the challenges faced by the G5 Sahel countries through four key components; (i) grid investments to de-risk Solar IPPs and pave the way for the uptake of a regional solar market; (ii) financial de-risking instruments such as senior loans to Independent Power Producers (IPPs) to catalyze the uptake of private sector investments in solar generation; (iii) access to electricity through 1000 mini-grids across the G5 Sahel countries and (iv) technical assistance to institutional stakeholders.

The AfDB and the Green Climate Fund (GCF) signed a letter of intent for collaboration on the implementation of the Desert-to-Power Initiative. The Concept Note was approved by the GCF’s Climate Investment Committee in Q4 2020, with GCF Board approval for the first phase expected in October 2021.

• In addition to mobilizing financial resources, the capacity of the Taskforce is being reinforced through staff recruitments, secondments and technical support inter alia from Power Africa, the Government of Denmark, the European Investment Bank, MASEN and the Power Africa West Africa Energy Programme. The Tony Blair Institute has already deployed an advisor in Burkina Faso and it is expected that in 2021 there will be two additional advisors deployed to the Taskforce in Abidjan and an advisor in Mali and Niger. By the end of 2020, technical support from MASEN, Power Africa and the EIB had been availed to the Taskforce.

• The Bank has used key global platforms to raise awareness and engage partners and global thought leaders on the potential of the Sahel region with regard to economic development. In 2019, Burkina Faso President Kabore and AfDB President Adesina made the case for the Initiative during the G7 Summit in Biarritz, France. DtP was also discussed during the G20 Compact with Africa and also highlighted during the 2019 UN Climate Summit. In November 2019, the Bank held key discussions with partners at its high-level dialogue and unique stakeholder engagement platform, the Africa Investment Forum (AIF).

• **Green Mini-Grids/decentralized energy access (GMG) activities:** Both ongoing and planned GMG activities are earmarked to the DtP Initiative under the Sustainable Energy Fund for Africa (SEFA). These include technical assistance support for GMG Country Programmes in Burkina Faso and Niger. SEFA also finalized [GMG Market Intelligence reports](#) for Burkina Faso, Chad, Mali, Mauritania and Niger. At least two additional Sahel countries will receive technical assistance support through SEFA’s Africa Mini-Grid Acceleration Programme, approved by the Board of Directors in December 2020.
Another priority has been the close coordination of DtP activities with other initiatives, notably the *Alliance Sahel* energy working group. Cooperation with initiatives and partners including the Africa Renewable Energy Initiative (AREI), the International Solar Alliance (ISA), the Great Green Wall Initiative, or the Solar Risk Mitigation Initiative will be reinforced going forward.

The Desert-to-Power Initiative initially focuses on the G5 Sahel countries, where interventions will have the greatest impact.
The Africa Energy Market Place is held virtually between 8 and 10 December 2020. The event was a combination of plenary sessions, country roundtables and thematic sessions.
The 4th Edition of the Africa Energy Market Place (AEMP) themed Unlocking the Solar potential of the G5 Sahel Countries was geared towards governments, donors, technical partners and energy developers to mobilize resources for priority projects and key policy reforms identified in the National Roadmaps.

6.1. Plenary sessions

Plenary sessions were held to mark both opening and closing sessions of the AEMP. The opening session saw high-level announcements of support for the Initiative from dignitaries, including Dr. Amani Abou-Zeid, the African Union Commissioner for Infrastructure and Energy, Mr Francesco La Camera, Director-General of the International Renewable Energy Agency, H.E. Maman Sambo Sidikou, Executive Secretary of the G5 Sahel, Prof. Abdoulaye Dia, Executive Secretary of the Great Green Wall Agency and Ali Zerouali speaking on behalf of Mr Bakkoury, the President of the Desert to Power Steering Committee and CEO of MASEN. The African Development Bank’s Vice President for Power, Energy, Climate & Green Growth, Dr. Kevin Kariuki recalled in his opening remarks the endorsement of the Initiative at the highest level from all the Heads of States of G5 Sahel countries and highlighted the progress made over the past year, including the creation of the Bank-hosted Desert-to-Power Taskforce, the mobilization of resources notably for project preparation purposes and the approval of several transformative projects. The Ministers of Energy of Mali, Hon. Lamine Seydou Traore and Mauritania, Hon. Abdessalem Ould Mohamed Saleh, and senior representatives from the other G5 Sahel countries reiterated their commitment to turn the Roadmaps into reality.

At the closing ceremony, the Bank's Acting Director for Renewable Energy, Dr. Daniel Schroth, highlighted the role of the AEMP as a convening platform and commended the broad coalition formed around the Desert-to-Power initiative. His message was echoed in interventions from key partners, including Mark Carrato, Power Africa Coordinator, and Ms Shaw-Barragan, Director Global Partners at the European Investment Bank. The AEMP event was collectively deemed a great success with a clear call to action to turn the commitments of support into Megawatts of solar energy and electricity connections for the benefit of the people of the G5 Sahel countries.
6.2. **Country Roundtable Sessions**

The Country Roundtables were exclusive and, interactive sessions centered around resource mobilization for the projects and priorities identified in the National Roadmaps. These particular sessions, which attracted over 30 development and technical partners, provided an opportunity for G5 Sahel Governments to present their respective Roadmaps and the priority projects requiring support from technical and financial partners. Partners in turn expressed their support towards the implementation of the DtP Roadmaps indicating the nature of the support they could potentially avail.

**The Country Roundtables helped improve donor coordination and alignment with national roadmaps, enabling them to express support for the implementation of the Desert-to-Power roadmaps.**

6.3. **Thematic Sessions**

Over three days, participants, including representatives of the private sector and other actors, discussed a range of key issues: regional integration of the energy markets of the G5 Sahel countries with the participation of key regional entities such as the West African Power Pool and the ECOWAS Center for Renewable Energy and Energy Efficiency (ECREEE); the role that innovative technologies such as storage can play in fulfilling the region’s solar potential, the challenges and opportunities for Independent Power Producers, the mobilization and involvement of the various renewable energy funds in the Sahel G5 countries, and how to address the nexus between energy and agriculture and between energy and health, particularly in the context of the COVID-19 pandemic.

Key conclusions of the thematic sessions are summarized in the following table:
| **Roundtable with Renewable Energy Funds:** |
| Recommendations : |
| - Funds: continue progressing with their deals, several announcements expected soon. Closer collaboration between the Bank and other and financiers |
| - Governments: stronger commitment to reforms, upgrading of networks, well-structured scale-up programmes (IPP, mini-grids, SHS) |
| - Development partners: wider set of project financial solutions, from seed capital to guarantees, technical assistance and advisory support on reforms/programme design. |

| **Regional Integration** |
| Recommendations : |
| - Mobilize all the relevant partners (Governments, DFIs, RECs [relevant regional institutions], Private sector) |
| - Support current initiatives |
| - Finalize the regional roadmap & define an implementation framework. |

| **Innovative technologies to accelerate the development of solar projects in the Sahel** |
| Recommendations : |
| - Assessing opportunities for the development of decentralized projects, by organizing exchange workshops between developers / solution providers, representatives of the G5 Sahel energy ministries |
| - Preparing project dossiers linked to the country roadmaps to facilitate access to funding. |
| - Monitoring the development of storage technologies, the main lever for the deployment of decentralized energy solutions. |
| - Supporting member countries in taking ownership of projects and deploying these innovative solutions |

| **Roundtable with IPP developers & Partners** |
| Recommendations : |
| - Development of a protocol or a set of principles to be endorsed by the G5 Sahel countries that will provide more clarity to investors and address some of the common issues that impede IPPs investment in the region. |

| **Energy Solutions for Resilient Healthcare** |
| Recommendations : |
| - Engage with Sahel Alliance (incl. Energy Sector Working Group) to increase awareness and priority-level for health facility electrification |
| - Develop health electrification strategy for G5 Sahel countries and include in Desert-to-Power Roadmaps |
| - Follow-up on Technical Assistance requests and seek additional funding from other partners. |

| **Enable rapid agricultural and food development in the Sahel thanks to access to water and energy** |
| Recommendations : |
| - Deepen discussions at the Sahel and continental level in 2021 and identify gaps. Needs of governments and investors should be discussed in more detail. AfDB, TBI and the Rockefeller Foundation to collaborate more closely in this area. |
One of the key objectives of the DtP Initiative is to serve as a repository to inform decision making and fast-track project implementation. In this respect, the Bank is working in collaboration with its partners to generate knowledge and curate information on the Sahel region.
These efforts will contribute to attracting investors and raising awareness on a range of topics based on the evolution of local contexts, innovations in renewable energies and technical issues drawn from the lessons learnt from project implementation. The information will be presented in a series of Knowledge Notes and the ongoing Grid-Mini-Grid (GMG) Market Intelligence reports.

The Knowledge Notes will focus on:

- Technical issues relating to solar energy costs and funding while showcasing interesting case studies on how private sector can intervene in the G5 Sahel energy sector;

- Planning and integration of renewables into local on-grid systems, principles of Green-base Load and regional energy markets and utility transformation programmes;

- Local contents and contexts, solar panel producers, development models, newly created markets such as solar plants, solar home systems (SHS) and grid-mini-grids (GMG);

- Procurement processes, notably on creating an enabling environment for effect and efficient procurement, selecting the appropriate procurement processes and guides for direct negotiations processes;

- Principles of solar Independent Power Producers (IPPs) with focus on prerequisites for ideal IPP investments, currency convertibility and transfer of risks.

- The GMG Market Intelligence Reports, which aim to provide comparable actionable data on the potential for GMGs across countries in sub-Saharan Africa.

Knowledge and capacity-building activities will help attract investors and raise awareness on a range of topics depending on changing local contexts, innovations in renewable energy and technical issues drawn from project implementation.
With the national roadmaps validated and priority projects identified, the focus of the DtP Initiative for the coming period will be firmly on implementation.
The Bank is reinforcing the capacity of the Taskforce through an increased staff compliment and continues to pursue discussions with partners for additional secondments and technical support. With a strengthened Taskforce, the key priority areas of intervention in the forthcoming period will be on the following activities:

1. **Advance identified priority projects & priority reforms:**
   - Secure resources for financing of priority projects from Bank windows notably ADF;
   - Screen priority roadmap projects and packing them for partners and investors;
   - Promote opportunities including through the Africa Energy Market Place platform, dedicated country roundtables and other platforms, such as the Climate Investment Platform;
   - Provide technical advice: utilization of Bank instruments/facilities, e.g. Africa Legal Support Facility and Green Mini-Grid Helpdesk as well as capacities of DtP partners such as the Power Africa West Africa Energy Programme.

2. **Accelerate resource mobilization efforts (Desert-to-Power Resource Mobilization Platform):**
   - Continuation of ongoing resource mobilization processes and deployment of resources already mobilized;
   - Preparation of additional applications for funding from various facilities including climate facilities;
• Follow-up with all technical & financial partners who have made commitments in the country roundtables at the AEMP in December.

(3) **Strengthen in-country coordination and collaboration with partners and other initiatives:**
• Further strengthen the Taskforce with additional support from partners;
• Set-up and operationalize in-country coordination mechanism for Desert-to-Power capitalizing as appropriate on existing platforms;
• Intensify engagement with other key initiatives with a view to create synergies;
• Increase focus on nexus areas such as the energy & agriculture nexus and the energy & health nexus.

(4) **Develop a private sector engagement platform:**
• Engage with renewable energy funds to explore increased investments in the G5 Sahel including the Bank incubated Facility for Energy Inclusion (FEI), a debt financing platform for small-scale energy access

The year 2021 will be resolutely focused on the implementation of priority projects of the G5 Sahel countries.

projects (notably through off-grid solar, small IPPs and mini-grids, building on the conclusions of the thematic session on the topic organized during the AEMP in December;
• Develop a protocol for the G5 Sahel countries that will provide more clarity to investors and address common issues that impede IPPs investment in the region.

(5) **Increase visibility for the initiative:**
• Promotion of DtP in key high-level platforms including in the context of the upcoming COP26;
• Roll-out of the DtP Knowledge Notes series.
Achieving universal access requires a connection to electricity for +30 million people in the G5 Sahel countries.
This first year of operating Desert-to-Power has been one of laying the foundation for an accelerated implementation of the Initiative to ensure that the objectives set and the commitments made in September 2019 remain unaltered.
As was presented in this report, understanding the priorities of the G5 Sahel countries through the National DtP Roadmaps was key for the Taskforce and partners. Mobilizing the requisite resources to meet the needs of the countries identified as priority projects was equally important. The coming months will be determinant of the pace of implementation, notably of the projects identified under the fast-track phase. However, a few challenges have been detected that if resolved will facilitate the proposed accelerated implementation. It is in this context that the Bank has identified three recommendations for the consideration of the Heads of State of the G5 Sahel countries:

1. **Prioritize DtP operations with regard to the allocation of resources from the African Development Fund.** These resources will be the nucleus that will allow the DtP Taskforce to leverage significant additional resources from partners and climate funds.

2. **Establish in-country implementation and coordination structure for DtP** that incorporates all energy sector players at the national level to strengthen coordination and avail opportunities for real-time information and homegrown expertise to better orient implementation.

3. **Establish a common framework or protocol for private power generation** to alleviate the challenges Independent Power Producers (IPPs) face and thus attract more investors to the region.

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**A few difficulties have been identified which, when resolved, will facilitate implementation.**
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