



ADVANCING RENEWABLES IN DEVELOPING COUNTRIES

Progress of projects supported through
the IRENA/ADFD Project Facility



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Message from the ADFD Director General

The United Arab Emirates (UAE) has retained the title of world's top donor of official development assistance for five years in a row. The Development Assistance Committee of the Organisation for Economic Co-operation and Development (OECD) noted the UAE's total contribution of more than USD 5.2 billion (AED 19.3 billion) in development aid in 2017, which reached 147 countries around the globe. Foreign development aid amounted to more than 1.3% of the UAE's gross national income – almost double the recommended target set by the United Nations.

Abu Dhabi Fund for Development (ADFD) is proud to have played a significant role in achieving this recognition.

Established as the leading national entity for development aid in July 1971, shortly before the birth of the UAE federation, ADFD has played a game-changing role in driving sustainable socio-economic growth and enhancing living standards in developing nations. It has done so by providing concessional loans and managing the UAE government grants in key sectors, including renewable energy.

Through our innovative partnership with the International Renewable Energy Agency (IRENA), ADFD has committed USD 350 million over seven funding cycles to the IRENA/ADFD Project Facility. To date, this ground-breaking joint initiative has enabled ADFD-funded loans totalling USD 214 million over five annual cycles.

We are proud of our synergies with IRENA, which have enhanced our collaboration to support replicable, scalable and potentially transformative renewable energy projects. As the first of these projects approach commissioning, they set to truly benefit communities and improve people's living conditions.

We look forward to receiving applications for further funding cycles.



Mohammed Saif Al Suwaidi

Director General

Abu Dhabi Fund for Development

Message from the IRENA Director-General

Rapidly improving renewable energy technologies now provide a cost-competitive pathway to expand energy access and improve socio-economic welfare. Their deployment needs to be scaled up substantially for the world to meet the Sustainable Development Goals set by the United Nations for 2030. This crucial transformation promises to grow economies, empower local communities and, at the same time, mitigate emissions and build resilience to climate change.

Partnerships are key to supporting renewable energy deployment in low-income developing countries, and the IRENA/ADFD Project Facility exemplifies what innovative partnerships can achieve. To date, the Project Facility has received over 500 applications for low-cost loans.

This report highlights the progress of 16 selected projects, located across Africa, Asia, Latin America, the Caribbean and the Pacific, that are now moving forward through various stages of implementation. Several of those projects are set to start generating clean, sustainable, renewable electricity within the coming year.

The current IRENA/ADFD portfolio could bring energy access to an estimated 4 million people or more. Along with creating new jobs and strengthening people's livelihoods, the benefits include providing clean water and electrifying health centres and schools. All this amounts to a transformative impact for local communities.

I would like to express our deep appreciation to the United Arab Emirates for their commitment to support renewable energy deployment in developing countries through the IRENA/ADFD Project Facility. IRENA is grateful to ADFD for the fruitful collaboration throughout successive funding cycles to date. As developing countries seek climate-safe energy solutions, the demand for low-cost project finance continues growing. Together, we can develop solutions to help deliver renewable energy deployment around the world.



Adnan Z. Amin

Director General
International Renewable Energy
Agency

Contents

EXECUTIVE SUMMARY.....	7
INTRODUCTION	8
PORTFOLIO PROGRESS HIGHLIGHTS	10
FIRST CYCLE.....	14
Maldives.....	14
Mali.....	16
Mauritania	18
Sierra Leone	20
SECOND CYCLE.....	22
Argentina	22
Cuba	24
Saint Vincent and the Grenadines.....	26
THIRD CYCLE.....	28
Antigua and Barbuda.....	28
Burkina Faso	30
Senegal.....	32
FOURTH CYCLE.....	34
Marshall Islands.....	34
Niger.....	36
Seychelles	38
Solomon Islands.....	40
FIFTH CYCLE	42
Mauritius.....	42
Rwanda.....	44
CONCLUSIONS AND OUTLOOK	46
Implementation and process improvements, 2014 - 2018	46
2019 OUTLOOK	47

EXECUTIVE SUMMARY

As part of the United Arab Emirates' (UAE) bid to host the International Renewable Energy Agency (IRENA), the Abu Dhabi Fund for Development (ADFD) committed to provide USD 350 million in concessional co-financing for the implementation of government-supported renewable energy projects in developing countries. Spread over seven annual selection cycles, the funding is allocated to projects that are recommended by IRENA. The IRENA/ADFD Project Facility is the result of this commitment and represents a partnership between these two organisations to promote renewable energy in developing countries.

Since January 2014, a total of 21 projects have been selected through the IRENA/ADFD Project Facility to receive concessional loans in five annual cycles. Those loans, allocated by ADFD based on IRENA recommendations, amount to USD 214 million. Of the 21 selected projects, 16 have already advanced through several stages of implementation, as defined by ADFD funding procedures.

Seven of these are at construction/installation stage and are expected to begin power generation in 2019. This report reviews the progress achieved to date in implementing the selected projects and highlights their expected development impacts, as reported by project proponents. In the first cycle, solar PV projects in Mali and Sierra Leone, a wind power project in Mauritania and a waste-to-energy project in the Maldives have all reached the construction/installation stages.

The second cycle features a hydropower project in Argentina, which remains in the tendering stage; a solar PV project in

Cuba that has reached installation; and a geothermal energy project in Saint Vincent and the Grenadines for which civil works are underway.

Progressing in the third cycle is a hybrid wind-solar PV project in Antigua and Barbuda, which is under construction; and solar PV projects in Burkina Faso and Senegal, for which loan agreements are being finalised.

Fourth cycle projects include solar PV initiatives in Niger and the Marshall Islands that have reached the loan agreement processing stage; a solar PV project in the Seychelles that is now under construction; and a hydropower project in the Solomon Islands that is expected to reach financial close by the end of 2018.

Of the two projects progressing in the fifth cycle, loan agreements are being processed for a solar PV project in Mauritius that has already entered its pilot phase, and a second solar PV project in Rwanda that is at the pre-loan approval stage.

The selection process for the sixth cycle of projects is near completion, and the results will be announced in January 2019 during the ninth session of the IRENA Assembly.

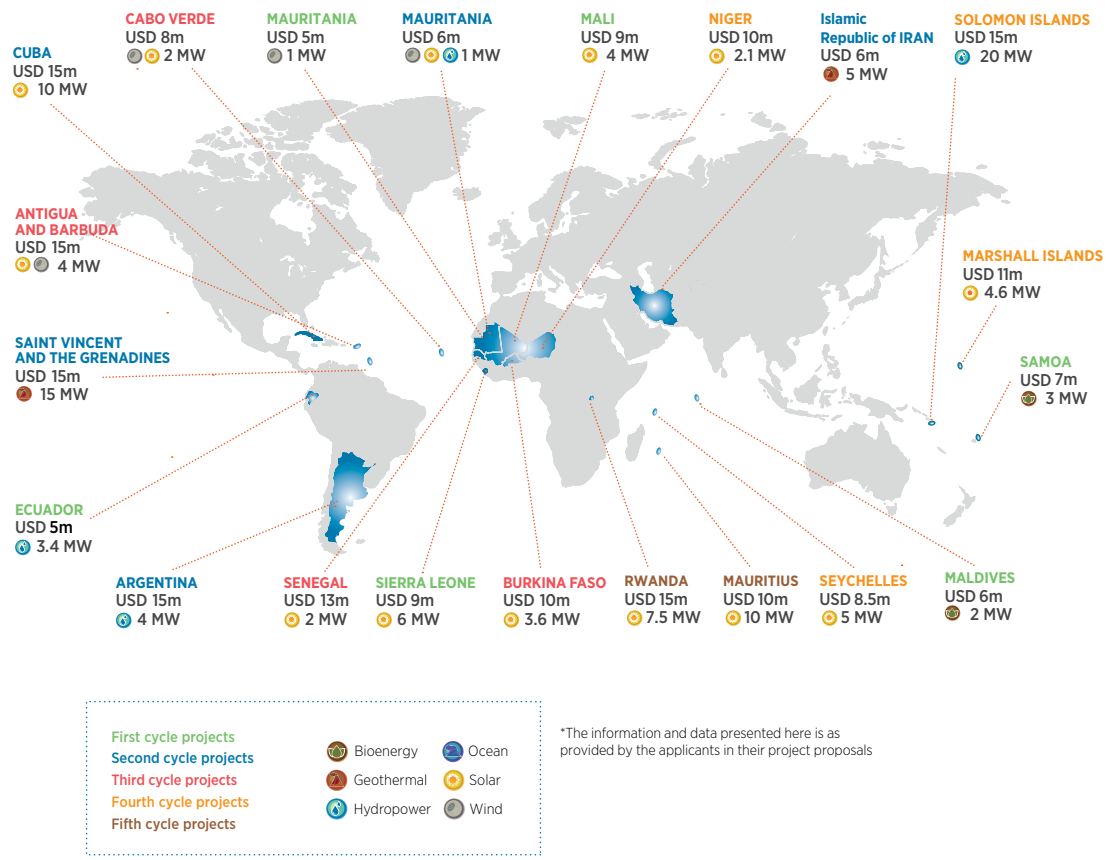
The IRENA/ADFD partnership is contributing to the achievement of the United Nations Sustainable Development Goals by supporting developing countries in their transition to a sustainable energy future.

INTRODUCTION

The IRENA/ADFD Project Facility has completed five selection cycles since 2014, resulting in the allocation of USD 214 million by the Abu Dhabi Fund for Development (ADFD) to 21 selected projects. Projects are funded by ADFD based on an agreed selection process and resulting recommendations by the International Renewable Energy Agency (IRENA).

The geographical distribution of the projects is shown in Figure 1.

Figure 1: Selected projects in the five cycles



Note: Upon completion of the sixth cycle, selected projects were announced during the ninth session of the IRENA Assembly in January 2019.

Disclaimer: Boundaries and names shown on this map do not imply any official endorsement or acceptance by IRENA.

After announcing the selected projects in each cycle, IRENA connects the project proponents and host government representatives with ADFD to jointly work through five main stages of advancement toward their implementation. IRENA also facilitates engagements between ADFD and the project team to support communication and project progress monitoring.

The main post-selection stages are as follows:

1. Preliminary loan offer, acceptance and project appraisal.
2. Agreement signing and ratification.
3. Procurement of consulting engineers to support the Project Implementation Unit (PIU) in providing project oversight.
4. Procurement of Engineering Procurement and Construction (EPC) contractors.
5. Construction/installation and commissioning stage; includes several disbursements to the project, as per milestones set by the PIU.



The signing of a new co-operation agreement in 2016 further strengthened the partnership between ADFD and IRENA

PORTFOLIO PROGRESS HIGHLIGHTS

By the end of November 2018, 16 of the 21 projects were progressing through the post selection stages. Seven of those 16 projects are expected to begin generating electricity in 2019. Technology options, country political and economic factors, climate-induced/environmental factors, and the implementation capacity of the proponents are all key attributes that contribute to the rate of progress of the projects.

Of those projects progressing with ADFD funding, seven (or 44%) have reached the construction/ commissioning stage (stage 5); three are in procurement (stages 3 and 4); five are in the agreement/ratification stage (stage 2) and only one project remains in the preliminary loan offer stage (stage 1) (Figure 2).

The sections below provide updates on the progress of the projects at various critical milestones and list the challenges faced by each project to date.

Funding allocation

Over the past five cycles, some of the funding remained unallocated and unused and is now being made available to projects selected in the upcoming cycles. The IRENA/ADFD Project Facility encourages more government-priority projects from eligible countries to apply for these funds in the upcoming cycles.

Status of loan agreements processing

Of the 16 progressing projects, ten have signed and ratified their loan agreements, qualifying them for loan disbursements. Of the remaining six projects, five are at the agreement/ratification stage and one remains at the preliminary loan offer stage.

Projects expected to begin generation in 2019

Seven projects are expected to begin generating electricity in 2019. Of these projects, three are from the first cycle; the remaining four are from cycles 2–5, as shown in Table 1.

The IRENA/ADFD Project Facility encourages more government-priority projects from eligible countries to apply for funds in upcoming cycles

Figure 2: Progress of projects

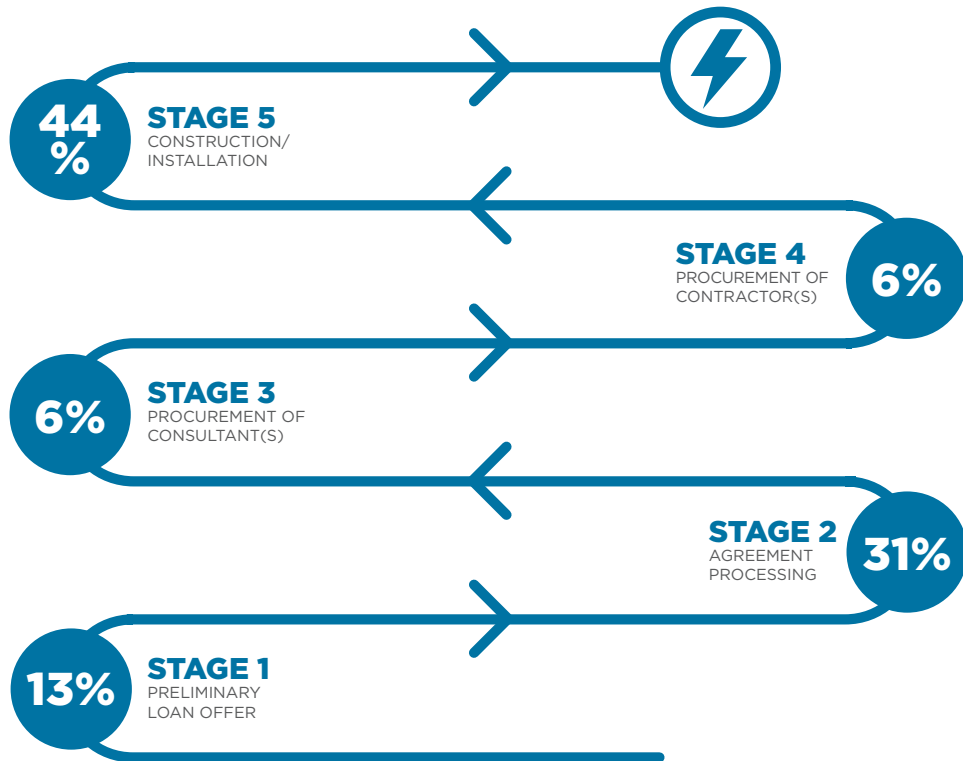


Table 1: Progress towards project completion

Cycle	Project	Status
1 st	Maldives: Small-scale waste-to-energy project.	The first of the two facilities in this project will be commissioned. The second facility will be commissioned in 2019.
1 st	Mali: Hybrid renewable energy systems for rural electrification in 32 villages.	Hybrid renewable energy systems for rural electrification are expected to reach completion in the first 10 of 32 villages in 2019.
1 st	Sierra Leone: Solar Park Freetown	Project is at the installation phase and is expected to be commissioned in 2019.
2 nd	Cuba: 10MW Grid connected Solar PV.	The four solar PV plants will begin operation in the first quarter of 2019.
3 rd	Antigua and Barbuda: Transformation of the Water and Government Sectors using Renewable Energy	The solar component of this project will be completed in 2019 while the wind components will be completed in 2020.
4 th	Seychelles: Ile de Romainville Solar Park	Scheduled for completion before the end of 2019.
5 th	Mauritius: 10 MW solar PV systems for 10,000 households in Mauritius.	Installation and commissioning of up to 2 000 kits of 1kWp capacity grid-connected rooftop solar PV each year for up to seven years.

Implementation status

In technological terms, projects involving solar PV installations are advancing faster than any other technology type. Geothermal and hydropower projects, on the other hand, are taking much longer to pass through each stage of advancement and are expected to take longer in the installation/construction phase, given their design and implementation complexities.

Implementation delays also stem from challenges in securing co-financing, as well as environment-related factors, described below.

Co-financing challenges

The IRENA/ADFD Project Facility enables access to concessional loans that cover up to 50% of total project costs. Notably, once selected, several projects have faced challenges in securing co-financing. In some cases, projects have taken more than two years to close financial shortfalls, leading to delays in their implementation. In two cases, these financial shortfalls were the result of updates in project scope and size.

Environmental challenges and considerations

Environmental factors affect project progress in two ways: firstly, extreme weather occurrences such as hurricanes and tropical storms slow down progress – particularly in island states. Secondly, possible exposure to harsh environmental conditions increases project risk levels and consequently affects project costs. In some case, expensive design options are recommended for environmental-proofing of projects. These additional costs drive up total project budgets and delay their financial close.

The IRENA/ADFD Project Facility enables access to concessional loans that cover up to 50% of total project costs

Summary of the expected development impacts of projects continuing with ADFD funding



4 million people

benefitting from
renewable energy



**800 SMEs
electrified,**

increasing productivity
in communities



400+

schools and health
centres electrified



19 million litres

of water provided for
domestic & productive use



5 000 new jobs

created



30 million litres

of fuel per year replaced
with renewable energy
options



3 million tCO₂e

mitigated per year



USD 125 million

saved on fuel imports
per year



Maldives

Project name

Small-scale waste to energy project

- Technology: Waste to energy
- Capacity: 4 MW
- ADFD loan: USD 6 million

Project outline

The Ministry of Environment and Energy, in partnership with the Waste Management Corporation Limited (WAMCO) – a state-owned enterprise – put forward this project to address waste management, access to fresh water and sustainable energy solutions in a holistic manner. It comprises the construction of two small demonstration waste-to-energy facilities to provide renewable electricity for the population through the combustion of municipal waste, while also powering an integrated desalination plant through a heat recovery system. These waste-to-energy facilities are part of the country's broader waste management framework and also contribute to the government's 'Scaling up Renewable Energy Program'.

The project secured a concessional loan of USD 6 million from ADFD and is being co-financed by the Government of Maldives and the World Bank.

Project status

Installation at one of the project sites has started. The project is expected to be completed in 2020.

Development impacts



Provision of clean energy and integrated waste management benefitting

122 000 people
(c. 25% of population)



Environment benefits:

55 000 tonnes
of waste incinerated annually,
enabling reductions in local
marine pollution that threaten
coral reef health



Energy security:

3.5 million litres
of **diesel fuel** saved annually



Fresh water access:

551 000 litres
of **desalinated water** annually,
reducing national water stress



Emissions of

9 200 tCO₂e
per year avoided



Photograph courtesy of the Ministry of Environment and Energy, Maldives



Mali

Project name

Hybrid renewable energy systems for rural electrification in 32 villages

- Technology: Solar PV
- Capacity: 4 MW
- ADFD loan: USD 9 million

Project outline

This project involves the installation of decentralised solar PV mini-grid systems to provide clean energy to 32 villages in six regions of Mali. The project uses a public-private partnership model to allow co-operation between Agence Malienne pour le Développement de l'Energie Domestique et de l'Electrification Rurale (AMADER), Mali-Folkecenter Nyetaa and ACCESS – a local rural energy service company. Existing diesel mini-grids will be converted to solar hybrid systems and 154 km of grid extension infrastructure will be installed to increase access to power for communities.

The project complements current socio-economic development programs being carried out by the Government of Mali that aim to combat poverty through sustainable development and increase the contribution of renewables in the Malian energy balance.

The project is being supported with a concessional loan of USD 9 million from the ADFD and co-financing from the Government of Mali and the Arab Bank for Economic Development in Africa (BADEA).

Project status

Installation of solar PV is on-going for the first 10 villages. The second phase of 22 villages is at procurement stage. The project is expected to be completed by 2021.

Development impacts



Increasing energy access
in rural communities
from 10% to 25%, benefitting

123 000 people
in 32 villages



5 000 tCO₂e
emissions avoided annually



Catalysing employment
and creating

2 000
direct and indirect
jobs



IRENA photograph



Mauritania

Project name

Wind power electrification project for coastal communities

- Technology: Wind
- Capacity: 1 MW
- ADFD loan: USD 5 million

Project outline

This project, put forward by the National Agency for Development of Renewable Energy (ANADER) in Mauritania, will provide four off-grid coastal fishing villages with decentralised renewable power for domestic use, desalination plants and ice production facilities. A total of 18 wind turbines of 15 kW capacity will be installed, providing 270 kW capacity for each of the localities of Lemcid, Lemhaijrat, Bellewakh and Loubeir.

ADFD provided a USD 5 million loan, complemented by co-financing from the Government of Mauritania and the Global Environment Facility (GEF).

Project status

The project is at construction stage and is expected to be completed by 2020.

Development impacts



Providing energy access for
8 000 people
in off-grid localities



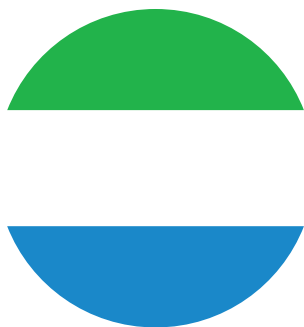
Powering
schools and
health centres



Providing electricity for
ice-making facilities
to boost the fishing
communities' productivity



Photograph courtesy of ANADER, Mauritania



Sierra Leone

Project name

Solar park, Freetown

- Technology: Solar PV
- Capacity: 6 MW
- ADFD loan: USD 9 million

Project outline

This project, put forward by the Ministry of Energy and Water Resources, involves the construction of a grid-connected solar PV park near the capital city of Freetown. It represents one of the first large-scale PV installations in Western Africa and aims to have a multiplier effect in the region whilst setting standards for additional renewable energy developments.

Financing is provided through a loan of USD 9 million from ADFD and co-financing provided by the Government of Sierra Leone.

Project status

The project is at construction stage and will be completed by 2019.

Development impacts



Bringing renewable
energy benefits to
15 000
people



Improving national
power
reliability



Mitigating
8 000 tCO₂e
emissions annually



Photograph courtesy of Ministry of Energy and Water Resources, Sierra Leone



Argentina

Project name

Nahueve hydropower project

- Technology: Hydropower
- Capacity: 7 MW
- ADFD loan: USD 15 million

Project outline

The Nahueve hydropower project is a government-driven multi-purpose project located in Neuquen province. The project involves development of a 7 MW mini-hydropower plant, and will also provide both potable and irrigation water for the population of Villa de Nahueve. The project will be used as a model for future small-scale hydro development in Argentina.

A concessional loan of USD 15 million from ADFD was availed for the project; co-financing is provided by the Government of Argentina.

Project status

Construction is expected to commence in 2019 and to be completed in 2022.

Development impacts



Improving electricity **reliability**
in Neuquen province



Providing energy access for
54 000 people



Increasing **agricultural productivity** through
120 ha
of land irrigation



Creating **employment** for
130 people



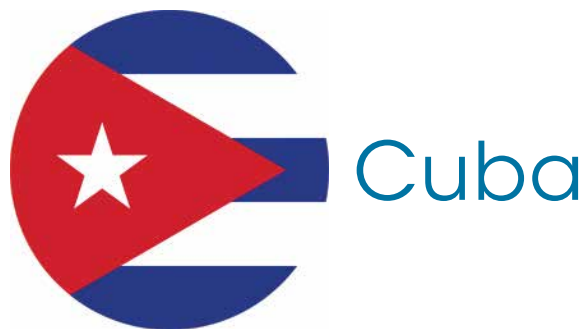
Reducing **greenhouse gas** emissions by
22 800 tCO₂e
annually



Saving
7.3 million litres
of **fossil fuels** annually



Photograph courtesy of Agencia de Inversiones Neuquen (ADI-NQN), Argentina



Project name

10 MWp grid-connected solar PV project

- Technology: Solar PV
- Capacity: 10 MW
- ADFD loan: USD 15 million

Project outline

This project is being implemented by Union Electrica (UNE) – a state-owned utility that oversees the generation, transmission, distribution and delivery of electricity services. Four grid-connected solar PV power plants will be installed in various locations in Cuba with a total generation capacity of 10 MW. The solar PV power plants will directly contribute to the government's national objectives to reduce the use of fossil fuels for electricity generation in Cuba and consequently reduce greenhouse gas emissions.

The project is financed through a USD 15 million loan from ADFD and co-financing from the Government of Cuba.

Project status

Installation of solar PV equipment at the four locations has begun. Completion and commissioning are expected in 2019.

Development impacts



Increasing **share of renewables** in Cuba's **energy mix** by adding
10 MW
of generation



Benefitting
6 500 people
with **reliable energy** and
enabling electricity stability



Mitigating
10 800 tCO₂e
annually



IRENA photograph



Saint Vincent and the Grenadines

Project name

La Soufriere geothermal energy project

- Technology: Geothermal
- Capacity: 10– 15 MW
- ADFD loan: USD 15 million

Project outline

This 10–15 MW geothermal project will transform the energy sector of Saint Vincent and the Grenadines, providing a sustainable and reliable source of renewable power. The project is being developed as a public–private partnership between the Government of Saint Vincent and the Grenadines, Light & Power Holdings and Reykjavik Geothermal. The project will contribute to achieving the country’s Energy Action Plan target to increase the amount of renewable energy to 60% of the energy mix by 2020. Once operational, the plant will bring the share of renewable energy sources to approximately 73% of total national power generation, well in excess of the country’s Energy Action Plan target.

ADFD has provided a concessional loan of USD 15 million for this project. Co-financing is being provided by equity partners and several sources of public funding including the Government of Saint Vincent and the Grenadines and donor agencies.

Project status

Civil works are already underway and drilling works will begin in 2019. The project is expected to be completed by 2023.

Development impacts



Increasing **renewable energy** in the country's energy mix to **75%** of total electricity generation capacity



Making **electricity more affordable** through lower tariff structures through **cheaper generation**



Mitigating **53 000 tCO₂e** emissions annually



Reducing reliance on **fossil fuel** imports by **17 million litres** and reducing national foreign exchange expenditure



Photograph courtesy of Government of Saint Vincent and the Grenadines



Antigua and Barbuda

Project name

Transformation of the water and government sectors using renewable energy

- Technology: Hybrid wind and solar PV
- Capacity: 4 MW
- ADFD loan: USD 15 million

Project outline

This 4 MW solar-wind hybrid project is being implemented by the Government of Antigua and Barbuda's Department of Environment as part of a wider scheme to transform the water sector and provide low-emission and climate-resilient energy for critical services in the small island state. The project involves the installation of foldable wind turbines and solar PV panels, with battery backup for electricity storage in the event of extreme weather events. Beneficiary facilities include reverse osmosis desalination plants for clean water provision as well as providing electricity to hospitals, community clinics and emergency response public service buildings. This project directly contributes to the Government's objective to obtain 20% of electricity from renewable sources by 2018, and to make its critical services resilient to the impacts of climate change.

The ADFD provided a concessional loan of USD 15 million for the first phase of 4 MW out of the total 25 MW programme. Co-financing is provided by Government of Antigua and Barbuda, the Global Environment Facility (GEF) and other development partners.

Project status

The project has reached the construction stage and the solar component is expected to begin power generation in 2019. The project is expected to be fully completed in 2020.

Development impacts



Providing access to
clean water to the
90 000
inhabitants of Antigua



Mitigating
8 275 tCO₂e
emissions annually



Improving national
energy security by
**reducing
dependency**
on imported fossil fuels



Making electricity more
affordable for
33 000
customers



Photograph courtesy of Department of Environment, Antigua and Barbuda



Burkina Faso

Project name

Rural electrification by solar PV/diesel and power-distribution mini-grids

- Technology: Solar PV
- Capacity: 3.6 MW
- ADFD loan: USD 10 million

Project outline

This government priority project involves the rural electrification of 42 localities in Burkina Faso with mini-grids, grid extensions and solar home system technologies. The project is being implemented by Agence Burkinabé de l'Électrification Rurale (formerly Fonds de Développement de l'Électrification) – the Burkina Faso Government agency for electrification. The project utilises a holistic approach by matching the most suitable and cost-effective technology with each end user. In rural trading localities where populations are sufficiently dense, mini-grids will provide technical and economic competitive advantages over grid connections or individual solar kits. In sparsely populated areas, however, households will be most cost-effectively served by individual solar kits – which will be provided by the project.

A loan of USD 10 million was provided by the ADFD for this project. Co-financing was secured from the local government on a public-private partnership basis.

Project status

The project loan agreement is ready for signature. Installations are expected to begin in 2019.

Development impacts



73 400 people
benefitting through electricity
provision for households, as well
as **70 schools, 25 health centres**
and **16 water supply locations**



10 714
new electricity
connections



2 500 tCO₂e
emissions avoided
annually



350
small businesses
supported



Cost savings from displacing
1.1 million litres
of fuel use



300
jobs created



IRENA photograph



Senegal

Project name

Promoting renewable energy rural electrification

- Technology: Solar PV
- Capacity: 2 MW
- ADFD loan: USD 13 million

Project outline

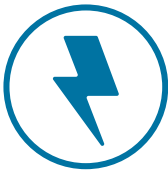
This project was developed by the Senegalese Rural Electrification Agency (ASER) to electrify 100 villages located in isolated regions of Senegal. It is part of a broader government emergency rural electrification strategy that aims to achieve 60% rural electrification by 2025. The project will power medium sized, remote villages using solar PV plants that feed into mini-grids. The mini-grids will include solar battery storage devices to provide power during the evenings. This project supports the government's national electrification program, which aims to provide universal access to energy by 2025–2030.

The ADFD has committed a concessional loan of USD 13 million for the project. Co-financing is provided by the Government of Senegal and other development partners.

Project status

The project loan agreement has been signed and ratification is ongoing. Construction is expected to begin in 2019.

Development impacts



Enhancing energy access for
80 000 people
in 100 rural communities



Providing electricity to
150 health centres and
200 schools



Improving productivity for
450 small businesses



Mitigating
3 200 tCO₂e
emissions annually



Photograph courtesy of ASER, Senegal



Marshall Islands

Project name

Solar micro-grid hybrid project in four islands

- Technology: Solar PV
- Capacity: 4.6 MW
- ADFD loan: USD 11 million

Project outline

The Marshall Islands' National Energy Policy and Energy Action Plan of 2016 seeks to provide "an improved quality of life for the people of the Marshall Islands through clean, reliable, affordable, accessible, environmentally appropriate and sustainable energy services".

The Government, together with Solar City, developed this project to contribute to the policy objective by deploying hybrid microgrids on the four islands of Ebeye, Jabor, Rongrong and Wotje. Solar PV will be combined with advanced lithium ion battery storage and control systems (specially designed for the harsh near-ocean environment) and integrated with existing diesel generation as the primary electricity generation source. The energy will be used for domestic and productive uses including powering freshwater supply.

ADFD has committed a concessional loan of USD 11 million to this project. Co-finance is being provided by the government and its development partners.

Project status

Loan agreement processing is on-going. Installations are expected to begin in 2019.

Development impacts



Access to affordable electricity for
16 000 customers



Reducing diesel-based power generation
by **36%** for the island of Ebeye and by **90%** for Jabor, Rongrong and Wotje



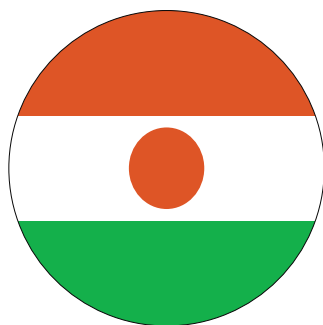
Provision of
18.5 million litres
of water annually



Foreign exchange savings equivalent to
1.7 million litres
of diesel imports annually



Photograph courtesy of the Government of the Republic of the Marshall Islands



Niger

Project name

Solar rural electrification in 100 villages

- Technology: Solar PV
- Capacity: 2.1 MW
- ADFD loan: USD 10 million

Project outline

This government priority project is being implemented by the Rural Electrification Agency of Niger – Agence Nigerienne de Promotion de l'Electrification en milieu Rural (ANPER). It supports the Government's policy to provide electricity through solar PV systems to 200 villages in order to offer sustainable and clean electricity services to the beneficiaries. Given Niger's national electricity access rate of around 10% (49% in urban areas and 0.4% in rural areas), ANPER was created to accelerate rural electrification and has since embarked on work to electrify 100 localities.

The ADFD has provided a concessional loan of USD 10 million alongside co-financing from the Government of Niger.

Project status

Loan agreement processing is on-going. Installations are expected to begin in 2019.

Development impacts



Electricity access for
21 000
new connections
in 100 villages



Enabling improved access
to basic services powered
by renewable energy
including schools, health
centres, provision of water
for drinking and agriculture,
and food processing and
preservation



Reducing pollution from
diesel based generators
and kerosene lamps



Providing benefits for
150 000 people



Creating
250
direct and indirect
jobs



Photograph courtesy of ANPER, Niger



Seychelles

Project name

Ile de Romainville solar park project

- Technology: Solar PV
- Capacity: 5 MW
- ADFD loan: USD 8.5 million

Project outline

This government-driven project being implemented by the Public Utilities Corporation (PUC) involves the construction of a 5 MW solar PV plant that will be integrated into an existing offshore wind farm, located 500 metres from the largest island of Mahé. PUC is wholly owned by the government and comes under the authority of the Ministry of Environment, Energy and Climate Change. The solar park will be located on the same site as existing wind turbines on Ile de Romainville, resulting in a highly space-efficient concentration of renewable energy plants.

The electricity generated will be injected into the national grid using the existing transmission network and will benefit the entire population of Mahé island.

The project will contribute to achieving the long-term objective of the Government of Seychelles to achieve a 15% renewable energy contribution to the power generation mix by 2030.

The ADFD has allocated a concessional loan of USD 8.5 million for the project. Co-finance is provided by the PUC.

Project status

The project has reached the construction/installation phase. Completion and commissioning are expected in 2019.

Development impacts



Enable the country to supply **clean energy** to over
5 000 people



Foreign exchange savings equivalent to
1.6 million litres
of diesel imports each year



Creation of
295
direct and indirect
jobs



Mitigating
5 000 tCO₂e
emissions annually



Photograph courtesy of Public Utilities Corporation, Seychelles



Solomon Islands

Project name

Tina River hydropower project

- Technology: Hydropower
- Capacity: 20 MW
- ADFD loan: USD 15 million

Project outline

The Tina River hydropower project is a national priority energy project initiated by the Solomon Islands Government to introduce renewable energy to the country's energy mix and reduce dependence on diesel fuels. The project aims to convert the Solomon Islands power sector, which is presently 100% dependent on imported diesel fuel. Currently, the retail cost of electricity is very high and greenhouse gas emissions are significant.

Financing is being raised by a group of development partners and private equity is being pooled through the special-purpose company implementing the project. The ADFD is providing a concessional loan of USD 15 million to the pool of funds raised by several partners including the Green Climate Fund.

Project status

The project is expected to reach financial close in 2018 and begin construction in 2019. Completion and commissioning are expected in 2023.

Development impacts



Enabling
183 000 people
to benefit from
renewable energy access



Reducing power tariffs, making
electricity
more **affordable**



Reducing greenhouse gas
emissions by
2.5 million tCO₂e
annually



Reducing the country's
annual expenditure on
diesel fuels by 75%, leading
to annual savings of
USD 28 million



Photograph courtesy of Tina Hydropower Project, Solomon Islands



Mauritius

Project name

10 000 solar PV systems for households

- Technology: Grid-connected rooftop solar PV
- Capacity: 10 MW
- ADFD loan: USD 10 million

Project outline

This government priority project by the Mauritius Central Electricity Board's green energy company, involves the installation of 10 000 solar PV kits of 1 kWp each on the rooftops of low-income households. The kits are grid-connected and offer net-metering benefits to participating households in the form of 50 kWh of free electricity each month.

The project will contribute to achieving the government's target of generating 35% of its electricity from renewable sources by 2025. By lowering energy expenditures for low-income households, the project will also contribute to poverty alleviation, which is a strategic priority for the government.

The ADFD has allocated a concessional loan of USD 10 million. Additional co-financing is being provided by the Central Electricity Board.

Project status

The project's loan agreement is currently being processed. A pilot phase of the project is under way with 600 installations completed. Annual installations of about 1500-2000 kits are expected until 2025.

Development impacts



Making electricity more affordable for low income households with 50 kWh of free electricity per month benefitting **30 000 people**



Increasing the share of renewables in the grid by **10MW**



Reducing dependence on fossil fuels and saving **USD 400 000** annually



15 000 tCO₂e emissions avoided annually



Photograph courtesy of Central Electricity Board, Mauritius



Rwanda

Project name

Ignite Rwanda

- Technology: Solar PV home systems
- Capacity: 7.5 MW
- ADFD loan: USD 15 million

Project outline

The Ignite Rwanda project is a joint venture between Ignite Power – a private limited liability company – and the Government of Rwanda to distribute and install 500 000 solar home systems to households through an affordable payment scheme. The systems are distributed through agents in districts across the country, creating employment for young people (50% women) along the value chain. An affordable pay-as-you-go (PAYGO) model enables off-grid low income households to make small payments daily or weekly. The project will install solar PV kits to power lights and FM radios, as well as to charge phones, providing increased information access to rural communities. Installation work is on-going with funding from the equity partner having enabled 60 000 installations so far.

The ADFD has allocated a concessional loan of USD 15 million to this project. Co-financing includes equity and commercial debt raised by the Ignite Rwanda joint venture.

Project status

The project is at pre-loan approval stage. Completion is expected in 2025.

Development impacts



Providing
500 000 households
(3 million people)
with access to affordable electricity



Creating
2 000 jobs,
50% of them for women



Household savings of
USD 200
annually from replacing
kerosene lamps with solar PV



Adding
7.5 MW
of renewable energy
to Rwanda's electricity mix



Reducing dependence
on fossil fuels and saving
USD 100 million
annually



500 000
tCO₂e
emissions avoided annually



Photograph courtesy of Ignite Rwanda

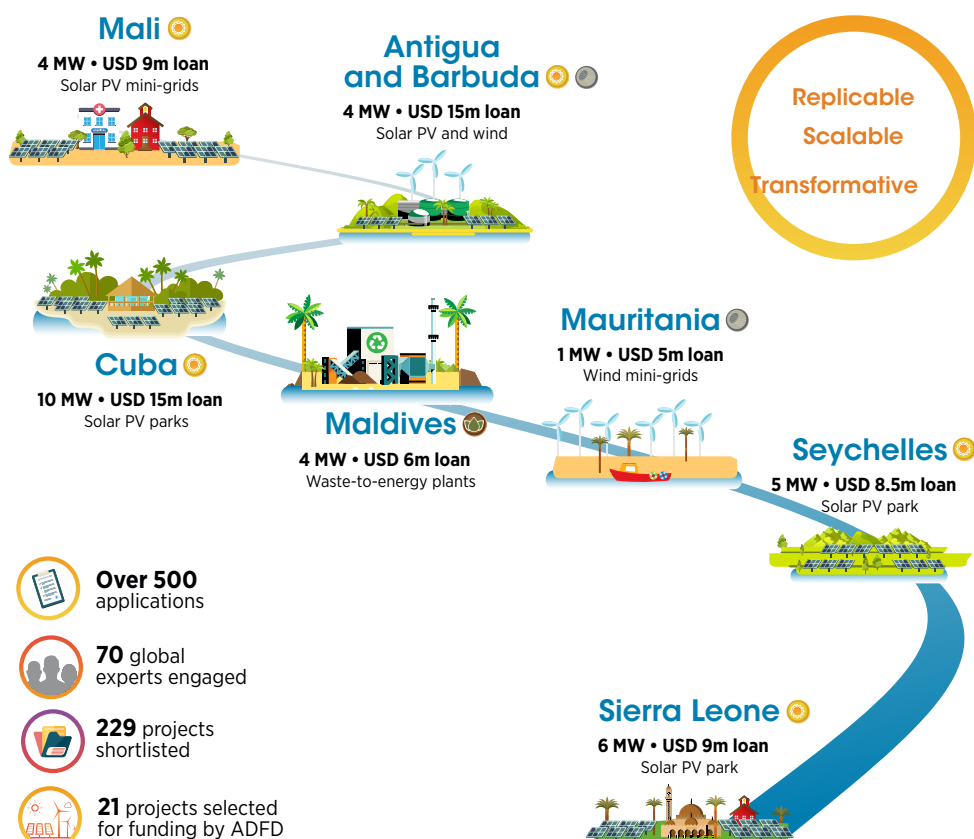
CONCLUSIONS AND OUTLOOK

Implementation and process improvements, 2014–2018

While the Facility has achieved notable successes in its first five cycles, the lessons learned along the way will also be useful in improving the selection and implementation process in future funding cycles. IRENA and ADFD continue to actively engage with project development teams to support the implementation process and bring the benefits of renewable energy to the developing world. Project advancement has been further facilitated by joint appraisal missions, periodic conference calls with project teams and follow-up missions to monitor and document progress.

Improvements in selection and post-selection processes have enabled more projects to advance through the post-selection stages faster. Hence, several projects in the third, fourth and fifth selection cycles are already procuring contractors, while some have reached the construction/installation phases. This suggests that more recent projects are taking about half the time of the first- and second-cycle projects to reach advanced stages. These improvements mean that the expected benefits of the projects to target communities and host nations will be realised faster.

Status at end of 2018: seven projects at construction stage



2019 Outlook

With projects beginning to deliver renewable energy in 2019, the IRENA/ADFD team will continue to monitor development impacts and the contribution of these projects to sustainable development goals. In addition, the lessons learned during the process may be applied both by the Facility itself and in broader efforts to boost renewable energy deployment in the developing world.

1. Seven projects starting generation of renewable energy

Up to seven projects will begin generation of renewable energy in 2019. These include projects in Antigua and Barbuda, Cuba, the Maldives, Mali, Mauritius, the Seychelles and Sierra Leone. Of these, the projects in Cuba, the Seychelles and Sierra Leone will be fully completed, while installations will continue for the others in 2019.

2. More projects at construction/installation stage

Most of the projects in the five cycles will be in the construction stage in 2019. Several projects that are in the procurement stages are expected to reach construction in 2019. Lessons learned from the first few completed projects will be used to assist the other projects to achieve completion.

3. New agreements signed

The remaining projects from the third, fourth and fifth selection cycles are expected to be signed in 2019, together with some sixth cycle projects. The IRENA/ADFD team will work together closely to ensure these projects are efficiently processed, paving the way for more projects to advance through the implementation stages.

4. Announcement of results from the sixth cycle

The sixth cycle selection process was completed and its results were announced in January 2019 during the ninth session of the IRENA Assembly.

5. Selection process for the seventh cycle

Upon initiating the seventh cycle, the IRENA/ADFD Project Facility still had more than USD 50 million available for eligible projects. The seventh cycle opened in November 2018 for applicants to submit their projects for consideration by 14 February 2019.

For more details visit: www.irena.org/adfd

About IRENA

The International Renewable Energy Agency (IRENA) is an intergovernmental organisation that supports countries in their transition to a sustainable energy future and serves as the principle platform for international co-operation, a centre of excellence and a repository of policy, technology, resource and financial knowledge on renewable energy. IRENA promotes the widespread adoption and sustainable use of all forms of renewable energy, including bioenergy, geothermal, hydropower, ocean, solar and wind energy, in the pursuit of sustainable development, energy access, energy security and low-carbon economic growth and prosperity.



About ADFD

The Abu Dhabi Fund for Development (ADFD) is a national organisation owned by the Abu Dhabi government. Established in 1971, its purpose is to help emerging countries by providing concessionary loans to finance sustainable development projects alongside other long-term investments and direct contributions. In addition, the Fund manages grants offered by the Abu Dhabi government and monitors the course of corresponding projects. To date, the Fund has invested around AED 80 billion (USD 2.4 billion) in development projects across 88 countries.





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