Strategy 2019-2022

Energy Transition

#WorldInCommon

AFD
AGENCE FRANÇAISE
DE DÉVELOPPEMENT

AFD Group, present in over one hundred countries and all French overseas territories, is carrying out its development mission in line with the AFD Group's 2018–2022 Strategy, adopted in 2018, and its five commitments:

- Become the first "100% Paris Agreement" development agency,

- Ensure that its activity is "100% Social link",

- Promote "3D[1] development" in contexts of crisis and fragility,

- Give priority to non-sovereign solutions that allow for private-sector intervention as close as possible to grass-roots level,

- Adopt a partnership reflex.

The Group's action aims to support and accelerate the six major transitions that the world has currently undertaken: demographic and social, energy-related, territorial and ecological, economic and financial, and political and civic.

The present strategy defines the major orientations relating to the energy transition, and the way in which the activities conducted will seek to meet the above commitments.

[1] Development, Diplomacy, Defence.

Executive Summary

The Energy Transition (ET) is now underway in developing and developed countries alike. Driven mainly by technological advances, it presents an economic, social and environmental opportunity to achieve the Sustainable Development Goals (SDGs), and an imperative if we are to attain the objectives set by the Paris Climate Agreement. It aims **for access to efficient, resilient and low-carbon energy services for all.**

Large-scale deployment of the energy transition implies profound technological and societal changes: it goes far beyond the question of electricity to include industry, construction, mobility, urban planning, agriculture, our consumption patterns, our leisure activities. The challenge is to bring about large-scale changes in the consumption and production of energy and, at the same time, provide access to reliable energy services for over a billion people.

To meet these challenges and the requests from its partner countries more effectively, AFD Group has adopted a strategy that positions its action on accelerating the energy transition, in line with the AFD Group's 2018–2022 Strategy approved in August 2018:

By defining three focus areas for intervention consistent with the commitments to 100% Paris Agreement and 100% Social link:

- **Access to energy services for all,** which is a fundamental objective of the Development Agenda, so as to ensure better social and territorial inclusion, particularly in Africa and Southeast Asia, and also a key challenge in contexts of crisis and fragility.

- **Energy efficiency and demand management.** This priority is at the heart of the societal change mentioned above. An "energy-efficiency reflex" needs to permeate all of the Group's projects, particularly those supporting urban development, the construction sector and industry.

- **A modernised and low-carbon energy supply,** forms the historic core of the Group's intervention and requires financing public and private investments in both the electricity and bioenergy sectors. AFD Group will use a selective approach, bolstered by the 100% Paris Agreement commitment; the Group will abstain from financing coal-fired power plants, projects for the exploration or production of coal, or projects exclusively dedicated to transporting coal or hydrocarbons (conventional or unconventional), and will proactively support its partners in exiting from fossil fuels.

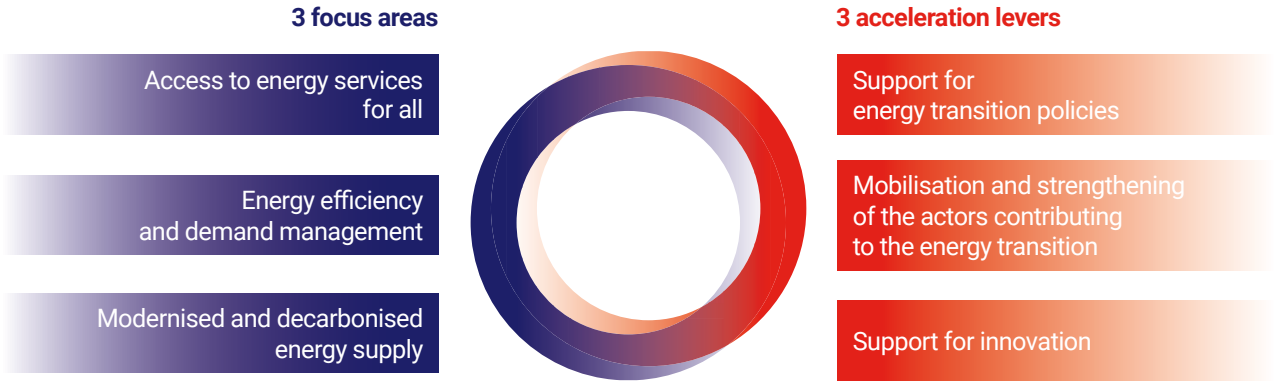
By mobilising three cross-cutting levers to accelerate the energy transition:

- **Support energy-transition policies.** AFD's support for designing, implementing and monitoring public policy will be reinforced. It will be grounded on policy-based loans, technical assistance and decision-support tools to strengthen the policy dialogue with governments and ET actors. In particular, it will be fuelled by partnerships with French actors through peer exchanges on the arrangements for implementing the energy transition.

- **Mobilise and strengthen the actors contributing to the energy transition.** By developing partnerships, AFD Group will help to redirect investment flows, primarily private investment, towards the energy transition. Building the actors' capacities, particularly those of electric utilities, will also be pursued. This is a long-term effort and crucial to putting in place the conditions for the energy transition to succeed.

- **Support innovation.** Innovation is one of the key drivers of the energy transition. Whether incremental or disruptive, innovation needs to be supported in the Global South and in the French overseas territories. Technological, digital and financial innovations will be considered for new financing offers, calls for projects and pilot actions.

AFD and PROPARCO will be mobilised to implement this strategy, which will use a differentiated approach depending on the country, in line with the Group's geographic priorities. This mobilisation will enable AFD to reach its objectives to commit: i) €6 billion to the energy sector in



Africa between 2016 and 2020 (including €3 billion under the Africa Renewable Energy Initiative, AREI), and ii) €1.5 billion between 2016 and 2022 to support the International Solar Alliance (ISA).

Convinced that the energy transition offers an opportunity to all, AFD will mobilise all of its public, private and non-state partners to pursue one objective: in our world in common, each person must be able to access efficient, resilient and low-carbon energy services.

The energy sector occupies a prominent place in AFD Group's activity. Over the period 2014–2018, an average €2.0 billion were dedicated to the sector each year (two-thirds of which involve climate co-benefits), equivalent to around 20% of the Group's total commitment.

In 2018, AFD Group committed nearly €2.12 billion to the energy theme, including €1.74 billion by AFD and €0.38 billion by PROPARCO.

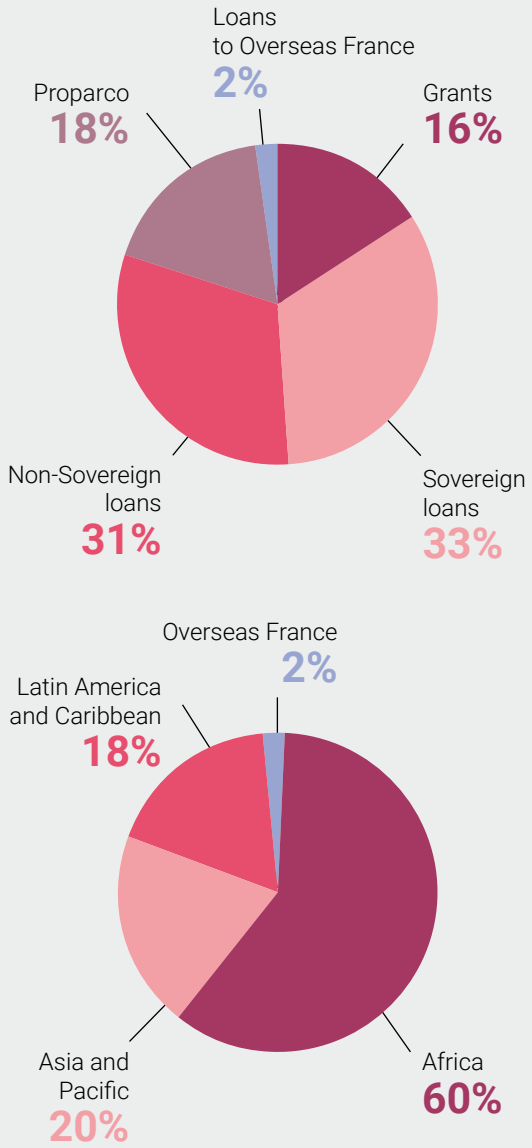


Figure 1: AFD Group's commitments to the energy sector in 2018
(in percent, by instrument [top] and by geography [bottom])

CONTENTS

1.

AFD'S POSITIONING ON THE ENERGY TRANSITION

1.1. ENERGY AS A DRIVER OF DEVELOPMENT

The availability of energy is key to meeting all basic human needs: water, food, health, education. Yet, over one billion people across the world have no access to electricity and over 2.5 billion use traditional biomass for cooking and heating. The unequal access to modern energy services[2] is one of the foremost inequalities, especially for households, where it is above all women who generally make up for the lack of energy services.

At the economic level, energy is a crucial vector for the growth of economic activities. The linkage between GDP growth and energy consumption is well-evidenced. Yet, fossil fuels account for 81%[3] of the global primary energy consumption, and two-thirds of greenhouse gas emissions (GHG).[4] The exploitation and consumption of fossil fuels (power generation, transport, heating of buildings, etc.) are sources of local pollution and ecosystem degradation. It is the poorest countries that are the hardest-hit.

Ensuring the sustainable development of energy systems is thus at the heart of AFD Group's mandate, which supports the energy transition in its intervention countries. In other words: **access to efficient, resilient and low-carbon energy services for all.**

1.2. THE ENERGY TRANSITION, A GLOBAL TRANSITION

In an energy sector that is primarily characterised by the increase in unconventional fossil fuel resources, the increasing competitiveness of renewable energies (mainly photovoltaic solar and wind energy) has allowed them to attract a growing share of investments compared to the classical process for generating electricity. In 2017, renewables accounted for around 60%[5] of the new installed capacities of power generation worldwide.

Power grids are being modernised thanks to the advances in digital technology, energy storage, and load aggregating or shedding systems that allow for an increased share of intermittent power. Technological innovations, such as autonomous solar kits and renewables- or hybrid-powered mini-grids, make it possible to rethink access policies, notably for rural areas. Innovation and digital technology also involve energy efficiency (mainly for buildings, urban development and transport). Finally, intelligence applied to end-user equipment makes it possible to optimise use and reduce energy consumption in various sectors, while also adapting to climate change.

[2] Here, "modern energy services" refers mainly to electricity and gas, which are intended to replace traditional energy sources such as fuel-wood.
[3] 2017 data; source: AIE World Energy Outlook 2018.
[4] WEO-2015 Special Report: Energy and Climate Change, International Energy Agency.
[5] 2017 data; source: AIE World Energy Outlook 2018.

1.3. THE ENERGY TRANSITION, A KEY LEVER IN THE FIGHT AGAINST CLIMATE CHANGE

These advances mark a positive move towards low-carbon development trajectories. For the first time in a period of global economic growth, GHG emissions from the energy sector remained stable between 2014 and 2016. This was achieved in part through the substitution of coal with gas or renewables in the world's major economies (China, the United-States) and through significant efforts to improve energy efficiency. However, in 2017 and 2018, CO_2 emissions linked to energy consumption rose again following an increase in the growth of energy demand and a slower pace of energy intensity improvements.

> *To fight climate change effectively, it is necessary to rapidly and massively decouple development trajectories and fossil fuel consumption.*

To fight climate change effectively, it is necessary to rapidly and massively decouple development trajectories and fossil fuel consumption. The challenge is to bring about large-scale changes to energy generation and consumption systems in all countries and, at the same time, to enable hundreds of millions of people to access reliable energy services that are resilient to the impacts of climate change.

Solar panels installed at a Kochi underground station.

AFD supports the construction of the metro and is helping the city to sustainably restructure its urban mobility.

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1.4. THE ENERGY TRANSITION TRAJECTORIES WILL BE DIFFERENT DEPENDING ON NATIONAL CONTEXTS

The investment decisions made today will shape countries' development trajectories and emissions for decades to come. These challenges compel us to think in terms of a long-term energy transition path. Unlike developed countries, which already have modern energy services accessible to all, developing countries need to dovetail several objectives: give as many people as possible access to reliable and efficient energy services, whilst also managing energy demand and reducing their reliance on fossil fuels. Decarbonising energy mixes, crucial for limiting global warming, rests on three pillars:

1. **demand management, energy sufficiency and energy efficiency across all sectors,**

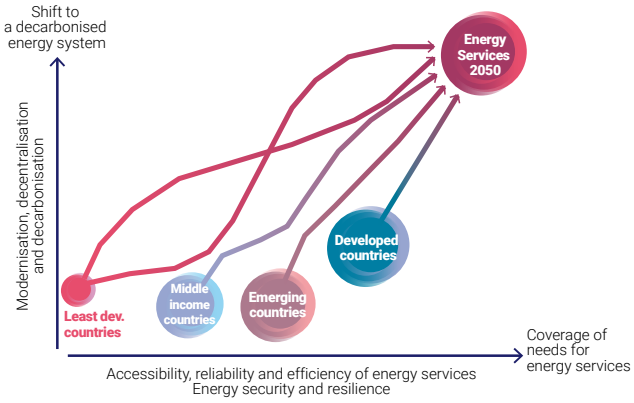
2. **the substitution of fossil fuels with renewable or biosourced energy vectors (low-carbon electricity, biofuels, biomass, etc.),**

3. **the decarbonisation of power generation.**

The efforts devoted to each of these three pillars and the technological choices can vary, leading to different decarbonisation trajectories for energy mixes. More broadly, these trajectories will differ depending on the context of each country, at the economic level (growth, energy mix, energy-intensive sectors, local resources, urbanisation model, etc.), the social level (access rate, share of biomass in domestic consumption, employment) and the environmental level (pollution, deforestation, waste). The impact on future CO_2 emissions will thus be of varying intensity: a fast emissions reduction path for some emerging countries, and for less developed countries an emissions peak followed by a reduction or moderate change...

There exists a real potential for a triple dividend: an economic one (energy security and more competitive services), social (energy access, job creation), and environmental

Differentiated Energy Transition trajectories
(The bubble size is proportional to the rate of access to energy services)



(reduction of local pollution and GHG emissions) – a potential that can be demonstrated by tools for macro-economic modelling[6] of the energy transition. The main challenge is to convince decision-makers that environmental policies, and particularly those aimed at limiting GHG emissions, do not put a brake on economic development and improvements to social well-being but, quite the contrary, offer an opportunity and should be supported at the social level to ensure greater inclusion. At the operational level, research on the triple dividend and its demonstration stand as an opportunity to fuel the policy dialogue that AFD undertakes in its countries of operation.

Given the stakes of the energy transition and the economic, social and environmental opportunities it creates, support for the energy transition is and will remain at the heart of the Group's action.

[6] See the example of Mexico: https://www.afd.fr/en/transitioning-towards-low-carbon-economy-mexico-application-threeme-model.

2.

CONTEXT JUSTIFYING A NEW STRATEGY

2.1. THE INTERNATIONAL AGREEMENTS AND INITIATIVES TO WHICH FRANCE HAS COMMITTED

The Paris Agreement, adopted in 2015, was a historical waymark insofar as the countries in the Global North and South recognised the need to change the current development models. Three objectives were set:

a) **limit the rise in mean global temperature to well below +2°C,** which supposes that the world will reach zero net GHG emissions between 2050 and 2100,

b) **strengthen the capacities to adapt to the harmful effects of climate change** and promote low GHG-emissions development in such a way that food production is not threatened, and

c) **make financial flows consistent with a low GHG-emissions and climate-resilient pathway.**

In this context, every five years, each country has to submit its increasingly ambitious nationally determined contribution (NDC) and should make efforts to formulate and communicate a long-term, low GHG-emissions development strategy.

The same year, the United Nations Member States adopted the new 2030 Agenda for Sustainable Development, with 17 objectives that address all developed and developing countries, as all of them are facing the global challenges. The sustainable development themes are interdependent, but directly linked with energy production and consumption. Among these, we will focus more specifically on: SDG 7, "Ensure access to affordable, reliable, sustainable and modern energy for all"; SDG 13, "Take urgent action to combat climate change and its impacts"; SDG 1, "End poverty in all its forms everywhere"; and SDG12 "Ensure sustainable consumption and production patterns".

The international community is mobilising around several initiatives that aim to develop renewables and access to clean energy for all, notably the initiative launched in 2013 by the United Nations, "Sustainable Energy for All (SE4All)", the Africa Renewable Energy Initiative (AREI), the International Solar Alliance (ISA) and the Sahel Alliance.

France's commitment to several of these calls on AFD Group particularly:

- **AREI (Africa Renewable Energy Initiative)** announced at COP 21, which aims to install 10 GW of renewable energy in continental Africa between 2016 and 2020 and move the continent onto the path of energy access for all by 2030. Together with other financial partners such as the European Union or Germany in particular, France has committed to dedicate over €3 billion to the themes of renewables and access to energy over the period 2016–2020. This commitment is part of the pledge to dedicate €6 billion to the energy sector in Africa over the same period.

- **The International Solar Alliance (ISA),** launched by India at COP 21, aims for a massive reduction in the costs of solar energy so as to enable a "scale change" in its deployment in 121 sun-rich countries located between the two Tropics. The French effort will reach €1.5 billion in loans and grants between 2016 and 2022, the challenge being to accelerate investment by using public money to unlock investment from the private sector.

- **The Sahel Alliance** aims to step up development partners' support to the Sahel region in order to further stabilise the security situation and eliminate poverty. In five years from now, the Sahel Alliance will mobilise €7.5 billion via more than 500 new or already ongoing projects. Energy is one of the Alliance's priority sectors, and ambitious objectives have been set for a 5-year horizon: double the number of people connected and double the installed renewables capacity in G5 Sahel countries. France is a key stakeholder in this Initiative, most notably alongside the EU, the World Bank, AfDB and KfW.

2.2. THE CHALLENGE OF FINANCING THE ENERGY TRANSITION

The *New Climate Economy Report*[7] (2016) estimates that, over the next 15 years, an average of nearly US$6,000 billion per year will be needed to replace infrastructure in the advanced economies (i.e. twice the current flows) and to support their development in the rest of the world, mostly in the energy and transport sectors, which are responsible for two-thirds of GHG emissions. This offers an opportunity to transform energy systems so that a country will not see its emissions locked, in future decades, into a trajectory inconsistent with the objective of limiting the increase in temperature to 2°C by the end of the century. Developing countries, which account for two-thirds of these investment needs, must also seize this opportunity to make a technological leap.

The possible additional cost in terms of energy transition investment is relatively moderate and can be offset by the decrease in energy facilities' operating costs and the materialisation of the triple dividend. The real challenge of financing the energy transition thus involves massively redirecting public and private investment flows within the energy sector by 2030. This would require reducing investments dedicated to fossil fuels by at least one-third and increasing those geared to renewables and energy efficiency in the same proportion. Although necessary, the mobilisation of public financing alone will not suffice to bring about this transformation. It will also need to leverage private financing as much as possible.

2.3. AFD GROUP'S COMMITMENTS

In making two major commitments for AFD Group's 2018–2022 Strategy – 100% Paris Agreement and 100% Social link –, the Group is defending the idea that the fight against poverty and inequality can be reconciled with the fight against climate change. The Agency thus commits to ensuring that all its financing, in each country, is consistent with low-carbon and resilient development as defined in the Paris Agreement. It will ensure that all its actions contribute to strengthening social cohesion between populations and between territories or, at the very least, not weaken this cohesion. This means working to reduce inequalities, improve access to essential goods and services, and promote the economic integration of communities and territories.

To support the energy transitions, which are central to these challenges, AFD Group will pay greater attention to taking into account the contexts and conditions specific to each country, and seek positive effects on the three dimensions of sustainable development:

Economically, by supporting growth based on a diversified energy mix, developing sustainable infrastructure across all countries, optimising energy systems to limit their losses, as well as energy efficiency and demand management.

Socially, through access to modern and inclusive energy services for all, which can serve remote areas (territorial inclusion), at affordable tariffs, (financial inclusion), with special attention to reducing gender inequality; and also by supporting professional development in the area of the energy transition, through vocational training.

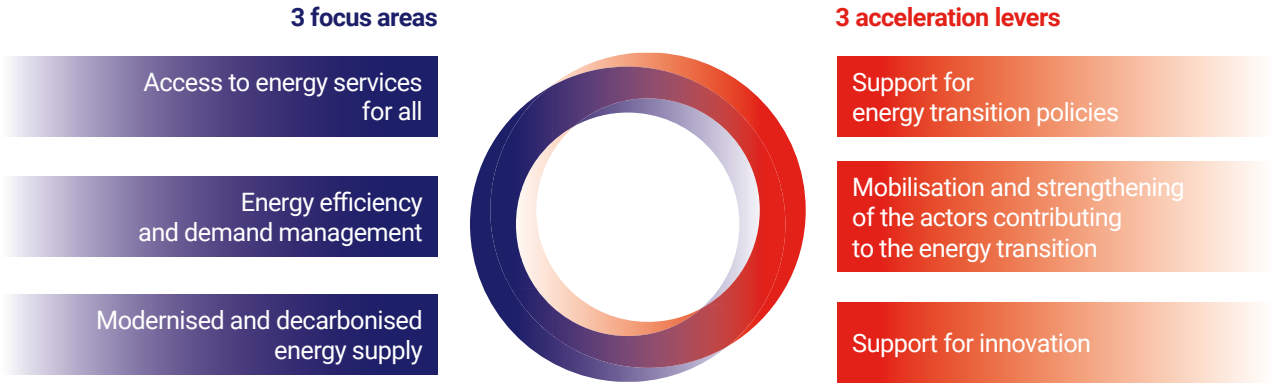
Environmentally, at local level by managing environmental impacts, mitigating local pollution and, more generally, by reducing GHG emissions.

[7] https://newclimateeconomy.report/

3.

THE ENERGY TRANSITION STRATEGY 2019–2022

The overarching goal of AFD Group's intervention will be to "accelerate the energy transition in developing countries in the direction of efficient, resilient and low-carbon energy services for all". It will combine three focus areas that mobilise three acceleration levers:



This strategy is designed to cut across AFD Group's activities (AFD, PROPARCO) using an integrated approach, whether in the area of public or private investment financing, support to public policy or capacity building, or research activities.

These focus areas and levers are applied to all of our intervention geographies under the structuring commitments of the Group's 2018–2022 Strategy: 100% Paris Agreement and 100% Social link. Mindful of the initial development situations and the Group's Climate objectives, the Group will nonetheless focus its support more specifically on the following aspects of the energy transition:

> *The overarching goal of AFD Group's intervention will be to "accelerate the energy transition in developing countries in the direction of efficient, resilient and low-carbon energy services for all"*

- In Africa and the least developed countries, the priority focus areas will be deployment of on-grid and off-grid access to energy and modernisation of power grids to integrate more renewables and minimise losses. Likewise, strengthen the capacities of the sector's actors, particularly electric utilities, will be a priority.

- In Asia and Latin America, particularly in the emerging countries, AFD Group will support the reinforcement of policies and low-carbon objectives through policy-based loans and investments strongly focused on energy efficiency and the productive sectors, be it construction or electrical systems. AFD will mobilise technological and institutional innovations useful for the energy transition (smart grids, ESCOs, etc.), and will work to support partnerships between local institutions and companies and their French counterparts.

- This partnership lever will also be strongly mobilised in the Three Oceans to support the regional influence of French partners. In Overseas France, AFD will more particularly assist in implementing the objectives of the Act on energy transition for green growth, to move towards 100% renewable energies by 2030 and will bolster its action for improved energy efficiency with local authorities.

3.1. FOCUS AREA I - ACCESS TO ENERGY SERVICES FOR ALL

In our world in common, everyone must have access to quality energy services, while preserving the environment.

3.1.1 Access to electricity

In 2017,[8] the number of people in the world with no access to electricity fell below one billion for the first time. Yet, the current trend is still a far cry from the set objectives as 700 million people will likely be without access in 2040. Most of them (96%) live in sub-Saharan Africa and Asia and 84% live in rural areas.

Despite the efforts undertaken, Africa's high demographic growth means that it is the only continent where the number of unconnected persons has not decreased in recent years, stagnating at around 600 million after a decade of increasing access.

In the countries where it operates, particularly in Africa, AFD Group will support ambitious programmes that promote access to electricity, covering the broadest possible range of technological options and economic models. It will rely on the complementarity between the public and private sectors and on a granular analysis of end-user needs. An effort will be made in the direction of innovative off-grid solutions based on renewable or hybrid energies supplementing grid-supplied power.

The interventions will be specifically aimed at:

- introducing public policies for sustainable access to electricity for all,
- increasing the number of grid connections to bolster the socio-economic impact,
- developing economically sustainable mini-grids for densely populated towns and villages that are not connected to national grids,
- deploying individual solar-power solutions, particularly in off-grid areas,
- improving the reliability of energy services supply and thus populations' resilience in a context of climate change.

AFD will work on developing an integrated approach that factors in end-users' needs, local community participation and the potential for developing income-generating activities. The complementarity of the different types of electrification will also be studied with particular attention to the challenges of territorial equity, regional planning and tariff-setting.

Cambodia – Green microfinance programme

In Cambodia, AFD supports innovation and the development of an offer of high-quality individual solar kits in partnership with the local private sector. A label has been introduced and some sixty products have been certified thanks to a European Union grant of €2 million and a line of credit approved by AFD to three microfinance institutions for the purchase of kits by rural populations. The programme currently underway has already benefitted nearly 3,000 households.

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[8] Word Energy Outlook, 2018.

3.1.2 Support to sustainable supply chains for domestic and artisan-produced fuels

Nearly one-third of humanity depends on biomass (wood or wood charcoal) for its daily cooking and/or heating needs – a situation set to persist in the coming decades. The challenges are concentrated in Asia (43% of the population; i.e., 1.65 billion people) and in sub-Saharan Africa (80% of the population; i.e., 780 million people), with high health risks.[9] AFD Group will prioritise interventions in the Sahelian region, on the outskirts of major urban areas. Its actions will aim to:

- support the development of public policies in favour of sustainable fuels,
- define and implement schemes for biomass management,
- modernise the fuel production sector (wood charcoal, pellets, ethanol, biogas, etc.),
- improve the efficiency of the use of fuel-wood energy (improved domestic stoves, modernisation of furnaces and boilers in small businesses and industries), with heightened vigilance on the quality of indoor air.

Intervening in fragile countries

In crisis or post-crisis countries, AFD will seek to finance programmes for rehabilitation or rapid construction of energy equipment using local renewable resources. Off-grid and rapidly deployable solar equipment is often relevant in emergency situations. It is also a question of supporting the implementation of priority programmes to provide essential services to the hardest-hit communities (drinking water, fuel, basic electricity, energy-efficient housing, public lighting, power supply to welfare centres and schools, etc.)

AFD will give particular support to NGOs and private operators active in deploying energy solutions in highly constrained environments.

3.2. FOCUS AREA II – ENERGY EFFICIENCY AND DEMAND MANAGEMENT

For the International Energy Agency, improving energy efficiency is the cornerstone of a strategy to mitigate the effects of climate change at lower cost. Any efficiency gain will make it possible to avoid, or reduce, investment in additional production capacities and the associated emissions. The importance of energy efficiency was endorsed by the SE4All initiative launched by the United Nations in 2013. One of the Initiative's objectives is to double the annual rate of improvement in global energy intensity, from 1.3% over the period 1990–2010 to 2.6% over the period 2010–2030. In 2017, investments totalled US$235 billion,[10] of which 60% was in the construction sector, 25% in transport and 15% in industry. However, the disparities between countries and regions of the world are very pronounced. Thus, investments made in Europe (US$75 billion), in the United States (US$42 billion) and China (US$64 billion) alone represented 77% of global investments in energy efficiency. The Group's objective will be to promote efficient energy systems in all its intervention countries, operating at the scale of territories (urban and rural) in the main energy-consuming sectors (buildings, transport, industry, agriculture) with the economic actors and local authorities.

[9] More specifically, 1.4 to 1.9 million deaths a year directly caused by the use of solid fuels in a domestic context, according to the *Global Burden of Diseases, Injuries, and Risk Factors Study* (GBD) 2017 comparative risk assessment (CRA).
[10] Energy Efficiency 2018 – Analysis and Outlooks to 2040, OECD/IEA, 2018.

3.2.1 Encourage energy sufficiency in countries and territories

Planning for urban areas and transport. Urban spaces are at the heart of energy systems. They are the main locus of energy consumption (residential and commercial buildings, transport, industries) and their structure and organisation shape energy generation needs. AFD Group will seek to work with local authorities and planners to act on the density, compactness, functional mixity or accessibility, in line with the territorial and ecological transition strategy.[11]

Optimise facilities and equipment in urban areas. AFD will seek to work with local authorities to act on the renovation or creation of public lighting networks or heating and cooling networks in view of attaining high energy performance standards, notably through heat-recovery and investments for adaptation to rising temperatures. AFD can also intervene on energy efficiency for cooling systems (air conditioning and industrial and commercial refrigeration).

Promote high energy-efficiency for buildings. AFD Group will finance programmes for investment in energy efficiency for new-builds or for the rehabilitation of existing stock (residential and/or commercial buildings) and support the setting-up of incentive frameworks at national or local level: i) thermal regulations; ii) standards and labelling; iii) thermal audits (in particular, integrating the direct effects of global warming); iv) awareness-raising and capacity building for actors in the sector; and v) the creation of adapted incentives and financial tools. AFD will work to promote bioclimatic approaches and a lesser need for air-conditioning in tropical regions, and will support the development of supply chains at local level that use local materials and know-how.

Planning for urban areas and transport, as well as the promotion of highly energy-efficient buildings particularly in social housing, fully support AFD's 100% Social link objective.

PEEB
PROGRAMME FOR ENERGY EFFICIENCY IN BUILDINGS

The Programme for Energy Efficiency in Buildings (PEEB) works towards the transformation of the building sector. The goal is to reduce energy demand from the building sector to a minimum level by promoting sustainable building design and construction. As a French-German initiative, PEEB is catalysed by the Global Alliance for Buildings and Construction (GlobalABC). The programme facilitates and provides financing for large-scale projects in combination with technical assistance in developing and emerging economies.

3.2.2 Develop a high-performing and energy-efficient productive sector

Energy-efficiency projects for energy-intensive industries, which alone account for around half of the productive sector's consumption, will receive particular attention. Although the agricultural sector consumes less energy, it could also be targeted by energy-efficiency projects aimed mainly at reducing the use of fossil fuels for pumping, irrigation, storage and processing of outputs.

3.2.3 Support the implementation of demand management programmes

In countries whose electricity sector is facing production constraints, demand-side management programmes can be developed with electric utilities to smooth load curves and optimise planning for investment in production. These programmes will be able to target productive sectors (electro-intensive industries or tertiary sectors) as well as households.

[11] Strategy under preparation.

3.3. FOCUS AREA III – A MODERNISED AND LOW-CARBON ENERGY SUPPLY

While CO_2 emissions continue to increase, the development of a modern and low-carbon energy supply is still a major challenge. AFD, alongside other IDFC members and multilateral development banks, has committed to support "putting in place more explicit policies to significantly reduce reliance on fossil fuels and rapidly accelerate financing for renewables".[12] AFD has committed to halt financing coal-based electricity generation since 2013. The Interministerial Committee for International Cooperation and Development (CICID), convened by the French Prime Minister on 8 February 2018, goes a step further and indicates that AFD "will increase the selectivity of its interventions in the energy sector, in particular through financing and support for public policies to accelerate ecological transition and to proactively support the end of fossil fuel usage in accordance with the framework established in Act No. 2014-773 of 7 July 2014 on development and international solidarity policy."

AFD Group will intervene more specifically to support power generation based on renewables, the modernisation and extension of power grids, and the sustainable exploitation of biomass. Special attention will be paid to the resilience of the sector's infrastructure to the impacts of climate change. Moreover, in compliance with its Environmental and Social Risk Management Policy, AFD mainstreams into all its projects procedures to identify, prevent or mitigate environmental and social damage, as well as any human rights violation that could result from AFD-funded activities.[13]

3.3.1 Deploy electricity from renewable energy sources on a massive scale

Support the massive dissemination of renewables. AFD Group will support the local production of renewable energies using technologies that are mature enough to enable large-scale deployment, such as hydropower, photovoltaic solar power, onshore wind power, biomass, geothermal energy or solar thermodynamic power. It will also support more recently developed sectors such as marine energy, and particularly seawater air-conditioning and offshore wind power. In this area, where private investment will be crucial for going to scale, the brakes on investment are not only regulatory but also financial. The financial constraints can, however, be eased by guarantee mechanisms (notably, off-taker liquidity risks). In addition to private sector financing via PROPARCO or financial intermediation (Sunref), AFD Group will propose guarantee instruments to support the deployment of private renewable energy projects. More broadly, AFD's support to public policies (cf. 3.4.1) will help to accelerate investment in renewable energy projects. The complementarity of AFD Group's intervention tools will enable it to bring a comprehensive and consistent support product to accelerate the dissemination of renewables.

Support technological innovation for managing and storing electricity. Special attention will be given to the development of solutions for managing and storing electricity, as these will impact the large-scale deployment of intermittent renewable energies, which are now developing rapidly.

The Zagtouli PV 33 MWc solar power plant: facilitating access to reliable energy.

In Burkina Faso, AFD contributed to financing the Zagtouli 33 MWc solar power plant, one of the largest solar plants in West Africa. The plant is a state-owned asset designed to further the country's energy transition and lower the cost of electricity. This marks the launch of Burkina Faso' solar plan, Yeleen.

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[12] Declaration of 12 December 2017, at the One Planet Summit.
[13] https://www.afd.fr/en/environmental-and-social-risk-management-policy-afd-funded-operations.

3.3.2 Renew, modernise and extend power grids

Invest in modernising and extending power grids. The extension and modernisation of the power transmission and distribution networks are crucial to securing and decarbonising power supply. Upgrading the grids and optimising their management improve their profitability and bolster their resilience. In some countries, mainly in sub-Saharan Africa, modernising the power grids helps to reduce technical and commercial losses, which can sometimes reach high levels (up to 50% in some countries).

Support the transition to Smart Grids. The modernisation of control systems and the gradual transition to what are called "smart grids", which embed digital technologies into electrical equipment, help to effectively match supply and demand, improve system performance (service quality and reduced losses), and maximise the integration of intermittent renewable energy sources.

Support regional integration. Support for developing electrical interconnections remains one of AFD's priorities given the advantages they offer: i) pooled means of production and cost reduction (scale economies); ii) enhanced grid reliability (via a more diversified energy mix), iii) energy resources shared with countries lacking these; and iv) increased capacities to integrate renewable energies. These developments go hand in hand with greater regional power integration, notably through the harmonisation of regulatory frameworks and technical capacity building for the utilities operating interconnected networks.

3.3.3 Proactively support the exit from fossil fuels

The Paris Agreement set the objective of reaching global carbon neutrality between 2050 and 2100, which requires putting an end to fossil fuel consumption (absent carbon capture and storage) over this same period. **To achieve this objective, the world's electricity production needs to be decarbonised by 2050 according to the IPCC.**[14]

In this perspective, AFD will strengthen its action to promote alternatives to fossil fuels. It will also support the efforts of countries wishing to reduce the share of fossil fuels, notably coal, in their energy mix, mainly by supporting energy transition policies and building up the actors' capacities. *(cf. acceleration levers for the energy transition below)*.

AFD Group will continue to apply a differentiated approach requiring different emission limits for projects depending on the partner country's level of development. Moreover, to ensure that projects comply with the "100% Paris Agreement" commitment, AFD will conduct analyses of countries' energy trajectories.

While complying with the Paris Agreement's long-term decarbonisation objective, some investment in fossil fuels will remain crucial for developing countries in the short term to ensure access to modern and reliable energy services for all.

In this context, AFD Group can envisage funding for:

- **natural-gas-based power generation connected to the national grid** in LDCs or countries in fragile situations[15] located in Africa, the Middle East and the Caribbean, provided that the project is part of the country's energy transition, notably by furthering the integration of intermittent renewable energies,

- **projects for the distribution of domestic cooking or heating gas** (LPG or distribution network), consistent with the priorities for access in Africa and Asia, insofar as these projects provide social benefits or energy substitutes that produce lower carbon emissions,

- **projects for "gas-flaring recovery",** provided that they have a limited and controlled local environmental impact and are part of the country's GHG emissions reduction trajectory,

- **projects for mini-grids fed by hybrid power plants** mixing renewables and fossil fuels with limited capacities and whose specific emissions are less than 500 kg CO_2/MWh,[16] in rural areas off the national grid or in small island states. Also, projects for decentralised hybrid power generation to meet the needs of industrial facilities on remote sites,[17]

- **projects to extend, strengthen or modernise power grids,** including those that are fed by a mix including fossil fuels provided they allow for improved availability, efficiency or territorial coverage of the service,

- **projects in productive sectors** (particularly in energy-intensive industries), by seeking to promote the best technologies available.

[14] IPCC. https://www.ipcc.ch/pdf/assessment-report/ar5/wg3/ipcc_wg3_ar5_chapter7.pdf. Figure 7.7.
[15] According to the World Bank's list: http://pubdocs.worldbank.org/en/892921532529834051/FCSList-FY19-Final.pdf
[16] This corresponds to a minimum of one-third renewables for two-thirds of diesel.
[17] These projects have a very limited impact in terms of emissions but are indispensable in some cases for electrification via mini-grids to meet the challenge of providing energy access to communities.

Lastly, in line with its "100% Paris Agreement" commitment, AFD Group excludes from its financing:[18]

- any coal-fired power plant project (as validated by its Board of Directors of March 2013),

- any project for power plants based exclusively on fuel oil or diesel (excluding the case of hybrid generation mentioned above),

- any exploration or production projects, or projects dedicated exclusively to the transport of coal, gas or oil (conventional and unconventional[19]),

- any infrastructure associated with a facility for exploring, producing or storing fossil resources (mines, processing units, refineries, storage, etc.) or for fossil fuel power generation if the unit is judged ineligible for AFD financing in view of the Agency's Climate and Energy Transition strategies. An infrastructure is said to be associated with such a fossil fuel unit if the two following conditions are met: (i) the infrastructure would not have been built had this fossil fuel facility been absent, and (ii) the fossil fuel facility would not have been economically sustainable without the infrastructure.

All of these developments facilitate the application of the CICID's 2018 objectives concerning the selectivity of AFD interventions in the energy sector and its support to public policies that accelerate the ecological transition and proactively support the exit from fossil fuels, in compliance with the framework laid down by the French Act No.2014-773 of 7 July 2014.

Al Rajef 86 MW wind farm: developing competitive energy.

In Jordan, PROPARCO co-financed with EBRD and DEG the Al Rajef 86 MW wind farm, built and operated by Alcazar company. The realisation of this project is part of Jordan's renewable energies development plan. For over five years, the country has been operating a regulatory framework able to attract private investors, who respond favourably to the tenders the country regularly puts out. The fruitful participation of the private sector allows the sector to benefit from energy that is increasingly competitive over time.

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[18] On account of the 100% Paris Agreement commitment, this list of exclusions may be expanded over the period that the strategy is in force.
[19] Unconventional gas includes several types of non-renewable natural gas resources such as shale gas. This is exploited using hydraulic fracturing techniques. Unconventional oil is produced or extracted using techniques other than the traditional oil-well method, or incurs additional costs and technology due to more difficult operating conditions.

3.3.4 Develop bioenergies for different sustainable applications

Biomass is a source of renewable energy, provided the stock is exploited sustainably. It has the advantage of being collectable and storable locally, which enhances a territory's energy autonomy by avoiding fossil fuel imports and their price fluctuations. The actions financed by AFD Group will aim to:

Develop the use of biomass through cogeneration. AFD Group will finance projects for grid-connected combined heat and power generation, using residues from the agri-industry or "green" urban waste (solid biomass, bio-methane recovery).

Support the growth of biofuel sectors. Biofuels and electric mobility are the two leading technical solutions to replace fossil fuels in transport. Biofuels are well positioned to develop in intercity-road, maritime and air transport, provided the sustainability of the resources used is controlled and land-use conflicts with food crops is avoided. The growth of these emerging sectors can only take place in a context of proactive public policies that combine a regulatory framework and incentive measures for tariffs.

Intervention principles for the bioenergy sector

Overall, AFD Group's interventions in biofuel projects will respect the principles laid down by the relevant French and European regulations and standards. More specifically, the following principles for action will be applied: i) refrain from funding projects that threaten food security and biodiversity in the areas concerned, or projects that require massive expropriations harmful to local communities, ii) ensure the quality of the Energy and Carbon Footprint audits and the fair sharing of value between the different stakeholders, iii) Give priority to food/non-food multi-purpose projects that have strong positive spill-overs at local level and a gender equality dimension.

3.4. THE LEVERS TO ACCELERATE THE ENERGY TRANSITION

In the coming years, AFD Group must act as an accelerator of the energy transition by bolstering its support to public policies, mobilising and strengthening the actors that contribute to the energy transition, and promoting innovation and research. These three levers to accelerate the energy transition will cross-fertilise each other and contribute to the 3 focus areas of the strategy.

3.4.1 Support public policies

The energy transition is a cross-cutting challenge that involves all human activities and the other transitions in our societies (digital, ecological and territorial, demographic and social, political and civic, economic and financial). Given energy infrastructure inertia and the different constraints (human, institutional, financial and technical) in the energy production and consumption sectors, public authorities need to coordinate and implement sectoral policies in favour of the energy transition. AFD will strengthen its interventions through policy-based loans, backed by technical assistance.

Support the development of decision-support, steering and coordination tools. AFD will propose sectoral modelling and planning tools to its partners in order to construct energy transition trajectories, as well as tools to analyse macroeconomic impacts and highlight the dividends of the energy transition. The sectoral modelling tools will most often be implemented by expert consultants, while those integrating macroeconomic impacts (employment, GDP, consumption, trade balance) will mainly be developed by AFD's in-house teams (GEMMES model). Lastly, the Group can assist national and local actors in setting up a governance framework for the energy transition, drawing notably on French experience and expertise in this domain. Special attention needs to be paid to the management of the economic and social impacts of the energy transition on the fossil fuel sectors, so as to avoid blockages and limit the negative impacts of the transition (loss of jobs, destruction of capital, etc.).

Support sectoral reforms. These reforms can modify the structure and the institutional framework of all or part of the sector (e.g. the establishment of a new regulatory framework, market mechanisms, or regulations for independent power generation). They help to improve the actors' financial situation or performance. They can help to speed up decarbonisation through sectoral measures (renewable energy auctions, removal of fossil fuel subsidies, energy consumption standards) or multi-sector measures (via carbon pricing), which can be deployed either at national or territorial level (for urban planning or passenger transport, for example). Stakeholder consultation and participation processes will be sought during the preparation of these reforms.

In Mexico, AFD has been supporting implementation of the energy transition since 2015. It has notably financed a technical partnership between ADEME and CONUEE aimed at creating an interactive web database to enrich the information system on energy consumption and inform the country's energy efficiency strategy. In Indonesia, Mexico and Pakistan, AFD has supported work to model energy trajectories or their macroeconomic impacts. The GEMMES model developed by AFD also enables macroeconomics to be used for analysing transitions.

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3.4.2 Mobilise and strengthen the actors contributing to the energy transition

Given the magnitude of the challenges, no single actor is able today to influence the energy transition trajectories alone. Meeting these challenges requires mobilising partners and local or private financing, and being able to rely on well-trained and proficient actors.

Mobilise partnerships, expertise and financing. AFD Group has committed to adopting a "partnership reflex" for all of its operations. It will also contribute to any partnership or coalition that can bring added value – finance, expertise, analysis or network – on which it can capitalise and innovate. It will rely particularly on French institutional actors and development actors, notably European and multilateral donors.

- Beyond the strategic and operational dialogue on the energy and ecological transitions, the Alliance with the Caisse des Dépôts et Consignations (CDC) will continue to operate in foreign countries through the common infrastructure fund (STOA) endowed with €600 M, as well as in French overseas territories, in a drive for coordinated interventions.

- The collaboration with the Agence de l'Environnement et de la Maîtrise de l'Energie (French Environment and Energy Management Agency – ADEME) and the Commission de Régulation de l'Energie (French energy regulator – CRE) will help to inform policy dialogue and develop tools.

- The rapprochement with Expertise France will bolster the promotion of French expertise and enable coordination with the other organisations developing North-South cooperation.

- French firms in the energy sector possess expertise that can be put to good use in partnerships to meet needs for vocational training for the executives of developing countries' energy companies. AFD will draw primarily on business associations and federations to fuel the dialogue on its sectoral positioning, the internationalisation of French expertise and innovations that can usefully accelerate the energy transition.

- Priority partnerships with European donors (KfW, EIB, EDFIs, etc.) and multilateral donors (WB, AfDB, ADB, CAF, IFCs, etc.) will be continued and steered in a spirit of harmonisation towards a coordinated approach, in view of leveraging our action, particularly with respect to support for sectoral reform and strengthening the operators' governance. Exchanges with the European Commission and the Green Climate Fund will be reinforced so as to increase financing to support the Strategy's key focus areas.

- AFD will contribute to international reflection by participating in major peer-to-peer discussion fora such as the Global Innovation Lab for Climate Finance, IDFC (International Development Finance Club).

- Civil society actors, foundations and think tanks will play a key role in awareness-raising and advocacy for the energy transition.

AFD Group will work to redirect financial flows, especially private financing, towards investments that support the energy transition. Strengthening public policy, regulatory frameworks and the capacities of institutional actors will contribute to this. It is also a matter of changing the signals that guide investment decisions and AFD will work to inform policy decisions on these topics. The Group will invest in innovation and roll out financial tools and measures conducive to more effectively harnessing local or private financial actors and improving the risk-return balance of investments: credit lines targeting new markets or geographies, co-financing private projects to provide security for investors, mobilising "green" financing such as the Green Climate Fund, public payment guarantees and credit enhancement for bond issues or local currency loans, bond issues akin to green bonds, etc.

Sunref (Sustainable Use of Natural Resources and Energy Finance) supports the energy and environmental transition in developing countries by assisting private actors in carrying out their projects and encouraging local financial institutions to fund these projects.

Sunref works with 70 partner banks in over 30 countries. €2.6 billion have been committed since 2006.

Strengthen the actors' capacities. The improved operational efficiency of electric utilities, their financial sustainability, and their enhanced governance are key factors in achieving a country's development objectives. Improving the performance of electric utilities will thus remain a priority for AFD Group, which will intervene more specifically in Africa and the least advanced countries in the following focus areas:

- improve the technical and commercial performance of electric utilities (improve the efficiency of electrical systems, cost recovery rates and set up investment planning and monitoring systems),

- improve the governance of electric utilities to achieve greater autonomy and a long-term financial equilibrium,

- modernise management tools for greater effectiveness, transparency and accountability,

- upgrade the information systems and introduce digital solutions to improve service, knowledge and relations with clients and suppliers,

- strengthen the governance of institutional frameworks and regulation of the power sector.

More generally, AFD will support actions for capacity building at different levels (central, regional and local administrations, state-owned companies, supervisory and controlling institutions), and university and vocational training related to the energy sector and the energy transition. Within the framework of these actions, special attention will be given to reducing gender inequality.

> *AFD Group will work to redirect financial flows, especially private financing, towards investments that support the energy transition.*

3.4.3 Innovation and knowledge production to support the energy transition

Promote innovation. The lines of research and development in the energy sector are multiple and mainly involve reducing the carbon footprint and improving technical and operational performance of electric utilities, whose good health is crucial to implementing the energy transition. The Group will work to identify – in a highly diverse and changing environment in both North and South – innovations that are likely to come to fruition in the medium term and to have a significant impact on energy systems. Mainly in the field of digital technology, these innovations will act as powerful levers to accelerate the energy transitions. On this count, data management, which is a core component of smart projects, and cyber security are becoming essential.

AFD will finance structural pilot operations in developing countries in order to validate their technical and economic feasibility and launch a change of scale actionable in a second phase. AFD Group will ensure a technological watch and targeted support to develop new solutions, mainly for carbon capture and storage. AFD Group will work in close synergy with the FFEM on this dimension.

The Group can draw on the new dynamics operating in the French overseas territories and on a strong network and French cutting-edge expertise on these topics, be it at the level of equipment providers, operators, developers and the whole GreenTech ecosystem (innovative firms, researchers, and higher education centres positioned on energy and the fight against climate change). The challenge for AFD will be to step up its support to this ecosystem while at the same time taking steps to factor in this ecosystem's specificities: the high-risk profile of start-ups, unproven longevity, need for small amounts of funding and non-financial support. The Group will pursue its own digital transformation to modernise its processes and tools, stimulate innovation and harness this in order to help further its mission.

Knowledge development. AFD Group will rely on analyses, studies and research to inform its reflection on country development trajectories, and will continue to enrich its operational and strategic choices and support innovation. It will operate through interactions and partnerships with local expert networks, including local researchers, think tanks and NGOs that are active on the strategy's priority themes, notably:

• The water-resources-energy nexus, to shed light on the dynamics and interdependencies between energy production and consumption and the water, agricultural and resource-extraction sectors.

• The development of tools to analyse energy trajectories, in collaboration with the institutions and stakeholders in the countries concerned (to assess a country's situation, study the possible trajectories for its most GHG-intensive sectors, analyse the consistency of AFD-funded activities with the country's energy transition trajectory).

• The production of targeted studies providing a granular analysis of the social and economic impacts of energy transition policies in differentiated contexts. The impacts on employment will be studied, particularly when fossil fuels occupy a large place in the economy and national employment.

• The development of tools to help analyse climate-related risks, in connection with the challenges of financing the energy transition, and the alignment of various signals so as to redirect investment flows into the low-carbon projects necessary to the energy transition.

To continue improving the impact of its operations, AFD Group will carry out evaluation and capitalisation studies mainly focusing on i) the quantification of impacts in terms of employment, energy savings and the well-being of populations and ii) the effectiveness of its support to sectoral reforms and particularly the modernisation of electric utilities in Africa, and its experience in the field of energy access. For this, AFD Group will ensure, right at the financing appraisal stage, that the objectives, arrangements and monitoring indicators are clearly formulated and shared with its partners.

APPENDIX:

ACCOUNTABILITY FRAMEWORK – ENERGY TRANSITION

PRESENTATION BY AFD GROUP'S 2018-2022 STRATEGY COMMITMENT

100% Paris Agreement

- Reduction of GHG emissions (tCO_2e avoided)
- % in volume of commitments with climate co-benefits
- Number of people whose resilience to climate change is strengthened by projects

100% Social link commitment

- Number of people gaining access to a sustainable electricity service (in nb. of individuals)
- Number of people whose quality of service for electricity has been improved
- Volume share of AFD's commitments with a principal or significant gender objective (OECD's policy markers 1 and 2)

3D commitment

- Number of people connected and the installed RE capacity in G5 Sahel countries

PRESENTATION BY FOCUS AREA AND LEVER

Focus area 1: Access to energy services for all

- Amount of commitments for focus area 1 by geography and type of instrument (loan, grant, guarantee) (in € million)
- Number of people gaining access to a sustainable electricity service (in nb. of individuals)

Focus area 2: Energy efficiency and demand management

- Amount of commitments for focus area 2 by geography and type of instrument (loan, grant, guarantee) (in € million)
- Energy consumption saved (in GWh/year)

Focus area 3: Modernised and decarbonised energy supply

- Amount of commitments for focus area 3 by geography and type of instrument (loan, grant, guarantee) (in € million)
- International Solar Alliance 2016–2022: cumulative commitments since 2016 for solar energy projects
- New installed RE capacities (Megawatt)

Acceleration levers:

- Amount of commitments to support public policy by type of instrument (loan, grant) and by geography (in € million)
- Number of countries and electric utilities receiving support for their reform

Focus Africa 2016–2020:

Cumulative commitments since 2016: i) in the energy sector, and ii) dedicated to renewables and access (AREI).

ACRONYMS AND ABBREVIATIONS

3D: Développement, Diplomatie, Défense (Development, Diplomacy, Defence)

ADB: Asian Development Bank

ADEME: Agence de l'environnement et de la maîtrise de l'énergie (French Environment and Energy Management Agency)

AFD: Agence Française de Développement (French development agency)

AfDB: African Development Bank

AREI: African Renewable Energy Initiative

BMU: German Federal Ministry of Environment, Nature Conservation and Nuclear Energy

CAF: Corporation andine de développement (Andean Development Corporation)

CDC: Caisse des Dépôts et Consignations (French state-controlled financial institution)

CICID: Comité interministériel de la coopération internationale et du développement (Interministerial Committee for International Cooperation and Development)

CO_2: Carbon dioxide

CONUEE: Comisión Nacional para el Uso Eficiente de la Energía (Mexican National Commission for Efficient Use of Energy)

COP: Conference of the Parties

CRE: Commission de Régulation de l'Energie (French national commission for energy regulation)

DEG: Deutsche Investitions- und Entwicklungsgesellschaft mbH (German Investment and Development Corporation)

EDFI: European Development Finance Institution

EIA: Energy Information Administration (USA)

EIB: European Investment Bank

EBRD: European Bank for Reconstruction and Development

ESCO: Energy service company

ET: Energy transition

EU: European Union

FFEM: French Fund for Global Environment

GDP: Gross domestic product

GEMMES: General Monetary and Multisectorial Macrodynamics for the Ecological Shift

GHG: Greenhouse gases

GIZ: Deutsche Gesellschaft für Internationale Zusammenarbeit (German agency for international development cooperation)

IDFC: International Development Finance Club

IFC: International finance corporation

IPCC: International Panel of Experts on Climate Change

ISA: International Solar Alliance

KfW: Kreditanstalt für Wiederaufbau (German development bank)

LDCs: Least developed countries

LPG: Liquified petroleum gas

NDC: Nationally determined contribution

NGO: Non-governmental organisation

PEEB: Programme for Energy Efficiency in Buildings

PROPARCO: Promotion et Participation pour la Coopération économique (AFD's private-sector financing subsidiary)

RE: Renewable energy

SDGs: Sustainable development goals

SE4All: Sustainable Energy for All

SUNREF: Sustainable Use of Natural Resources and Energy Finance

SWAC: Sea Water Air Conditioning

WB: World Bank

What is AFD?

AFD is an inclusive public financial institution and the main actor in France's development policy. It makes commitments to projects that genuinely improve the everyday lives of people, in developing and emerging countries and in the French overseas territories.

AFD works in many sectors – energy, health, biodiversity, water, digital technologies, training – and supports the transition to a safer, more equitable and more sustainable world: a world in common. Its action is fully in line with the Sustainable Development Goals (SDGs).

Through its network of 85 agencies, AFD operates in 115 countries and is currently supporting over 4,000 development projects. In 2018, it earmarked EUR 11.4bn to finance these projects.

http://www.afd.fr

Juin 2019 - advitam | advitam.org | 01 53 17 30 40

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