

## Producing electricity by promoting your resources

Over 600 million Africans do not yet have access to electricity, the equivalent of half of the continent's inhabitants. Given that Africa currently generates only 2.3% of the planet's CO<sub>2</sub> emissions, the challenge is how to develop electrification without sacrificing this advantage. EDF supports public initiatives to improve the development of electricity within the continent. Through a range of diverse solutions involving the use of hydroelectric, wind, solar, biomass, thermal and nuclear power, the Group favours the most efficient solutions that will produce the lowest levels of CO<sub>2</sub> emissions.

We are particularly keen to help industrial companies to develop their business activity throughout Africa. We do this by proposing energy solutions that meet their needs, but also by seeking to build long-term partnerships with them.



### OUR CUSTOMERS

- Ministries, public agencies and municipalities
- Public and private companies
- Grid operators
- Electricity producers
- Industrial companies
- Households



Sale of solar kits by ZECI (Côte d'Ivoire)

Training-network operation for SNE (Congo Republic)

## Strengthening your infrastructures to develop and improve electricity distribution in Africa

The numerous studies and projects that we have conducted have provided us with deep knowledge of African electricity installations. We help you to develop new lines, to reinforce safety and to improve the performance of your networks. We propose innovative solutions, with a particular emphasis on effectively integrating renewable solutions into your networks or automating your electricity supply systems. The EDF Group also has substantial expertise in reducing commercial and technical losses (customer identification, accounting systems and billing recovery...).

### MOROCCO

- Site identification, design, construction supervision and commissioning assistance of the pumped-storage power station in Afourer (466 MW) and basic design update of 3 hydroelectric installations on the Oum-Er-Rbia river (120 MW, ongoing project)
- Technical assistance for the rehabilitation and the remote management of hydroelectric power plants for ONEE
- Construction of wind farms in Tétouan (50 MW) and Taza (150 MW, ongoing project)
- Creation of the transmission-generation master plan up until 2025 and local distribution network master plans for various distribution authorities
- Illumination of heritage sites (Casablanca, Essaouira, Rabat-Salé)
- Development of "smart" services for the smart lighting of Green City Mohammed VI
- Access to decentralised solar electricity for more than 160,000 people on behalf of ONEE via Temasol (subsidiary ceded)

### SENEGAL

- Project management assistance to Senelec for the refurbishment of their power generation assets and training for their trainers
- Creation of a national utility load dispatcher
- Study of non-technical losses and diagnosis of substations for Senelec
- Installation of solar milk tanks



Solar milk tank

- A concession covering a quarter of the country managed by Énergie Rurale Africaine (EDF-Matforce subsidiary)

### BURKINA FASO

- Bobo-Dioulasso-Ouagadougou interconnection (360 km of overhead lines, 7 substations)
- Strengthening of power lines, master plan

### CÔTE D'IVOIRE

- Sale, installation and maintenance of solar kits for rural and peri-urban households by ZECI (EDF-Off Grid Electric subsidiary)
- Creation of Ciprel and Azito (subsidiaries ceded) for 5 combustion turbine generators (399 MW)
- Ongoing contracts with CI-Energies and CIE (planning, engineering, training, remote control, etc.)
- EDF alongside Sifca develops the most important energy plant powered by palm residue biomass: Biovea (46 MW)

### ALGERIA

- Participation in a gas production field (Reggane)

### GHANA

- Sale, installation and maintenance of solar kits for rural and peri-urban households by ZEGHA (EDF-Off Grid Electric subsidiary)

### EGYPT

- Port-Said and Suez: development, construction and O&M of two power plants (2 x 340 MW, ceded)
- O&M training and operation management for EEHC
- Development, construction and operation of two solar power stations (100 MW<sub>AC</sub> in total) with Elsewedy Electric Group
- Assistance for the construction of the regional utility load dispatcher for transmission in the Nile Delta
- Strategy and management of the deployment project of 53,000 smart meters for EEHC (with Sagemcom and Globaltronics)
- 6 permits for the exploration and production of gas (Abu Qir), contributing to approx. 7% of total Egyptian gas production

### MOZAMBIQUE

- Studies, engineering and supervision of works for the transport network strengthening
- Assistance for the refurbishment of the training centre of Electricidade de Moçambique (with WLE)

### SOUTH AFRICA

- Assistance, operation and training for the nuclear power plant at Koeberg (1,800 MW, Eskom)
- Assistance with the commissioning of the Medupi power plant (4,800 MW)
- Operation of three wind farms at Grassridge (62 MW), Chaba (21 MW) and Waainek (25 MW)
- Studies to improve distribution network performance in Port Elizabeth
- Installation of low-consumption lighting in a township of Port Elizabeth
- 135,000 people in KwaZulu-Natal and the Eastern Cape equipped with photovoltaic kits by KES (an EDF-Total-Calulo subsidiary)



Grassridge wind farm

### ZAMBIA

- Refurbishment and operation assistance of hydroelectric installations (Victoria Falls, Kariba North Bank)
- Feasibility study for a hydroelectric project on Luapula river

### LESOTHO – SWAZILAND

- Feasibility studies for pumped-storage power station projects

- |               |         |                 |  |
|---------------|---------|-----------------|--|
| Thermal       | Wind    | Solar power     | Decentralised service and production companies |
| Hydroelectric | Gas     | Energy services | EDF Location                                   |
| Nuclear       | Biomass | Networks        |  |

### BENIN

- Feasibility study for a Ghana-Burkina Faso-Mali interconnection
- Revision of studies and supervision of work conducted on the Information and coordination centre for the transmission systems linking the 14 countries of the WAPP

### CAMEROON

- Together with the Cameroon government and IFC, EDF participates in a project to construct and operate the Nachtigal power plant (420 MW) on the Sanaga river

### GABON

- Ongoing contracts with SEEG (distribution networks and hydroelectric generation) and with Eranove for the basic design of the hydraulic project Ngoulmendjim (70 MW)

### CONGO REPUBLIC

- Technical assistance (including training) to improve the performance of the SNE distribution networks
- Study for connecting a cement factory (Dangote) to the network

## Assisting you in your projects and transmitting our expertise

Our skills, our values and our references facilitate the financing of projects with stakeholders at the very highest levels (the French Development Agency – AFD, the World Bank, investment banks, investment funds, etc.).

In addition to our technical expertise, we can assist you in fields as varied as the regulation of the electricity sector, tariff structures and company organisation.

Because we are convinced that the success of our shared initiatives depends on the development of skills, we design training programmes specially adapted for you.



Pumped-storage power station at Afourer (Morocco)

Over **500,000** people have access to electricity thanks to EDF.

## Supporting you in your efforts to boost development to give access to electricity to the largest possible number of people

As a responsible partner, we have been at your side to invest in sustainable development for over fifty years. We apply our experience to rural and peri-urban electrification projects that promote clean energy, in partnership with start-ups specialized in off-grid and with local industrials.





NETWORK PERFORMANCE  
SMART CITY  
INTERCONNECTIONS  
WIND POWER  
DECENTRALISED ENERGY  
BIOMASS  
HYDROELECTRIC  
SOCIAL AND ENVIRONMENTAL RESPONSIBILITY  
EMPLOYMENT  
INNOVATION  
ENERGY SERVICES  
SOLAR POWER  
GAS  
NUCLEAR  
OFF-GRID  
REGULATIONS  
TARIFFS  
TRAINING  
DEVELOPMENT



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## EDF Group: the world's leading electricity company

### 1<sup>st</sup>...

... nuclear operator in the world

... European producer of renewable energies

... national power grid in Europe

... electricity supplier in France

One of the main European players in energy services

88% of electricity produced without CO<sub>2</sub>

37.1 million customers worldwide

154,845 employees

71.2 billion euros in turnover

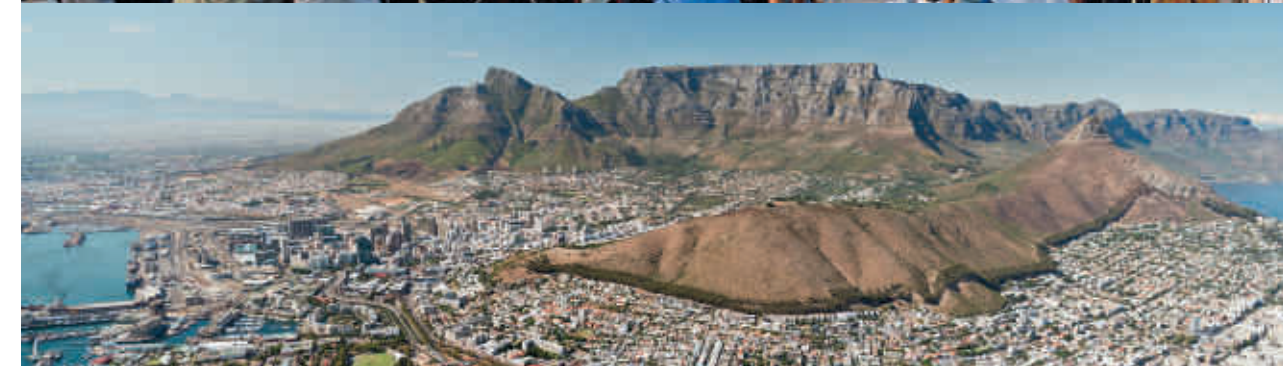
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# Africa



Present in Africa  
for over 50 years,  
EDF is by your side to meet  
all your energy needs,  
from the production  
of low-carbon electricity  
to bringing lighting  
to households.