



INTERCONNECTIONS
 SOLAR POWER NETWORK PERFORMANCE
 HYDRO-ELECTRIC
 ENERGY SERVICES WIND ENERGY GAS
 DECENTRALISED ENERGY
 BIOMASS SOCIAL AND ENVIRONMENTAL RESPONSIBILITY
 SMART CITY NUCLEAR
 INNOVATION GEOTHERMAL
 OFF GRID



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EDF Group: the world's leading electricity company

1st...

- ... 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

87% of electricity produced without CO₂

37.6 million customers worldwide

159,112 employees

33 locations

75 billion euros in turnover

2015 figures

www.edf.com



Asia



Present in the region for about 30 years, EDF aims to support your energy challenges, from low carbon electricity production to smart energy services.

Design & production: **INVAS PARIS** - Photo credits: © EDF - Bruno Gombau, © EDF - Marc Didier, Getty Images.

Producing electricity to meet ongoing demand in a fast-changing and dynamic market

The rapid growth of Asian population leads to an increasing demand for the generation and distribution of safe, affordable and low-carbon electricity.

From development and design to construction and commissioning, our numerous references enable us to intervene at any stage of the development of innovative power plants.

Through a range of diverse solutions involving the use of hydro-power, nuclear, thermal, biomass, wind and solar power, storage, the Group favours the most appropriate and low-carbon solutions answering the energy transition expectations.

Strengthening your networks to improve the performance of your power grids

The studies and projects that we have conducted in Asia have provided us with deep knowledge of your power grid installations. We help you to develop new lines, to reinforce safety and to improve the performance of your grids. We offer active consultancy services by proposing innovative solutions with a particular emphasis on renewable integration into your networks, automating your electricity supply systems through SCADA, smart grids, etc., or linking non-interconnected countries or islands.

Our customers

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

LAOS

- Design, construction and operation under a 25-year BOT contract of Nam Theun 2, a six-turbine hydropower plant (1,070 MW, owned by NTPC, jv EDF-EGCO-Lao Holding State Enterprise)
- Management of the transmission aspects of Nam Theun 2 including the construction of 140 km of HV line connecting the power plant to the Thai and Laotian power grids

NEPAL

- Preparation of Nepal's transmission master plan for Nepal electricity authority

INDIA

- Audit of national control center of Power Grid Corporation of India Limited
- Design of the advanced metering infrastructure of a smart grid for 75,000 smart meters in New Delhi (in consortium with Wapcos)
- More than 400 MW of solar and wind power capacities in operation or under construction
- Technical assistance for Tehri pumped-storage power station (1 GW): design of tunnels and culverts, excavation works
- Owner assistance at every stage of the construction of Koldam power plant (800 MW)



THAILAND

- Feasibility study and detailed design for Metropolitan Electricity Authority (MEA) for the first 230 kV underground station

CAMBODIA

- Feasibility studies and bidding documents for 115 and 230 kV substations and transmission lines for Électricité du Cambodge

VIETNAM

- Construction as an EPC contractor of CCGT power plant Phu My 2.2 and operation under a 20-year BOT contract (715 MW, owned by MECO, jv EDF-Sumitomo-Tepco)
- Design of the control system for the power distribution network (110 kV) and SCADA system for EVN SPC in the Southern region
- Protection plan of HV lines and substations for optimisation of EVN distribution networks, organisation of training seminars

SINGAPORE

- Collaboration in urban planning between EDF Labs and local authorities in Singapore. Agreement with the Housing Development Board and development of an innovative 3D urban modeling tool
- Trading activities for Asian area

CHINA

For many years, EDF Group has been investing in nuclear and thermal power plants and developing its activities in renewable energies, grids and energy services for urban and industrial uses.

- Co-investor and technical assistance for operation of Sanmenxia II, owned by Datang Sanmenxia Power Generation Co. (2 x 600 MW, jv EDF-Datang-Sanmenxia city)
- Building and operation of the ultra-supercritical coal-fired power plant Fuzhou in the Jiangxi province (2 x 1,000 MW, jv EDF-Datang)
- Building and operation of two EPR nuclear reactors in Taishan (2 x 1,750 MW under construction, jv EDF-CGN-Yuedian)
- Design and construction of nuclear reactors in Daya Bay (2 x 1,000 MW) and project management assistance for Ling Ao (2 x 1,000 MW) in the Guangdong province for CGN
- Technical assistance for construction of pumped-storage power stations Yixing (1 GW), Conghua (1,2 GW), Zhanghewan (1 GW) and Longtan (6,3 GW)
- Acquisition of a majority stake in UPC Asia Wind Management building wind projects in China
- Master plan for Shaanxi Power Grid (SPG)
- Technical assistance of performance improvement for several Chinese distribution system operators
- Numerical model for a 1 MW concentrated solar power (CSP) plant in Badaling developed in cooperation with the Chinese Academy of Science to optimise the operation of CSP plants
- Installation of 70,000 LED light points with smart control tools in Dongfeng Peugeot Citroën factory in Wuhan
- Engineering, building and operation of an urban heating network to supply three districts of Sanmenxia city (200,000 inhabitants)

JAPAN

- Cooperation agreements with Japanese utilities (Tepco, Kansai, Chubu, Kyushu...) and suppliers (MHI, Toshiba and JSW)
- R&D cooperation agreements including exchanges of researchers

INDONESIA

- Collaboration program with PLN on system operation and planning, HVDC technology and distribution network reliability improvement
- Network study for PLN for a circular grid (500 kV – 40 km) around Djakarta, potential for developing smart grids

- Nuclear
- Hydro-electric
- Wind power
- Solar power
- Thermal
- Networks
- Energy services trading
- EDF locations

A global expertise for tailored and innovative energy solutions

You want to make your city a smart city where people want to live while developing your local resources? Looking for a solution to optimise energy management of your buildings or increase performance of your heating or cooling networks? Or why not reduce your energy bills and your atmospheric emissions by innovative and competitive energy solutions adapted to your industrial sector? Because every company, every building, every city is unique, we propose made-to-measure and smart solutions for your energy issues.

The presence of two R&D centres in Beijing and Singapore enables the Group to take part in the new technological projects carried out in Asia. As a major hub for innovation in the fields of energy technologies, Asia is a real testing ground in terms of sustainable cities, smart grids, energy efficiency and digital simulation.



A committed long term partner

In Asia and especially in China, EDF has been developing industrial and financial partnerships for many years. These cooperations enable the Group to share its industrial expertise and cutting edge technology with local players and to establish long term, balanced and mutually beneficial relations.