



Supporting Pacific Island Countries with 100% Renewable Energy Target

JICA Infrastructure with a Focus on JICA Iran's Achievement in Energy Sector

Since the beginning of civilization, the Earth has provided humanity with the natural resources necessary for life and development. Today, renewable energy offers an important pathway toward a cleaner and more sustainable future.

Following the oil crises of the 1970s, Japan strengthened cooperation between the public and private sectors to improve energy security, diversify energy sources, and promote energy efficiency. Through decades of continuous innovation and policy development, Japan has accumulated extensive expertise in ensuring a stable, efficient, and environmentally sustainable energy supply. At this moment, Japan has achieved a 100% household electrification rate and a high-quality electric power supply with average annual power outage of only about 20 minutes.

Drawing upon this experience, the Japan International Cooperation Agency (JICA) works

with partner countries to share Japan's knowledge, technologies, and development experience. Under its Global Agenda for Infrastructure, JICA aims to realize **"a world where everyone can use affordable, reliable and sustainable electricity."** While approximately 750 million people around the world still lack access to electricity, JICA supports partner countries in strengthening energy infrastructure, promoting renewable energy, improving energy efficiency, and developing human resources to achieve sustainable economic growth and carbon neutrality.

In line with JICA's Energy Transition Cooperation Strategy, these efforts also contribute to supporting partner countries in achieving both carbon neutrality and affordable, reliable energy systems suited to their national circumstances. Recognizing that energy

transition pathways differ from country to country, JICA promotes practical and sustainable solutions that balance environmental objectives with stable energy supply and economic development.

JICA's approach is built on four cooperation directions:

1. Formulate and implement energy transition policies and plans;
2. Develop and deploy next-generation decarbonization technologies;
3. Foster moderate interdependence in regional energy supply (e.g., ASEAN Power Grid, African Power Pool);
4. Ensure stable supply of critical minerals for transition.

The impact of these efforts can be seen across many regions of the world. In Eastern Africa, for example, the Great Rift Valley possesses abundant geothermal resources that provide a clean and stable source of renewable energy. Kenya has successfully developed these resources since the 1980s, and today more than 40% of the country's electricity is generated from geothermal power.

JICA's concessional loans have contributed to the development of approximately half of Kenya's current geothermal power generation capacity.

Beyond infrastructure development, JICA has been working to develop human resources so that they can further promote the development of geothermal resources on their own. Building on this experience, JICA has also supported geothermal resource development in neighboring countries such as Djibouti and Ethiopia.

Among JICA's partner countries, Iran has been an important counterpart in promoting energy efficiency and environmentally sustainable power development. Iran has achieved one of

the highest electrification rates in the world, with 100% of the urban population and 99.8% of rural villages (with ten households or more) connected to the national electricity grid.

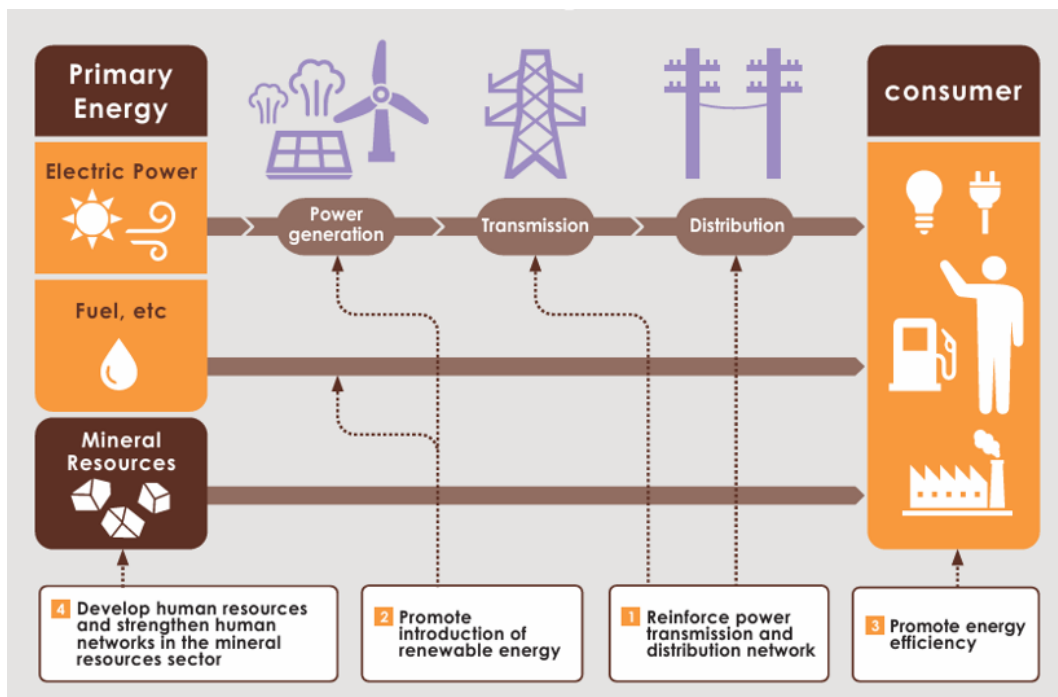


**Supporting geothermal resource development
in the Great Rift Valley of Eastern Africa**

Nevertheless, electricity demand continues to increase due to population growth, economic development, and relatively low electricity tariffs. At the same time, improving energy efficiency and expanding the use of renewable energy remain national priorities for achieving sustainable energy development.

To address these challenges, JICA has implemented a series of technical cooperation projects in Iran aimed at strengthening institutional capacity, enhancing technical expertise, and promoting environmentally friendly technologies.

One of the earliest initiatives was, Country-Focused Training Program (CFT) on “Energy Efficiency and Renewable Energy (EE&RE) (2014 – 2016)”. Through this program, Iranian engineers and policymakers participated in training courses in Japan to learn from Japan's experience in EE&RE. The program strengthened institutional knowledge and promoted the



The realization of carbon neutrality: Approach Diagram for Reducing CO2

adoption of advanced energy management practices in Iran. In another effort, with the aim of strengthening the knowledge and capacity of the government organizations including local authorities on Energy Service Company (ESCO), JICA has cooperated with Iran in a project on “Implementation of Pilot Projects to Introduce ESCO for Government’s Buildings in Islamic Republic of Iran (2014 – 2018)”.

Due to increase in energy consumption in residential and commercial sector in Iran, the promotion of the Energy Efficiency and Conservation (EE&C) in the building sector became the most immediate priority mission of Ministry of Energy of Iran. ESCO framework is one of the effective measures for promoting EE&C.

During the mentioned technical cooperation project, JICA had supported counterpart organizations by study measures and policies to promote ESCO for government buildings, developed regulations and manuals, establishment of institutional framework, conducted energy audits, and demonstrated practical energy-saving measures through pilot projects. These efforts laid the foundation for wider application of EE initiatives in Iran.

JICA further expanded its cooperation through the project on “Master Plan for Developing Environmental Friendly Technologies in Iranian Power Sector (2018 – 2020)”. Responding to the Iranian Government’s request, the project assessed the technical gaps concerning energy efficiency and environmental measures between Iran and Japan, as well as other developed countries, in the fields of power generation, transmission, substations, distribution systems, and the management of Poly Chlorinated Biphenyl (PCB)-containing equipment. Based on comprehensive technical assessments on Iran’s power, the JICA study team identified key challenges, proposed priority investments, and recommended strategic policies for improving environmental performance and energy efficiency across Iran's power sector. The master plan provides an important roadmap for future modernization and supports Iran's long-term transition toward a cleaner and more sustainable energy system.

Building on decades of cooperation, JICA remains committed to supporting Iran’s efforts toward *a world where everyone can use affordable, reliable, environmental friendly and sustainable energy*”.