

SDG 7: Affordable and Clean Energy:

TARGETS	INDICATORS
7.1 By 2030, ensure universal access to affordable, reliable and modern energy services	7.1.1 Proportion of population with access to electricity
	7.1.2 Proportion of population with primary reliance on clean fuels and technology
7.2 By 2030, increase substantially the share of renewable energy in the global energy mix	7.2.1 Renewable energy share in the total final energy consumption
7.3 By 2030, double the global rate of improvement in energy efficiency	7.3.1 Energy intensity measured in terms of primary energy and GDP
7.A By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology	7.A.1 International financial flows to developing countries in support of clean energy research and development and renewable energy production, including in hybrid system
7.B By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support	7.B.1 Investments in energy efficiency as a percentage of GDP and the amount of foreign direct investment in financial transfer for infrastructure and technology to sustainable development services

Section 1.1 – ‘Inclusive Socio-economic Development’

Electricity for All

- 90% of the population currently has access to electricity.
- Electrification projects in the rural and maritime areas will be expedited to ensure that the entire population has access to electricity by 2021.
- Further grid extensions will be undertaken in Viti Levu, Vanua Levu, Ovalau and Taveuni.
- Government will continue to fully fund rural electrification projects, including connections for households near the grid lines. For the rural and outer islands, decentralised renewable energy sources such as solar, mini hydro, hybrid biofuel/ diesel operated generators and wind systems will be adopted where feasible.
- Electricity generation from renewable energy sources will be increased to 100% t by 2036.

- Other renewable energy sources such as wind, solar, biomass, geothermal and wave and tidal energy will be developed where they are viable and affordable.
- Future electricity infrastructure projects will be climate resilient, and opportunities for underground cables for electricity distribution will be explored and adopted where feasible.
- Carbon credits under the Clean Development Mechanism (CDM) will be employed as part of the financing arrangements.
- Independent power producers of both small- and large scale electricity production will be supported with fair pricing for sale of electricity.
- The ongoing regulatory reforms in the electricity sector with the partial divestment of FEA will promote private sector participation and raise efficiency and service delivery.

Inclusive Socio-economic Development	2015	2021	2026	2031	2036
Percentage of population with primary reliance on wood fuels for cooking (%)	18	12	6	<1	0
Energy intensity (consumption of imported fuel per unit of GDP in MJ/FJD) (SDG 7.3)	2.89	2.86	-	2.73	-
Energy intensity (power consumption per unit of GDP in kWh/FJD) (SDG 7.3)	0.219	0.215	-	0.209	-
Renewable energy share in electricity generation (%) (SDG 7.2)	67	81	90	99	100
Renewable energy share in total energy consumption (%) (SDG 7.2)	13	18	-	25	-

Energy Intensity:

Energy intensity is a measure of the energy inefficiency of an economy. It is calculated as units of energy per unit of GDP. High energy intensities indicate a high price or cost of converting energy into GDP. Low energy intensity indicates a lower price or cost of converting energy into GDP.



For more information on energy intensity:

<https://www.sciencedirect.com/topics/engineering/energy-intensity>

Renewable Energy:

Renewable energy is energy that is collected from renewable resources, which are naturally replenished on a human timescale, such as sunlight, wind, rain, tides, waves, and geothermal heat.

For more information on renewable energy:

<https://energysavingtrust.org.uk/renewable-energy>

Fiji National Development Plan Target 3.1.2 – Energy

The government aims to create “a resource-efficient, cost-effective and environmentally sustainable energy sector”.

Electricity:

- Almost 90% of the population now have access to electricity. Those that still lack access are concentrated in rural and maritime areas; over the next 5 years there will be a focus on addressing this.
- The government will continue with the policy to fully fund rural electrification projects.
- The government will support education for engineers.

Renewable Sources:

- Currently over 60% of electricity is generated from renewable sources such as hydro, biomass, wind and solar energy.
- Investment will continue to ensure that over 80% of all electricity comes from renewable sources by 2021.
- There are three major hydro projects being developed in Fiji with further sites being investigated.
- Further research will be done into the potential use of ocean energy, geothermal energy, wave energy and the generation of energy from waste.
- Solar, mini-hydro and wind systems will be used to electrify rural areas and maritime zones where possible.
- The government are developing an Independent Power Producers framework to increase private sector generation of energy while ensuring fair pricing and a transparent process remain.

- Tax incentives for investment in renewable energy will continue.
- The codes and standards for buildings and industry will be updated to reduce electricity consumption.
- Efforts will continue to ensure that electricity infrastructure is made disaster-resilient.

Petroleum and Biomass

- The transport sector is the main consumer of imported fossil fuel:
 - Therefore the government has incentivized the importation of hybrid and electric cars
 - Fiji Airways has upgraded its fleet with more fuel-efficient aircrafts
 - Research and development on biofuel in the transport sector will continue
- Energy generation from biomass will be expanded over the next 5 years and a new biomass plant in Sigatoka is currently under construction.



Figure 1: Construction of 10 MW biomass plant at Navutu, Sigatoka

Wood

- Wood is the main cooking fuel and although it can be considered renewable, there are serious health implications such as emphysema.
- Therefore, the government has introduced the Rocket Wood Stove in rural areas.

3.2.9 SUSTAINABLE CITIES AND TOWNS

“Creating vibrant and environmentally sustainable urban centres”

- Fiji is experiencing rapid urbanisation, with slightly over half the population now living in urban areas. This is projected to increase to around 56 percent by 2021.
- In the next 5 years, the government will focus on better urban development strategies
- Areas identified for new-town development include Navua, Korovou, Nabouwalu, Keiyasi, Vunidawa, and Seaqqa
- Nature and recreation parks, gardens and walkways will be developed to beautify towns and cities and also ensure balance between urban expansion, nature and quality of living
- Waste recycling and transfer stations will also be developed in strategic areas around the country.
- All new urban development projects will need to comply with guidelines to ensure resilience to climatic hazards and natural disasters.
- A special Smart City Programme shall be developed for the Towns and Cities to ensure that the towns are cities that adapt to global modern urban management practices - all for the purpose of promoting a clean and green environment. .
- Sister-city agreements shall be formed with overseas counterparts. Sister-city arrangements are seen as a way to drive economic and green growth

FURTHER INFO

Urban Policy Action Plan 2007

- The Urban Policy Action Plan 2007 will be reviewed with a view to undertaking institutional reforms. Spatial plans and miniature models will be developed to guide long term development in all urban centres

Waste Management Authority

- To provide more efficient, effective and financially viable waste-management services to municipal councils. Waste recycling and transfer stations will also be

Urban Development projects:

- Structural integrity and climate and disaster-proof designs will be key aspects of future projects, together with early-warning systems, disasterresponse plans, inter-agency coordination and enhanced disaster-response capacity

Smart City Programme

- Smart City is expected to see that town and city centres promote green growth initiatives including green energy, effective and environmentally friendly transport systems, security for inhabitants, green building construction, technology advancement and new techniques for solidwaste management

3.2.10 EXPANDING THE RURAL ECONOMY

“Promoting equal opportunities, access to basic services and building resilient communities”

- Aims to bridge the development gap between the urban and rural areas, through government investment in the development of rural infrastructure, provision of education and health services, rural electrification, access to water, income-generating opportunities, better communications, and transportation.
- In consultation with communities and stake holders, investments will continue for the next 5 years in an integrated manner.
- Production will be improved and links between the agriculture sector and the market will be strengthened along with better organising rural farmers through; cluster farming, provision of extension services, farm-access roads, irrigation, mechanisation, marketing support and export development.
- Agriculture Marketing Authority will also provide effective marketing support.
- 830 vulnerable communities at risk from climate-related events have been identified for relocation, with 48 of these needing urgent relocation that will be supported through government funding with assistance from development partners.
- In addition to relocation, evacuation centres are being constructed and rural and maritime areas are prioritised for the construction of sea walls, watershed management, river dredging and drainage, and riverbank protection.
- Increased attention on gender differences in access to and repayment of credit, the beneficiaries of land purchase, land titling, public amenities, extension services and technology to enable equal access by all to the factors of agricultural production. The policy will consider the disadvantaged position of the most vulnerable women in rural areas.

SDG 7 in figures:

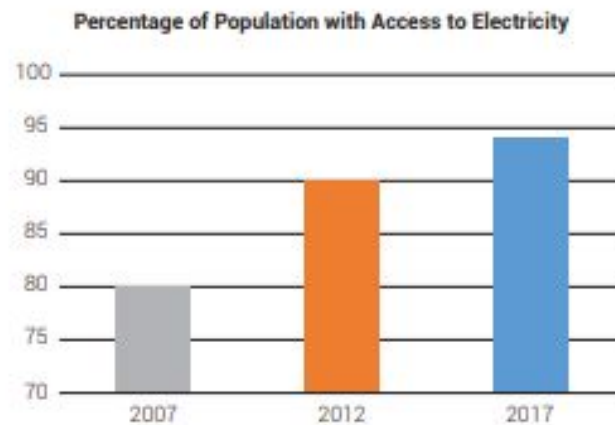
96% of population with access to electricity (2017)

27% Energy share in the total final energy consumption (2017)

(All statistics derived from

<https://public.tableau.com/profile/asiandevelopmentbank#!/vizhome/SustainableDevelopmentGoalsFiji/DashSDG7>)

SDG 2019 Review:



- Fiji has progressively invested in rural electrification through grid extensions and the installation of Solar Home Systems with over FJ \$132.9 million allocated from 2016-2017 to 2018-2019
- A total of 8,500 solar home systems have been installed to date
- Fijian Government has administered an electricity subsidy programme since 2015 for households with a combined income of FJ \$30,000 whereby the first 100 kilowatt hours of electricity per month is paid by the State.
- The 2017 National Census found that 94 percent of all households have access to some form of electricity
 - 78% = National electricity grid
 - 12% = solar energy
 - 3.6% = diesel generators and communal diesel/hydro plants
- Fiji is cognisant of the fact that improving access to electricity for all Fijians must be coupled with green investments into existing and new electricity generation.
- In 2017, Fiji's share of renewable energy generation stood at 51.26% (of which 48.7 percent was from hydropower, 0.21 % from wind power and 2.33% from independent power producers.

Opportunities for collaboration:

Reduced dependance on fossil fuels:

- Mineral oil imports in 2017 were estimated to total FJ \$931.2 million, accounting for 19% of the total national import bill to which electricity generation is a significant contributor
- Electricity generation = >16.2%to Fiji's total greenhouse emissions.

Improved private sector investment

- Private sector involvement in the electricity sector is currently low and would require a supportive regulatory environment, attractive feed in tariff rates and greater uptake of fiscal incentives available for renewable energy investments.

Resilience of Fiji's Energy Sector

- The category 5 Tropical Cyclone Winston in 2016 destroyed electricity assets amounting to FJ \$33 million¹⁰ and caused losses associated with intermittent electricity supply amounting to FJ \$8.1 million. Since then cyclones Keni and Josie in 2018 and other periods of tropical depression have continued to damage overhead power lines and main transmission towers
- The Fijian Government is formulating a rural electrification masterplan with technical assistance from the Asian Development Bank. This will be integral to achieving 100% electrification especially in inaccessible regions.

Increasing Renewable Energy Uptake

- In order to maintain 100% renewable energy sources on the island, the Fijian Government is partnering with the Global Green Growth Institute and the Korean International Cooperation Agency to install a 1.55 megawatt solar power plant on the island to supplement its hydro capacity and meet growing electricity demands with renewable energy.
- To foster continued research and development (R&D) of new, cleaner, renewable energy technologies within various sectors of its economy, a 250% tax deduction incentive on any expenditure incurred by eligible companies investing in R&D within the renewable energy sector has been introduced in Fiji.
- Renewable energy investment activity also lends itself to the creation of employment opportunities for women, improving their earning potential. Fiji will continue to invest in its electricity sector in a sustainable, inclusive and resilient manner.