

**CONCEPT NOTE**

**Country:** Fiji

**Location within the country:** Islands of Namuka-I-Lau, Kioa and Naviti, Yasawa

**Concept focus:**

- Climate change adaptation
- Sustainable energy
- Both

**Project type:**

- Type 1 – 200,000 Euro maximum budget
- Type 2 – Maximum budget is the country allocation

**Total requested budget:** ~ 410,000 Euro (FJD 1,000,000)

**Duration of project:** 2 years

**Contact points:**

**Coordinating/Implementing Agency:** Climate Change Division, Ministry of Foreign Affairs and International Cooperation (MFAIC)

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**Executing Agency:** Department of Energy, Ministry of Works, Transport & Public Utilities Contact person: Peceli Nakavulevu – Director of Energy

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**Support for PDD development:**

- Yes, consultant(s) or organisation(s) to be engaged: .....
- No
- Undecided

## 1. Project title

Fiji Sustainable Energy Hybrid Power Project (FSEHPP)

## 2. Background and rationale (max ¾ page)

Fiji fully embraces the United Nation's Sustainable Energy for All (SE4All) initiative and as such the Fijian Government, by the year 2020, aims to provide all Fijians with access to modern energy services which are also affordable, clean and reliable. However, amongst the major challenges facing the country is the provision of basic reliable and affordable electricity services to the remote and maritime rural communities. As such, to address this problem, enduring partnerships together with more concerted efforts and enabling greater utilisation of local renewable energy resources is certainly the way forward. The EU-GIZ project certainly dovetails well with the initiative and in addition compliments the 'Green Growth Development Framework' currently pursued by the nation.

Fuel imports on average represent about 1/3 of Fiji's total import bill and amounts to over one (1) billion Fijian Dollars, which also has enormous economic, environmental and social impacts on ordinary Fijians. The greatest impacts are felt by the communities in rural and remote areas where supply chain issues contribute to the added costs and inconsistent supplies, leaving people to be exposed to issues of energy insecurity and unaffordability on a daily basis. Despite many interventions by Government including price control on fuels, the increasing international market price of fossil fuels is inadvertently passed down to the consumers, contributing to further hardships faced by some of the most vulnerable people in our communities.

The Fiji SE4All: Rapid Assessment and Gap Analysis study estimates that approximately 15-18% of the rural population lack basic electricity services and amongst such communities are; i) the village of Namuka-I-Lau (74 households), Kioa (89 households) and Yasawa High School (135 students) on Naviti island. The people on these islands depend solely on diesel generators for limited hours of electricity supply, usually 2 - 4 hours per night and kerosene and benzene lamps are used to supplement their basic lighting needs thereafter. As such, this project targets to assist these three vulnerable communities by introducing solar PV systems and enabling the existing diesel systems to operate as solar-diesel hybrid systems.

Moreover, fuel supply to these islands is irregular and the costs are very high compared with the costs of fuels on the mainlands of Fiji. Also, there are associated issues such as transportation challenges to these islands and the health impacts especially on women and children as a result of the use of kerosene for cooking and lighting. The money spent on purchase of fuels is also a significant share of the income of individual households.

This project is consistent with the draft National Energy Policy (NEP) 2014 (<http://www.energy.gov.fj/images/NEP2013/draft%20national%20energy%20policy%202013.pdf>) and the related Strategic Action Plan (SAP) 2014-2020, both of which share the vision of a resource efficient, cost effective and environmentally sustainable energy sector. More specifically, the SAP states "Improve the effectiveness and sustainability of off-grid rural electrification projects".

The proposed projects are important as they not only reduce the financial burden of fuel imports on the vulnerable people living in the remotest parts of Fiji but also offer opportunities to better their lives through improved facilities for education, information technology, telecommunications, improved health, energy security and opportunities to venture into income generating activities. The related documents can be accessed from Department of Energy website [www.energy.gov.fj](http://www.energy.gov.fj).

### **3. Objective (s) (two to three sentences )**

The project aims to:

- Establish environmentally sound and sustainable power systems for energy production and end-use.
- Increase the use of indigenous energy sources to reduce the financial burden of high cost fossil fuels on rural and remote communities.
- Prove the operational/financial model of village solar/diesel hybrid systems for larger deployment in Fiji.

### **4. Expected project outcomes (max ¼ page)**

The outcomes of this project will be:

- Improved electricity services for Kioa, Namuka-I-Lau and Yasawa High School.
- Reduced spending on fossil fuels by the communities of Kioa, Namuka-I-Lau and Yasawa High School.
- Affordable energy for the maritime villagers.
- Sustainable energy supplies for rural and maritime communities.

### **5. Targeted outputs (max ½ page)**

Upon completion this project would have:

- Installed Solar Photovoltaic systems (including related accessories) for each of the three island communities.
- Delivered a Solar-Diesel hybrid system for each island community.
- Established a communal refrigeration system for each village.
- Installed user-pay systems for electricity services which contribute towards project management funds.
- Developed a sustainable power system with reduced dependency on fossil fuels.

### **6. Beneficiaries (max ½ page)**

The main beneficiaries would be the people and school children of the respective islands and villages. Altogether this includes about 163 households, 2 public health centres, 3 schools: (2 primary, 1 secondary), 2 nursing quarters, 19 teachers quarters and 1 student dormitory will be assisted. Other beneficiaries would be youth groups, women's groups, churches and small community businesses. Direct benefits will include reduced spending on fossil fuels and greater access to electricity, including during day time. Other indirect benefits will include school children can use computers and other IT appliances to

enhance their education. The vulnerable villagers, Youth and Women’s group can start small businesses like sewing centres, baking/pastry, dairy shops etc. that can possibly include basic facilities such as coolers/refrigerators for storage of seafood. The most vulnerable, elderly and the infants can benefit from such cooling facilities through storage of medicine etc. Similarly, electricity supply will enable everyone on the islands to benefit through use of telecommunications technologies; mobile phones, fax machines, internet etc. Overall, this project will stimulate economic activities that can open up multiple opportunities for rural and maritime communities.

The roles and responsibilities of the people and the different groups on the island will include liaison contacts between the villagers and the project implementers as well as responsible for collection of electricity bills from households for the project future management fund. The Youth and women’s group additional responsibilities will include basic maintenance of solar PV systems for which capacity building will be part of the project. Project delivery could be enhanced with liaison and involvement of Provincial Council and Tikina Council representatives.

#### 7. Indicative budget (max ½ page)

Item (Summary and combined costs of the three projects)	Indicative budget (FJD)
Output 1: Solar PV system Installation	500, 000
Output 2: Solar-Diesel Hybrid Implementation	300, 000
Output 3: Establishment of communal refrigeration systems	70, 000
Output 4: Installation of user-pay system (metering system)	150, 000
<i>Other budget items as required</i>	
Project management costs	100, 000
Monitoring and evaluation	30, 000
Communication and visibility	10, 000
Co-financing / In-kind contribution (optional) <i>Fiji DoE will contribute any shortfall in funding including financial support for logistical and transportation costs</i>	Costs exceeding FJD 1 million
<b>TOTAL</b>	<b>EU-GIZ: 1 000, 000 FJD</b> <b>Fiji: 160,000+ FJD</b>

#### 8. Project management (max ½ page)

The lead national agency with overall responsibility will be Ministry of Foreign Affairs and International Cooperation (MFAIC), Climate Change Division (CCD) and National Executing agency will be Ministry for Works, Transport and Public Utilities (MWTPU), Department of Energy (DoE). The project will be under the direct supervision of Director

of Climate Change Division (CCD) and will be executed by the Department of Energy via local energy service company(s), recruited through competitive tender processes. However, the technical staff within the Rural Electrification Unit of DoE will provide supervision of project implementation. Similarly, all financial and accounting responsibilities will be undertaken by the CCD through the accounts section within the MFAIC and governed in accordance with the Fiji Government's accounting and financial standards. Likewise, the financial reporting would also be done by the CCD through the MFAIC accounts section and in accordance with Fiji Ministry of Finance reporting guidelines which will also meet specific EU-GIZ reporting requirements. Any technical reporting responsibility would be undertaken by CCD in consultation with the DOE

The following two projects have been successfully coordinated, implemented and managed by the DoE in accordance with the Fiji Government's accounting, financial and reporting guidelines which have also fulfilled the specific and respective requirements of funding agencies.

i. Rukua Mini-Grid (15kW) Solar Project

Rukua is also an Island Community and through battery back-up solar system the project phased-out diesel generator system from Rukua village. This project supplies electricity to about 300 individuals including 70 households, 3 churches and a community hall. It was funded through Japanese grant and successfully coordinated and implemented by the DoE's Rural Electrification Unit and was commissioned in December, 2013.

ii. Solar-Diesel Hybrids for Government Stations

The Government operated diesel stations on the outer islands are supplemented with Solar Photovoltaic systems; Kadavu (200kW), Rotuma (100kW) and Lakeba (100kW). All works are coordinated by the Department of Energy in consultation with the office of Divisional Engineer Central Eastern and implemented by local energy service companies. The project is funded by the United Arab Emirates.

Notwithstanding the above, it needs to be noted that the Department of Energy has been implementing rural electrification projects (On Grid Extension Works / Diesel Systems / Mini Hydro Power Projects / Biofuel Projects / Solar Home Systems etc.).

**9. Complementarity and replicability (max ¼ page)**

This project complements similar ongoing projects currently being implemented at the government stations in Rotuma, Lakeba and Kadavu. It builds on previous project experience at Rukua on Beqa Island and is consistent with the plans as per the partially reviewed Rural Electrification Policy, which has provisions for good performing diesel schemes to be hybridized with solar PV systems. In future, DoE plans to introduce solar-diesel hybrid systems to rural and maritime areas all around Fiji, which have diesel generators but are facing many challenges to operate fossils based power systems. The

Project will also prove the operational/financial model of village solar-diesel hybrid systems for wider deployment in Fiji.

**10. Sustainability and risks (max ¼ page)**

This project will complement existing diesel generator power systems for each of the three communities, which have been successfully managed by the villagers over the years. Regular maintenance of the solar system components would be incorporated into the already established regular maintenance and servicing schedules for diesel generators. The revenue generated from the user-pay system will be utilised for operation and maintenance costs. Therefore, the addition of solar to the existing system (Solar-Diesel hybrid) would enhance the sustainability - economically, environmentally and socially. Risks to successful implementation could be adverse weather conditions experienced mainly during cyclone season (November-April). However, the installations will be planned to commence during the non-cyclone seasons and the structural components as well as other Balance of System Components would be engineered to withstand such weather conditions. Engineering aspects will be important considerations during technical design of the project.

**11. Timeline for planned measures (max ¼ page)**

Project site	2015						2016												2017		
	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-Jun		
Yasawa							Monitoring and Evaluation														
Namuka -I-Lau																				M & E	
Kioa																				M & E	

**12. Stakeholder engagement in concept note development (maximum three sentences)**

The following agencies were consulted: Ministry of Foreign Affairs and International Cooperation, Division of Climate Change, Department of Fisheries, National Disaster Management Office, Ministry for Regional Development - Provincial Council Office. The consultation and consensus is evident in the form of agreement by all stakeholders to submit only two concept notes, which is Fiji’s collective focus.