



REQUEST FOR PROJECT PREPARATION GRANT (PPG)

PROJECT TYPE: Full-sized Project
THE GEF TRUST FUND

Submission Date: 4 August 2009
Re-submission Date:

GEF PROJECT ID:

GEF AGENCY PROJECT ID:

COUNTRY(IES): Republic of Turkey, Cook Islands

PROJECT TITLE: Realizing Hydrogen Energy Installations on Small Islands through Technology Co-operation

GEF AGENCY(IES): UNIDO

OTHER EXECUTING PARTNER(S): UNIDO-ICHET (International Centre for Hydrogen Technologies),
Ministry of Energy and Natural Resources (Turkey), Ministry of Energy (Cook Islands)

GEF FOCAL AREA(S): Climate Change

GEF-4 STRATEGIC PROGRAM(S): CC-SP3-RE

NAME OF PARENT PROGRAM/UMBRELLA PROJECT: Strategic Program on Technology Transfer

A. PROJECT PREPARATION TIMEFRAME

Start date of PPG	October 2009
Completion date of PPG	April 2010

B. PAST PROJECT PREPARATION ACTIVITIES (\$)

List of Past Project Preparation Activities	Output of the Activities	Project Preparation Amount (a)	Co-financing (b)	Total c = a + b
Total Project Preparation Financing				

C. PROPOSED PROJECT PREPARATION ACTIVITIES (\$)

Describe the PPG activities and justifications:

The PPG provides for the conduction of the following preparatory activities and tasks that are primarily focusing on one of the installations to be realized in the context of the project, that on Aitutaki island. Similar preparatory work has already been carried out for the Bozcaada island component of the project. The cost of these activities was US\$30,000 and it is shown as one part of the cost-sharing below.

1. Determine the peak and base energy loads of selected demonstration sites (airport and hospital) and define fuel cell systems, including amounts of H₂ to meet these requirements.
Output: engineering design and cost of demand side (end-users) component.
2. Define a RE-to-H₂ system to be located on a disused airstrip at the island's airport to supply H₂ requirements of the project. Will involve:
 - a) design, capacities, and integration of a PV array, wind turbines, electrolyzer, compressor, and H₂ storage tanks;
 - b) preparation of requirements for a control and monitoring system to optimize the integration of production of RE and use of H₂ according to intermittent wind and solar generation, H₂

<p>requirements, and feeding surplus RE to the grid; c) costing of above components. <i>Output: integrated engineering design and cost of RE-to-H₂ system, including custom design with software to automate and optimize the system.</i></p> <p>3. Defining local project organization and management arrangements, including possible participation of public/private partnerships. <i>Output: project management arrangements.</i></p> <p>4. Analyzing local human and physical (mechanical, electrical and others) capacities and capabilities and identifying training and other needs required to build / upgrade capacities to facilitate smooth transfer of Environmentally Sound Technologies (ESTs.) <i>Output: local capacity building programme.</i></p> <p>5. Project Development and formulation, including:</p> <ul style="list-style-type: none"> • Stakeholders' consultations • Identification and analysis of barriers • Definition of project strategy • Review of project barriers and risks; refining project strategy to address them • Discussion and agreement on activities, roles and responsibilities of Government counterparts and other project partners • Development of the project implementation plan (workplan) • Development of monitoring and verification plan (in particular, definition of milestones to check the effective transfer of ESTs), including developing project baselines, indicators and best feasible estimates for project direct and indirect GHG emissions reductions • Negotiating and securing co-financing commitments from Government counterparts, private sector partners, bilateral and multilateral donors and other entities <p><i>Output: project document.</i></p> <p>The pilot project would make a substantive contribution to the development of clean RE on Aitutaki and the Cook Islands and, by expansion and replication, to RE on island nations more broadly. Preparatory activities will be carried out in consultation with the Government of the Cook Islands (GCI), the private sector, tourist operators and other groups expected to benefit from the project. They will also involve any bi- or multi-lateral co-financiers that GCI and/or UNIDO identify.</p>
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List of Proposed Project Preparation Activities	Output of the PPG Activities	Project Preparation Amount (a)	Co-financing (b)	Total c = a + b
1. Demand side analysis	<i>engineering design and cost of demand side (end-users) component</i>	5,000	5,000	10,000
2. Design of RE-to-H ₂ system	<i>integrated engineering design and cost of RE-to-H₂ system, including custom design with software to automate and optimize the system.</i>	10,000	10,000	20,000

List of Proposed Project Preparation Activities	Output of the PPG Activities	Project Preparation Amount (a)	Co-financing (b)	Total c = a + b
3. Defining local project organization and management arrangements	<i>project management arrangements</i>	5,000	5,000	10,000
4. Analyzing local human and physical (mechanical, electrical and others) capacities	<i>local capacity building programme</i>	5,000	5,000	10,000
5. Project Development and formulation	<i>project document</i>	25,000	15,000	40,000
Bozcaada component	Preparatory work		30,000	30,000
Total Project Preparation Financing		50,000	70,000	120,000

It should be pointed out that some of the above mentioned activities have been already initiated by UNIDO, using resources of UNIDO-ICHET, to perform a pre-feasibility study of such a hydrogen energy system on Aitutaki and another two islands in the South Pacific. However, more work and resources are needed to develop and formulate the full project proposal.

D. FINANCING PLAN SUMMARY FOR PROJECT PREPARATION GRANT: (\$)

	Project Preparation	Agency Fee
GEF financing	50,000	5,000
Co-financing	70,000	
Total	120,000	5,000

E. PPG REQUESTED BY AGENCY(IES), FOCAL AREA(S) AND COUNTRY(IES)¹

GEF Agency	Focal Area	Country Name/ Global	(in \$)		
			PPG (a)	Agency Fee (b)	Total c = a + b
Total PPG Requested					

¹ No need to provide information for this table if it is a single focal area, single country and single GEF Agency project.

F. PPG BUDGET REQUEST

Cost Items	Total Estimated Person Weeks for GEF Grant (PW)	GEF (\$)	Co-financing (\$)	Total (\$)
Local consultants *	40	20,000	20,000	40,000
International consultants*	30	15,000	45,000	60,000
Travel		15,000	5,000	20,000
Total PPG Budget		50,000	70,000	120,000

G. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF policies and procedures and meets the GEF criteria for project identification and preparation.	
GEF Agency Coordinator Dmitri PISKOUNOV Managing Director Programme Development and Technical Cooperation Division UNIDO	Project Contact Person Enver KHAN Project Manager Energy Efficiency Unit Energy and Climate Change Branch UNIDO
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Annex A

Consultants Financed by the Project Preparation Grant (PPG)

Please note that while only the Person Weeks to be financed by GEF PPG are indicated in the table below.

Position Titles	\$/Person Week	Estimated PWs	Tasks to be performed
<i>Local experts</i>			
Experts on energy, financing and energy policy	1,000	20	<ul style="list-style-type: none">• Obtain local meteorological data and estimate renewable energy potential• Obtain data on operating cycle and fuel consumption of captive fleets of vehicles (mini vans transporting tourists, taxis)• Contribute in the process of sizing the RES and hydrogen energy installation• Perform economic analysis of system• Identify suitable local or international partners for the co-funding of the project• Collect data for capacity building• Contribute in the preparation of the final proposal to GEF
<i>International experts</i>			
Hydrogen Energy experts	2,000	15	<ul style="list-style-type: none">• Perform modeling of renewable energy and hydrogen systems• Consult on costs and availability of equipment in order to finalize the system on the Aitutaki installation• Identify and design capacity building activities for technology transfer• Identify the networking and global forum activities for technology transfer• Contribute in the preparation of the final proposal to GEF