

**Department of Commerce, Industry and Environment (DCIE)
and
United Nations Development Programme**

**Supporting Mainstreamed Achievement of Roadmap Targets on Energy in Nauru (SMARTEN)
– Local Project Appraisal Committee (LPAC) Meeting, 28th – 29th November 2019**

Minutes

Date: 28th November 2019 (Technical Session), 29th November 2019 (Strategic Session)

Venue: Department of Commerce, Industry & Environment Board Room, Yaren, Nauru

Chaired by: Ms. Berilyn Jeremiah, Secretary, Department of Commerce, Industry & Environment (DCIE)

Time: 10:00am to 1:00pm (Technical Session), and 3:00-4:00pm (Strategic Session)

Agenda and Participant List

The agenda for the LPAC was discussed and agreed collectively between the DCIE and UNDP. This is attached as Annex 1. The participant list is attached in Annex 2.

Technical Discussions on the UNDP/GEF SMARTEN project document

Demonstration activities

1. There are three low carbon energy technology application demonstrations that the SMARTEN will implement in Nauru, which will directly contribute to greenhouse gas (GHG) emission reductions. The demonstrations are:

- Demo 1: Storage of solar PV generated electricity in desalinated water. The implementation of this demonstration will produce about 480,000 L/day. The Reverse Osmosis (RO) unit will be added to the Nauru Utility Corporation (NUC) water desalination site in Meneng to take advantage of existing infrastructures and equipment (i.e., pumps, water tanks, and reticulation system). The equipment that will be procured, shipped and installed, will cost USD 1,020,000 and is expected to have a 25-year lifespan.
 - Demo 2: Mini solar powered treated water production and distribution system. This demo will allow the show-casing of the application of solar PV panels to desalinate and distribute water directly into a selected group of households. The current sizing is based on a preliminarily selected site and will provide a total of approximately 15,600 L/day to a group of 120 people.
 - Demo 3: Hybrid diesel-electric bus for public transportation. This activity involves the procurement and operation of a hybrid diesel-electric bus with a charging station. Since this is a brand-new technology for Nauru, for which expertise and spare parts are not readily available, an additional battery bank and other required spare components will be also procured, and training programs for two mechanics will be organized.
2. General comments: For independent solar PV systems to be considered efficient, they should be connected to the main power utility grid so that any access power produced by the solar PV system can also be used by other consumers. It is important to get the utility grid on renewable energy. [The concern is fully covered and will be addressed in Component 1.]
3. Regarding Demo 1: The actual lifespan of RO systems in Nauru is 10 years and not 25 years as expected.

4. Regarding Demo 2: Currently, there are no funds available for sustaining the maintenance costs of solar PV systems in communities. The NUC has designed a 30-year masterplan for ensuring water access in Nauru and did an analysis on the 'cost of carting/trucking water to communities versus the cost of pipping'.
 - The SMARTEN project must ensure that it does not burden the communities to bear the cost of maintaining the solar PV system. In the past, NUC and DCIE have been approached by communities to pay for the maintenance of solar PV systems or water tanks that were installed as development projects.
 - A fund needs to be set-up to take care of the 'maintenance of such solar PV systems'. One way of doing this is to sub-contract a responsible party to be responsible for maintaining the systems and paid for by SMARTEN.
 - UNDP's new programming instruments enables for this kind of arrangement via the Low Value Grant (LVG). Since SMARTEN will be implemented through a pure NIM arrangement, DCIE could engage a private entity in Nauru for maintaining the systems.
 - A business plan should be developed to make this demo self-sustainable – with proper monitoring and maintenance ownership. The state-owned enterprise 'Eigigu Holdings' could be engaged in developing the business plan. This may be possible given that a similar UNDP/GEF project in Tuvalu is engaging the University of Technology Sydney to determine if a solar-powered water purifier (via capacity deionization) could be installed and the purified water could be sold to households in Funafuti.
 - This demo should be integrated with NUC's 30-year water master plan and long-term plan for electricity supply.
 - Maintenance costs should be allocated in the Total Budget and Work Plan of SMARTEN.
5. Regarding Demo 3: The recommendation is to go fully electric, instead of demonstrating a hybrid diesel-electric bus. Practically, it's better to introduce a smaller electric vehicle as it will be easy to manage, monitor and maintain.
 - NUC is willing to install a charging station at their cost, if SMARTEN purchases electric cars as part of its operational fleet.
 - The same arrangement could be made for DCIE and Nauru Post, where electric cars could be purchased for their operations.
 - Once there is success with smaller electric vehicles, then we could proceed with procuring an electric bus.

Governance and Management Arrangements

6. The SMARTEN project is governed by a Project Board, and the day-to-day coordination of activities is led by the Project Management Unit (PMU) under the supervision of the Director of Energy Division, and with project oversight services provided by UNDP. Technical experts will be engaged to execute specific project activities.
7. With the current micro-HACT assessment findings at significant risk rating along with preference of GEF for pure NIM, UNDP is unable to advance funds to DCIE for project implementation unless a third party manages the SMARTEN project funds. Some possible options are:
 - The state-owned enterprise, Eigigu Holdings, could manage SMARTEN funds.
 - Bendigo Bank could also manage SMARTEN funds, provided they have the capacity to accept US currency and convert it to Australian currency.
 - The Government of Nauru's Planning & Aid Division (PAD) is responsible for managing donor funds in Nauru. With the increasing volume of donor funding coming into Nauru, PAD is short-staffed and will require a dedicated project staff to handle SMARTEN. For this, a

project position needs to be created within PAD. The Finance & Administration position within the SMARTEN PMU could be re-allocated to PAD to address the staffing issue. This needs to be discussed between the Secretary for DCIE and Secretary for Finance & Planning.

Strategic Discussions on the UNDP/GEF SMARTEN project document (29th November)

The main discussion points from yesterday's technical consultations were presented. There were no objections to all the three demonstration projects. The following adjustments need to be made in the project document during Inception Phase:

- For Demo 2: Include an activity for establishing a maintenance fund for solar PV systems, include an activity for developing a business plan for the sustainability of water access in the demonstration site, and include an activity for integrating this with NUC's 30-year water master plan and long-term plan for electricity supply.
- For Demo 3: Include an activity where electric cars could be procured as operational fleet for NUC, DCIE, and Nauru Post.
- Adjust the Total Work Plan and Budget to include the additional activities for Demos 2 and 3 above.
- Re-allocate the Finance & Administration position from the SMARTEN PMU to PAD to ensure that staff is available to handle SMARTEN-related financial transactions and reporting.

Recommendations

The LPAC agrees on the following:

1. Government of Nauru's Planning & Aid Division (PAD) to manage and administer the Nauru SMARTEN project funds.
2. Nauru SMARTEN project document be approved and the adjustments to the project document are made during Inception Phase.

Signature of LPAC Chair



.....
Ms. Berilyn Jeremiah,
Secretary,
Department of Commerce, Industry & Environment.

Date: 22/1/20

Signature of LPAC Co-Chair



.....
Ms. Karin Takeuchi,
Deputy Resident Representative,
UNDP Pacific Office in Fiji

Date: 24/01/2020



Annex 1 – Agenda

Thursday, 28th November 2019	
Technical Session	
9:00 – 9:15am	Registration - Miniva Harris, SMARTEN Project Development Coordinator, Energy Division, DCIE.
9:20 – 9:45am	Welcome and Official Opening Remarks – Ms. Berilyn Jeremiah, Secretary for DCIE (and GEF Operational Focal Point).
9:45 – 10:00am	Introduction of participants (facilitated by Midhun Ajaykumar)
10:00-10:30am	Morning tea and group photo session
10:30am – 11:30am [Presentations]	<ul style="list-style-type: none"> • Overview of UNDP Project Cycle, and What has been produced during the Project Preparation Grant? – Miniva Harris. <p>Project background – Midhun Ajaykumar and Miniva Harris</p> <ul style="list-style-type: none"> • Energy situation in Nauru (demand, supply, status, gaps, etc); • Overview of SMARTEN project (total budget, financiers, implementing partners and agencies, beneficiaries, timeframe; • Technical overview of SMARTEN project: what are the issues that the project intends to address, what are the specific interventions, what are the expected results, and what solutions will be developed to help meet long-term energy demand. <p>Project governance, management arrangements, and budget (Emma Sale and Dhiraj Singh)</p> <ul style="list-style-type: none"> • Project Structure and Institutional Arrangements; • Project Organization Arrangements; • Total budget and workplan; • Micro-HACT assessment preliminary finding.
11:30am – 1:00pm	<ul style="list-style-type: none"> • Discussions on the presentations on SMARTEN project document.
Friday, 29th November 2019: Strategic Session	
3.00pm-3.10pm	Introduction and Welcome
3.10pm-3.20pm	Overview of the project document
3.30pm-3.35pm	Quality Assurance (QA1) Summary
3.35pm-3.45pm	Discussion and recommendation
3.45pm-3.55pm	Decision making of LPAC
3.55pm-4.00pm	Closing remarks and way forward by co-Chair: Ms. Karin Takeuchi, UNDP Deputy Resident Representative.

Annex 3: Supporting Mainstreamed Achievement of Roadmap Targets on Energy in Nauru (SMARTEN) – Strategic Session of the Local Project Appraisal Committee (LPAC) Meeting, 29th November 2019

<i>Name</i>	<i>Position, Organization</i>	<i>Email</i>
1. Berilyn Jeremiah	Secretary, Department of Commerce, Industry & Environment (DCIE)	berilyn.jeremiah@gmail.com
2. Midhun Ajaykumar	Director of Energy, Department of Commerce, Industry & Environment (DCIE)	directorofenergy@gmail.com
3. Miniva Harris	SMARTEN Project Design Coordinator, Department of Commerce, Industry & Environment (DCIE)	minivaharris@gmail.com
4. Karin Takeuchi	Deputy Resident Representative, UNDP Pacific Office in Fiji	karin.takeuchi@undp.org
5. Kevin Petrini	Team Leader, Resilience & Sustainable Development Unit, UNDP Pacific Office in Fiji	kevin.petrini@undp.org
6. Emma Sale	Programme Analyst, Resilience & Sustainable Development Unit, UNDP Pacific Office in Fiji	emma.sale@undp.org
7. Dhiraj Singh	Finance Analyst/HACT Focal Point, UNDP Pacific Office in Fiji	dhiraj.singh@undp.org
8. Merewalesi Laveti	Monitoring & Evaluation Analyst, UNDP Pacific Office in Fiji	merewalesi.laveti@undp.org

Annex 4: Audit Trail for Nauru SMARTEN LPAC Minutes (Technical Comments)

No	Author	Comment Section ¹	Comment/Feedback on the LPAC Minutes	Response and actions taken
1	Manuel Soriano	Technical discussions	Not included here are the enhancement of the ADB 6MW solar PV project. Enhancements are meant for ensuring grid stability with co-benefits of improving the diesel power generation SFC (in line with the NUC objective to achieve SFC = 0.244 lit DFO/kWh, or 4.1 kWh/lit DFO). The enhanced Low Carbon Fund financing scheme seems not discussed.	Although this was presented to the LPAC (slide #4), the LPAC members were interested in the three SMARTEN demonstration activities hence the focus of discussions.
2	Manuel Soriano	Technical discussions	Replace 'demonstration projects' with 'demonstration activities'	Done
3	Manuel Soriano	Technical discussions	Insert in para 1 - 'low carbon energy technology application', 'the', 'implement'	Done
4	Francesco Citro	Technical discussions – Demo 1	The RO system can generate 480,000 L/day, however since we primarily use this unit to store excess electricity during day time, under normal conditions the plant will generate 100-120 kL/day. If needed, the plant can be operated 24/7 and generate the rated capacity of 480 kL/day.	Noted
5	Manuel Soriano	General Comments	This concern is fully covered and will be addressed in Component 1 of SMARTEN.	Noted
6	Manuel Soriano	Regarding Demo 1	Other technologies, apart from RO (e.g., CDI) can also be considered during project implementation.	UNDP had stated this during the discussions citing an example of collaboration between the University of Technology Sydney and Tuvalu FASNETT project.
7	Francesco Citro	Regarding Demo 1 & 2	For the large desalination unit, I recommend to use the same technology that NUC uses for other systems, to simplify the O&M and to minimize the type of spare parts necessary. For the demo 2, we could, as also mentioned in the LCTE report, explore other technologies. As to the lifespan of the RO plants, 25 years is widely used in literature (this is one from the WB: https://openknowledge.worldbank.org/bitstream/handle/10986/31416/W18059.pdf?sequence=5&isAllowed=y); furthermore considering that the RO plant for demo 1 will not be used 24/7 the lifespan of 25 years should be easily achievable. (additional reference: https://watereuse.org/wp-content/uploads/2015/10/Intake_White_Paper.pdf)	Noted. This needs to be discussed further during Inception Phase.
8	Manuel Soriano	Regarding Demo 2	It would be good to have a copy of that study if that has not yet been provided to the PDT for consideration in the	Noted. DCIE is requested to provide a copy of NUC's 30-year Water Masterplan

¹ Page Number refer to the track changes version of the LPAC Minutes

			identification and selection of the proposed demo.	
9	Manuel Soriano	Regarding Demo 2	The demo is supposed to be co-financed! Maintenance cost could be part of co-financing of the demo host. Is NUC the demo host? Nonetheless, the SMARTEN Project can cover the maintenance cost of the systems that will be installed during the duration of the project. After the project, it is expected that the demo host will shoulder the O&M cost of the installed system. Note that the demo is to showcase a sustainable and commercially viable water production and supply system.	It was clearly discussed that if communities are to host the demo, then funding needs to be made available to pay for maintenance costs. If NUC is the host demo, then they could pay for maintenance costs. This needs to be further discussed at Inception Phase.
10	Manuel Soriano	Regarding Demo 2	Why is that? Did NUC and DCIE agreed to pay? The demo is to showcase a sustainable and commercially viable water production and supply system. Who is the demo host? NUC?	Communities do not have spare money to pay for maintenance costs of donor-projects. Money available to each household is committed to their day-to-day expenses, which doesn't include costs for maintenance.
11	Manuel Soriano	Regarding Demo 2	The demo host could be the responsible party. It will be responsible for the O&M of the demo facility during the project implementation period (with assistance from the project) and after the project, when the demo is supposed to be operating as a proven viable commercial initiative. Who is the demo host? NUC?	As stated earlier, this needs to be discussed further at Inception Phase.
12	Manuel Soriano	Regarding Demo 2	Please refer to my previous comments re Low Value Grant (LVG).	Noted
13	Manuel Soriano	Regarding Demo 2	Yes particularly if NUC is the demo host. Is it?	As stated earlier, this needs to be discussed further at Inception Phase.
14	Manuel Soriano	Regarding Demo 2	As far as I know that's included in the demo cost.	Noted
15	Francesco Citro	Regarding Demo 2	The demo includes: spare battery; spare pump; I did not specify it but cost for RO unit includes replacement membranes membranes (I can amend the text), and training for 2 people on how to O&M all equipment involved in this demo. We might select the trainees among the beneficiaries of the demo, who will, in exchange for the desalinated water and the training received, maintain the equipment. What is not included is the cost of replacement batteries. The reason why I did not budget the replacement batteries (I have only included 1 additional spare battery) is because, if properly maintained, the provided batteries	Noted. The costs of replacement batteries needs to be discussed further at Inception Phase.

			will last at least 8 years; therefore well past the completion of SMARTEN. Furthermore, in 8 years there will probably be cheaper and better batteries available.	
16	Manuel Soriano	Regarding Demo 3	Wasn't the decision to demonstrate a hybrid DE bus operation as public transport done by consensus. Note that the demo is for public transportation.	Yes, it was. However, the Department of Transport was not present in the LPAC meeting to clarify.
17	Francesco Citro	Regarding Demo 3	Not necessary, charging station and training to O&M both hybrid bus and charging station is already budgeted in the demo. A charging station is now very cheap, can be purchased for less than US\$ 10k (there were some as cheap as US\$ 3k, I chose a higher quality one), it is much cheaper to replace the charging station than buying a new fleet of EVs to NUC. The charging station is quite simple technology, it is an electricity outlet with transformers, it can be installed at DoT, who will also receive the training. We are also providing an additional battery for the hybrid bus, which will minimize the maintenance costs that DoT might incur.	Noted. This needs to be discussed further at Inception Phase.
18	Manuel Soriano	Regarding Demo 3	That's possible if there's co-financing from DCIE and/or Nauru Post. For example, DCIE or Nauru Post intends to buy new gasoline/diesel fueled cars, and we recommend that they instead buy EVs. We use incremental GEF funds to top up their budget for the gasoline/diesel fueled cars.	This is a good idea that we've also floated. This needs to be further discussed at Inception Phase.
19	Manuel Soriano	Regarding Demo 3	Does this mean that after demonstrating the application of EVs, private entrepreneurs will be encouraged to buy EBs for them to operate as public transport buses in Nauru? That would be great if that's the intention.	Yes, this is the idea. This needs to be further discussed at Inception Phase.
20	Manuel Soriano	Governance & Management Arrangements	I think these are good RP options. Was there a decision made on which option should be considered?	The last option (i.e. strengthening capacity of PAD) was considered most favourable. As this will involve creating a new position within PAD (that will involve recruitment and supervisory responsibilities), this needs to be discussed between the Secretary of DCIE and Secretary for Finance & Planning.
21	Manuel Soriano	Recommendation	Insert 'agree' in second bullet point.	Noted, and amended accordingly.

