## Cook Islands, Fiji, Niue, Solomon Islands, Tokelau, Tuvalu and Vanuatu

### 100% Renewable Energy Targets in the Pacific Islands

<table>
<thead>
<tr>
<th>Activity</th>
<th>National and regional policies, plans, and strategies to set and meet the 100% renewable energy goals in seven Pacific Island Countries</th>
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</thead>
<tbody>
<tr>
<td>Country</td>
<td>Cook Islands, Fiji, Niue, Solomon Islands, Tokelau, Tuvalu and Vanuatu</td>
</tr>
<tr>
<td>Sector(s) involved</td>
<td>Energy sector</td>
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<tr>
<td>Time frame</td>
<td>2012 onwards</td>
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<tr>
<td>Case summary</td>
<td>In May 2012, Ministers representing a group of the Small Island Developing States (SIDS) agreed to the Barbados Declaration, which included a declaration on renewable energy targets by Pacific Island Countries (PICs), seven of which declared an ambitious target to generate 100% of their electricity from renewable technologies. The Cook Islands, Niue and Tuvalu have set a goal of 100% renewable energy by 2020, and Fiji, Vanuatu and Solomon Islands for 100% renewable energy by 2030. Tokelau already achieved the target by 2012/2013. The process of transition to renewable energy generation is deeply rooted in the existing national and regional policies, plans and priorities of the PICs, as reflected in their national and regional energy policy documents. However, the case demonstrates the highest political will of seven PICs to transition to 100% of their electricity generation from renewable energy technologies, exhibiting ambitious goals for RE transition. A coordinated and consultative approach at all levels (local, national and regional) was undertaken to remove barriers to the implementation of renewable energy plans in these countries. To ensure the implementation of the targets, the governments are seeking technical and financial support through ongoing regional activities and support from bilateral and multilateral finance channels. The country governments and the Secretariat of the Pacific Community aims to continue the momentum of meeting with these ambitious targets and to draw synergies with upcoming activities including the development of Nationally Appropriate Mitigation Actions (NAMAs) and the preparation of Intended Nationally Determined Contributions (INDCs).</td>
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Solar panels and windmills ©iStock.com/vencavolrab
Post high oil prices in 2008, these seven countries of the Pacific faced several economic and social imperatives, some of which were common to the region, while others were specific to their national circumstances that led to their acceleration towards renewable energy. Key factors include:

- Vulnerability to oil price due to domestic dependence on fossil fuel imports.
- Need for expanding the access of electricity to the masses in the remote, unconnected localities.
- Recognising the slow pace of adequate international agreements, the countries decided to take matters into their own hands, and eliminate their carbon emissions by 2020.

The process of transition to renewable energy began in 2002, when the first regional energy policy, the ‘Pacific Islands Energy Policy and Plan’, was developed to guide and coordinate individual national energy policies. Against this background, a Strategic Action Plan was laid out in 2004 to provide for technical assistance in energy policy development, energy planning and improvement of regulatory structures, project finance and institutional development. The plan focussed on having a needs driven approach to RE transition and thus put an emphasis on the ownership of the participating countries.

Joint activities were developed through an inclusive and consultative process with both public and private sector stakeholders. At the national level, these translated into a National Energy Policy for each country, which laid the foundation for renewable energy targets and strategies for their achievement. In parallel, donor supported technical assistance programmes were undertaken in these countries to prepare regional approach for removing barriers to the development and commercialisation of RE systems.

Renewable energy assessments were undertaken to understand the key energy issues in the region, barriers to the development of renewable energy to mitigate climate change, and capacity development needs for removing the barriers. One of the key programmes for this was the GEF supported-UNDP implemented programme called the Pacific Islands Renewable Energy Project (PIREP), later designed into a larger regional initiative called the Pacific Islands Greenhouse Gas Abatement through Renewable Energy Project (PIGGAREP).

Together, these programmes created readiness in PICs to undertake deployment of renewable energy technologies in the region. During the Ministerial Conference on Sustainable Energy held in Barbados in May 2012, PICs declared some ambitious renewable energy targets, including the seven PICs that aim to generate 100% of their electricity from renewable technologies. Of them, Cook Islands, Niue and Tuvalu have set a goal of 100% renewable energy by 2020, and Fiji, Vanuatu and Solomon Islands for 100% renewable energy by 2030. Tokelau already achieved the target by 2012/2013.

- National initiatives for peer learning: The political willingness to achieve the 100% RE targets is seen in government initiatives where mayor from cities from around the world who have already achieved 100% RE in electricity generation are invited to these countries for knowledge sharing (e.g. Prime Minister of the Cook Islands invited the mayor of Gussing (Austria) to share their experience on their 100% RE transition).
- Renewable Readiness Assessments and Multi-stakeholder consultations: To make the targets attainable, a comprehensive assessment of the current status of renewable energy development and the key issues that need to be addressed was launched with help of IRENA. As part of the RRA study, consultancy work was carried out by an independent consultant and facilitated by the Department of Energy to collect data and conduct interviews. This was followed by an RRA multi-stakeholder consultation workshop, at which the pre-identified issues were discussed and the key findings were verified.
Regional Initiatives for transforming national energy sectors: The PICs, along with the help of donor agencies and Aid partners, have launched initiatives such as SIDS DOCK, Pacific Energy Summit etc, that provide opportunity to PICs to work with development partners towards implementing energy efficiency, RE initiatives, and provides collective institutional mechanism to PICs to transform their national energy sectors.

Integration of energy data: To better inform the process of national and regional energy planning and policy choices, the Secretariat for the Pacific Community has taken up responsibility for building national capacity in information gathering and collation, management, dissemination and analysis of economic, social and environment aspects of energy. The process builds upon existing Secretariat web portals such as PRISM, GeoNetwork and the Pacific Hydrological Cycle Observing System, and links to other sites where Pacific energy data and information are stored while establishing a Pacific Regional Energy Repository.

Marketing and Capacity Building Initiative: The Secretariat for the Pacific Community, in collaboration with the International Renewable Energy Agency, is currently embarking on a marketing and capacity building assessment initiative to determine potential markets and capacity needs in relation to the deployment of renewable energy.

Institutions involved
- Secretariat of the Pacific Regional Environment Programme (SPREP): It has been set up by the governments and administrations of the Pacific region to lead the coordination of regional climate change policies and programmes through the Pacific Climate Change Roundtable, the Pacific Islands Framework for Action on Climate Change and the CROP CEOs Working Group on Climate Change. With donors, it develops partnerships for implementing adaptation and mitigation policies and programs in the region. It operates through a coordinated and consultative approach at all levels and across all relevant sectors at the national level.
- Council of Regional Organisations of the Pacific Energy Working Group: Forum for coordinating energy-related activities within the members of PICs such as drafting of Pacific Islands Energy Policy and Plan, National Energy Policies and PIGCAREP.
- Secretariat for the Pacific Community: A non-political party in existence since 1947, comprising of 22 PICs as members. The Secretariat helps PICs in addressing risks and impacts of climate variability and climate change in partnership with other members of the Council of Regional Organisations of the Pacific.
- Department of Energy (DoE): Department of Energy in these seven countries were involved in conducting stakeholder consultations for renewable energy assessments to achieve RE targets.
- Other institutions involved: Pacific Power Association, University of the South Pacific, Pacific Islands Forum Secretariat, and the UN Economic and Social Commission for Asia and the Pacific.
- International Renewable Energy Agency (IRENA): Provides technical expertise and knowledge sharing to PICs.

Cooperation with
- The International Union for Conservation of Nature’s Energy, Ecosystems for Sustainable Livelihoods Initiative;
- Asian Development Bank’s Energy for All Initiative;
- World Bank’s Energising the Pacific initiative;
- FAO’s Bio-energy and Food Security effort and those of the Renewable Energy and Energy Efficiency Partnership;
- Global Climate Change Alliance Pacific Small Islands States Project funded by the EU;
- Global Renewable Energy Islands Network of IRENA aimed at bringing IRENA members together to share knowledge and experience on a number of activities organised around Pacific clusters;
Cook Islands, Fiji, Niue, Solomon Islands, Tokelau, Tuvalu and Vanuatu

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- The University of the South Pacific, partner in Project DIREKT, the Small Developing Island Renewable Energy Knowledge and Technology Transfer Network, a collaboration between universities in Germany, Fiji, Mauritius, Barbados, Trinidad and Tobago who are all working to raise the level of scientific expertise in Pacific small island developing nations.

Finance

- Development Aid: Renewable energy investments in PICs have been largely funded by development aid from Denmark, China, European Union, New Zealand, Australia, UAE and Japan (Pacific Environment Community Fund).
- Budgetary Allocation: Comprises a small component of overall finance needs for RE transition in the seven PICs.
- Equipment donations: Supporting organisations, developed countries and the Council of Regional Organisations of the Pacific agencies have provided equipment for many rural stand-alone systems and more recently also for larger grid-connected systems.
- SIDS DOCK: The SIDS DOCK programme facilitates funding through a combination of sources including the SIDS themselves (government, private sector and social organisations) and the global private sector and development partners.

People

- Experts and representatives from the institutions mentioned above.

Impact of activities

- Extending electrification and energy related co-benefits: Visible progress on rural electrification and energy related co-benefits such as better health, infrastructure (transportation), generating livelihood activities and education.
- Improved Balance of Payments: Import bills of the seven PICs with regards to fossil fuels for energy supply have been declining.
- Direct GHG emission reductions: Transition from fossil fuel electricity generation towards 100% RE will reap emissions mitigation potential for these seven countries as also indicated in their INDCs’.

Why is it good practice

- The policy framework reflects commitment, leadership and ambition at the highest political level. It involves country driven processes for setting national targets for RE deployment in the country as they guide public policy (including regulatory arrangements) and indicate where potential investment opportunities lie for the private sector. In addition, proactiveness in forging partnerships with regional and international organisations for technical, financial and capacity support for renewable energy development.

100% Renewable Energy Targets in Pacific Island Countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Target</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tokelau</td>
<td>100%</td>
<td>2012/13</td>
</tr>
<tr>
<td>Tuvalu</td>
<td>100%</td>
<td>2020</td>
</tr>
<tr>
<td>Niue</td>
<td>100%</td>
<td>2020</td>
</tr>
<tr>
<td>Cooks Islands</td>
<td>100%</td>
<td>2020</td>
</tr>
<tr>
<td>Solomon Islands</td>
<td>100%</td>
<td>2030</td>
</tr>
<tr>
<td>Vanuatu</td>
<td>100%</td>
<td>2030</td>
</tr>
<tr>
<td>Fiji</td>
<td>100%</td>
<td>2030</td>
</tr>
</tbody>
</table>

Source: Own compilation
The initiatives engage stakeholders from all sectors from within the country as well as through regional and donor integration to ensure coordination across different key ministries for implementation of activities. Action towards compilation of activity data for the energy sector at national level was initiated as a critical process with support from the Secretariat of Pacific Community for assessment of RE potential in these countries.

The seven individual country governments have also built consensus amongst stakeholders and attempted to draw synergies with follow-up activities on Nationally Appropriate Mitigation Actions (NAMAs) and the preparation of Intended Nationally Determined Contribution (INDCs).

Clear emphasis on capacity development in the energy sector, which is imperative for the region’s development, has been a key focus of the entire exercise of meeting the 100% renewable energy target, facilitating peer-to-peer learning in the entire process.

Political willingness towards renewable energy transition: Through the Barbados Declaration, the seven PICs showed strong commitment and political willingness to move towards 100% RE transition of their electricity sector, with technology for transition not yet being available. This commitment enabled strong regional cooperation on implementation of RE targets and facilitated mutual learning.

Donor support for finance, capacity building and institutional development: With aid money readily available, renewable energy transition could be accelerated. Donor support moved from initial hardware-based funding for renewable transition in countries to financing soft-skill development, and also focused extensively on institutional capacity development.

Development of regional partnerships: PICs developed partnerships for regional development goals, improving the accessibility of individual national strategies for potential donors. Like-minded countries work together to achieve a common agenda.

Existing potential to tap renewable energy and small geographical size of countries: PICs have very good technical potential for renewable energy, including solar, wind, hydro, geothermal and biomass. Moreover, the small geographical size of the island countries, made it more feasible to draw up a regional renewable energy financing and implementation policy.

What were the main barriers/challenges to delivery?
How were these barriers/challenges overcome?

There is lack of financial resources for RE projects’ feasibility study as well as project implementation. Multilateral funding arrangements with donor partners such the EU, ADB often solve this problem.

There is suppressed market for electricity due to low rate of electrification in these countries to justify large RE projects. A regional approach to implementation through regional organisations such as SPC, PPA, SPREP, etc. often fits into the donor agencies preference for large projects.

There is low purchasing power among consumers who are unable to afford decentralised renewable energy technologies even with subsidies. Incentivised mechanisms such as import duty free, subsidy schemes and low interest loans offered by National Development banks make the RE affordable.

Getting RE equipment transported to more remote islands is expensive, irregular and causes issues with installations and maintenance. Most of the installations are usually carried by government agencies such as the Department of Energy, or a private company hired by the Government. In the case of Fiji and some other countries, the upkeep of the RE systems are subsided by Governments. Also the regional approach mentioned above by combining a number of countries together makes the implementation of projects more attractive and viable.
Cook Islands, Fiji, Niue, Solomon Islands, Tokelau, Tuvalu and Vanuatu
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Institutional

Poor infrastructure.
Although in many cases, the investments in these areas are incremental, countries have realised the need to improve existing infrastructure and strengthen institutional capacity by allocating resources either through the national budgetary process or through bilateral partnerships funding.

Bureaucratic hurdles for foreign investors and inability to secure rights over land make PICs an unattractive destination for foreign investments.

Regulatory process covering foreign investments and land tenure can be a hindrance to private sector investment in the energy sector. Understanding the culture and knowing the key stakeholders/partners and who to approach (including organisations) helps expedite things. Moreover, regional cooperation among different stakeholders is helping to build this readiness.

Comprehensive data sets for RE development planning are not readily available in these countries.
The usual practice is to ask around for data, which are scattered all over the different entities. Recently there is an attempt to establish a regional data repository for the purpose of quality planning by the SPC.

The seven countries have limited technical capacity in energy planning, adequate management capacities at government level, and Operation and maintenance capacities at local level.

Donors, international/technical/implementing organisations are providing technical assistance to local staff, governmental bodies, utilities and industry associations to build both managerial and technical capacity at all levels, and identify and eliminate barriers to entry of RE technologies. Focus for technology transfer has shifted from hardware to soft skills based training to stakeholders, demonstration projects.

Highly controlled electricity sector. There are state monopolies that deter private sector investments in the sector.

Country governments have sought to promote investment in renewable energy technologies by reforming the electricity sector aimed at establishing independent power price regulation in order to facilitate cost recovery and attract private sector investment have been undertaken in some countries, including Fiji.

Technology

Technology for RE deployment is available however RE energy storage is a critical barrier in increasing the potential of renewable energy in these counties to 100%.
Organisations such as IRENA are involved in charting the roadmap to address the issue of energy storage in the seven countries to ramp up RE deployment to 100%. For instance in Cooks Island, Fiji, Solomon Islands and Vanuatu many possibilities have been identified for energy storage including developing small hydropower stations with small impoundments that could serve as pumped storage for solar.

Lessons learned

- Ready availability of finance and regional coordination is key: The ‘many partners, one team’ approach needs to be put into practice through increased coordination between development partners, donors, regional institutions, national authorities and universities.
- Importance of harmonised technical standards for implementation of renewable energy technologies: With most renewable energy projects in the PICs being supported through international development assistance, a wide range of technologies from different countries and differing specifications are being installed. This causes significant complications for operation and maintenance. An energy development initiative such as SIDS-DOCK could help to overcome such problems, provided funds are managed through the unified programme and not cut into many small projects with different decision makers.
- Clear assessment on the energy-water and land-use nexus is required: The spatial constraints of islands require that the energy, water and land-use nexus must be assessed carefully with stakeholder involvement in the planning process for successful large-scale deployment of renewable energy.
It is important to build investor confidence going beyond international development assistance: The current dominance of, and reliance on, international development assistance financing for renewable energy projects in the seven PICs limits the opportunities to enhance investor confidence through demonstration of the commercial attractiveness of existing projects.

An enabling environment is needed to attract the private sector: An enabling regulatory environment is needed to attract private sector investments in renewable energy deployment in the region.

Cultural adaptation is crucial: Cultural adaptation linked to property rights, and the capacity to demonstrate the advantages of adopting change, are important factors to successfully install new projects, which will foster favourable development for local populations.

Strengthen the collection and management of energy data: This will assist in the development of robust energy information to begin with. It is also important to undertake in-country feasibility studies of renewable energy potential, which varies across countries.

Make the transfer of soft skills a mandatory component of technology transfer: This will help in building capacity for renewable energy at various levels. Targeted training workshops to address specific needs should be undertaken.

Develop bankable renewable energy projects: In the PICs, the fact that virtually all renewable power projects were funded from grants or soft loans endangered the sustainability of the projects and at times proved detrimental to the development of the renewable energy sector. For renewable energy projects, it is critical that projects include a sustainable business model where investment costs are readily recuperated.

Participate in regional coordination networks and activities: For replication of these activities, countries must participate in the ‘many partners, one team’ approach taken up through increased coordination between development partners, donors, regional institutions, national authorities and universities.

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Website(s)
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References
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