

ACCELERATING SDG 7 ACHIEVEMENT

POLICY BRIEF 13 ACHIEVING SDG 7 IN SMALL ISLAND DEVELOPING STATES MID-TERM REVIEW OF THE SAMOA PATHWAY



POLICY BRIEF #13

ACHIEVING SDG 7 IN SMALL ISLAND DEVELOPING STATES—MID-TERM REVIEW OF THE SAMOA PATHWAY

Developed by

The Office of the High Representative for the Least Developed Countries, Landlocked Countries and Small Island Developing States

In collaboration with

United Nations Industrial Development Organization (UNIDO), the International Renewable Energy Agency (IRENA), the Rocky Mountain Institute, and Saint Lucia

Key Messages

Given the strong interdependence between climate, water, food and agriculture, poverty eradication, improving livelihoods, and access to sustainable energy, the issue of developing viable renewable energy resources coupled with genuine and durable partnerships remains a high priority for Small Island Developing States (SIDS).

In 2014, the international community gathered in Samoa for the Third International Conference on SIDS, which resulted in an intergovernmental agreed outcome document "SIDS Accelerated Modalities of Action (SAMOA) Pathway." One of the priority areas of the SAMOA Pathway is sustainable energy, recognising that dependence on imported fossil fuels has been a major source of economic vulnerability and a key challenge for SIDS. In September 2019, the General Assembly will convene a meeting to review progress in implementing the SAMOA Pathway.

The sustainable energy sector (renewable energy and energy efficiency) offers considerable potential for SIDS, as their dependence on fossil fuel imports leads to some of the highest electricity tariffs in the world, making them extremely vulnerable to fluctuating global energy prices and high transportation costs. SIDS have large potential to use renewable energy sources such as solar, wind, geothermal, hydropower, and tidal power, and to improve their generation, transmission, and demand side efficiency.

The deployment of sustainable energy technologies is considered an effective tool to raise productivity and competitiveness, energy security, energy access, and affordability, and to address the negative externalities of conventional energy systems (e.g., GHG emissions) in an integrated way. However, looking at the moderate growth rates of sustainable energy over the last years, the overall share remains low in a number of SIDS. Therefore, SDG 7 and SDG 13 cannot be attained by 2030 in business-as-usual scenarios.

Despite growing investments over the past decade, sustainable energy markets have not reached economies of scale in SIDS. The deployment of renewable energy and energy efficiency solutions remains hindered by a broad range of barriers and shortcomings related to inadequate policy and regulation: lack of fiscal and non-fiscal incentives; technical limitations; economic challenges; lack of access to affordable finance; limited human and institutional capacity; and inadequate infrastructure, research and development, and innovation frameworks.

SIDS have set ambitious targets to become less reliant on fossil fuels, and require support from international development partners and new partnerships to leverage investments and access new technologies to support their transition to renewable energy, while at the same time strengthening their energy security and resilience. There is a need for stronger regional and SIDS-SIDS cooperation. SIDS markets for sustainable energy products and services remain often small and fragmented. Regional cooperation coupled with harmonised standards and incentives can be important accelerators.

Improved access to affordable finance also remains critical for achieving SDG 7 in SIDS. This includes simplifying the procedures that SIDS need to go through to access climate finance and providing enhanced support for SIDS to navigate the complex climate finance system.

1. Small Island Developing States and the Midterm Review of the SAMOA Pathway

Small Island Developing States (SIDS) are a distinct group of 38 UN Member States and 20 Non-UN Members / Associate Members of regional commissions facing unique social, economic, and environmental vulnerabilities. The three geographical regions in which SIDS are located are the Caribbean, the Pacific, and the Atlantic, Indian Ocean and South China Sea (AIS).

In 2014, the international community gathered in Samoa for the Third International Conference on SIDS to forge a new pathway for the sustainable development of SIDS. The Conference resulted in an intergovernmental agreed outcome document "SIDS Accelerated Modalities of Action (SAMOA) Pathway." The SAMOA Pathway (A/CONF.223/3) reaffirmed that SIDS remain a special case for sustainable development, recognizing SIDS's ownership and leadership in overcoming these challenges. One of the priority areas of the SAMOA Pathway is sustainable energy acknowledging that dependence on imported fossil fuels has been a major source of economic vulnerability and a key challenge for small island developing states for many decades and that sustainable energy, including enhanced accessibility to modern energy services, energy efficiency, and use of economically viable and environmentally sound technology, plays a critical role in enabling the sustainable development of small island developing States.

300 multi-stakeholder partnerships were announced at the Conference in Samoa. More than 15 of these global SIDS partnerships focus on renewable energy and energy efficiency. For example, in line with the established SAMOA Pathway Partnership in 2014, The United Nations Industrial Development Organization (UNIDO) and the Small Island Sustainable Energy and Climate Resilience Organization (SIDS DOCK) established a network of regional sustainable energy centers for SIDS in Africa, Caribbean, Pacific, and Indian Ocean. The network is fully operational. The established centers are operating in the ownership of regional organizations (CARICOM, SPC, ECOWAS). The Caribbean Centre for Renewable Energy and Energy Efficiency Centre (CCREEE) is operating in Bridgetown, Barbados; the Pacific Centre for Renewable Energy and Energy and Energy Efficiency (ECREEE) in Nuku'alofa, Tonga; and the ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE) in Praia, Cabo Verde.

Furthermore, as a direct follow-up of Conference in Samoa, the SIDS Lighthouses initiative was launched at the United Nations Climate Summit in 2014. The initiative, facilitated by the International Renewable Energy Agency (IRENA), brings together SIDS and development partners in a framework for action to support SIDS' energy transformation. Another initiative, the Small Island Developing States Global Business Network (SIDS-GBN), launched by UN-OHRLLS and its partners, is an online platform and resource hub to share best practices in support of private sector partnerships for SIDS. Renewable energy is a cross-cutting themes of the SIDS-GBN, which provides an important bridge to enable closer private sector ties between the three SIDS regions, and also with the international business community.

On 27 September 2019, the General Assembly will convene a one-day high-level meeting to review progress made in addressing the priorities of SIDS through the implementation of the SAMOA Pathway. The Mid-Term Review of the SAMOA Pathway builds on the regional and inter-regional preparatory process as well as the Samoa Partnership Dialogue, that have taken place in 2018.

2. Achieving access to affordable, reliable, sustainable, and modern energy for all in SIDS

Small Island Developing States (SIDS) face additional geographic barriers to economic as well as sustainable energy development. SIDS generally rely heavily on imported fossil fuels for both transportation and electricity generation, while their remoteness poses logistical and financial challenges to trade. The disproportionate reliance on fossil fuels in SIDS renders them highly vulnerable to fluctuations in global

oil prices and directly results in these nations having some of the highest electricity tariffs in the world. This leads to higher costs of living for families and increases in the cost of doing business. Most SIDS rely on widespread use of fossil fuel based (e.g., diesel, heavy fuel) generators for electricity, and with small, dispersed populations, the grid does not always reach all inhabitants, particularly in rural areas. At the same time, SIDS have the potential to access several renewable energy sources, such as solar, wind, geothermal, hydropower, and tidal power, and have the potential to transition to renewable energy by adopting national renewable energy strategies, building the enabling environment, scaling up existing initiatives, establishing new partnerships, adopting new technologies, and gaining better access to financing. Moreover, many SIDS have vast opportunities to decrease their electricity peak demand by improving generation, transmission, and demand-side efficiency through the introduction of standards and labelling schemes (e.g., buildings, appliances, lighting, technical, and economic losses).

In 2017, the proportion of population with access to electricity in SIDS was 82 per cent, representing a small increase from 78 per cent in 2014. The disparities between urban and rural and remote areas remain wide and in 2017, 95 per cent of urban population had access compared to 61 per cent of rural population.

Many SIDS are working towards transitioning to more sustainable energy sectors, where improved energy efficiency and renewable energy play an increasing role. In 2016, 17.6 per cent of the electricity in SIDS was derived from renewable sources. However, a large part of this is still from hydropower and to an even greater extent the traditional use of solid biofuels (mainly for cooking). Since the adoption of the SAMOA Pathway, many SIDS have made moderate progress in renewable energy uptake. The SIDS Lighthouses initiative tracks data on renewable energy for 36 SIDS partners. According to this data, SIDS have installed 280 MW of solar PV and 59 MW of wind between 2014 and 2017. The total installed capacity of renewable energy sources in the power sector (bioenergy, geothermal, solar, wind, and hydropower) increased form 2409 MW in 2014 to 2775 MW in 2017. However, renewables still only account for approximately 10 per cent of total installed capacity in the power sectors of SIDS partners of the initiative and most of their potential remains untapped. Further efforts are therefore required to accelerate the energy transformation in SIDS.

SDG 7 also aims to ensure access to affordable energy for all. Nevertheless, average electricity rates in SIDS still tend to be costly and therefore represent the highest electricity tariffs in the world. More specifically, referring to data from 2018, the average electricity rates of Solomon Islands, Vanuatu, and Cook Islands respectively are 0.99 US\$/kWh, 0.60 US\$/kWh, and 0.50 US\$/kWh. This in contrast to countries such as Germany, the United States, and India, representing electricity rates of 0.33 US\$/kWh, 0.13 US\$/kWh, and 0.08 US\$/kWh in average. High electricity rates in SIDS negatively impact electricity access and hinder socio-economic development.

3. Island ambition to become frontrunners in the renewable energy uptake

Many SIDS are emerging as frontrunners in the pursuit of renewables-based energy systems building on the abundant local and natural resources. Mini-grid and off-grid solutions provide new opportunities to SIDS, given that their populations are spread across tens of thousands of islands. Also, the declining cost of renewable energy and energy efficiency technologies has opened the door for new opportunities to switch to clean energy.

Several SIDS have included in their national plans ambitious targets on increasing the share of renewable energy in their power mix. Additionally, many of them have also set ambitious targets in their Nationally Determined Contributions (NDCs) under the Paris Agreement. For example, Samoa set a conditional target of achieving 100 per cent renewable electricity generation by 2025, through 12 MW of bioenergy, 6 MW of grid-connected solar PV, 3.5 MW of hydropower, and 0.55 MW of wind. Samoa has made noteworthy progress towards meeting this target and when completed, Samoa targets to save about 36 million liters of diesel per year.

To accelerate the progress in achieving SDG 7 in SIDS, the SAMOA Pathway underlines the importance to support actions facilitating access to existing financing mechanisms to increase capital flows for the

implementation of sustainable energy projects in Small Island Developing States for renewable energy and energy efficiency; enhancing international cooperation and cooperation among Small Island Developing States for research and technological development; and for the implementation of appropriate renewable energy, energy-efficient, and environmentally sound technologies for Small Island Developing States, and supporting investment in initiatives by and for Small Island Developing States.

SIDS Dock, SIDS Lighthouses Initiative facilitated by IRENA, and Rocky Mountain Institute's Islands Energy Program have provided valuable support to SIDS in renewable energy uptake. This uptake can be expanded even further by pursuing a few key steps:

- Achieving alignment among national governments and electric utilities in SIDS around a shared vision for the country's energy sector;
- Preparing and updating analytical, long-term plans, such as an Integrated Resource Plan, to identify the optimal energy mix and project portfolios that will achieve the shared vision;
- Improving access to affordable finance and increasing human and institutional capacities; and
- Before projects can be pursued, adequate preparation must be completed to de-risk future projects to enhance their commercial viability. This is in addition to pursuing the required regulatory reform to ensure that any projects developed will ultimately benefit the general population in SIDS.

Pursuing these key steps will greatly enhance the ability of SIDS to achieve SDG 7. Nonetheless, they still face a number of challenges in accessing investment to meet this vital sustainable development goal. The climate finance landscape remains complex and fragmented, placing a considerable burden on SIDS as it relates to their ability to navigate climate financing options and arrangements and to make effective use of available funds. Particular obstacles also include high transaction costs for accessing resources and changing criteria for eligibility, access, implementation, monitoring, and reporting. International Financial Institutions (IFIs) also tend to prefer larger projects over smaller or medium sized, which places SIDS in a disadvantaged position.

Moreover, in a number of SIDS the inability of the domestic private sector to supply sustainable energy quality products and services under competitive prices has become a bottleneck for the uptake of sustainable energy markets. The domestic manufacturing and servicing sector remains weakly developed and growing demand remains underserved by international suppliers and supply chains due to high market entry costs and risks. Moreover, policies and technology transfer programs tend to focus on creating demand for sustainable energy products and services and tend to ignore supplier-oriented actions focused on strengthening domestic innovation systems, productive capacities and entrepreneurship.

Such trends raise concerns regarding the inclusiveness of technology transfer processes. This offers opportunities, but also bears the risk that the local value and job creation effects of such investments remain low and are not sustained in the long-run. Particularly in SIDS even basic equipment and services (e.g., consulting, energy auditing, installation, and maintenance) continue to be imported. The absence of domestic suppliers and service providers questions the long-term sustainability of already undertaken renewable energy investments in various SIDS. The lack of domestic R&D and entrepreneurship hinders the commercialisation of sustainable energy and climate technology (SECT) solutions adapted to the realities of SIDS.

4. Linkages between sustainable energy in SIDS and SDGs to be reviewed in High-Level Political Forum 2019—focus on SDG 13 climate change

Among the sustainable development goals to be reviewed in depth during the 2019 High Level Political Forum is SDG 13: Take urgent action to combat climate change and its impacts. Although SIDS are among

the least responsible for climate change, they are at the forefront of its devasting impacts. For SIDS, climate and energy are inextricably linked. On one hand, the energy sector is the largest contributor to global greenhouse gas emissions, which in turn have contributed to increasing global temperatures and many adverse effects in SIDS. On the other hand, exploitation of the abundant natural renewable energy resources in SIDS can contribute to enhancing energy security and build their resilience, as well as to the achievement of SDGs 7 and 13 and overall sustainable development. It is critically important to look at the energy climate nexus therefore, with a view to exploring integrated approaches to policy development across relevant sectors.

According to the IPCC "Special Report 2018," temperature rise to date has already resulted in profound alterations to human and natural systems, including increases in droughts, floods, and some other types of extreme weather; sea level rise; and biodiversity loss. It is noted that these changes are causing unprecedented risks to vulnerable persons and populations, small islands among them. Recognising the existing and potential impact of these unprecedented risks, SIDS have continually taken the lead in climate action, with early ratification of the Paris Agreement and active engagement in the NDC process. SIDS have championed mitigation measures in their countries, with highly ambitious NDCs with the deployment of about six GW of renewables envisaged.

Ambitious renewable energy targets have been set by SIDS, as a means of minimizing dependency on fossil fuel consumption, while at the same time utilizing their significant energy resources toward sustainable economic growth. Recognising SIDS vast ocean spaces, marine energy, including advances in renewable offshore technologies, have the potential to provide clean energy to SIDS in the future. For SIDS, harnessing local resources such as solar, hydro, wind, and geothermal also has the potential to enhance resilience to the adverse impacts of climate change, including extreme weather events, such as hurricanes. Greater resilience is achieved by developing these resources in a distributed manner to reduce the vulnerability of the electricity system to failures that occur at single points on the grid (single point failures). Benefits are also achieved through increased diversification of the power supply and improved energy access, which lowers the risk of a single resource having an adverse impact on the supply of energy. There is therefore room for further exploration of the possible synergies in policy development in SIDS in the areas of climate and sustainable energy. More coordination on these issues could help SIDS achieve their commitments under the Paris Agreement, as well as the accelerated implementation of the SAMOA Pathway and the SDGs.

5. Making progress: regional experiences and sustainable energy success stories

By looking at the moderate growth rates of sustainable energy and climate technology markets in many SIDS, it becomes obvious that SDG 7 and SDG 13 cannot be attained by 2030 in business-as-usual scenarios. There is need for economies of scale and speed. Regional cooperation and integrated regional markets following harmonised standards and incentives can be important accelerators.

The establishment of a network of regional sustainable energy centers for SIDS in Africa, the Caribbean, the Pacific and the Indian Ocean at the UN Third International Conference on SIDS in Samoa in 2014, was a step towards this direction. The Caribbean Centre for Renewable Energy and Energy Efficiency Centre (CCREEE), the Pacific Centre for Renewable Energy and Energy Efficiency (PCREEE), and the ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE) aim to accelerate the energy and climate transformation by creating economies of scales, equal progress, and spill-over effects between countries. Through cross-border approaches and methodologies, the centres complement and accelerate national efforts in the areas of policy and regulation, capacity development, knowledge management, awareness raising, as well as the promotion of investment, innovation, and entrepreneurship. The centres serve as a hub for all kind of domestic and international partnerships. Under the Global Network of Regional Sustainable Energy Centers (GN-SEC) platform, the centers cooperate on common island energy issues and adapted solutions.

Over the last 5 years, numerous SIDS have taken steps to increase their uptake of sustainable energy

through national level integrated energy plans, as well as pilot and large-scale projects that build off those plans. Two leading examples include Saint Lucia, and Saint Vincent and the Grenadines. In 2016, non-profit organization Rocky Mountain Institute (RMI) partnered with the Government of Saint Lucia and the electric utility, Saint Lucia Electricity Services Limited (LUCELEC), to develop the country's National Energy Transition Strategy (NETS)—a roadmap that outlines how the electricity needs of Saint Lucia will be met over time while transitioning to renewables and at the same time improving grid reliability, reducing system costs, and increasing energy independence for the country. The NETS identified least-cost energy mix to be pursued to advance the sustainable energy goals of Saint Lucia. This led to the development of a 3 MW solar PV project completed in 2018, representing the island's first utility scale renewable energy project, which was secured at the lowest solar PV price point in the Eastern Caribbean to date. Following this project, the lessons learned and expertise gained proved instrumental in stimulating further clean energy projects in Saint Lucia in collaboration with other partners, including a 10 MW solar PV project, a 12 MW wind project, and a utility scale battery energy storage project, which are all either under development or are undergoing a tender process to select the vendor.

In Saint Vincent and the Grenadines, RMI's collaboration with the Government of the Saint Vincent and the Grenadines, and the local utility Saint Vincent Electricity Services Limited (VINLEC) led to the creation of the 2017 Saint Vincent and the Grenadines National Electricity Transition Strategy (NETS). The document outlined the most cost-effective pathways and clean energy projects for achieving a sustainable energy transition over a 25-year period. Following this, the country pursued plans for a 5 MWh battery storage project—the first energy storage project on the island. Additionally, the Grenadines islands are transitioning away from diesel and towards renewable energy, particularly on the island of Mayreau and Union Island, where microgrids consisting of high penetration solar PV and battery storage were recently commissioned. Combined with the development of a 500 kW solar PV facility near the international airport and the future construction of a 10 MW geothermal plant, Saint Vincent and the Grenadines is well on its way to almost completely reducing its dependence on imported fossil fuels and relying primarily on renewable resources for electricity.

SIDS Lighthouses initiative provides a best practice of a global level partnership. Over the last five years, SIDS partners have gained access to (1) policy, regulatory and technical advisory services for renewable energy roadmaps, assessments and grid stability analyses, as well as project planning, identification, structuring and execution; (2) capacity building for local policy makers, utilities, private sector, financing institutions and other relevant actors; (3) funding for early-stage transactions and project finance, aiming to attract private investments in renewable energy projects; and (4) a platform to share information, knowledge, lessons learned, and good practices.

The initial targets of SIDS Lighthouse for capacity installation by 2020 (i.e., 100 MW of new solar and 20 MW of new wind power) have been exceeded three years ahead of schedule. Taking into consideration the commitments of SIDS and the evolution of their energy context, new priority areas were endorsed in September 2018, and the next phase of the Initiative was launched.

6. Scaling-up progress in the next 5 years

While significant strides have been made in SIDS to advance their sustainable energy development, there is still a need to create and implement action-oriented policy that can spur further advancements. There are 3 key areas where recommendations are of greatest need and benefit for SIDS over the next 5 years:

- sustainable energy regulatory reform;
- organic and local stimulation of sustainable energy initiatives; and
- use of cleaner energy sources in end-use sectors.

In many SIDS, electricity is generated through a standard and common approach—an electric utility and/or

independent power producers (IPPs) generate electricity often through centralized means from large power plants using fossil fuels or first-generation renewables such as hydropower to benefit from economies of scale. The reduction in the cost of renewable energy technologies such as solar PV and wind, as well as the introduction of implementation tools to make energy efficiency more viable, have disrupted the standard model for electricity generation. However, the policies and regulations which govern the generation of electricity have not fully adapted to the changing landscape in many SIDS. As a result, the use of newer, cleaner, and more cost-effective technologies may not be fully realized in SIDS due to expensive import duties on certain materials, and regulations which stymie the use of microgrids and other forms of distributed energy resources (DERs). It is therefore recommended that regulatory reform should be pursued with the aim of identifying the most cost-effective and beneficial ways of delivering electricity to consumers and advancing policies which enable this. Policy reform by key stakeholders could take shape at many levels: At the highest level, governments can develop legislation to remove import duties or taxes on materials used for the advancement of sustainable energy-solar panels, energy efficient light bulbs, batteries for energy storage, and inverters, among others. Additionally, concurrent legislation can be passed to expand the ability to generate electricity to entities other than utilities or IPPs, while changing the incentive structures for most utilities away from depending on electricity sales for revenue, and towards revenue earned based on other objectives such as reliability performance or renewable energy targets hit. The incentivization of energy efficiency through legislation can also be done, as this is often the cheapest and most effective method for managing electricity use in the energy sector.

Even if policies and regulations are enacted to encourage sustainable energy development in SIDS, there may still be a need to stimulate this growth at the local level. In many developing countries, projects focused on renewable energy, energy efficiency, and energy access are often implemented through external organizations which possess the expertise for these projects. Such initiatives are excellent for pilot projects and initial undertakings of complicated ventures, however involvement at the local level can ensure that sustainable energy development matures in SIDS. This could first be done by developing hubs for knowledge sharing of sustainable energy through platforms that are easily accessible by locals. One current example of this is the CARILEC Renewable Energy Community (CAREC), which brings together over 1,000 energy professionals and stakeholders representing over 50 countries from the Caribbean, Indian Ocean, and Pacific-including several continental countries, in an online platform, where they are able to share and learn about energy development best practices across various countries, and both share and increase their knowledge on relevant topics though webinars, podcasts, trainings and conferences. Most importantly, CAREC facilitates South-South exchange, which enables SIDS to learn from each otherresulting in less reliance on external consultants. Developing such platforms at the local level in SIDS will help to stimulate interest in sustainable energy and encourage innovation and creativity around sustainable energy technologies and concepts that can be used in SIDS.

Provided that sustainable energy advancements lead to high penetrations of renewable energy and energy efficiency, as well as increased energy access, benefits in other sectors can be more fully realized. In many SIDS, the transport sector is one of the most polluting sectors, with most transport types dependent on some form of fossil fuel. The pathway to improving this outcome involves a few steps. Firstly, relevant studies should be carried out to establish the extent of vehicle use, health and emissions impact, and uptake of electric vehicles (EVs) in respective SIDS. Once this is completed, the applicability of electric vehicles can be tested through pilot projects for organized groups such as those involved with public transportation, government vehicle fleets, or utility vehicle fleets. This should help to determine the key stress points for the integration of EVs as well as the infrastructure requirements. Once piloted and deemed ready for large-scale implementation, policies can be put in place to incentivize the use of EVs while not disadvantaging undeserved groups in SIDS. Some policy examples include rebates for electric vehicles and reducing time of use rates to encourage charging of EVs at times that support rather than cause stress to the electricity grid. The potential results of such a move could lead to drastic reductions in local emissions, and potentially greater uptake of more efficient forms of transport, either through the use of public transport, or electric

vehicles themselves.

These elements will be vital for making progress in the remaining 5 years of the Samoa Pathway. However, SIDS will also require support from international development partners and new partnerships to leverage investments and access to new technologies to support their transition to renewable energy and at the same time build resilience of SIDS. Also increased support to access climate finance will be critical in scaling-up the progress.

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