SIDS
LIGHTHOUSES

ACCELERATING THE ENERGY TRANSITION ON ISLANDS

Launched at the 2014 Climate Summit, the Small Island Developing States (SIDS) Lighthouses Initiative provides a global framework for the energy transition on islands. It moves away from developing projects in isolation to a holistic approach that considers all relevant elements, from policy and market frameworks, to technology options and capacity building.

By 2020, the initiative aims to:

• Mobilise USD 500 million for the island energy transformation;

• Deploy 100 megawatts (MW) of new solar photovoltaic (PV) power capacity;

• Deploy 20 MW of new wind power;

• Deploy significant quantities of small hydropower and geothermal energy, along with getting several ocean energy projects underway; and

• Ensure all participating SIDS develop renewable energy roadmaps.

The initiative facilitates co-ordinated support for islands to transform their predominantly fossil-based power systems to renewable energy. It achieves this through partnerships with public, private, intergovernmental and non-governmental organisations.

For more information: www.irena.org/islands

SIDS Total Installed Capacity of Renewable Energy Sources
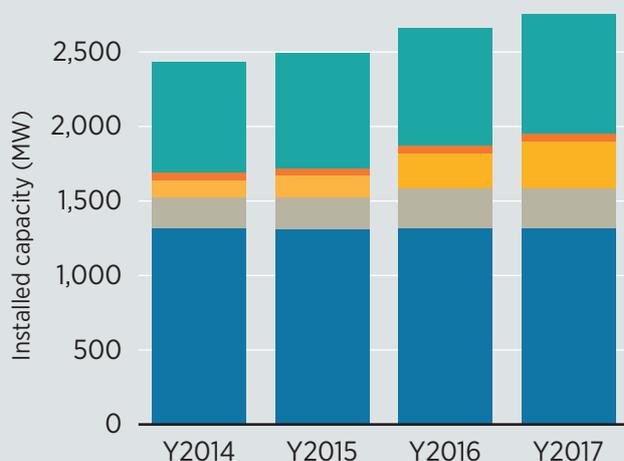
New Cumulative Renewable Energy Installations (Starting Year 2014)
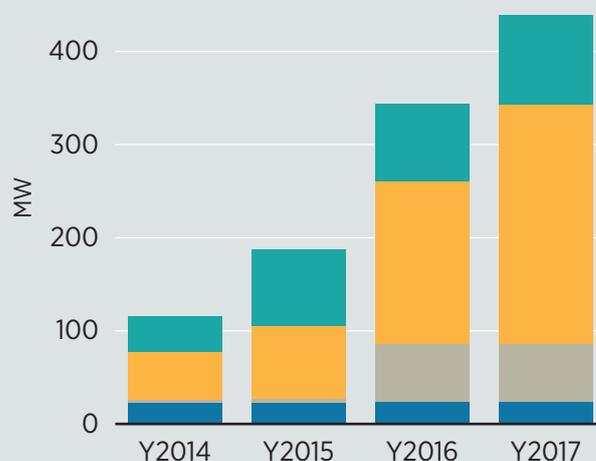
Source: SIDS Installed Capacity - IRENA Resource Database

New Renewable Energy Installations by Technology (2014 - 2017)

MW

250
200
150
100
50
0

Hydro Wind Bioenergy Solar
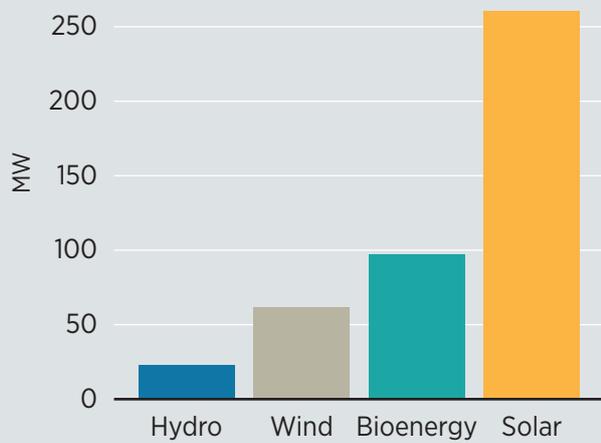
Technology

● Bioenergy
● Geothermal
● Solar
● Wind
● Hydropower

The infographic illustrates progress made by partners of the SIDS Lighthouses initiative based on data compiled by IRENA.

Installed Capacity Data Source

RESOURCE
YOUR SOURCE FOR RENEWABLE ENERGY INFORMATION

SMALL ISLAND DEVELOPING STATES IN THE LIGHTHOUSES INITIATIVE

Groupings

- Atlantic, Indian Ocean, Mediterranean and South China Sea islands
- Caribbean islands
- Pacific islands

SIDS partners:

Antigua and Barbuda, Aruba, Bahamas, Barbados, Belize, British Virgin Islands, Cabo Verde, Comoros, Cook Islands, Cuba, Dominican Republic, Micronesia (Federated States of), Fiji, Grenada, Guyana, Kiribati, Maldives, Marshall Islands, Mauritius, Montserrat, Nauru, New Caledonia, Niue, Palau, Papua New Guinea, Saint Lucia, Saint Vincent and the Grenadines, Samoa, Sao Tome and Principe, Seychelles, Solomon Islands, Tonga, Trinidad and Tobago, Turks and Caicos, Tuvalu, Vanuatu
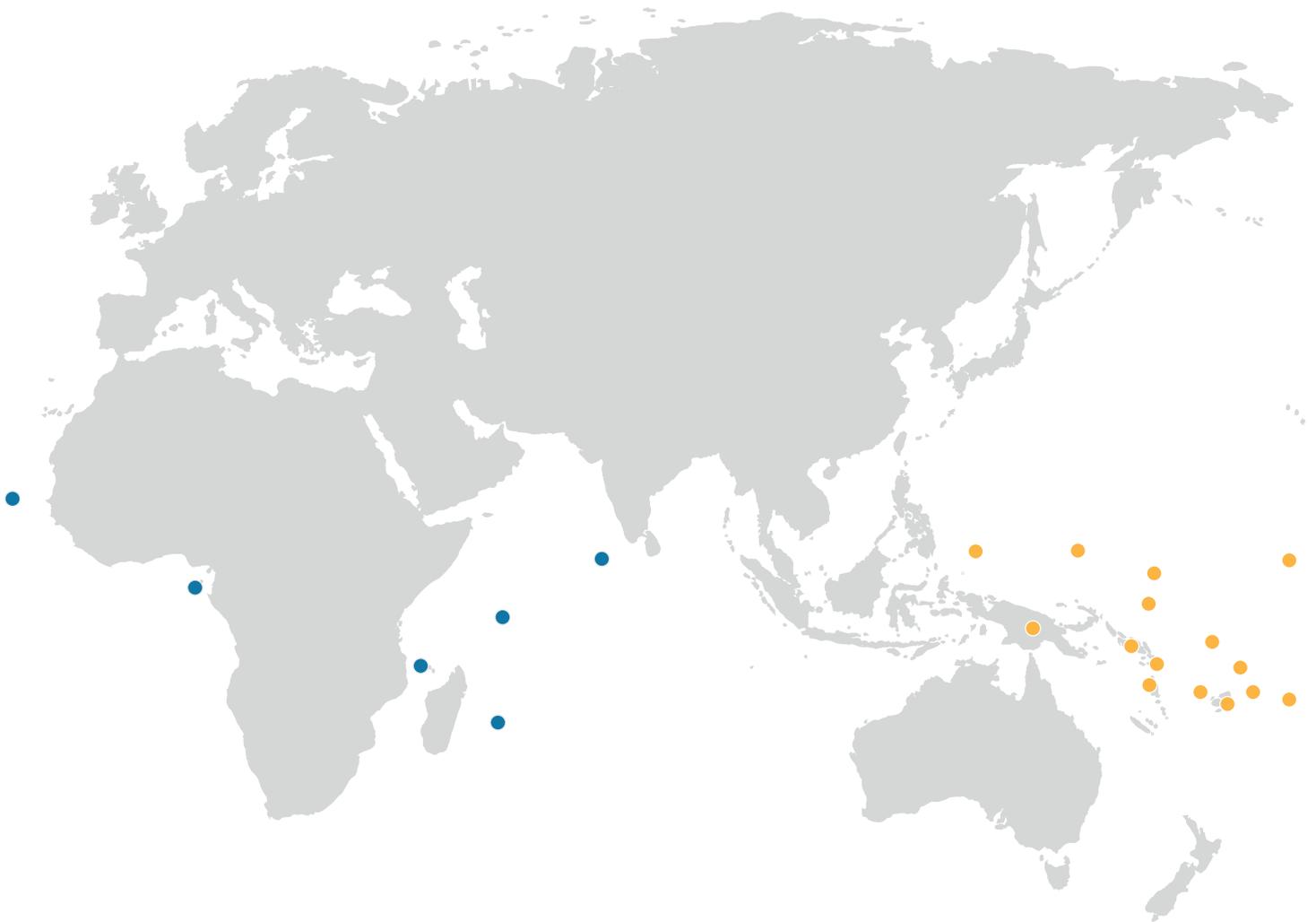
Other partners:

European Union, France, Germany, Italy, Japan, New Zealand, Kingdom of Norway, United Arab Emirates, United States of America, Indian Ocean Commission, International Renewable Energy Agency (IRENA), Association of the Overseas Countries and Territories of the European Union, United Nations Development Programme, World Bank, Enel, Clean Energy Solutions Center, Clinton Climate Initiative, Rocky Mountain Institute—Carbon War Room, Sustainable Energy for All (SEforALL), Organisation of Eastern Caribbean States (OECS), Solar Head of State.

JOINING SIDS LIGHTHOUSES

The SIDS Lighthouses Initiative is an inclusive and neutral multi-stakeholder platform that brings together public, private, intergovernmental, and non-governmental actors that share a common vision of accelerating the deployment of renewable energy on islands.

For more information: www.irena.org/islands

AIMS OF THE INITIATIVE

The SIDS Lighthouses Initiative supports governments in transforming the energy sector by scaling up renewables. The initiative brings together stakeholders to identify holistic solutions to accelerate renewable energy deployment in SIDS.

The initiative, through co-operation with partners, aims to assist SIDS through:

• Development of effective energy policy, regulatory and institutional frameworks;

• Facilitation of knowledge-sharing and co-operation between SIDS and other partners;

• Identifying suitable technologies to maximise deployment and supporting the integration of variable renewable energy into the grid;

• Project facilitation, helping project developers to secure financing more efficiently and supporting investors and lenders in building stronger project portfolios;

• Meaningful tracking of progress towards renewable energy targets.

Partners also benefit from integrated support via IRENA tools and platforms such as the Global Atlas, the Project Navigator and the Sustainable Energy Marketplace.

PRIORITY ACTION AREAS

Based on the outcomes of the UN Secretary General's Climate Summit in New York in 2014, the SIDS Lighthouses Action Plan provides the framework for action for SIDS and partners. The plan identifies seven key actions to promote renewable energy solutions for SIDS:

Action 1 - Institutional Frameworks

- Provide government leadership and political support for the accelerated transition to renewable energy

- Set policy priorities for islands, including access to modern energy services, lower electricity tariffs, lower oil import dependency, and job creation

- Ensure institutional co-ordination of transition planning and implementation

Action 2 - Knowledge Base

- Create a repository of best practices to facilitate an effective and coherent strategy for the successful deployment of renewables

- Increase the understanding of appropriate technology options for island conditions

- Assess grid stability and the integration of higher shares of renewables

- Develop a strategy for timely and accurate statistical data collection and estimation, including metrics for tracking progress towards renewable energy targets

Action 3 - Transition Planning

- Develop a clear transition plan that involves market design, grid access, and enables legal and regulatory frameworks

- Adopt and enforce quality standards and develop appropriate national quality infrastructure

- Harmonise regional quality standards to facilitate market access and create economies of scale

- Create sustainable business plans for deployment, operation and maintenance

Action 4 - Financing

- Design and implement energy roadmaps, such as a framework for funding priorities

- identify a business model that ensures long-term sustainability, where revenues enable re-investment

- Form project clusters to reach a scale that reduces transaction costs and fosters investment

- Develop bankable project proposals that meet the quality criteria of leading international financial institutions

Action 5 - Renewable Energy Deployment and Operation

- Set developer and technology selection criteria

- Establish local contractor and project management capability

- Create sustainable business plans that allow for re-investment

- Plan for operation and maintenance

Action 6 - Human Capacity Building

- Strengthen human and institutional capacity for energy transition planning and management, particularly in ministries and utilities

- Build the capacity to operate and maintain equipment

- Develop such project proposals and conduct effective tender process

Action 7 - Regional and International Co-operation

- Strengthen regional co-operation of power utility associations, energy organisations and academia

- Increase regional and international co-ordination in target areas, such as standardisation and quality control
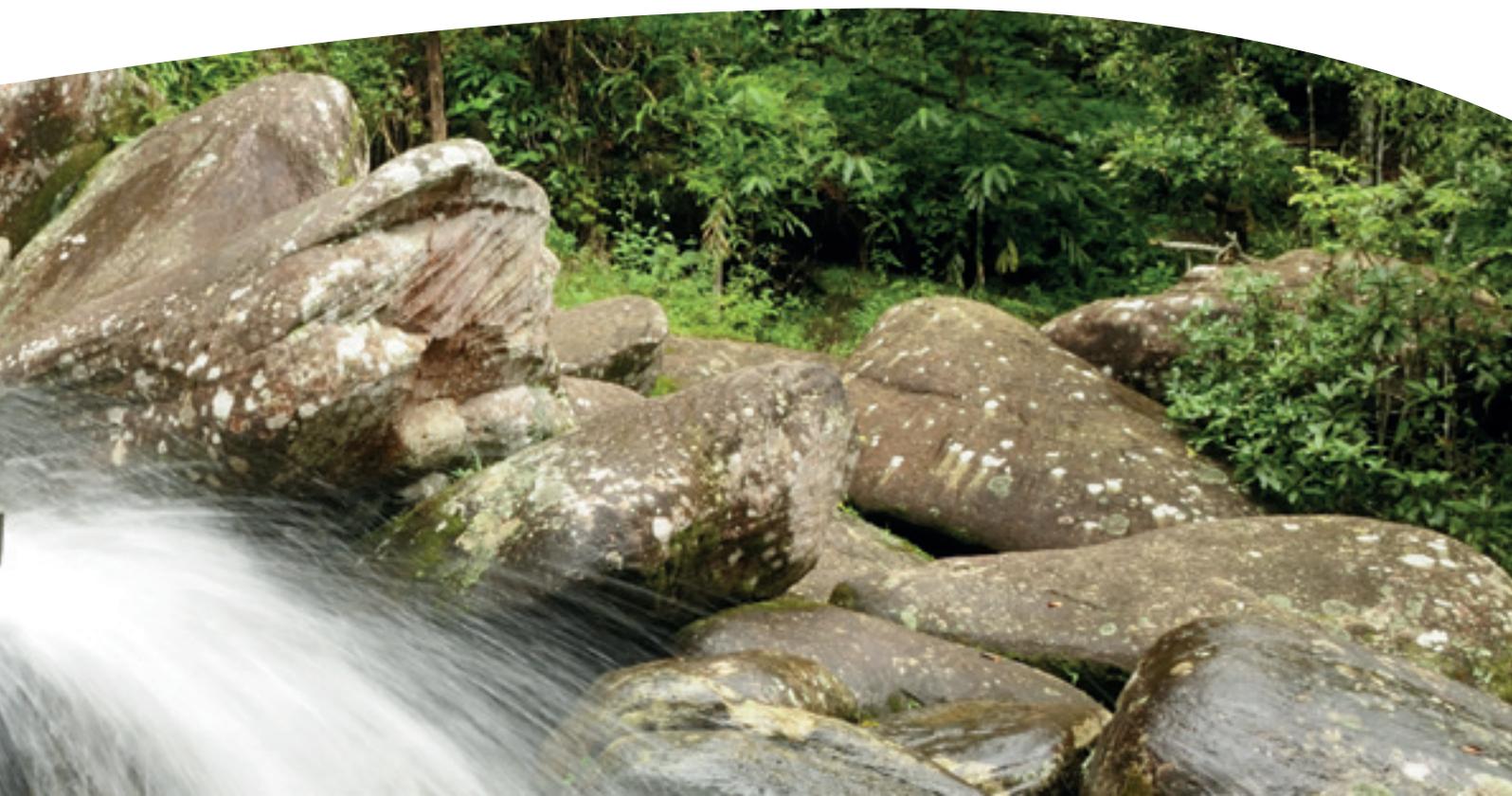
IRENA TOOLS FOR SIDS LIGHTHOUSES PARTNERS

Renewables Readiness Assessment

The Renewables Readiness Assessment (RRA) is a country-led, comprehensive tool for holistic evaluations and recommendations for action to accelerate renewable energy deployment.

RENEWABLES READINESS ASSESSMENT

Sustainable Energy Marketplace

The Sustainable Energy Marketplace is a virtual platform that gathers project developers, financiers, service and technology suppliers to work together to realise projects related to renewable energy. The Marketplace provides visibility to projects and facilitates investment opportunities.

SUSTAINABLE ENERGY MARKETPLACE

IRENA Project Navigator

The IRENA Project Navigator is an online platform providing comprehensive, easily accessible, and practical information, tools and guidance to assist in the development of bankable renewable energy projects. The Project Navigator has introduced a component to assist project developers in Small Island Developing States (SIDS). Within this islands module, the Project Navigator will help islands assess and address project development issues, in order to enable stronger, economically sustainable development and smart integration of renewables.

IRENA PROJECT NAVIGATOR

IRENA/ADFD Project Facility

IRENA and the Abu Dhabi Fund for Development (ADFD) have collaborated to create a joint Project Facility to finance transformative and replicable renewable energy projects in developing countries. The facility involves IRENA selecting and recommending promising renewable energy projects in developing countries. ADFD offers concessional loan to projects ranging between USD 5 million and USD 15 million, with the loan amount for each project not exceeding half of the estimated project cost. ADFD is providing USD 350 million over seven annual cycles. Applications for each new cycle commence in November.

IRENA ADFD
Supporting Energy Transition

Global Atlas

The Global Atlas for Renewable Energy is a free online resource-assessment tool with maps on solar, wind, ocean and bioenergy resources. It also facilitates a first screening of sites and areas for renewable energy investment opportunities.

Global Atlas FOR RENEWABLE ENERGY

IRENA ACTIVITIES WITH ISLANDS

National energy roadmaps

IRENA actively supports islands in their transition to a renewable energy future through the development of national energy roadmaps. These roadmaps provide clear pathways covering the technical, economic and policy elements that enable the large-scale, sustainable deployment of renewables.

Roadmaps are a result of co-operation between IRENA, national governments and key stakeholders. They feature analysis detailing transformation of current energy usage to least-cost energy systems with a significant contribution from renewables.

Roadmap analysis is centred on identifying renewable energy options for power generation. The analysis can also examine the potential for renewables in heating, cooling and transportation sectors.

Grid integration studies

IRENA's grid integration work supports policymakers and public utilities from Small Island Developing States address and overcome technical constraints associated with the operation of electricity grids with high shares of variable renewables, such as solar and wind energy.

The work focuses on:

- Analysis of grid stability and grid operation for the integration of higher shares of renewable energy, particularly upon request from IRENA Member States;

- Development of grid integration assessment methodologies as the basis for IRENA country support;

- Provision of access to software tools, models and guides for grid integration studies, with a focus on small isolated systems;

- Training and technical workshops on grid operation and expansion planning for small isolated systems hosting high shares of renewable energy resources.

Site appraisal programme

IRENA's site appraisals simulate the financial viability of a wind or solar project at a specific site. The wind or solar resource potential and the possible costs, financing and revenue associated with the specific site are assessed. The appraisal generates scenarios of financial performance based on the confidence determined in the resource data or the power purchase agreement model. It uses hourly high-resolution wind and solar time series datasets within an IRENA custom-built model and can be applied to any location worldwide.

SIDS Lighthouses Initiative partners can apply for site appraisals.

Quickscans

The quickscan process allows islands to quickly assess their readiness to deploy renewable energy in the power sector. The quickscan is a government-led process, supported by analysis from IRENA or other partners of the initiative. The core of quickscan is a targeted question-naire covering seven elements that are critical to a successful transition to renewable energy.

About IRENA

The International Renewable Energy Agency (IRENA) is an intergovernmental organisation that supports countries in their transition to a sustainable energy future, and serves as the principal platform for international cooperation, a centre of excellence and a repository of policy, technology, resource and financial knowledge on renewable energy. IRENA promotes the widespread adoption and sustainable use of all forms of renewable energy, including bioenergy, geothermal, hydropower, ocean, solar and wind energy in the pursuit of sustainable development, energy access, energy security and low-carbon economic growth and prosperity.