

SIDS Lighthouses Initiative

Progress and way forward

3 June 2015, Bonn

SIDS Lighthouses Initiative overview

Launched on 23 September 2014 at the Climate Summit

STRATEGIC OBJECTIVE:

- Enabling a sustainable energy transformation for people on the front line of climate change on small islands around the world
- Enhancing energy independence and economic prosperity on SIDS

MAIN ELEMENTS:

- Information Exchange
- Capacity Building
- System Transitions

TARGETS by 2020:

- USD 500 mil mobilized
- 100 MW of new solar PV
- 20 MW of new wind
- Significant quantities of other RE technologies
- All participating SIDS have RE roadmaps

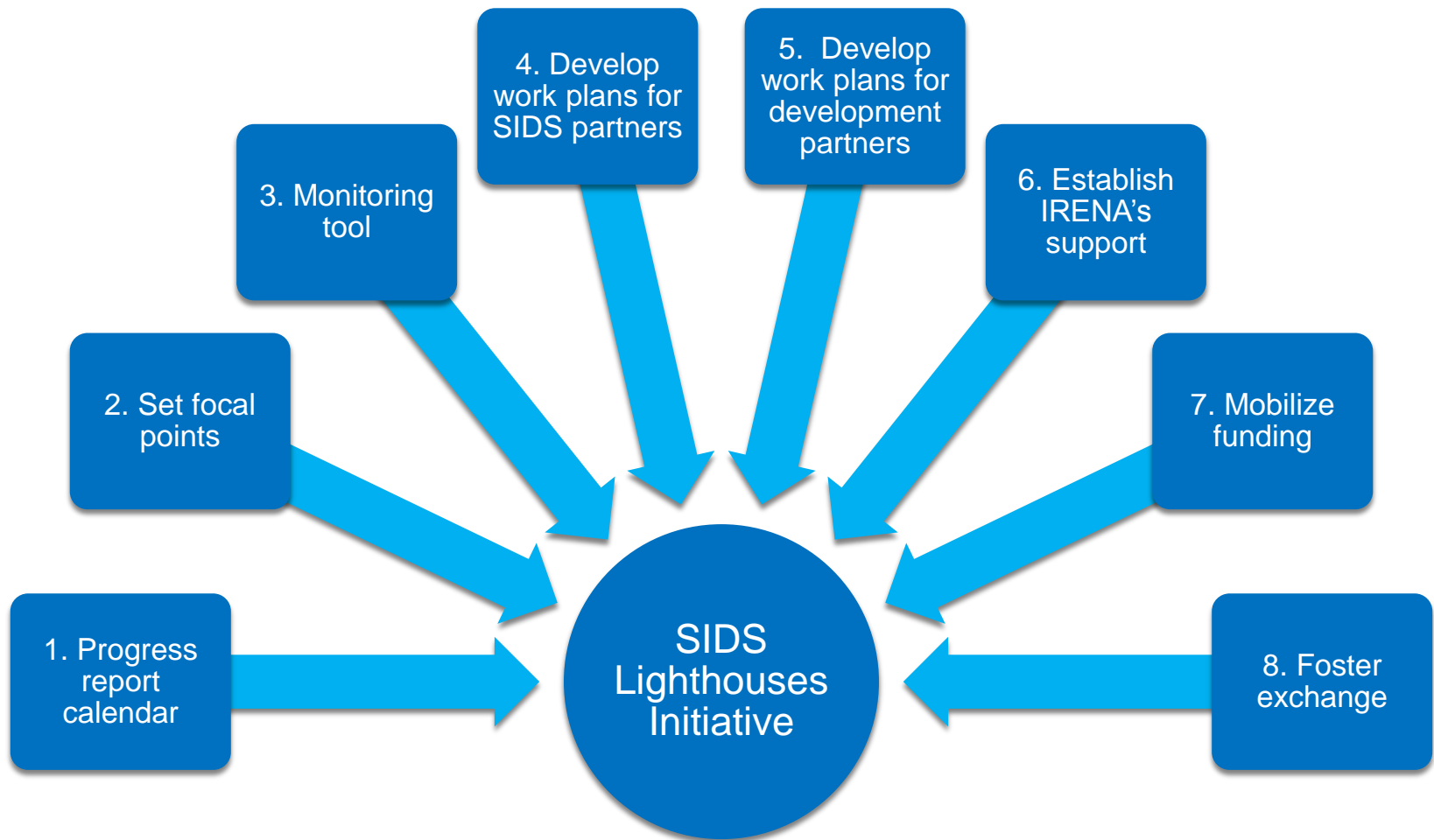


Lighthouses status

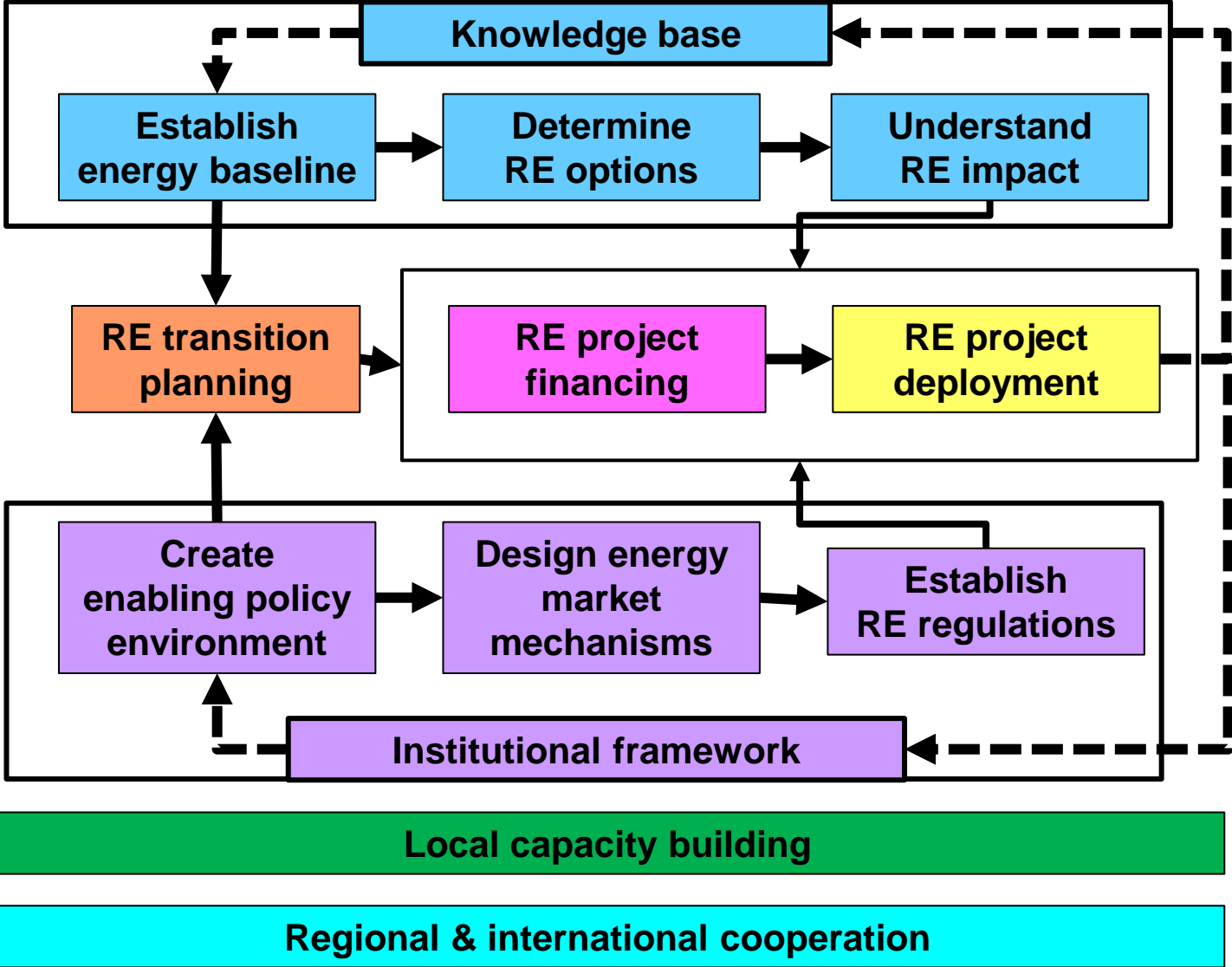


- **26 SIDS and 18 development partners**
- Antigua & Barbuda, Aruba, Bahamas, Barbados, Cape Verde, Cook Islands, Federated States of Micronesia, Fiji, Grenada, Guyana, Kiribati, Maldives, Republic of the Marshall Islands, Mauritius, Nauru, Niue, Palau, Saint Vincent & the Grenadines, Samoa, Sao Tome and Principe, Seychelles, Solomon Islands, Tonga, Trinidad and Tobago, Tuvalu, Vanuatu
- ENEL, New Zealand, European Union, Norway, France, SE4ALL, Germany, United Arab Emirates, Indian Ocean Commission, United States of America, IRENA, UNDP, Japan, World Bank Group, Carbon War Room, Rocky Mountain Institute, Clinton Climate Initiative

Lighthouses key steps



Lighthouses process



Progress since Climate Summit

German VC

- Lighthouses facilitation team
- Assessment of existing financing gaps
- Project development facilitation
- Financing for pre-feasibility studies
- Island navigator module

Norwegian VC

- Grid assessments
- RRA and roadmaps
- Caribbean lighthouses: coordinator and workshops



RE for tourism event ITB Berlin 4 March 2015 with the Government of Germany

Martinique event June 2015 with the Government of France

- Focus RE resource assessment (wind, marine and geothermal)
- RE desalination, biomass and waste-to-energy systems

Honolulu event in July 2015 with the Government of the United States of America and SPC

Bangkok event with the Government of Japan

Aruba, Barbados, Carbon War Room, Clinton Climate Initiative and Rocky Mountain Institute joined

COP 21 in Paris, France, 30 November – 11 December 2015

IRENA co-organizing RE day with the French Syndicate of Renewable Energy (SER)

- Under preparation
- Possible additional partners

Lighthouses progress will be showcased

- At least three islands with tangible results (new projects)
- Project financing facilitation



Objective:

- Assess the current situation in terms of enabling conditions for RE deployment
- Gather available information and identify information gaps
- Identify priority areas for action
- Involve government and private sector players

Approach: desktop review, phone interview plus 2-day visit when necessary

Quickscans progress

- Finalized the methodology
- Ran for Mauritius, Bahamas, Kiribati, Tonga, Samoa, New Caledonia and Fiji
- Ongoing for Barbados, Cook Islands, FSM, Nauru Palau, RMI, Solomon Islands, Tuvalu and Vanuatu.
- Requested by Belize and St. Kitts and Nevis

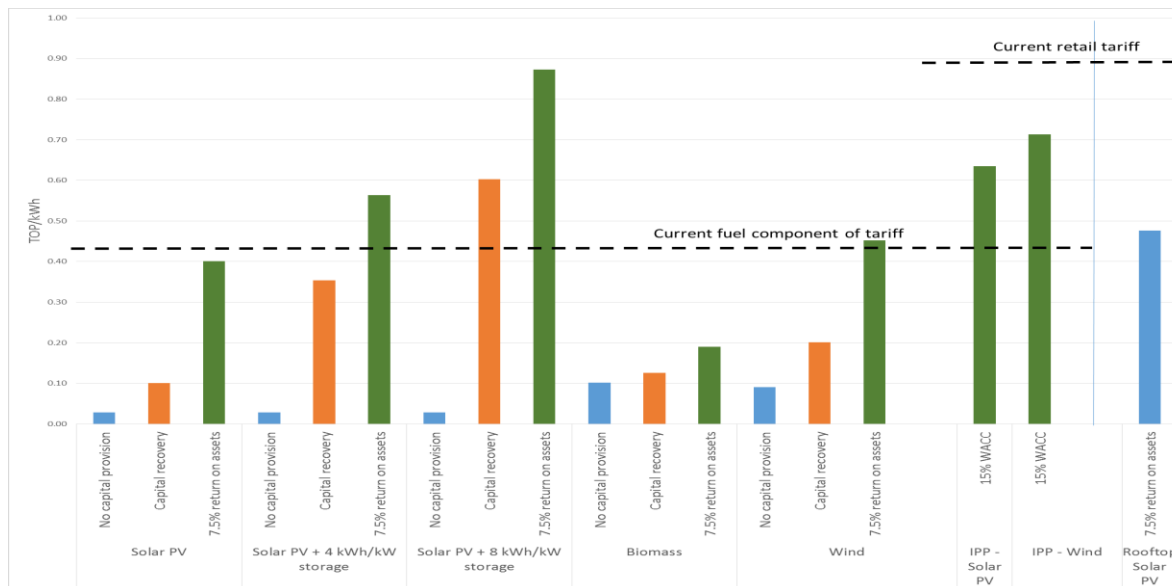
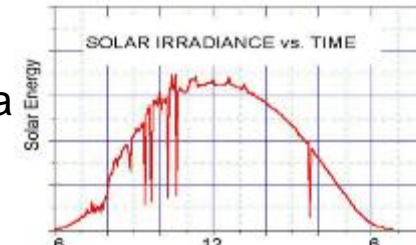
Timeline: complete assessment before COP 21 (about 25 overviews)

IRENA's programmatic work relevant for Lighthouses

Lighthouses builds on existing IRENA work

- **Renewables Readiness Assessment**
 - Starting Antigua and Barbuda
 - Completed Kiribati, Grenada, Fiji, RMI, Vanuatu
- **Grid stability**
 - Antigua and Barbuda, Barbados, Cook Islands, Palau, Samoa
- **Tariff studies (Tonga)**

| SERVICE | Renewable energy resource | | | | | |
|-------------------------|---------------------------|------------|-------|--------|-------|------|
| | Bioenergy | Geothermal | Hydro | Marine | Solar | Wind |
| On grid - electricity | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Off grid - electricity | ✓ | ✓ | ✓ | | ✓ | ✓ |
| Off grid - motive power | | | ✓ | | | ✓ |
| Thermal energy* | ✓ | ✓ | | | ✓ | |
| Transport | ✓ | | | | | |



■ **GREIN technical studies on RE for Islands:**

- Tourism
- Resource assessment
- Desalination
- Waste to energy

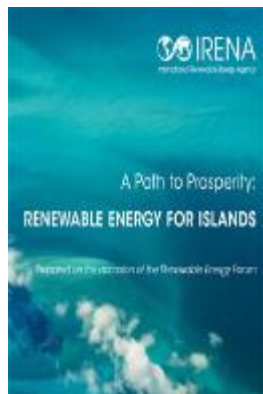
 IRENA
International Renewable Energy Agency

**RENEWABLE ENERGY
OPPORTUNITIES
FOR ISLAND TOURISM**



AUGUST 2014

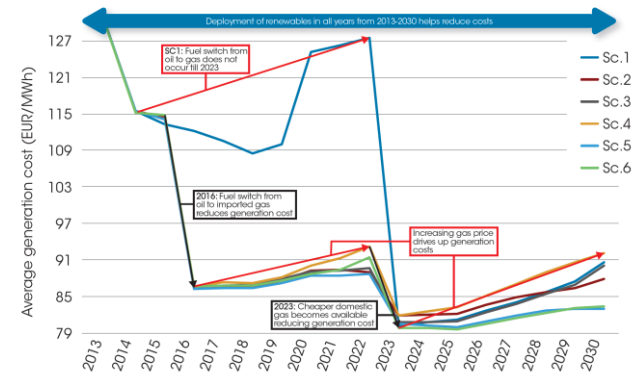
- Review of RE projects in SIDS (in support of the Samoa SIDS conference)



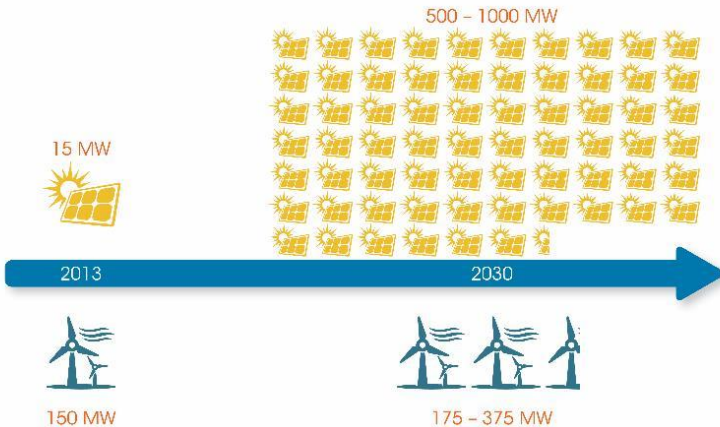
RE roadmaps for islands

- Roadmapping Baseline Report for Pacific SIDS: [*Pacific Lighthouses: Renewable Energy Roadmapping for Islands*](#)
- Nauru Energy Road Map completed (with GIZ, SPC)
- Cyprus completed
- Maldives under completion
- Started Barbados and Kiribati
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- Mauritius ocean energy roadmap completed
- Roadmap deployment support Cap Verde, Vanuatu (with GIZ)
- Island roadmap blueprint workshops planned for 2015

CYPRUS: POWER GENERATION COSTS

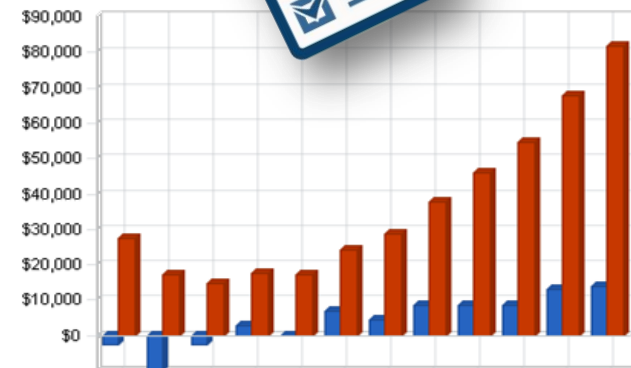


RENEWABLES IN CYPRUS:
PV AND WIND DRIVE DEPLOYMENT



Project Navigator

- Improve project development skills and increase the bankability of RET projects. → Increase in the number of successful projects and RE share.
- **Cabo Verde Workshop**
 - Organisation of PV tender
 - Formulation of PPA template
 - Further capacity building
 - Regional adaptation of the Navigator



IRENA – Abu Dhabi Fund for Development



- Commitment of up to USD 350 million, over seven funding cycles
- soft loans and used solely to finance renewable energy projects recommended by IRENA
- First and second cycle: two SIDS out of six countries: Maldives and Samoa (1st), Cuba and St. Vincent and the Grenadines (2nd)
- Applications for the third cycle just closed

First Funding Cycle

| Country | Project Summary | Capacity | Loan | Benefits |
|----------|--|--|---------------|--|
| Maldives | Small-scale waste-to-energy project and desalinated water output | 2 MW; 62 million litres of drinking water per year | USD 6 million | <ul style="list-style-type: none"> • Model solution for waste on small islands • Produces clean electricity and drinking water • Provides significant health and tourism benefits for over 120,000 people |
| Samoa | Biomass gasification and biodiesel plants on two islands | 3 MW; 4 million litres of biodiesel per year | USD 7 million | <ul style="list-style-type: none"> • Supplies sustainable electricity to homes and businesses • Replaces expensive imported transport fuel |

Second Funding Cycle

| Country | Project Summary | Capacity | Loan | Potential benefits |
|--------------------------------|----------------------|----------|----------------|---|
| Cuba | Solar energy project | 10 MW | USD 15 million | <ul style="list-style-type: none"> • Provides energy, creates jobs • Helps environment • Benefits more than 5,000 people |
| St. Vincent and the Grenadines | Geothermal project | 10-15 MW | USD 15 million | <ul style="list-style-type: none"> • Strong development benefits • Supplies consistent power to the entire country |

Diverse renewable energy resources, falling cost



