



IRENA - CYPRUS EVENT ON RENEWABLE ENERGY APPLICATIONS FOR ISLAND TOURISM

**Intercontinental Hotel, Aphrodite Hills
Paphos, Cyprus
29-30 May 2014**

Background

In the Malta Communique of 2012, Ministers and other officials from 48 countries called on IRENA to establish a Global Renewable Energy Islands Network (GREIN) for pooling knowledge, sharing best practices and seeking innovative solutions for accelerated uptake of clean and cost-effective renewable energy technologies on islands, reducing their needs for costly fossil fuel. GREIN is establishing clusters of islands that wish to work together on renewable energy roadmaps, power grid integration, resource assessment, waste-to-energy systems, desalination, and applications for tourism.

The tourism sector on islands represents a prime commercial opportunity for renewable energy development. Many islands have substantial tourist industries that represent over 25 percent of GDP. With costs of diesel-dominated electricity generation typically over 35 U.S. cents per kilowatt-hour, hotels on such islands can substantially improve their competitiveness and reduce operating costs by installing cost-effective renewable energy technologies for cooling, hot water and electricity production, all of which can substantially reduce their energy bills.

Cyprus is almost entirely dependent on imports to meet its energy needs. In an effort to reduce its import dependency, the country has increased its renewable energy share from 3.8 percent in 2005 to almost 9 percent in 2013. Cyprus is a leader in deploying solar hot water heating systems for hotels and residential buildings and has the highest solar heating capacity installed per capita of all European countries. Its experience with solar hot water heating and other renewable energy technologies could usefully inform the tourism industry in other islands.

Cyprus is also an active participant in GREIN and could form a locus for the tourism interest cluster in the Africa-Indian Ocean-Mediterranean-South China Sea (AIMS) region. In this light, it is hoped that an IRENA – Cyprus event on renewable energy applications for island tourism will help create awareness of renewable energy options and share best practices for deploying these options in the tourism sector of islands worldwide.

Expected Outcome

The event in Cyprus is the first in a series of regional events to discuss strategies for accelerating deployment of renewable energy in island tourism. Most participants and presenters are from hotels and other businesses involved in tourism. Some of them will showcase renewable energy investments in their facilities. Others are interested in renewable energy options but want to better understand the business case before installing them.. By providing a platform for exchange of



experiences and information, the event should encourage them to invest in renewable energy options.

IRENA will present a draft report on renewable energy applications for island tourism including solar hot water, solar air conditioning, sea water air conditioning, and photovoltaic power. Feedback received from participants will be incorporated in the final version of the report. Outcome of the event will be summarized as an annex to the IRENA report, and the report will be presented at the Third International Conference on Small Island Developing States in September 2014.

Format and Structure

The first day of the event will focus on renewable energy solutions for island tourism. Experts will first introduce the technologies, and then the hotels that implemented renewable energy solutions in their premises will present the compelling business cases. Each session will conclude with a discussion among the panelists and other participants on the factors that convinced them to invest in renewable energy in their hotels

On the second day of the event, IRENA will present its review study of cost-effective renewable energy options for island tourism and policies to accelerate the deployment of these options. . The ensuing discussion will focus on successful policy approaches to promoting renewable energy in island hotels. Development partners will present their experiences and share views on what international cooperation can contribute. A concluding public-private roundtable will discuss how hotels, tourism ministries and others can partner with IRENA to accelerate the deployment of renewable energy in island tourism.

Participants

Participants in the event will include, inter alia:

- Governments from Island Countries and Countries with islands
- Hotels with experience in renewable energy deployment
- Hotels and hotel chains interested in introducing renewable energy
- Tour operators and hotel associations
- Development partners
- Companies and experts involved in the deployment of RE in the transport sector
- Interested Private Sector representative



FINAL AGENDA

DAY 1 – RENEWABLE ENERGY SOLUTIONS FOR HOTELS – PRIVATE SECTOR BEST PRACTICES

9:00 **Opening session**

- Adnan Z. Amin, Director-General of the International Renewable Energy Agency (IRENA)
- H.E. Yiorgos Lakkotripis, Minister of Energy, Commerce, Industry and Tourism of the Republic of Cyprus

9:30 **Session 1: The Business Case for Renewable Energy in island Tourism**

Chair: Adnan Z. Amin, Director-General, International Renewable Energy Agency (IRENA)

- Renewable energy for water desalination (Costas Papanicolas, CEO of CREF and President of the Cyprus Institute, Cyprus)
- Electric vehicles for island tourism (Edison Yin, Business Development Manager, BYD Europe B.V., Netherlands)
- Electric vehicles for the integration of renewable energy in transport - technology and case studies from Hawaii (Alex Schroeder, Technology Deployment Manager - Fuels and Vehicles, National Renewable Energy Laboratory, USA)
- Algae for biofuels for road transportation (Alexandros Charalambides, Cyprus University of Technology, Cyprus)
- Biofuels for air transportation (Alejandro Rios Galvan, Director, Sustainable Bioenergy Research Consortium, UAE)
- RE in Italian touristic islands (Mario Gamberale, CEO of Exalto and AzeroCO2, Italy)
- Discussion of key enabling factors and barriers

11:30 **COFFEE BREAK**

12:00 **Session 2: Solar Water Heating Systems for Island Hotels**

Chair: Jeffrey Skeer, International Renewable Energy Agency (IRENA)

- Technology and cost overview (Jeffrey Skeer, IRENA)
- Quality infrastructure in Cyprus (George Roditis, Cyprus Solar Water Heaters Laboratory, Cyprus)
- Case studies from Cyprus (Tassos Frantzis, EBHEK, Cyprus Union Of Solar Energy Industrialists, Cyprus)
- Discussion of key enabling factors and barriers

13:00 **LUNCH**



14:00 Session 3: Renewable Energy for Air Conditioning in Island Hotels

Chair: Costas Papanicolas, CEO of CREF and President of the Cyprus Institute

- Solar Air Conditioning: technology, cost and case studies from Greece (Panagiotis Tsekouras, CRES, Greece)
- Solar Air Conditioning: case studies from Cyprus (George Florides, University of Cyprus, Cyprus)
- Sea Water Air Conditioning: technology, cost and case study (Makai Ocean Engineering, Hawaii, USA)
- Ground source heat pumps for hotels: technology, cost and case study (Chrysis Chrysanthou, Ayii Anargyiri, Cyprus)
- Discussion on key enabling factors and barriers

15:30 COFFEE BREAK

16:00 Session 4: The Business Case for Solar Photovoltaic Systems in Island Hotels

Chair: Venizelos Efthymiou, Chairman of the "Sustainable Energy" Research Centre, University of Cyprus

- Technology overview (George Karagiorgis, Frederick University, Cyprus)
- Cost overview (Peter Journeay-Kaler, IRENA)
- Large PV hybrid off-grid for a resort, case study from Fiji (Bruce Clay, Clay Energy, Fiji)
- Large PV hybrid off-grid for a resort, case study from Maldives (Alessandro Venanzini, Nidec ASI, Italy)
- Discussion on key enabling factors and barriers

19:00 DINNER RECEPTION IN APHRODITE HILLS HOTEL



DAY 2 – STRATEGIES TO ACCELERATE RENEWABLE ENERGY DEPLOYMENT IN ISLAND TOURISM

- 9:00 Opening speech - His Excellency Nicos Anastasiades, President of the Republic of Cyprus
- 9:15 Remarks from Mr. Adnan Z. Amin, Director-General of the International Renewable Energy Agency (IRENA)
- 9:30 **Session 5: Development Partners' Experiences**
Chair: Adnan Z. Amin, Director-General, International Renewable Energy Agency (IRENA)
- Deutsche Gesellschaft für Internationale Zusammenarbeit – GIZ (Alexander Haack, Team Leader, Energy)
 - Inter-American Development Bank – IDB (Adriana Valencia, Team Leader)
 - United Nations World Tourism Organisation – UNWTO (Sofía Gutiérrez, Deputy Director, Sustainable Development of Tourism)
- 10:45 **COFFEE BREAK**
- 11:15 **Session 6: Roadmap for Renewable Energy in Island Tourism**
Chair: Dolf Gielen, Director, IRENA Innovation and Technology Centre
- Presentation of IRENA findings on Renewable Energy Solutions for Island Tourism
 - Financing renewable energy projects in Cyprus (Nicos S. Kyriakides, Partner and Head of Financial Advisory Services, Deloitte Limited, Cyprus)
 - Discussion with the public on effective policies and measures for the deployment of renewable energy in island tourism
- 12:45 **LUNCH**



14:00 Session 7: Concluding Roundtable on Overcoming Barriers to the Deployment of Renewable Energy Technologies in Islands Tourism

Moderator: Dolf Gielen, Director, IRENA Innovation and Technology Centre

Participants:

- Stelios Himonas, Permanent Secretary of the Ministry of Energy, Commerce, Industry and Tourism of the Republic of Cyprus
 - Angelos Loizou, President and Chairman, Cyprus Tourism Organisation
 - Ilisoni Vuidreketi, Chief Executive Officer, South Pacific Tourism Organisation
 - Gail Henry, Sustainable Tourism Specialist, Caribbean Tourism Organization
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- What are the key opportunities to accelerate the deployment of RE technologies in island tourism?
 - What needs to be done from a policy perspective? Which policies are key to trigger deployment?
 - What is the tourism sector's perspective on the subject, and what can be done to mobilize private sector investments to deploy renewable energy in island tourism?
 - What are the opportunities for partnership and for international cooperation?

17:00 SITE VISIT AND DINNER AT AYII ANAGYIRI

- Departure at 17:00 by bus from Aphrodite Hills to Ayii Anagyri.
- Visit to the hotel, which has many different renewable energy technologies installed, including solar PV-driven pool pumps, solar water heaters, heat pumps and ground-source VRV chillers.
- Dinner with traditional organic food will follow.
- A bus will take the participants back to Aphrodite Hills after dinner.