GSEII Special Event – UN CSD-14th Session

Sustainable Energy Islands – Leading by Example

Thursday, May 4th, 2006
1:15—2:45pm
Conference Room A

UN Headquarters, New York, NY

Table of Contents

I. Background of GSEII-UNIDO Side Event

Five Small Island Developing States (SIDS), St. Lucia, Dominica and Grenada, Fiji, and the Marshall Islands, are actively participating in the Global Sustainable Energy Islands Initiative (GSEII), a consortium of international NGOs and multi-lateral institutions designed to transform the economies of SIDS to a renewable power base. GSEII, which aims to expand its reach to at least a dozen SIDS by 2010, has been organized to support potential private investors and donors by bringing renewable energy and energy efficiency projects, models and concepts together in sustainable energy plans for small island nations. In 2004, GSEII and United Nations Industrial Development Organization (UNIDO) joined forces to carry out feasibility studies and various capacity building activities to help implement the sustainable energy plans of the participating SIDS. The funding for these activities is being provided by the United Nations Foundation, Government of Italy, Rockefeller Brothers Fund, US Agency for International Development and the Renewable Energy and Energy Efficiency Partnership (REEEP).

While SIDS produce only a tiny fraction of global greenhouse gas emissions, many because of their location barely above sea level, are among the most vulnerable to the effects of climate change such as sea level rise and extreme weather conditions. Compounding their climate change challenge, some small island nations struggle with the inability to supply electricity in rural areas. Many island nations are mostly dependent on imported fossil fuel, the rising price of which is increasingly putting huge burdens on their terms of trade and economic growth. There is an urgent need to develop an energy agenda for the SIDS as a whole that is consistent with their indigenous resources and less prone to disruptions from external forces.

Given the challenges faced by SIDS, the GSEII-UNIDO program aims to:

- reduce dependence on fossil fuels and eliminate related trade deficits
- secure energy independence
- reduce negative impacts on local environments
- reduce greenhouse gas emissions
- encourage private investment and trade
- enhance socioeconomic development

II. Description of Event

The GSEII Special Event, entitled *Global Sustainable Energy Islands – Leading By Example*, presented a vision of the energy future for Small Island Developing States (SIDS) based on existing practical examples of commitment and leadership. The event highlighted the progress made in the participating SIDS on the development and

implementation of their sustainable energy plans. The GSEII partner organizations presented the various ongoing activities in the SIDS and senior representatives from SIDS reiterated their commitment to sustainable energy by their respective nations.

The presentations underscored the link between energy and sustainable development, as well as discussed opportunities for SIDS to utilize sustainable and renewable energy technologies to reduce their vulnerabilities from the impacts of Climate Change. The event provided a forum for sharing of experiences between SIDS and with the international community. The event showcased that real and positive change is possible with leadership, targeted planning and collective action.

III. Agenda

- **Judy Siegel** (Moderator)
- **Hon. Tom Roper**
  Board Member, Climate Institute
- **Ambassador Alfred Capelle**
  Permanent Representative of the Marshall Islands to the UN
- **Ambassador Crispin Gregoire**
  Permanent Representative of Dominica to the UN
- **Ambassador Dr. Joseph Christmas**
  Permanent Representative of St. Kitts & Nevis to the UN
- **Mark Lambrides**
  Organization of American States
- **Marco Matteini**
  United Nations Industrial Development Organization
- **Questions & Answers**

IV. Proceedings

Judy Siegel, Moderator of *Sustainable Energy Islands – Leading by Example*, opened the GSEII Special Event by welcoming the distinguished member of the panel and introducing the Global Sustainable Energy Islands Initiative (GSEII). She thereby highlighted the climate change challenges faced by Small Island Developing States (SIDS) and stressed the extreme vulnerabilities of SIDS to climate change due to limited financial resources and capacities to respond. The potential effects of climate change on

SIDS are magnified by key challenges in the energy sector such as heavy dependence on fossil fuels, which burdens the terms of trade and economic growth of SIDS. Judy Siegel stressed the need for a transformation of energy systems in SIDS toward renewable energy sources before opening the floor for the panelists' presentations.

Hon. Tom Roper, Climate Institute, presented an overview of this initiative and gave the background and scope of work being undertaken by GSEII. He noted the role of the GSEII in overcoming barriers to sustainable energy in SIDS and pointed to the advantages of renewable energy utilization and energy efficiency in SIDS. He stressed that renewable energy development in SIDS is hindered by a lack of commitment on the part of Government Ministers, officials, and utilities as well as a lack of knowledge and capacity, specifically a shortness of skilled personnel. In addition, the small size of utilities, markets and potential projects as well as utility dependence on established diesel technology, combined with little or no experience of renewables and few resource assessments further exacerbate the situation. However, he applauded the participating SIDS for their leadership in pursuing a path that was sustainable for their countries and also setting example for others to follow.

Emphasizing the need for donor support and private sector investment for sustainable energy initiatives, Hon. Tom Roper underscored that the GSEII can help those SIDS seeking to become sustainable energy nations by addressing the barriers to clean energy development through capacity building and training. GSEII has also been working closely with the regional utility organizations in the Caribbean and the Pacific and has organized several training sessions for Pacific Power Association, and CARILEC (Caribbean Energy Services Corporation). He said that GSEII also aims to raise awareness of the potential advantages of renewable energy utilization and energy efficiency and demonstrate that SIDS can set an example for the bigger and more polluting countries by cutting their GHG emissions.

Discussing GSEII activities, Hon. Tom Roper highlighted French leadership in Guadeloupe, which has succeeded in utilizing renewable energy sources to supply 20 percent of all energy needs at a cost less than diesel. This has been achieved by drawing on a variety of locally available renewable energy sources including geothermal, small hydropower, wind turbines designed to resist hurricanes, 2000 units of PV Solar for rural power supply, solar thermal for water heaters, bagasse as a sugar industry byproduct, and energy from waste. Real and positive change in the form of a 7 MW savings of peak demand has been made possible in Guadeloupe through the installment of 350,000 energy efficient lamps in 44,000 households.

Hon. Tom Roper closed his presentation by underlining the opportunities for SIDS, especially through carbon financing, which offers financial incentives for projects that reduce greenhouse gas emissions and help countries to achieve sustainable development. He remarked that carbon finance projects ought to introduce a sustainable dimension in the three areas of fuel consumption, energy efficiency and transportation through, fuel substitution, improvements in energy generation and distribution, and

increased efficiency measures. While the number of projects in the SIDS are currently limited, the island communities must act quickly to take advantage of CER (Certified Emissions Reduction), CDM (Clean Development Mechanism), and benefiting from the voluntary markets of carbon offsets.

In his concluding remarks, Hon. Tom Roper reiterated that strengthening institutional arrangements and local technical and professional capacities as well as utilizing carbon finance offers can help SIDS achieve sustainable development and energy goals. He stressed that sustainable energy is not only an environmental necessity but makes economic and social sense.

Ambassador Alfred Capelle, Permanent Representative of the Marshall Islands to the UN, focused on the Republic's Electrification of the Outer Islands program, which was initially developed by the Ministry of Resources and Development with the revitalization of the Energy Office in 2001. He thanked the Global Sustainable Energy Islands Initiative for their continued support in helping to raise funds and implement their electrification plans. He stressed that the Marshall Islands share a heavy dependence on imported petroleum with Pacific island nations and, despite their low energy consumption in global terms, are faced with high energy costs relative to their small economies. The ratio of petroleum imports to total exports is over 400 percent, constituting a dangerous dependency situation and leaving the Marshall Islands extremely vulnerable to potential major disruption in the fuel supply due to global shortages, rising prices, and conflicts.

Ambassador Capelle asserted that the government views renewable energy as the most appropriate long-term alternative source to replace imported petroleum products for electricity production in the Marshall Islands and remarked that the goal of the Electrification of the Outer Islands program is a more widespread solar electrification of the outer islands. As such, the program attempts to provide a cost-effective and sustainable source of electricity to the outer islands, which is a key to improving the standard of living of the people in the outer islands and reducing urban drift from the outer islands into the urban centers of Majuro and Ebeye and its impact on the nation's welfare.

He added that in its commitment to the global effort to reduce GHG emissions and ensure sustainable development, the RMI government believes that for the remote and scattered outer islands populations, stand-alone solar systems represent the best technical and economic solution to supply electricity. The current widespread use of kerosene for lighting and cooking on the outer islands poses both an economic burden as the price of kerosene is above $2 per gallon and a serious safety issue as most homes are constructed from wooden or local materials. Ambassador Capelle said that more widespread solar electrification, the major goal of the Electrification of the Outer Islands program, should reduce the cost and dangers for the average household of using petroleum. The monthly fee for the use of the solar system will be in the range of $8-12 per month.

Ambassador Capelle remarked that MEC has also addressed common institutional issues found in solar electrification projects across the Pacific Region such as poor local maintenance of solar equipment and lax fee collection and management. In addition, MEC identified that commonly held custom and hierarchical values of many local communities can weaken collection discipline and result in the use of funds for community projects rather than necessary solar equipment repairs. Consequently, fee collection and management should come from outside the immediate community.

Ambassador Capelle also mentioned the support from GSEII that is providing 10,000 energy efficient light bulbs to RMI that will not only reduce the electricity bill of the individual households but also reduce the burden on the electricity generation systems and reduce fossil fuel imports.

Ambassador Crispin Gregoire, Permanent Representative of Dominica to the UN, emphasized that in 2001 the Government of Dominica began to focus its attention on sustainable energy as the energy policy direction for Dominica, known as the Nature Island of the Caribbean. The government was then determined that reliance on fossil fuel to meet energy needs was not sustainable both in terms of affordability (electricity price to consumers is 2 to 3 times higher than Europe and the US) and damage to the environment from CO2 emissions. He added that the same year a relationship was developed with the Global Sustainable Energy Islands Initiative (GSEII).

Ambassador Gregoire also noted that at the WSSD in 2002, the late Prime Minister Pierre Charles declared the Government's plan to actively pursue development of renewable energy guided by a Sustainable Energy Plan (the draft plan was developed under the GSEII initiative in late 2002). Currently, Dominica's electric power is generated through 60% diesel and 40% hydro with peak load at 13 MW, and its transport sector is dependent on gasoline and diesel.

Highlighting that Dominica possesses considerable natural resources to provide for its energy needs with a combination of renewable energy technologies-hydro, wind, biomass, geothermal and solar, Ambassador Gregoire remarked that the Government of Dominica, through the Ministry of Housing, Lands, Telecommunications, Energy and Ports has embarked on a multi-pronged approach to meet the energy challenge. The primary elements of this approach include:

- Development of Hydro**.** Presently Hydro makes up 40% of Dominica's energy production. The plan is to at least maintain and consolidate that level of hydro energy production into the future, while exploring development of mini-hydro.

- Harnessing the abundant supply of available Solar Energy. The State has invested in a totally solar-powered facility at the Morne Diablotin National Park at Syndicate, and a number of homes have solar water heaters.

- Wind Energy Research. The viability of wind energy generation in some parts

(Woodford Hill and Delices) of the island has been confirmed through wind energy research. The plan is to develop wind farms generating up to 3 MW.

- Geothermal Energy Initiative
  ► Phase I of the OAS/GEF-funded Eastern Caribbean Geothermal Development Project (Geo-Caraibes), involving Dominica, St. Lucia, and St. Kitts and Nevis has been completed with tangible outputs: viable technical assessments, draft legislation for Geothermal Energy development, and completion of initial Cost Benefit Analyses. Phase I established that Dominica's Geothermal potential presents the real possibility for export of electric power to the neighboring Overseas Departments of France, Guadeloupe and Martinique, via submarine cables.
  ► Phase II of this Initiative seeks to develop and commission a 5-7megawatt geothermal plant by December 2008 and create a public/private sector consortium involving Dominican companies, French public sector agencies and private sector companies, the GEF, and other international partners.
  ► Phase III of this Initiative aims to develop a 45-90 MW plant, which will provide for interconnection between Dominica and Guadeloupe and Martinique.

- Development of Bio-Diesel using Coconut Oil. Dominica has had a coconut industry for the last 50 years and exploration of bio-diesel from coconut oil is undertaken. It is hoped that the knowledge and experience of the Pacific SIDS will be transferred to Dominica, and that a functional relationship would be developed with the UN Foundation Bio-Fuels Initiative.

Ambassador Gregoire commented that the Government of Dominic has recognized that realization of this multi-pronged strategy will require (i) the enactment of New Energy and Environment Legislation and the deregulation of the Energy Sector (now monopolized by one company) to allow Independent Power Producers (IPPs), Renewable Energy Laws-Geothermal Law, and A Clean Air Act, (ii) both private and public Foreign Direct Investment, (iii) unwavering political commitment to ensure that the strategy is strictly followed, and (iv) the liberalization of the electricity sector to change the current reality of monopoly generation of electric power through enactment of new legislation.

Ambassador Gregoire closed his presentation by emphasizing that an important consideration in the shift to renewable energy is its compatibility with the island's eco-tourism thrust and sustainable development strategy.

Ambassador Joseph Christmas, Permanent Representative of St. Kitts & Nevis to the UN, lamented about the closure of the country's vital sugar industry in December 2004 due to financial losses that the industry experienced in the last two decades. He remarked that the Government of St. Kitts & Nevis then decided to request the technical assistance of the GSEII and UNIDO project for conducting a study that should assess the viability of utilizing sugar cane for energy production: ethanol and co-generation of

electricity. He added that the Government has also expressed its willingness to develop a new energy policy and implementation strategy aimed to promote and support a transitioning away from energy consumption and supply patterns based on conventional fossil fuels towards more economically and environmentally sustainable energy development based on sound renewable energy technologies and more efficient use of energy.

Ambassador Christmas said that at the request from the Government of St. Kitts and Nevis, the GSEII team would initiate the sustainable energy planning process in St. Kitts & Nevis. An initial mission to St. Kitts is planned for the summer of 2006 to have individual meetings with all the key energy stakeholders and form an information working group. A preliminary assessment of local renewable energy resources and potential for energy efficiency improvements will be made. He added that a stakeholders meeting will be organized in St. Kitts & Nevis that would include government agencies, private sector and all segments of society to discuss and identify strategies and opportunities for St. Kitts to transform its energy system from a fossil fuel base to renewables.

Based on these assessments and dialogue with the stakeholders, a comprehensive Sustainable Energy Plan (SEP) for St. Kitts & Nevis will be developed. The SEP shall identify policy and regulatory reforms, specific renewable energy and efficiency projects and a draft time line for implementation. Ambassador Christmas emphasized that the realization of the envisioned SEP will allow St. Kitts & Nevis to develop an environmentally sustainable energy system based on sound renewable energy technologies and more efficient use of energy.

In addition, Ambassador Christmas mentioned that the Global Sustainable Energy Islands Initiative shall also assist the Government of St. Kitts and Nevis in making informed decisions in developing and implementing an economic diversification program for the sugar cane industry. The immediate objective is to conduct a comprehensive study, including a detailed financial and economic analysis, of the viability of utilizing sugar cane for energy production, in particular ethanol for transport and bagasse for heat and power generation.

Mark Lambrides, Organization of American States, presented a quick overview of policy development in the participating countries and focused more on providing an update on the Eastern Caribbean Geothermal Development Project that is a multi-island project and direct outcome of the GSEII work in the Caribbean. He stressed the importance of turning commitments into action by focusing on the need for the development of sustainable energy plans and ensuring their implementation. While GSEII supports SIDS in a range of issues from setting national goals and priorities for the use of sustainable energy systems for the electricity and transportation sectors to supporting policy and regulatory reform and capacity building, Mark Lambrides particularly focused on GSEII efforts to identify and support the development of sustainable geothermal energy projects.

Mark Lambrides noted that GSEII assists its partner countries in growing their sustainable energy project portfolios by specifically identifying commercially viable project opportunities, assessing needs and outlining interventions. Geothermal resources that may be exploitable for commercial power generation have been identified in the island nations of Dominica, St. Lucia, and St. Kitts and Nevis. He observed that despite repeated attempts, efforts to prove the geothermal resources and develop commercial power in the Caribbean have been marked by setbacks.

To overcome the multiple challenges that stand in the way of successful regional geothermal development, a partnership including the small island nations, OAS, UNEP, AfD (Agence Francaise de Development) and others has been formed. Grant assistance from the Global Environment Facility (GEF) was secured. The so-called Geo-Caraïbes Vision aims to create market conditions for the expansion of geothermal energy, aggregate demand to maximize geothermal development, and attract proven geothermal developers. By focusing on technical, policy, legal, and financial aspects, the Geo-Caraïbes vision has succeeded in laying the groundwork for successful geothermal project development.

Mark Lambrides mentioned that assessment of the resource and technical potential for several sites and an electricity interconnection scenario has reduced resource uncertainty and development risks. In addition, reform of legal frameworks and the development of local and regional capacity have lessened contract and policy uncertainties, expediting licensing and permitting and strengthening local inputs. Last, financial risks associated with initial commercial exploration have been reduced through the preparation of a geothermal drilling risk reduction tool.

Mark Lambrides presented an outline of the current status of the Geo-Caraïbes Vision, noting that the PDF/B has been completed. More specifically, draft geothermal legislation has been prepared and strong institutional commitments have been secured from Governments, utilities (DOMLEC, NEVLEC, SKN), and Partners (EDF, AfD/FFEM). Surface studies and interconnection pre-feasibility were positive and preliminary training and institutional strengthening has been achieved. While challenges remain, including GEF full project submission and attracting private developers particularly in Dominica and Nevis, the Geo-Caraïbes Vision has played a vital role in moving GSEII partner countries toward clean energy development.

Marco Matteini, United Nations Industrial and Development Organization, presented UNIDO's involvement in the GSEII by describing in detail ongoing joint projects and activities, including the Caribbean Solar Financing Program in St. Lucia and activities to reduce power and energy losses in electricity transmission and distribution networks in Dominica. He initiated his presentation by outlining UNIDO's vision to improve the living conditions of people and promote global prosperity through offering tailor-made solutions for the sustainable industrial development of developing countries and countries with economies in transition.

Noting that the UNIDO and GSEII partnership began in May 2004, Marco Matteini highlighted that energy is required for all social and economic activities and as such is vital for the development and achievement of the Millennium Development Goals. He further stressed the negative impacts of energy generation and use based on fossil fuels on the environment and climate, and pointed to the security issue inherent in dependence on imported fossil fuels. Efficiency of energy supply and demand sides, he said, is critical for the economy and competitiveness of a country.

After mentioning key challenges in SIDS' energy sectors such as the risk of fuel disruption and low energy efficiency, Marco Matteini discussed UNIDO-GSEII responses to support SIDS. Efforts are focusing on GSEII assistance in developing national Sustainable Energy Plans centered on the promotion and use of renewable energy and energy efficient practices and technologies as well as developing a portfolio of clean energy projects that are commercially viable. GSEII also offers support in the designing of project-specific financing mechanisms, capacity building, and international outreach.

Joint efforts in St. Lucia have resulted in the strengthening of the island's financial infrastructure, a key precondition for the development of a vibrant market for solar hot water systems, by training lending personnel of St. Lucia Credit Unions and offering long-term loans at discounted interest rates to credit union members. Public campaigns in television, newspapers, and credit unions product brochures have contributed to raising consumer awareness of the benefits of solar hot water heaters.

In Dominica, activities have concentrated on improving energy efficiency and reliability in the provision of energy, decreasing greenhouse gas emissions per unit of electricity delivered, and reducing electricity costs to the consumers. A comprehensive loss reduction program, implemented over the next three years, has the potential to reduce power and energy losses by 3.9 and 0.2 percent, respectively, through reconductoring 400V lines and capacitors addition. Marco Matteini announced that forthcoming UNIDO & GSEII activities will focus on developing national sustainable energy plans and programs in St. Kitts & Nevis, the Marshall Islands, Grenada, and other Caribbean SIDS.

To close the GSEII Special Event, **Judy Siegel** recapped the main points of the speeches presented by the recognized panel and invited the audience to join into a discussion and question and answer session.

Questions & Answers

- **Pat Mc Ardle**, Public Diplomacy Advisor for Sustainable Development at the U.S. Department of State, raised the importance of integrating solar cooking technology in national sustainable energy plans in small island nations. She emphasized that solar cookers are an ideal addition to any sustainable energy policy by alleviating environmental problems such as deforestation and harmful carbon dioxide emissions and improving human health. As such, solar cooking technologies can assist small island states in not only diversifying their energy portfolios but also empowering their women by freeing valuable time that would otherwise be spent collecting fuelwood.

- **Gustav R. Grob**, President of the International Clean Energy Consortium, addressed the issue of clean transportation, remarking that electric cars are ideally suited for use over small distances in SIDS. Utilization of electric cars has the potential to reduce the extreme dependence of SIDS on imported fossil fuels, thereby increasing relative energy independence and achieving a cutback in carbon dioxide emissions.

- A representative from Yale University asked about similar clean energy initiative are being considered by any of the participating groups in Indian reservations and if any linkages could be established between Indian reservations and GSEII. Ms. Judy Siegel clarified that the focus of GSEII has been only on the SIDS while pointing out that similar work is being carried out in the Indian reservations by other organizations.

- **Anare Matakiviti** from Pacific Energy & Gender Network raised the question of policy development in the Pacific and the need for collaboration between Pacific and the Caribbean. Mr. Roper of Climate Institute further reiterated the need for more action as a lot of studies and plans have been produced in the Pacific, however, more implementation needs to take place.

V. Attendees

Organization	Name	Email
Energia	Gail Karlsson	gkarlsson@att.net
Pacific Energy & Gender	Anare Matakiviti	anare@sopac.org
Global Ecovillage Network	Rob Wheeler	robineagle@worldcitizen.org
Yale University	James Leslie	fames.leslie@yale.edu
Yale University	Arauinda Ananda	arauinda.ananda@yale.edu
Yale University	Julia Urrunaga	julia.urrunaga@yale.edu
Southern Development and Research Centre	Adelina St. Clair	humanityway@yahoo.com
Environment/ Cape Verde	Pedro Ramos	pcoramos@gmail.com
Mission of Cape Verde	Jose Silva	zdimaio@hotmail.com
US Department of State	Pat McArdle	mcardlep@state.gov
Tide Energy Near Mouth of the Amazon	Scott Anderson	sdand@bellsouth.net
Yale University	Alark Saxena	alark.saxena@yale.edu
International Commission on Occupational Health	Ian Eddington	eddington@usa.edu.au
US Department of Commerce	Richard Steffen	richard.steffen@mail.doc.gov
UNFIP	Will Kennedy	kennedyw@un.org
UNF	Richard Moss	rmoss@unfoundation.org
St.Kitts & Nevis Mission to UN	Carlisle Richardson	clr_sknmission@yahoo.com
UNEP	Jun Sniffer	snifferj@un.org
Government of France	Thibault Devanlay	thibault.devanlay@ecologie.gov.fr
Confederation of Asia-Pacific Chamber of Commerce	Tze-Luen Lin	avygo@yahoo.com
Italy Mofa	Lauinia Monti	lavinia.monti@ester.it
CSD/ NGO Steering Committee (Norhtern Co-Chair)	Richard Jordan	richardjordan@mailcity.com
Vencon, Inc.	Irvin Barash	vencon@worldnet.aa.ne
Swiss Delegation	Hanspeter Wyss	hanspeterwyss@sdc.ch
World Youth Alliance	Cale Siemion	cale@way.net
DSD/DESA/UN	Maria Galioto	galiotom@un.org
Sychelles Delegation	Rebecca Coustan-Lalanne	r.lalanne@pps.gov.sc

Sustain US	Regina Randall	gina_maria18@yahoo.com
Sustain US	Josh Arnold	josh-arnold@riseup.net
UN Habitat	Vincent Kitio	vincent.kitio@unhabitat.org
Ministry of Natural Resources in Suriname	Muriel Held	nhbirm@sr.net
UNIDO	Edward Clarence-Smith	E.Clarence-Smith@unido.org
Micronesia Mission	Tumai Murombo	tmurombo@law.pace.edu
Ministry of Economy, Labor and Entrepreneurship of Croatia	Ivana Halle	ivana.halle@mingorp.hr
Pan American Pan African Assn. NGO	Erik Hagberg	erik@pacinternational.org
International Center for Sustainable Development	John Spears	jspears@solarcities.org
ISEO + ISO	Gustav R. Grob	grob@icec.ch
Climate Institute	Jack Werner	jfwerner@climate.org
SustainalbiliTank.info	Pincas Jawetz	jawetz@aol.com
UNDP	Matt Spannagle	matt.spannagle@undp.org
Climate Institute	Nasir Khattak	nkhattak@climate.org
Climate Institute Intern	Nina Rinnerberger	nr6769a@american.edu