Eastern Caribbean Geothermal Development Project (Geo-Caraïbes)

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Organization of American States (OAS)
The Opportunity: The island nations of Dominica, St. Lucia, and St. Kitts and Nevis possess geothermal resources that may be exploitable for commercial power generation.
The Challenges:
Despite repeated attempts, efforts to prove the geothermal resources and develop commercial power have been unsuccessful
The Response: The Countries, OAS, UNEP, AfD and others, have secured grant assistance from the Global Environment Facility to address the Challenges
What is the Vision for the Project?

- Create the conditions for the “best case” commercial development of geothermal energy in the Eastern Caribbean

- “Best Case”
  - Maximum Power
  - Low Cost Electricity
  - Safe Conditions
  - Environmental Protection
How is the Vision Achieved?

- Maximize Geothermal Development by Aggregating Demand including Inter-island transmission
- Create market conditions (policies, financing, human/institutional capacity) for development
- Attract proven geothermal developers
Watten Waven, Dominica
Geo-Caraïbes

Pursuing The Vision – Financial Resources

- OAS, UNEP, Dominica, St. Kitts and Nevis, St. Lucia, AfD, EDF, CFG… Have secured grant funding from the Global Environment Facility (GEF)

- Phase 1 (GEF PDF/B):
  - Pre-feasibility assistance toward geothermal development in the project countries
  - US$700,000 (GEF) + Matching funds (AfD, EDF, OAS, Countries)
  - 12 months (April 2004 – April 2005)

- Phase 2 (GEF Full Project):
  - Feasibility and commercial development of several geothermal energy projects
  - US$7.5 MM (GEF) + Matching Funds
  - Up to six years
I. Technical: Assess the resource/technical potential for the several sites and electricity interconnection scenario = Reduce resource uncertainty and development risks

II. Policy/Legal: Reform legal framework and Develop Local/Regional Capacity = Reduce contract/policy uncertainties, expedite licensing/permitting, and strengthen local inputs

III. Financial: Prepare Geothermal Drilling Risk Fund = Reduce financial risks associated with initial commercial exploration
Sulfur Springs, St. Lucia
I. What Are the Technical Expectations for the Project?

- **Resource Evaluation:** The Project will deliver predictable geology, geochemistry, and geophysics data.
- **Infrastructure Assessment:** Analyze local and regional power demand, and feasibility of inter-island electricity transmission.
- **Highlight Commercial Project Development Scenarios**
- **Facilitate Arrangements For Project Deals** (Assist project countries with bidding (RFP or sole source negotiations))
Project Opportunities – Eastern Caribbean
Project Opportunities – Eastern Caribbean (Current Installed Capacity)

Geo-Caraïbes

- St. Kitts: 16 mw
- Nevis: 13 mw
- Barbuda
- Antigua
- Montserrat
- Guadeloupe: 400 mw
- Dominica: 19 mw
- Martinique: 350 mw
- Saint Lucia: 66 mw
Project Opportunities – Eastern Caribbean (+ Possible interconnections)

- St. Kitts: 16 mw
- Barbuda
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Project Approach – Technical

- Expert International Technical Team
  - Gerry Huttrer, Geothermal Management Company
  - Dr. Dale Morgan, MIT
  - Dr. Simon Young, GeoSY Ltd.
  - Michela Miletto, OAS/Universita di Torino, Italy

- Evaluate previous studies
- Design work plan to add critical knowledge
- Engage proven technical services from the region and world
II.a What are the Policy/Legal Expectations?

- Enable sound, transparent Legislation, Regulations, Contracts, Licenses, International PPAs, Treaties
  - Balance protection of national resources and attraction of investors
  - Establish geothermal-specific laws
  - Eliminate existing legal disputes
- Create commercially acceptable legal environment to attract and arrange for project deal
Project Approach – Policy/Legal

- Identify/Support Senior Geothermal Policy Decision Maker in Each Country
- Expert Legal Team
  - International Geothermal Legal Expert: John Armstrong
  - Local Geothermal Legal Team:
    - St. Lucia: Georgis Taylor-Alexander
    - St. Kitts: Steven Hector
    - Nevis: Mark Brantley
    - Dominica: Alick Lawrence
II.b What are the Capacity Building Expectations?

- Develop local expertise to support legal, technical, and financial aspects of project development
  - Establish national government geothermal desk
  - Build local expertise in legal sector
  - Create cadre of young geothermal professionals
Project Approach – Capacity Building

- Develop Capacity Building Module
  - Inter-Disciplinary (Legal, Technical, Financial)
  - Identify Local Champions/Focal Points
  - Implement Training in Coordination with the University of the West Indies, CARILEC, and CARICOM (CREDP)
  - Implement Public Awareness Campaign and Public Education Curriculum
III. What are the Geothermal Finance Expectations?

- Reduce the Risks Associated with Geothermal Exploratory Drilling
  - Despite the potential, there has not been any exploratory drilling in Dominica nor St. Kitts and Nevis
  - The high cost / high risk of exploration deters drilling activities
Establish an Eastern Caribbean Geothermal Drilling Risk Fund

- Up to $10,000,000 total fund
  - $5,000,000 from GEF
  - Additional from AfD, FFEM, EU, others

- Drilling funds will be available to developers on a competitive basis

- Fund design will be led by AfD

- Concept: Funds are as a loan for successful projects; grant for unsuccessful project
How May Geothermal Energy Benefit the Region?

- Increase government revenues in producing countries from royalties, taxes, etc.
- Provide a secure regional resource for power generation
- Decrease customer costs of electricity
- Provide a clean, carbon-friendly power source
- Create regional resource-based economy – jobs, technology transfer, infrastructure development
What are the Near-Term Priorities?

- Create local team – with Governmental Mandate – to work closely with OAS project team
  - Senior decision makers for policy
  - Technical support team

- Remove local impediments – Legal dispute resolution essential

- Launch public education and outreach initiative to foster a win-win atmosphere regionally and in each country
Timeline

- **Six to Twelve Months**
  - Create legal environment, technological proof of concept, institutional arrangements for international deal(s), domestic wherewithal to administer investment and revenue flow

- **Nine to Eighteen Months**
  - International Project Tenders

- **Two to Three Years**
  - Launch Project Investments

- **Three to Four Years**
  - Turn power on

- **Five to Ten Years**
  - Turn the power up

- **An investment in the Future… A vision for generations**
Thank you - Merci