



SUSTAINABLE ENERGY DEVELOPMENT IN CARICOM

**CARIBBEAN ENVIRONMENTAL FORUM & EXHIBITION CEF-5
& CARIBBEAN SUSTAINABLE ENERGY FORUM C-SEF-2**

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Sustainable Energy Development

- **Sustainable energy** is the provision of energy to meets the needs of the present without compromising the ability of future generations to meet their needs.
- **Sustainable energy sources**
 - all renewable sources,
 - Solar, Wind-power, Hydropower, geothermal, *biofuels*, etc.
 - Improved efficiency from use of energy efficiency technologies



SUSTAINABLE ENERGY OBJECTIVES

- SE meets two key objectives (also drivers):
 - ***Improving Energy Security*** Objective (as RE & EE represent only indigenous resources of many CARICOM countries) as well
 - ***Increasing Energy Access & Energy Poverty reduction***
 - ***Climate Change Mitigation (Environmental)***
- All countries have potential
- Potential area for increased economic activities; increasing competitiveness



What does a SE Future Look Like?

- **Policy & Regulatory Framework in place to support SE**

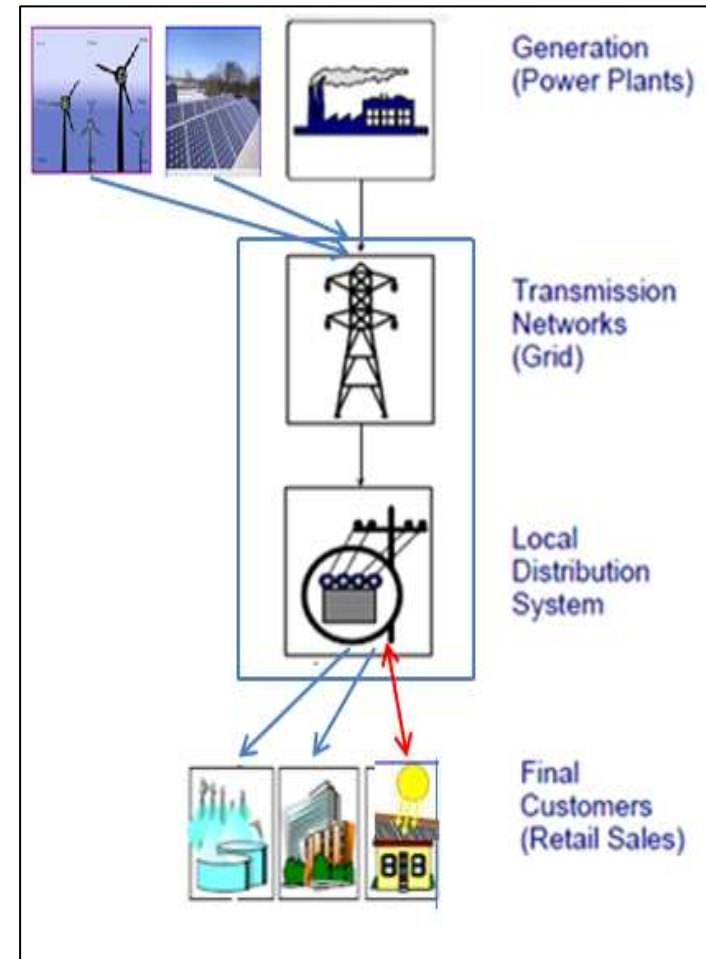
TRANSPORT SECTOR

ELECTRICITY AND WATER SECTOR

NEW AND RENEWABLE SOURCES OF ENERGY

ENVIRONMENTAL ASPECTS

ENERGY CONSERVATION AND EFFICIENCY





What does a SE Future Look Like?

- **Electricity Sector**

- Green Island electricity sector (now a near term possibility)
- Electricity G T & D planning and implementation place premium on SE options
- Integrated design of all buildings to meet min EE Standards, RE generation;
- Policies on importation of equipment; adequate standards and labelling

- **Transport Sector**

- Use of electric vehicles
- E-15 Bio-ethanol
- Fuel efficiency standards in place; supported by testing facility



What does a SE Future Look Like?

- **Capacity in place:**
 - At institutional level to analyse, plan, monitor; to provide support and guidance necessary to encourage investors
 - Well trained cadre of support personnel in various RET and EET
 - SE training & education integrated part of school curricula at every level
 - Vibrant SME industry manufacturing, distributing, providing after sales service
 - Strong and integrated link between R&D (UWI, UG, UTT, Utech) and industry
- **High level of awareness of importance of SE to development & Environ**
 - Potential investors have requisite information and in timely manner
 - Consumer choices reflect life cycle costing decisions rather than first cost
 - Financial institutions promote RET and EET loans at attractive and affordable rates



What does a SE Future Look Like?

- **Adequate Financial facilities/windows** for financing RE & EE at every level and scope and provide technical advice and project analysis services
- **National Development Planning** – integrated approach include energy in various sectors



WHERE ARE WE?

- **Challenges - known + Many Initiatives**
- **CREDP has played important role but to did achieve targets**
- **AFTER 37 YEARS we are beginning to see some changes**
- **Developments are much too slow**
- **Steps need to be taken to ensure that over the next decades, the developments will be expedited**



Key Challenges to Sustainable Energy

1. Inadequate Policy Framework

- For RE, ***Policy needed*** to level playing field
 - Targets, New generation, Incentives, Awareness, Government procurement
- For EE, ***Policy needed*** – for transportation sector eg. vehicle import, Appliance labelling, minimum building efficiency standards

2. Legal & Regulatory Framework

- **Utility Structure & Licence** – By Legislation or Licence: Monopoly, Integrated, Long period of for licence
 - Only electric utilities allowed by law to **generate** & distribute electricity



Key Challenges to Sustainable Energy

3. Limited institutional capacity - Lack of energy expertise in Ministries with responsibilities for energy.
4. Lack of knowledge of and confidence in RE & EE technologies - banks and financing institutions
5. Limited access to investment capital
 - Fund, window, facility needed in some cases
6. Countries need lower oil prices, but this tend to make RE & EE solutions less attractive



Key Challenges to Sustainable Energy

7. Sector based decision making and planning

- (instead of cross-sectoral decision making, eg. involving education, health, transport, agriculture sectors)
- Do education, health, agriculture budgets reflect measures to improve energy efficiency

8. Absence of baseline data

- e.g. wind regimes monitoring, geothermal resources, agricultural and Agro-industry waste;
- Eg absence of data to characterize stock of vehicles

9. Lack of understanding of the importance and potential of energy saving and energy efficiency



Key Challenges to Sustainable Energy

10. Small geographical areas and fragmented markets especially in electricity Sector some territories

- Lack of economies of scale and scope
- *Small land space*
 - *Caribbean has much sunlight but where could we locate 5, 10, or 20MW utility scale solar PV plant*
 - *Wind siting is a problem for many territories especially with NYMBY phenomenon and tourism*
- *Small electricity market*
 - *Guyana – Hydro*
 - *Geothermal – Dominica, St Kits and Nevis*



Key Challenges to Sustainable Energy

11. Perhaps one of the key challenges for Sustainable Energy Development in CARICOM has been a the **lack of** long term, sustained vision or strategy for energy sector;

- Attention to Sustainable energy fluctuate with price of oil; Can be observed from experience since 1973
- Climate Change Issue may change this
- Barbados Solar Water Heating industry is good example of the result of sustained policy for the sector



BUSINESS AS USUAL

- Piece-meal approach
- Actions at national level “knee jerked” and driven by crises;
- BAU will not take us there fast enough
- We have a short time



What is Being Done?

- **Energy Policy Framework**

1. Regional Energy Policy - Draft Being finalized
2. National Energy Policy development - Some countries have started
 - Technical Assistance Provided to Governments for Development & Implementation of National Energy Policy; Electric sector reform

Via:

1. **CARICOM Energy Programme** – *Current*
2. **Caribbean Renewable Energy Programme (CREDP)** – UNDP & **GTZ**
Component s- *Past & Current*
3. **OAS Project: Caribbean Sustainable Energy Programme (C-SEP)** in which CARICOM Secretariat is partner – *Current*

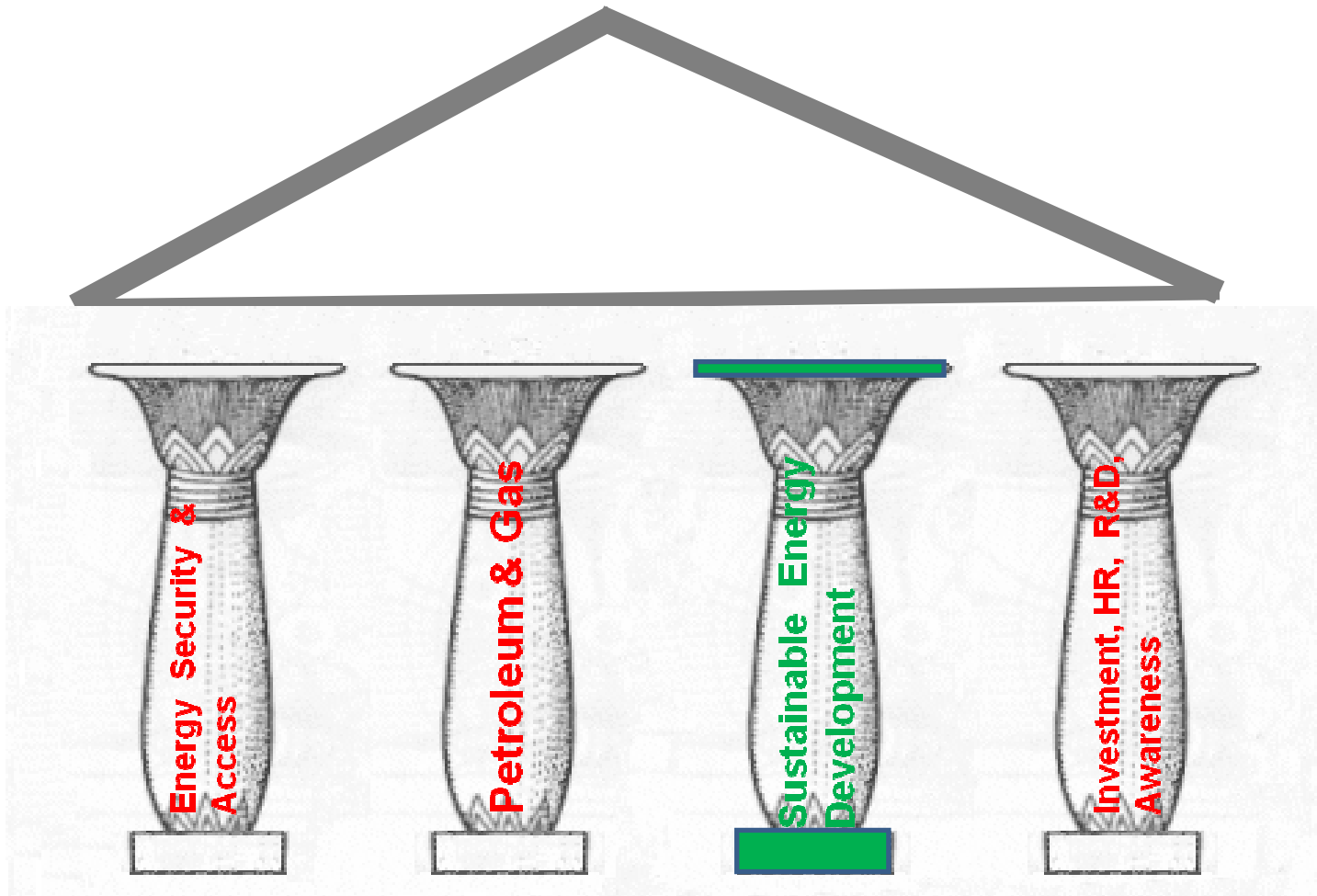


Role of CC Energy Programme

- Regional Policy Coordination & Monitoring
- Facilitate Coordination – *Clearinghouse function* – *Institutions & Investors*
- Implement Regional Strategies
- Policy Advisory Support & Facilitate Decisions
- Assist with Resource Mobilization – Technical, Financial, Assistance



REGIONAL ENERGY POLICY





What is Being Done?

Development of a Caribbean Sustainable Energy Roadmap and Strategy (C-SERMS)

Map:

- Community wide RE, EE, BE Resource Assessment
- Set Ambitious Targets, *say 30% by 2020*
- Secure Government Commitments to targets
- Develop Platform for engaging stake holders

Strategies:

- To Support Policies, Capacity Building, Financing, Awareness (*Energy Centre is contemplated*)
- To achieve targets at national levels and
- Implement Regional Projects



For Each Member State

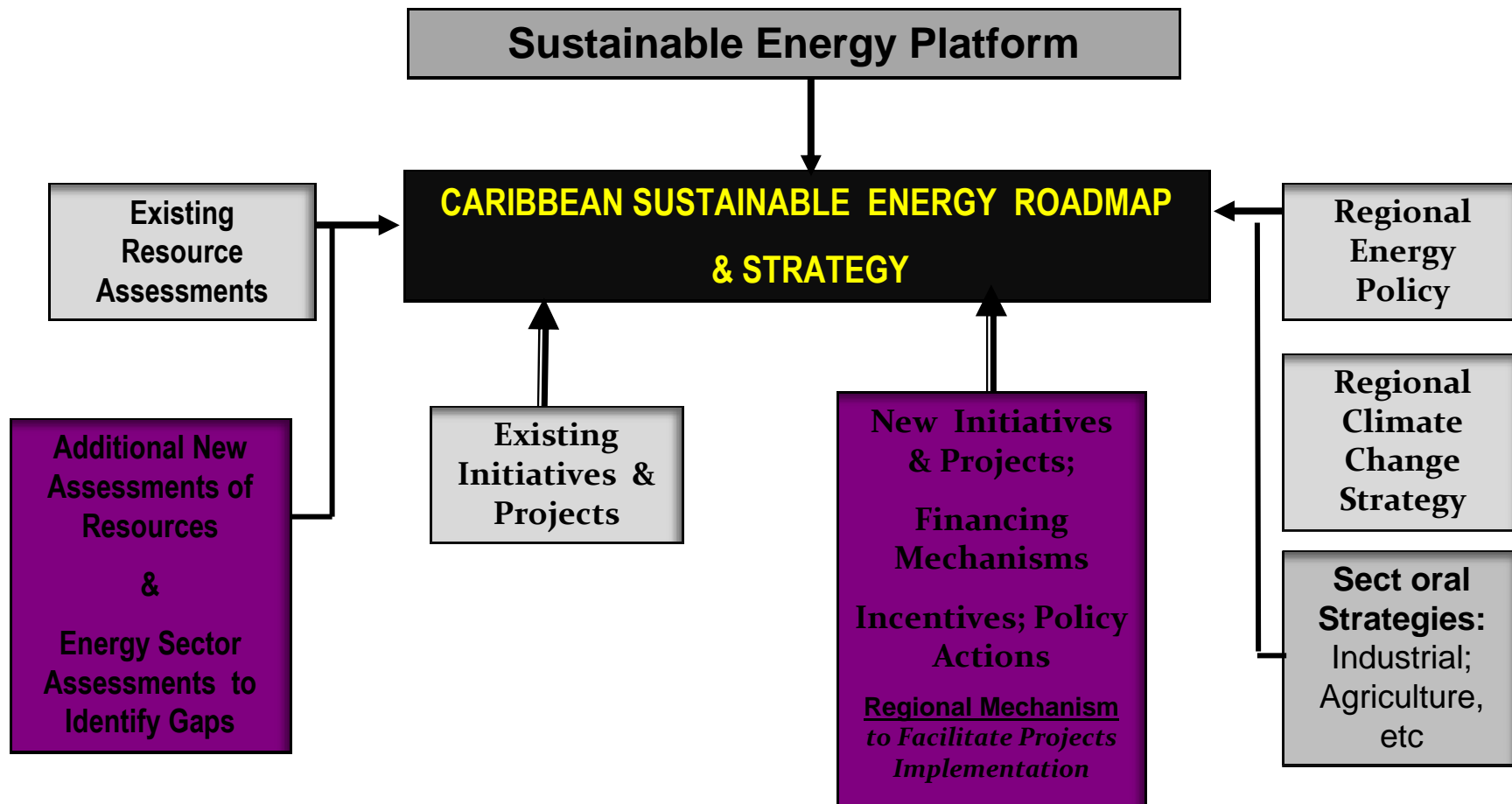
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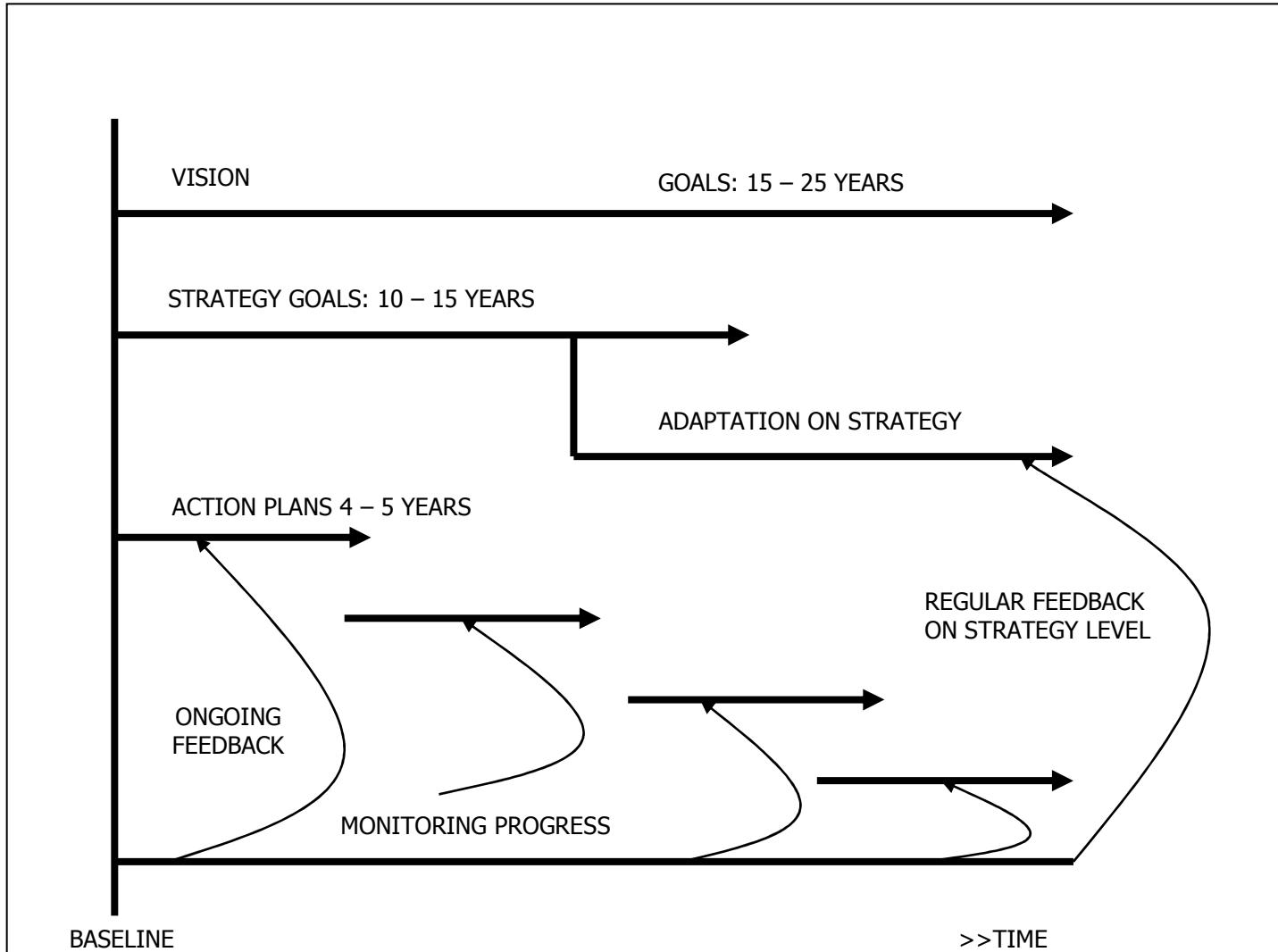
- Potential for Each RE Resource Available (Wind mapping; etc)
- Status of EE in per sector & potential for EE Improvement
- Investment Requirements
- Capacity Requirement/gaps; Institutional; Individual
- Policy gaps
- Legislative & regulatory gaps
 - Informational and Awareness gaps
- Develop Strategies to meet targets

Identify those components which are best pursued at Regional level



CONCEPTUAL FRAMEWORK For Development of Caribbean Sustainable Energy Roadmap & Strategy (**C-SERMS**)





Source: Fatum Caribbean



First Phase C-SERMS

Activities

- 1. Develop 1st Phase C-SERMS Based on Existing Info & Assessments**
- 2. Establish Regional SE Platform for 1st Phase Roadmap**
 - Platform for stakeholders dialogue & input to Roadmap
- 3. Mapping of SE Initiatives + Establish Database platform**

Status

- Commence July 2010
- IDB approved initial support
 - \$400 + \$100K CCS contribution
- **Funding to be identified**



INDICATIVE PROJECTS For Development C-SERMS

EARLY PROJECTS FOR IMPLEMENTATION

- Regional Sustainable Energy Centre
- ECERA
- Inter-connection of Electricity and Fuel Supply systems
- CARICOM Energy Efficiency Appliance Labelling Programme
- CARICOM Energy Efficiency Code and Guidelines
- CARICOM Energy management Standards



IMPLEMENTATION

Sustainable Energy Centre/s

- Research, Innovation
- Capacity Building,
- Financing and Business Development,
- Project Development and Implementation
- Advisory & Technical support for Policy development,
- Awareness Building,
- Technology Demonstration



Inter-connections of Electricity Infrastructure

- World Bank Study on Interconnection of Electricity Systems and Fuel Strategy – identified at state of pre-feasibility; projects which are highly economic and are technically feasible
- Will Require
 - Political engagements
 - Large Investments: via Private Public Partnership
 - Appropriate cross-border regulation eg ECERA



Nevis-St.Kitts/Nevis-US VI/Nevis-Puerto Rico

Source: World Bank 2010



Dominica Interconnections

- Geothermal
- Dominica-Martinique
 - ❑ 100 MW, 70 km, US\$588/kW
 - ❑ Highly economic
- Dominica-Guadeloupe
 - ❑ 100 MW, 70 km, US\$588/kW
 - ❑ Highly economic



Source: World Bank 2010



Thank You

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