



# Sensitization Workshop on Renewable Energy and Energy Efficiency Project Support Mechanisms

## The Landscape Of Renewable Energy & Energy Efficiency Project Financing: A Global And Regional Outlook

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On behalf of



Presented by



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# Presentation Overview

- Energy & Energy Efficiency Project Financing
- Areas Considered:
  - Green energy and relevance to the Caribbean
  - Global Green Energy Trends
  - Renewable Energy – types at work in the Region
  - Energy Efficiency- how viable is it in the Caribbean?
  - Financing – Where is the money?




# Green Energy - Relevance to the Caribbean

- High dependence on fossil fuel → economic instability, high debt profile, under-performing economic growth
- Large repositories of green energy – What is green energy?
- Underutilization of these repositories due to structural constraints-
  - Stranded Assets (Generation + Distribution)
  - Legacy contracts
  - Weak institutional frameworks
  - Consumer lending focus
  - Low ideation - innovation -implementation business transition
  - Nascent understanding of financing new businesses



# Global Green Energy Trends ...

- Global developments or emerging trends that can impact the Caribbean –
  - Mitigate structural constraints
  - Present opportunities .....
- Energy Storage, Green Hydrogen
- Community Cooling Ocean Thermal
- Distributed Generation
- Floating Solar
- Ocean Wind
- CDM
- Biomass
- Green Bonds
- Crowd Funding
- Fee for Service (ESCO) 

# Renewable Energy – types at work in the Caribbean

- Solar – Utility; St. Vincent, Jamaica, etc. Distributed; Barbados, Floating: Trinidad & Tobago (Proposed)
- Hydro – Suriname, Guyana, Jamaica, St. Lucia
- Wind – Jamaica,
- Biomass – Guyana, Jamaica, Belize
- Geothermal – Dominica, St. Vincent & Grenadines, St. Kitts
- Storage – Hydrogen – Martinique, Trinidad & Tobago & Barbados (Forthcoming)



# Energy Efficiency – how viable is it in the Caribbean?

- Demand side vs. Generation side
- Low hanging fruit?
- Opportunities for returns from EE investments?

Cooling systems - air conditioners, cold rooms, refrigerators and fans

Lighting systems - LED lights (including streetlights)

Water heating systems – solar water heaters, heat pumps

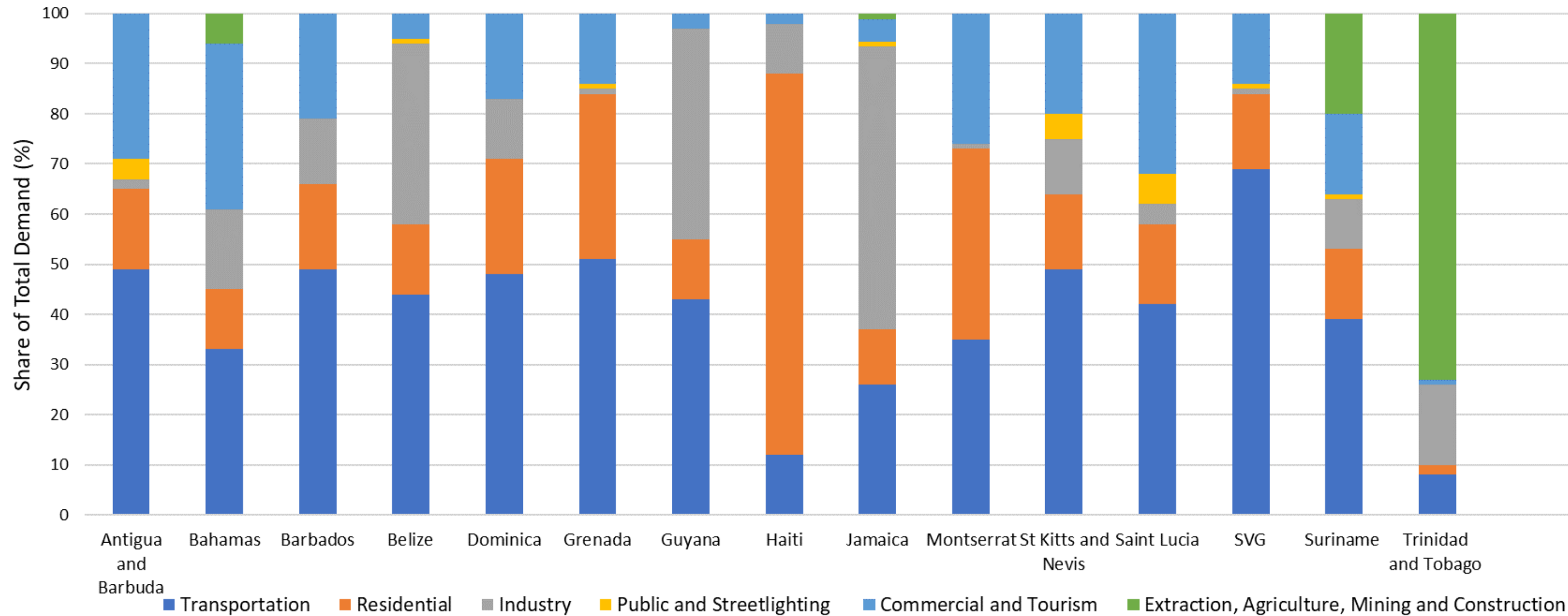
Manufacturing systems – motors, drives, boilers, machines

Energy efficient buildings – shading, insulation, air movement



# Energy Efficiency – how viable is it in the Caribbean?

## Sectoral demand in the Caribbean



Source: Development of a Regional Sub-policy, Strategy and Action Plan on Energy Efficiency for the Caribbean Community, CCREEE, Econoler, 2019



# Energy Efficiency – Demand Side

- Residential
- Commercial
- Industrial -Waste Heat recovery, (engine/process) Peak Power Demand Modulation
- Institutional
- Infrastructure - LED streetlights,
- Transport - Mass transit, EV





# Energy Efficiency – Generation & Distribution Side

- Combined cycle plants
- Organic-Rankine Cycle – biomass
- Allam-Fetvedt Cycle – CO<sub>2</sub> reduction
- Transmission (L.T. & H.T.) losses
- Biomass mix -
- Waste to energy (WtE)



# Sources & Structure of Financing - Institutional

## Institutional Financiers & Modalities for financing.

### \* Multi-lateral

- General Economic Development Specific - related to country and sectors.
  - Energy Related
  - Private Sector Focused
  - Counter-Cyclical Capital Providers

### \* Bilateral

- Climate Related
  - Green Climate Funds –
    - Adaptation
    - Mitigation
  - Low Carbon development (LCD)
  - Investment Accelerators



# Sources & Structure of Financing - Commercial

- Private Sector –
  - Banks
  - Private Equity
  - Investment Funds
  - Pension Funds,
  - Venture Capitalists
- Insurance Providers
- Guarantee Providers
- Consumers - PPA's
- Crowd Funding



# Principal Financing Modalities

- Debt
- Equity
- Grants
- Guarantees
- Blended Finance
- Consumer Financing
- Bonds (Green)
- Leasing
- Fee for Service (ESCO's)
- Stock exchange
- Crowd Funding



# Funding Agencies Active in the Region

## Multilateral Funds

Inter-American Development Bank Group : IDB Invest, IDB LAB  
World Bank Group – IFC, IDA  
European Investment Bank - EIB  
Caribbean Development Bank – CDF, CCREE, CCCCC  
Corporacion Andina de Formento – CAF  
United Nations Development Programme – UNDP

## Bi-lateral Funds

U.S. International Development Finance Corporation  
Dutch Entrepreneurial Development Bank - FMO  
Agence Francaise de Developpment – AfD, PROPARCO

## Intermediate Lenders: Private Equity Funds

CIBC First Caribbean International Bank  
Portland Caribbean Fund  
Corporacion Interamericana Financiamiento de Infraestructura, S.A.  
(CIFI)

## Grant Funds/ Agencies

Deetken Impact Sustainable Energy  
Green Climate Fund  
Adaptation Fund  
US Agency for International Development AID  
Dept for International Development - DFID  
European Union EU  
German Agency for Int'l Cooperation GIZ  
Canadian International Development Agency (CIDA)

## Insurance Providers

Multilateral Investment Guarantee Agency  
U.S. International Development Finance Corporation  
Lloyds



# Outlook for Green Financing ?

- What should we expect in the coming years?
- Impact of COVID Pandemic
- Price of Petroleum Derivatives
- Cost trend of renewables
- Impact of innovations in energy storage, EVs,
- What are the implications for the Caribbean Region?
- What will it take to expand local financial investments?





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## **RE & EE Project Financing- A Global And Regional Outlook**

# THANK YOU

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