Caribbean Hotel Energy Efficiency Action Program (CHENACT)

Final Presentation

Washington, DC

October 2012

Executive Summary

- CHENACT was a 3-year program funded by the Inter-American Development Bank, European Union, UN Environment Programme, and GIZ. CHENACT was executed by the Caribbean Tourism Organization, Caribbean Hotel and Tourism Association, and Caribbean Alliance for Sustainable Tourism.
- Detailed energy efficiency audits of various sized hotels showed savings potential of 20-30%, with payback periods of less than 5 years (depending upon the prevailing electricity tariffs).
- Assuming an average room rate of US$100, and electricity rates of $0.40/kWh, energy efficiency improvements would yield, over a 7 year period, the equivalent of:
  - 3,800 room nights revenue for small hotel (<50 rooms),
  - 7,500 room night revenue for a medium hotel (50-100 rooms)
  - 16,300 room night revenue for large hotel (>100 rooms)
- The net revenue (total savings minus investment), would be $280,000 for small hotel, $300,000 for medium hotel, and nearly $1 million for a large hotel over 7 years.

Summary of Impact of CHENACT Recommendations

Barbados Hotel Sector

- 96 hotels and 6,114 hotel rooms
- $16 million total investment in energy efficiency
- $10 million annual savings
- 27 million kWh total annual savings
- 18,800 tons CO_2e reduced annually
- 6,891kiloliters of diesel/HFO in reduced imports annually

Caribbean Region Hotel Sector

- 2,269 hotels; 241,058 hotel rooms
- $433 million total investment in energy efficiency
- $271 million annual savings
- 1,050 million kWh annual savings
- 835,000 tons CO_2e reduced annually
- 267,970 kiloliters of diesel/HFO in reduced imports annually

Topics

- Summary of CHENACT accomplishments
- Summary of CHENACT findings
- Summary of CHENACT lessons learned
- CHENACT Action Plan

CHENACT Accomplishments

- Institutional strengthening
  - 5 training workshops and/or conference sessions
  - 20 presentations at tourism and energy conferences
- Barbados Case Study
  - 31 detailed energy audits, 30 walk through energy assessments (64% of all licensed hotels in Barbados)
  - Electricity efficiency index for (<50, 51-100, 101-200, >200 room hotels)
  - Estimates of total electricity consumption and carbon footprint of Barbados hotel sector
  - Assessment of financing sources for hotel energy investment, including input to SMART Energy Fund design, cash flow model, support to 6 hotel's financing plans
  - Inventory of current refrigerant use in air conditioning and refrigeration equipment in the hotel sector (performed by UNEP)

CHENACT Accomplishments (cont.)

- Barbados Case Study (continued)
  - Hotel Clean Energy Policy
  - Support to pilot PV hotel demonstration (specifications, selection criteria, procurement document, proposal review)
  - Summary of impact of Barbados hotel EE program
  - Action Plan to implement CHENACT in Barbados (and region)
- Energy Performance Contracting for Caribbean Hotel Sector
  - Analysis of contracting models (shared savings, guaranteed saving, power purchase agreement, leasing/lease-purchasing)
  - Benefits and pitfalls of performance contracting
  - Profile of Caribbean energy services industry
  - Caribbean hotel energy performance contracting market
  - Caribbean hotel ESCO development strategy

CHENACT Accomplishments (cont.)

- Caribbean Regional Hotel CDM Program of Activity (PoA)
  - Analysis of carbon offsets and trading markets
  - Analysis of CDM for building EE projects
  - Analysis of applicable CDM methodologies
  - Description of sample CDM Program Activity (CPA) and steps to creating a Caribbean regional hotel EE PoA
- Model Hotel Clean Energy Program for the Caribbean
  - Profile of Caribbean hotel industry and electricity consumption
  - Additional 17 detailed energy audits in other islands (12 audits done by GIZ)
  - Model of 2,269 hotels (241,058 hotel rooms) in 25 countries/territories
  - Extrapolation of EE and carbon reduction potential
  - Analysis of benefits and costs of EE investment program
  - Analysis of the Caribbean EE market
  - Analysis of barriers to investment in hotel EE

CHENACT Accomplishments (cont.)

- CHENACT Communication Strategy
  - Caribbean hotel EE case studies and technology factsheets
  - Content for CHENACT website
  - Recommendations for communications messages and channels
  - Recommended communications activities for CHENACT counterparts and stakeholders

Topics

- Summary of CHENACT accomplishments
- Summary of CHENACT findings
- Summary of CHENACT lessons learned
- CHENACT Action Plan

Summary of CHENACT Findings

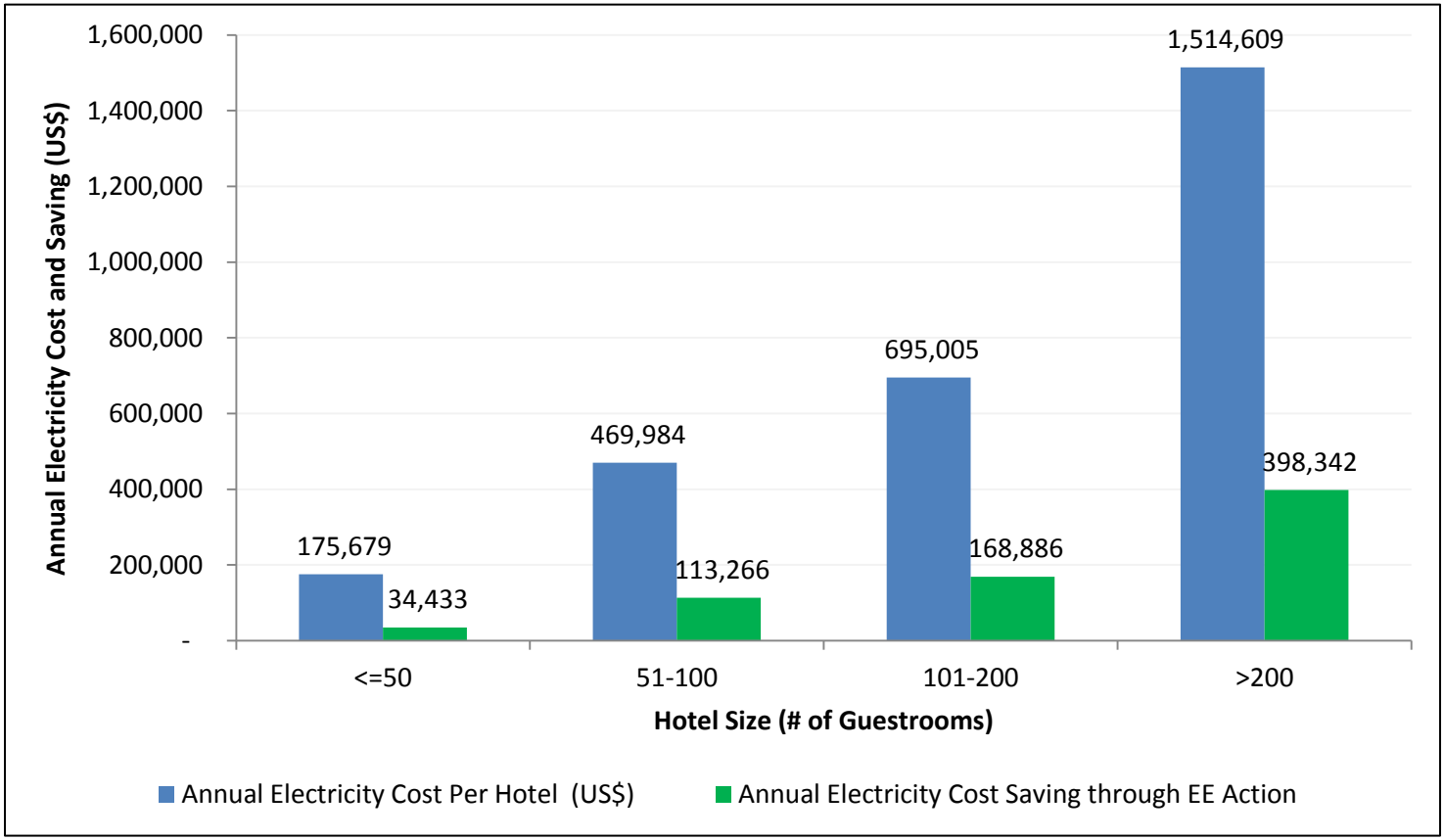
- CHENACT is a energy and climate change project in the tourism sector that introduced many new concepts (e.g., EE/RE technologies, performance contracting, CDM) to its principal counterparts
- None of CHENACT's principal counterparts (CHTA, CTO, CAST, BHTA) have in-house permanent technical staff to advocate for and facilitate clean energy implementation in the hotel sector
- There is considerable variation in the EE index among similar sized hotel properties, particularly for small hotels (<50 rooms)
- Air-conditioning and lighting together account for approximately two-thirds of total electricity use in Caribbean hotels
- EE projects would reduce electricity consumption by 20-30%, and would yield net savings of $280,000 to $1 million over 7 year period for small hotels (<50 rooms) to large hotels (>200 rooms), respectively. [1]
- IRR depends highly dependent on electricity tariff: 7% for 0.09 $/kWh vs.232% for 0.40 $/kWh

[1] Assumes US$0.40/kWh

Summary of CHENACT Findings (cont.)

- Despite high and rising cost of electricity, investments in cost-effective EE projects are not undertaken by Barbados hotels.
- A hotel clean energy policy framework includes initiatives by multiple sectors and entities (e.g., tourism, environment, energy, utility regulation, building and planning authorities, finance, customs).
- Over 835,000 tons of carbon-dioxide equivalent (CO_2e) could be reduced annually in the Caribbean region from hotel EE, however a CDM Program of Activities will initially be limited to a few countries with Designated National Authorities.
- Realizing the potential value of hotel EE investments will require an integrated approach that includes awareness, detailed analysis (audits), new technologies, targeted financing, qualified installation, and performance driven service providers.

Average Annual Electricity Expenditure for Barbados Hotels and Cost Saving Through Energy Efficiency Action



Electricity Use Index – CHENACT Benchmarks

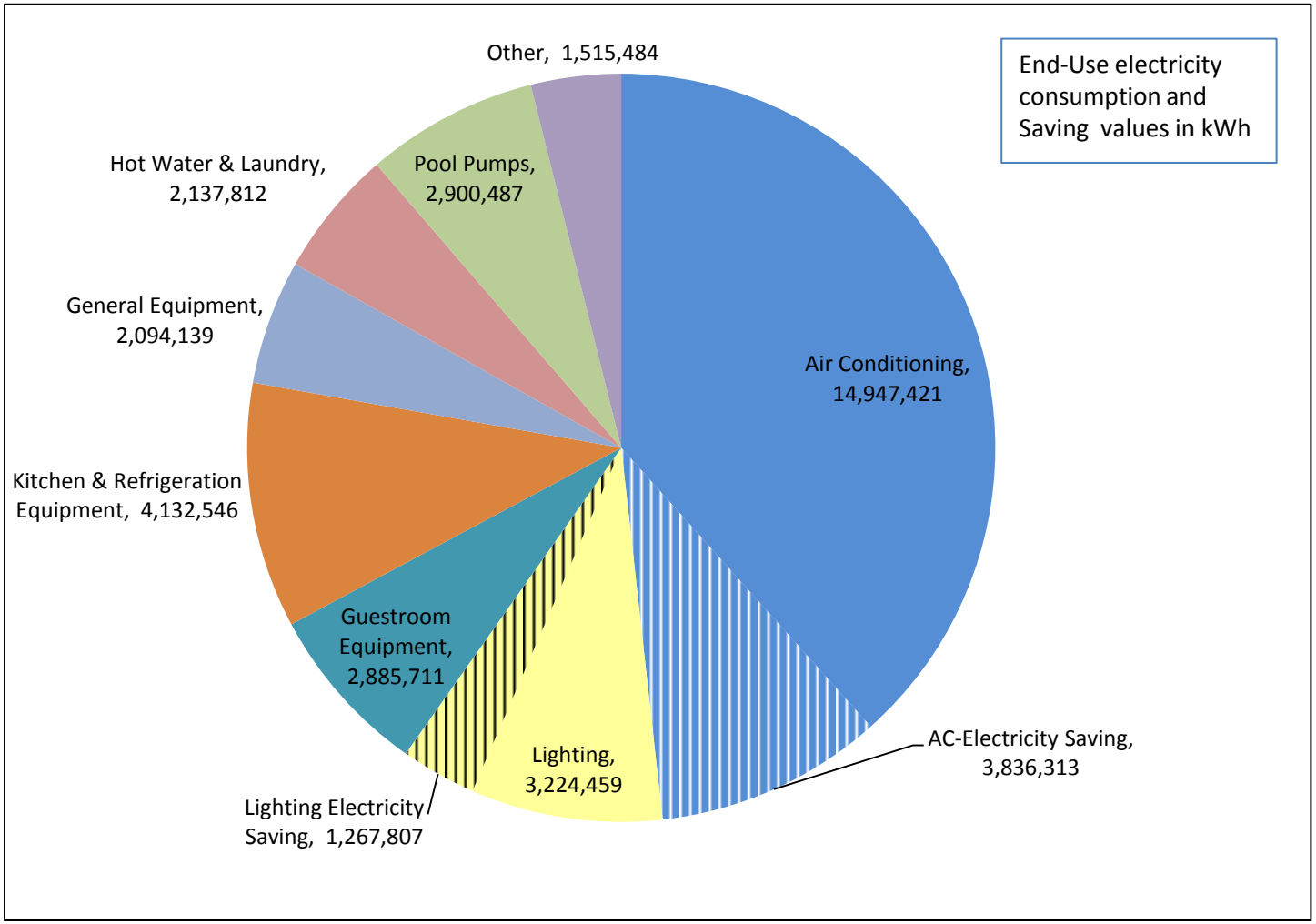
Smaller hotels, on average, consume more electricity than larger hotels. There is much more variation in the operations and amenities. Electricity benchmarks serve as one way to compare the relative efficiency of a hotel.

	Hotel Size (# of Guestrooms)			
	<=50	51-100	101-200	>200
High (kWh/Guest Night)	118	87	43	50
Average (kWh/Guest Night)	43	44	32	34
Low (kWh/Guest Night)	12	18	25	22
# of Hotels	13	8	5	4
GN/RN Ratio	1.63	1.79	1.79	1.90

Guest nights (GN) are the number of occupants in a hotel
Room nights (RN) are the number of occupied rooms

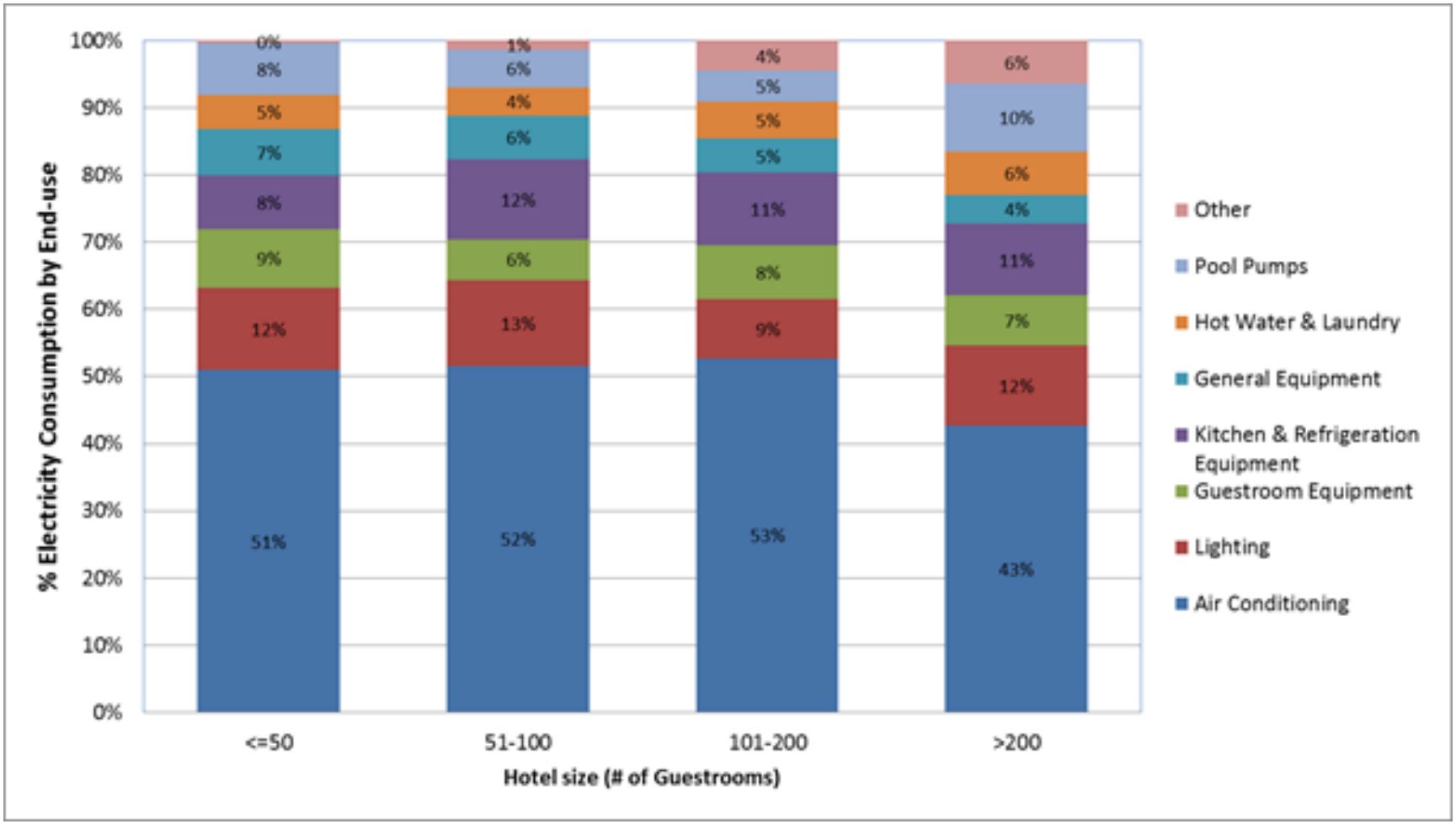
Overall Electricity Consumption by End-Use

Air conditioning and lighting together account for nearly two-thirds of all the electricity consumed in the hotel sector.



Electricity Consumption by End-Use for Different Sized Hotels in Barbados

Kitchen and Refrigeration uses more than 10% of medium and larger hotel's (>50 rooms) electricity use.



For <50 room hotels, hotels that were audited walkthrough, have been excluded from the sample

CFC use in the Barbados Hotel Sector

- Barbados is phasing-out hydro-chloro-fluorocarbons (HCFC) refrigerant gases presently being used in equipment such as air conditioning systems, freezers and refrigerators.

- HCFC R22 is the predominant refrigerant used in the hotel sector. R22 is used in 96% of the 3,300 mini-split A/C systems in the 51 audited hotels; whereas R134a is used in 96% of hotel's kitchen and bar equipment. R22 has a Ozone Depleting Substance (ODS) value of 0.05, but a Global Warming Potential (GWP) of 1700 times that of CO_2e. R134a has a ODS of 0.0 and GWP of 1300.

- Only two (2) hotels use new HFC refrigerant entirely in their systems for cooling of the guest rooms. One has five (5) R410a Chilled Water Systems and another has R407C mini split systems cooling the guest rooms. Four hotels still have CFC refrigerant systems at their premises.

- Representatives of the majority of the audited hotel indicated that there is no policy in place to adapt to ozone friendly technologies and no policy in place to train technicians in ozone friendly technologies.

Electricity Consumption and CO_2e Emissions for the Barbados Hotel Sector

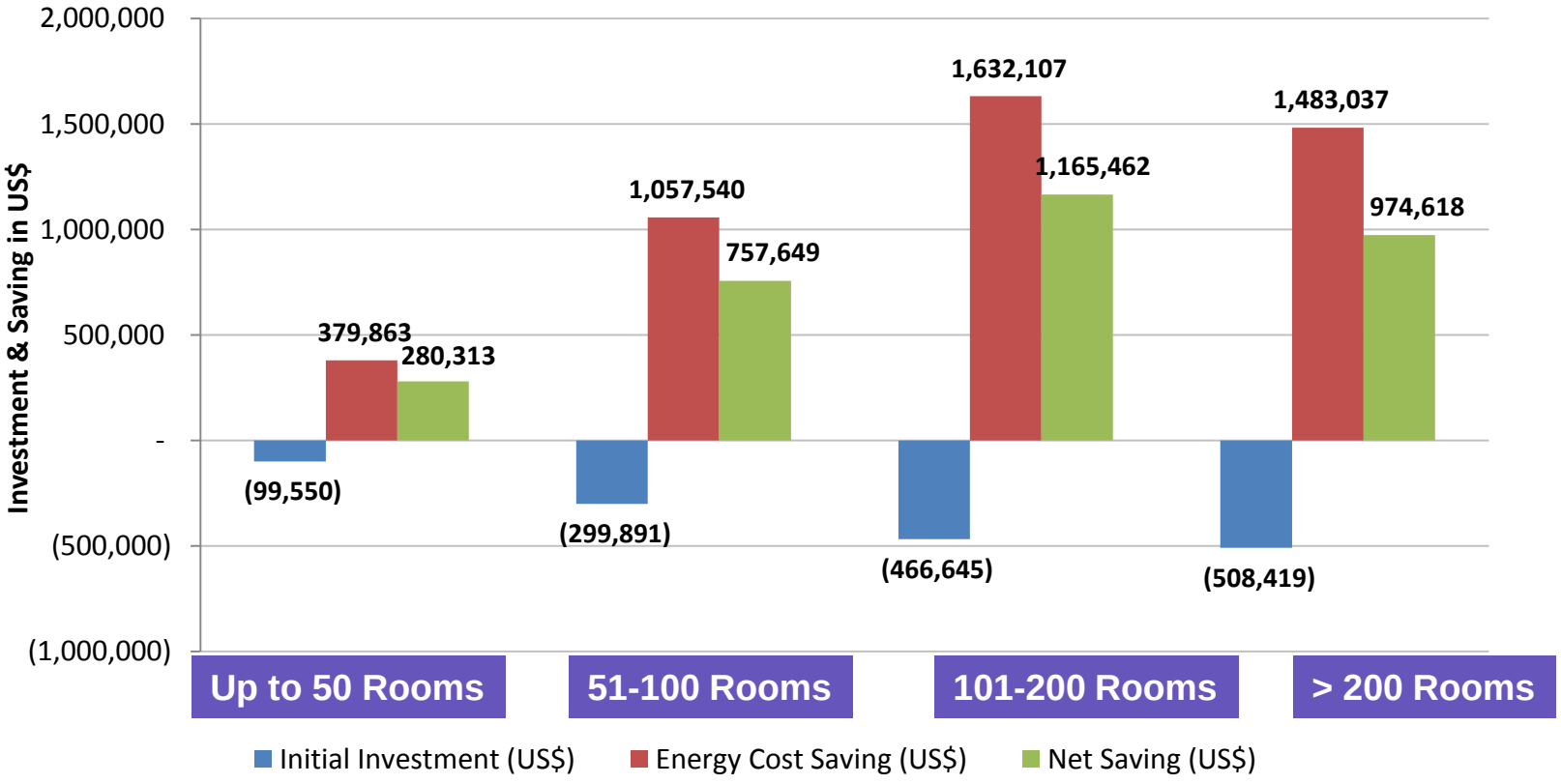
Extrapolating the results of the CHENACT detailed audits to 96 operating hotels in Barbados indicates that small hotels make up two-thirds of the total hotel properties, and 25% of total electricity consumption and CO_2e emissions.

# of Rooms	# of Hotels	Annual Electricity Consumption (MWh)	Annual CO_2e Emissions (Tons)
<=50	60	26,352	18,578
51-100	18	21,149	14,910
101-200	14	24,325	17,149
>200	4	15,146	10,678
Total	96	81,799	57,688

Hotels larger than 100 rooms make up only 8% of the total hotel properties, but account for 25% of total electricity consumption and CO_2e emissions.

Net Savings from EE Investment for Different Sized Hotels

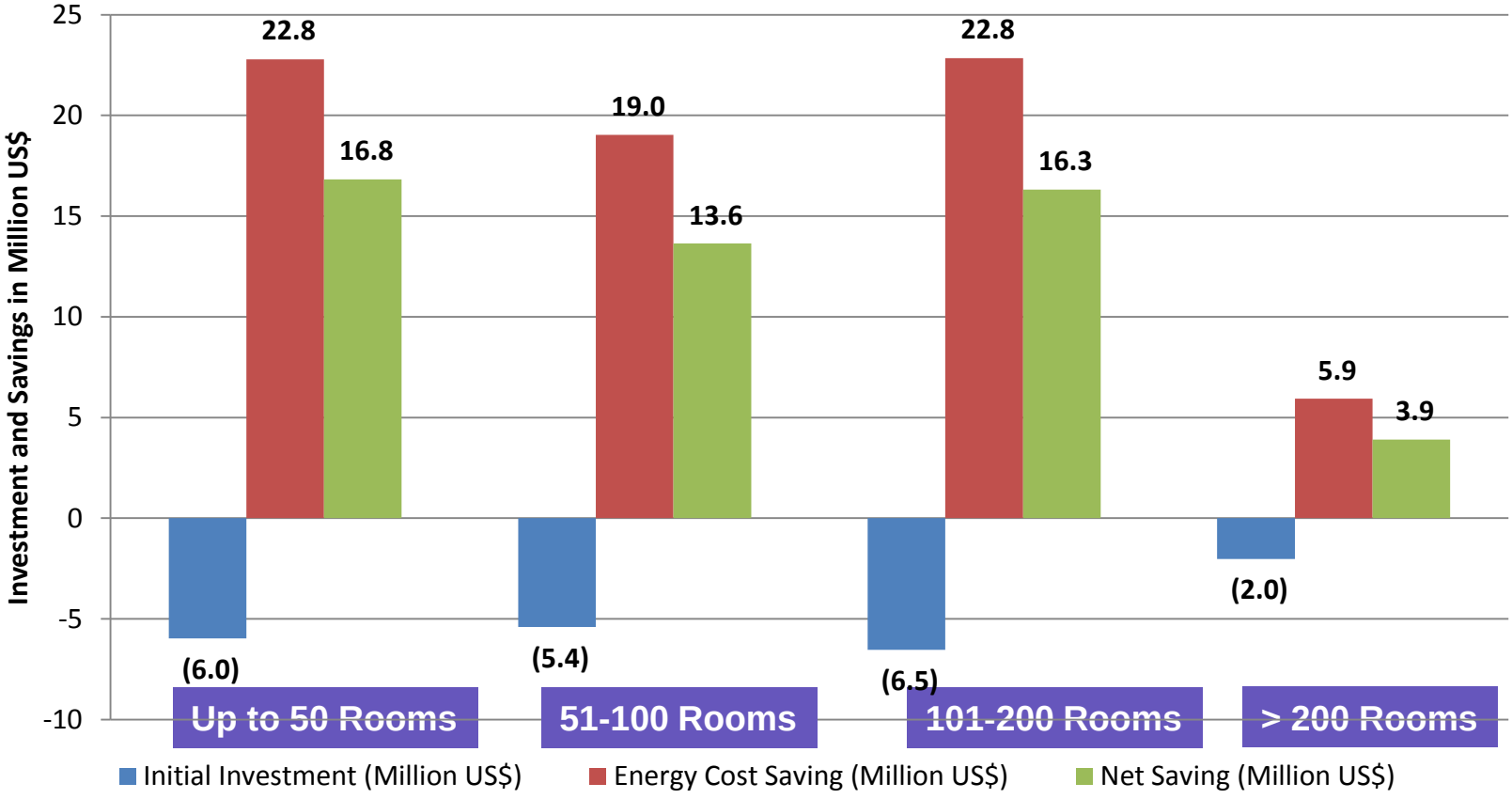
Hotels larger than 100 rooms could see savings of approximately $1.5 million over a 7-year period on an investment of approximately $500,000, or a net savings of approximately $1 million.



Assumptions: Analysis period – 7 years, Discount rate – 12%, Average electricity tariff – 0.40 US$/kWh, Electricity annual price escalation rate – 4.5% for Barbados.

Investment and Savings from Energy Efficiency in the Barbados Hotel Sector

US$ 20 million investment in Barbados hotel clean energy will yield US$ 50 million in net savings.



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Results of PV Demonstration

- Three (3) 7 kWdc grid-tied systems have been installed at three Barbados hotels as of October 2012.
- Systems awaiting inspection from BPL

Model Hotel Clean Energy Policy

The **goal** of the Model Hotel Clean Energy policy is to improve the competitiveness and viability of the Barbados hotel sector through increased energy efficiency and low carbon economic development.[1]

Policy Objectives

- **Improve the energy and water efficiency of Barbados hotels** – reduced kWh (and m^3 of water use) per guest night. Use hotel energy efficiency index as the b benchmark for efficiency rating.
- **Increase investment in cost-effective and proven energy efficiency and renewable energy technologies** – spending on green hotel design, efficient A/C, refrigeration, water heating, appliances, lighting, solar hot water, PV. Data collected from investment tax incentive filings.
- **Promote voluntary reduction of GHG emissions associated with energy use in hotels** within Barbados (as model for other sectors) and within the Caribbean (as a model for the tourism sector).

1 – The hotel clean energy policy could also qualify as a Nationally Appropriate Mitigation Action.

Impacts of a Model Hotel Clean Energy Policy

Desired Outcomes of CHENACT

- Growth in the Barbados clean energy industry (consultants, engineering companies, equipment suppliers/distributors, service providers) – tax revenue, employment
- Reduced operating costs for Barbados hotels - expenditures on electricity (and water)
- Improved balance of trade for Barbados through reduced imported energy resources – expenditures on oil imports
- Programmatic approach to reducing GHG emissions in the hotel sector as a example for other sectors
- Greater awareness of and appreciation for energy efficiency and renewable energy among hotel workers and the general public that can be employed in their homes

Proposed Barbados Hotel Clean Energy Policy Instruments

Policy Instrument	Proposed Intervention
Barbados Tourism Master Plan (2012-2021)	The TMP should include policy support for clean, energy efficiency, low carbon hotel development.
Tourism Development Act	Establish preference for EE verses non-EE investments, increased incentives for solar PV
Renewable energy system interconnection pilot program	Standardized long term power purchase agreement
SMART Energy Fund	Pre-investment grants, low interest loans tied to payback period, performance risk sharing, upfront payments for CERs
Building code (draft energy efficiency code)	Lighting, air-conditioning, hot water, appliance standards for hotel applications
Hotel Efficiency and/or Low Carbon Rating System	Voluntary rating system Promotion and marketing of “low carbon” development in tourism sector, accreditation of “low carbon” hotel properties
Hotel Appliance and Equipment Energy Efficiency Guidance	Lighting, air-conditioning, hot water, appliance standards for hotel applications
Hotel Clean Energy Capacity Building	Training for hotel management and staff, government, and local clean energy industry
Utility Demand Side Management (DSM) programs	Recovery of utility expenditures and allowable return on investment through rate base
Clean Energy Industry Development	Amend the Fiscal Incentives Act of 1974 to allow energy efficiency equipment suppliers manufacturers to benefit from import preferences and tax holidays.
Clean Development Mechanism Program of Activities for Hotels	National or part of regional program to structure projects so that they qualify under the CDM or other carbon markets
Elimination of CFC and other ODS in the Hotel Sector	Targeted awareness campaign for hotel owners and operators regarding the Montreal Protocol and associated Barbados ODS policies

Energy Service Industry in the Caribbean

Caribbean energy companies are typically involved in one or more of the following:

- Dissemination of information on energy technologies and products
- Studies such as audits and feasibility studies
- Engineering design (for more complex systems)
- Equipment supply (including manufacturers representatives)
- System integration (combining technologies and equipment)
- Electrical, plumbing, and ventilation/air-conditioning contracting
- System installation and commissioning
- Financing
- Operation and Maintenance (O&M) contracting
- Monitoring and Verification of system performance
- Technical training
- Supply of spare and replacement parts

Energy Service Companies (ESCOs)

Four different contract types are used with ESCOs:

- **Shared savings contract** - ESCO guarantees the cost of energy saved; the cost savings are split for a pre-determined length of time in accordance with a pre-arranged percentage. ESCO assumes the credit and performance risk.
- **Guaranteed savings contract -** ESCO guarantees a certain level of energy savings; the performance guarantee is the level of energy saved. The client assumes the credit risk, while the ESCO assumes the risk for the savings.
- **Power Purchase Agreement** – a contract between the power/energy producer and the consumer, and single cost for customer based on an easy to meter output, e.g., kilowatt hour or kWh. PPA provider would secure funding for the project, maintain and monitor the energy production.
- **Lease (or lease-purchase) agreement -** the consumer agrees to make a fixed payment to the ESCO for a fixed term. In addition to designing, operating, and maintaining the improvements, the ESCO guarantees that energy and maintenance savings from the project will exceed the payments to the ESCO. The net effect is similar to that under a shared savings agreement.

Benefits and Pitfalls of Energy Performance Contracting

The Caribbean hotel sector is unlikely to be a market for ESCOs because local providers are unable to provide financing and banks are not willing to accept savings as the basis for determining debt service coverage.

Benefits

- ESCO finances all of the project costs, including up-front engineering, construction, and maintenance services.
- Energy performance contracting streamlines the purchasing process for energy efficiency projects, reducing the cost and time required to bring energy-saving projects on line.
- The customer receives new and improved lighting, cooling, and other equipment and the cost of this equipment is either fully or partially offset by reduced utility bills.

Pitfalls

- Customer relies on ESCO in developing energy baseline and methodology for baseline adjustment (e.g., changes in operations).
- ESCOs can underestimate savings in order to ensure achieving contract terms.
- ESCO will include financing charge, as well as fees for maintenance, monitoring and verification.
- Performance agreements tend to be long term (5 years or greater), and may only include equipment-related savings, thereby ignoring operational savings

Adopting Performance Contracting Principals in Caribbean Hotel Sector

Despite the limited prospects for ESCOs, some elements of performance based service can be introduced:

- Encourage the bundling of energy services moving toward turnkey projects, e.g., studies, engineering design, procurement, installation, commissioning, operation and maintenance, and performance monitoring.
- Compile and disseminate information on EE equipment performance in hotel applications and analyze expected vs. actual performance.
- Develop standardized “baseline” calculation methodologies to reflect historical energy consumption and variations in occupancy (also relevant for CDM)
- Develop standardize contracts for energy performance contracts for hotel applications
- Provide government guarantees for investments in selected equipment retrofits/replacements.
- Encourage electric utilities to set up unregulated affiliates to offer performance based services to their customers.

CDM and Building Energy Efficiency

Energy efficiency projects have had limited success in the CDM market for the following reasons:

- Many, but individually small, reduction opportunities – Most CDM building EE methodologies are based on single technologies (types of equipment), whereas optimizing building EE requires many small interventions affecting architecture, engineering, building management, building function, occupant profiles.
- Carbon revenues are small compared to registration costs – Individual buildings cannot generate sufficient CERs to offset cost of design, registration, and monitoring/reporting/verification of reductions.
- Amount of carbon credits are small for each facility – Individual hotel projects are not attractive to carbon brokers or buyers.
- CDM's additionality requirement - Because of the fragmentation of the building market it can be almost impossible to prove what building design would have been selected in the absence of the CDM project. Energy efficiency investments in existing buildings are financially attractive, but are not typically pursued because of non-financial reasons.

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CDM Program of Activities

CDP Program of Activities (PoA) represents a good framework for capturing sector wide emission reductions for possible sale in voluntary markets:

- A Program of Activities (PoA) (often called Programmatic CDM) consists of multiple, similar smaller GHG emission reduction projects, each referred to as CDM Program Activities (CPAs).
- PoA is a voluntary coordinated action by a private or public entity which coordinates and implements any policy/measure or stated goal (i.e. incentive schemes and voluntary program).
- A PoA is characterized as: 1) a voluntary action, 2) implementing a policy, measure or stated goal, 3) coordinated by a public or private entity, 4) resulting in emission reductions or removals that are additional.
- One or more CPAs can be included under a PoA at the time of registration and additional CPAs can be added at any point in the life of the PoA.
- A PoA can involve CPAs being run in multiple countries, in which case a separate letter of approval would be required from each participating government Designated National Authority (DNA) involved.

Hotel Energy Efficiency CDM Program of Activities

Recommended technologies and services be included in the Hotel CDM PoA:

- Air conditioning retrofit - inverter type variable refrigerant volume mini-splits
- Guestroom energy controls – occupancy sensors, programmable thermostats
- Public area lighting controls – occupancy sensors
- Individual lamp replacement – compact fluorescent lamps (CFL) and Light Emitting Diode (LED) lamps
- Fluorescent tube lamps – T8 tube lamps with electronic ballasts and LEDs
- Solar hot water (SHW) heating systems
- Energy efficient freezers, refrigerators, cool rooms
- Guest room energy efficient mini-fridges, televisions
- Office and guestroom equipment – televisions, computer monitors
- Timers on pumps and motors
- Photo-sensors and timers for outdoor lighting
- Energy Management Systems

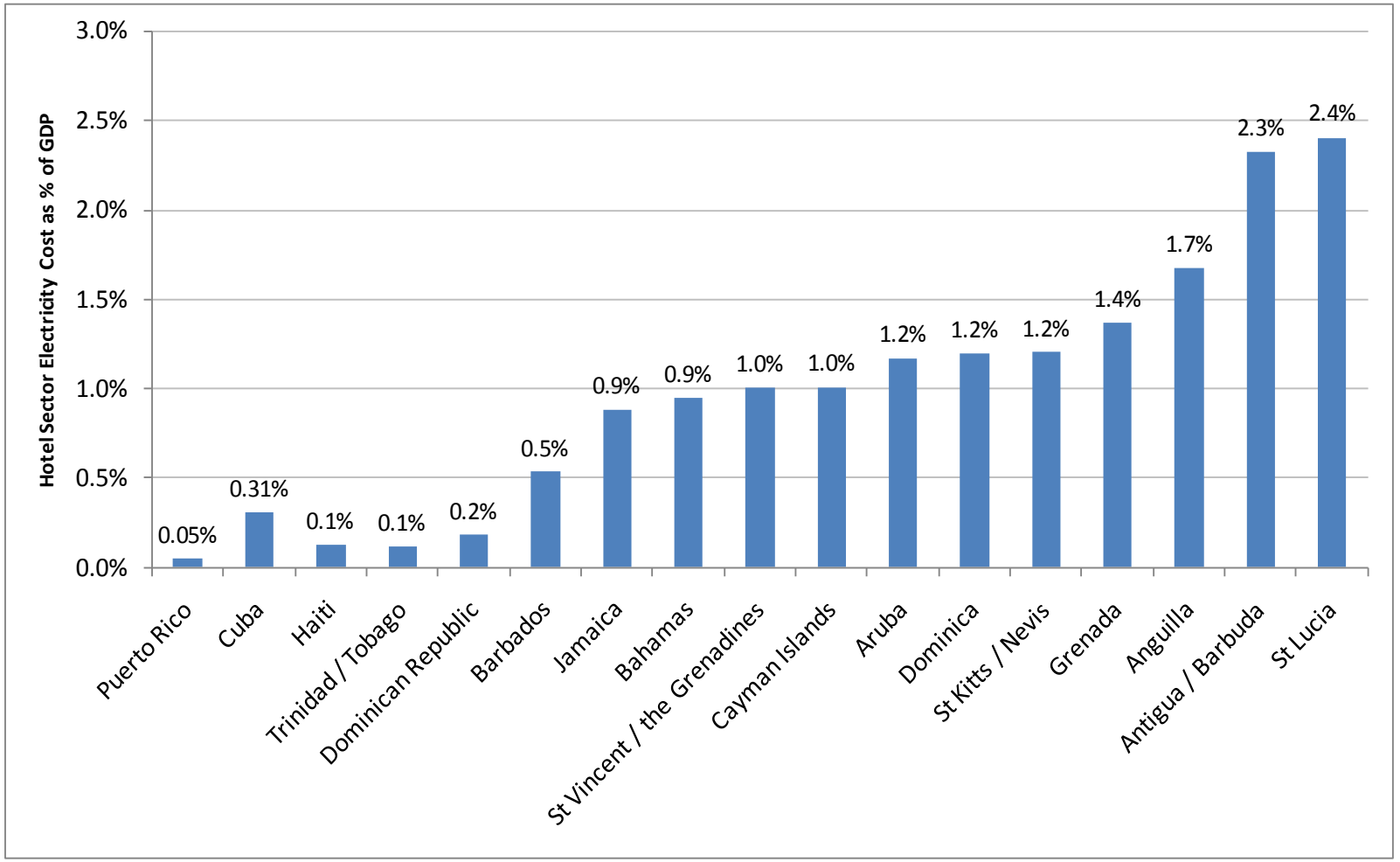
AMS-II Energy Efficiency and Fuel Switching for Buildings methodology allows for a combination of energy efficiency technologies, including SHW

Process for Establishing a Caribbean Hotel EE PoA

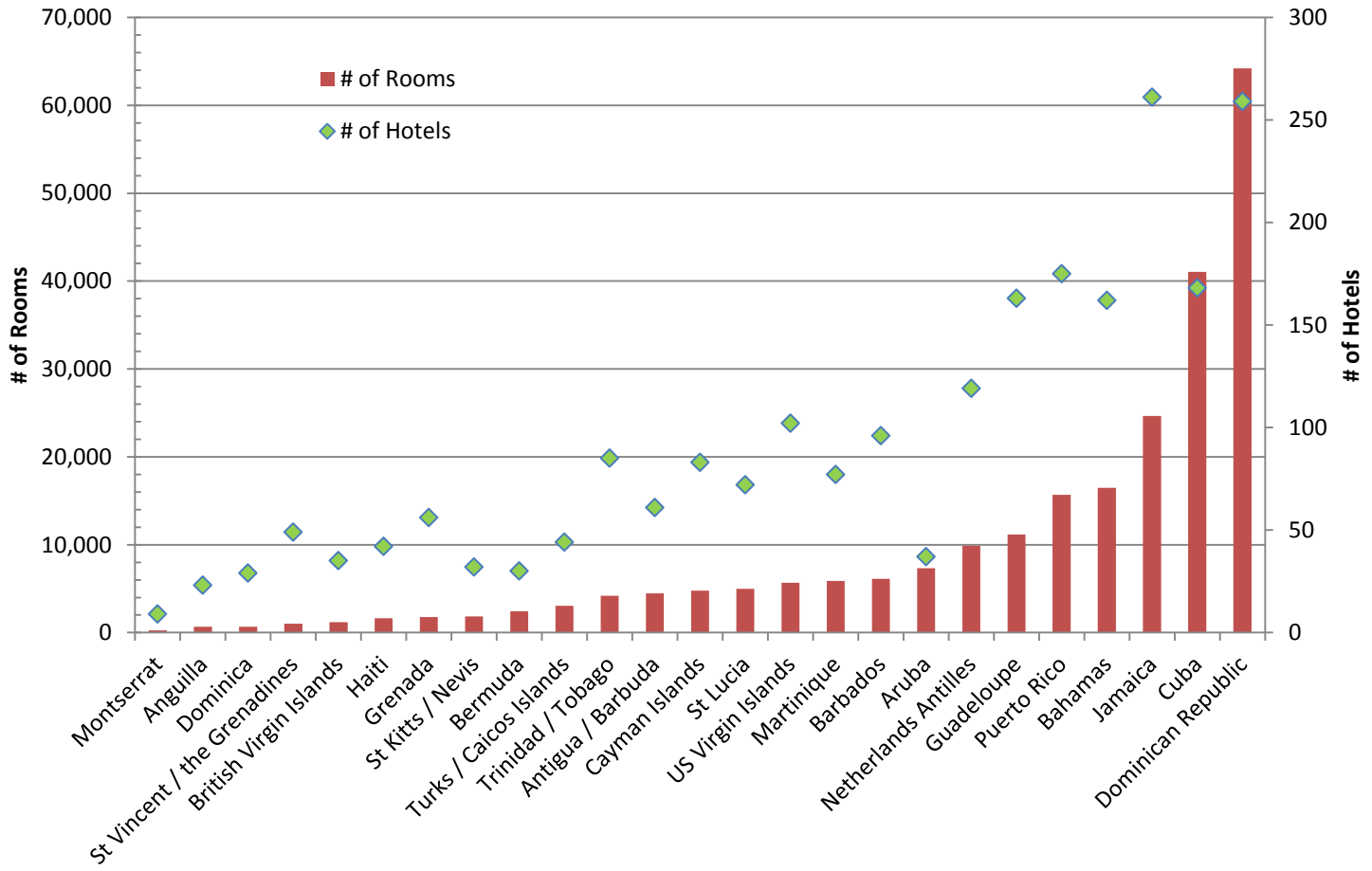
1. Define the geographic scope of the PoA based on:
   - Countries that have established a DNA (i.e., Antigua and Barbuda, Bahamas, Barbados, Belize, Mexico (Cancun, Cozumel, Playa Del Carmon), Dominica, Dominican Republic, Guyana, Jamaica, Suriname, Trinidad and Tobago)
   - DNAs that confirm that a Hotel Clean Energy Program assists in achieving "sustainable development"
   - Define the EE/RE technologies and associated methodologies to be included in the PoA, recommend using AMS-II Energy Efficiency and Fuel Switching for Buildings
2. Seek representative volunteer hotel property(ies) that will serve as the CDM Program Activity (CPA) in the registration of the PoA.
3. Estimate the size of the PoA in terms of the cumulative CERs generated by all future CPA participating in the PoA.
4. Establish the PoA Coordinating Entity
5. Prepare the Program of Activities Design Document (CDM-POA-DD).
6. Validation of PoA by Designated Operational Entity (DOE)
7. Application for Registration with UNFCC CDM or other carbon market

Hotel Sector Electricity Cost Share of GDP in the Caribbean

Hotel expenditures on electricity can represent more than 2% of total national GDP in smaller countries.

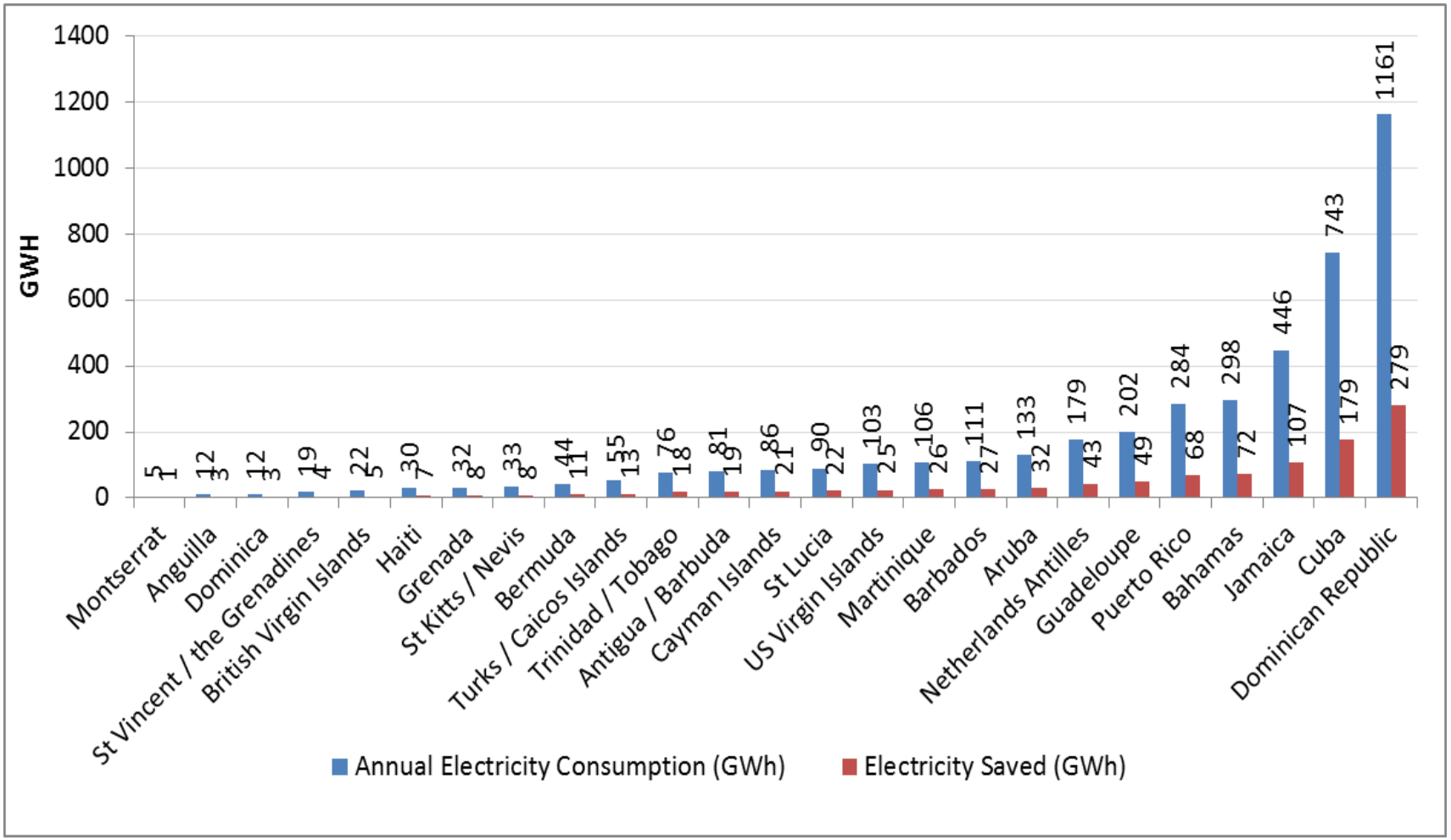


Overview of the Caribbean Hotel Sector

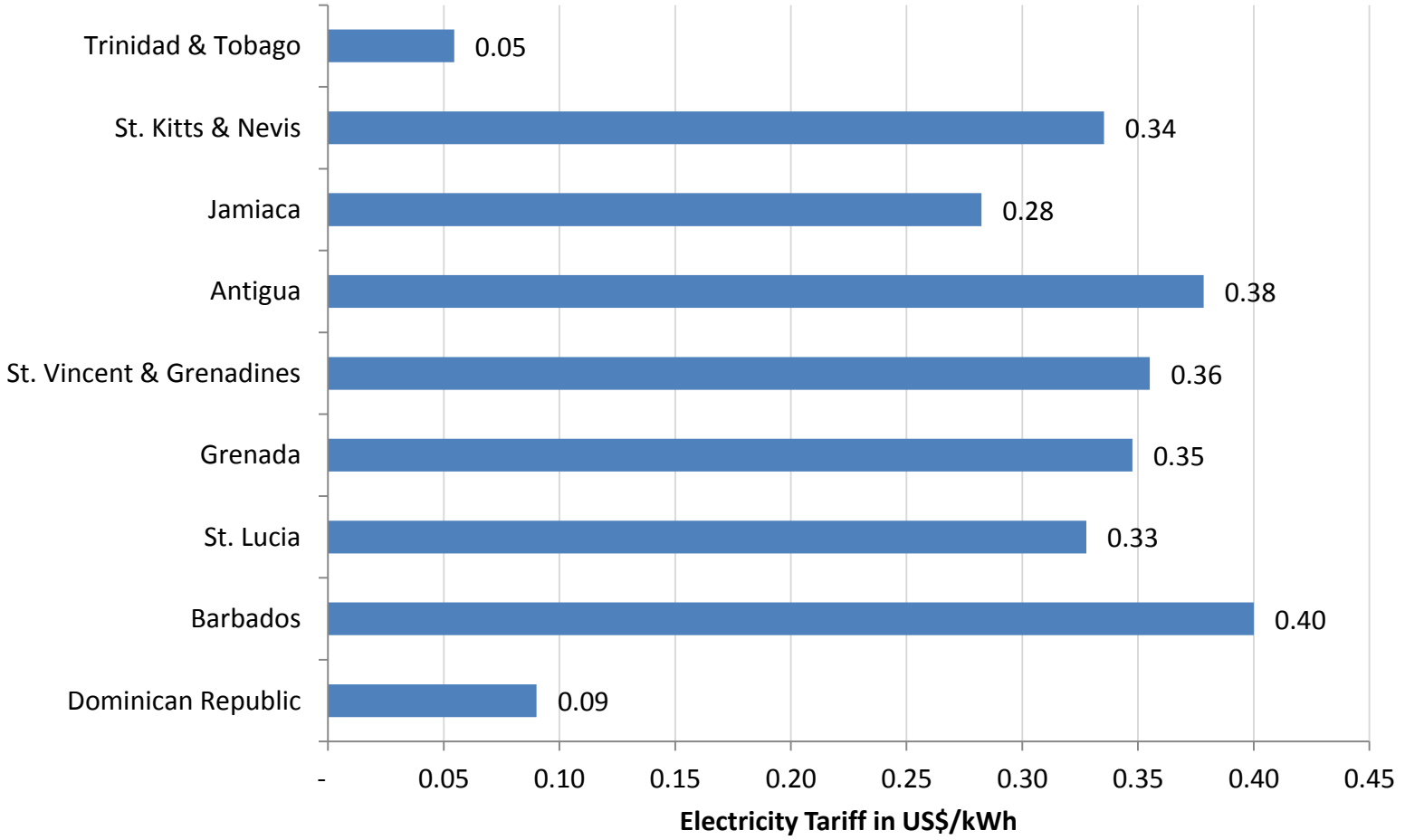


2,269 hotels in 25 countries/territories comprising 241,000 guestrooms

Caribbean Hotel Electricity Consumption and Potential Savings (GWh)



Electricity Tariffs in Selected Caribbean Countries



Note: Based on CHENACT audits, composite rates include total electricity bill divided by consumption, Dominical Republic tariff is based on Punta Cana, other parts of the country are up to US$0.25/kWh.

Electricity tariff determines the attractiveness of EE investments

Caribbean Territory	Electricity Tariff Rate (US$/kWh)	Simple Payback (years)	Net Present Value (NPV)	Internal Rate of Return (IRR)
Dominican Republic	0.09	6.5	(22,916)	7.2%
Barbados	0.40	1.5	585,046	232%
St. Lucia	0.33	1.8	443,087	137%
Grenada	0.35	1.7	482,108	158%
Antigua	0.38	1.5	542,554	197%

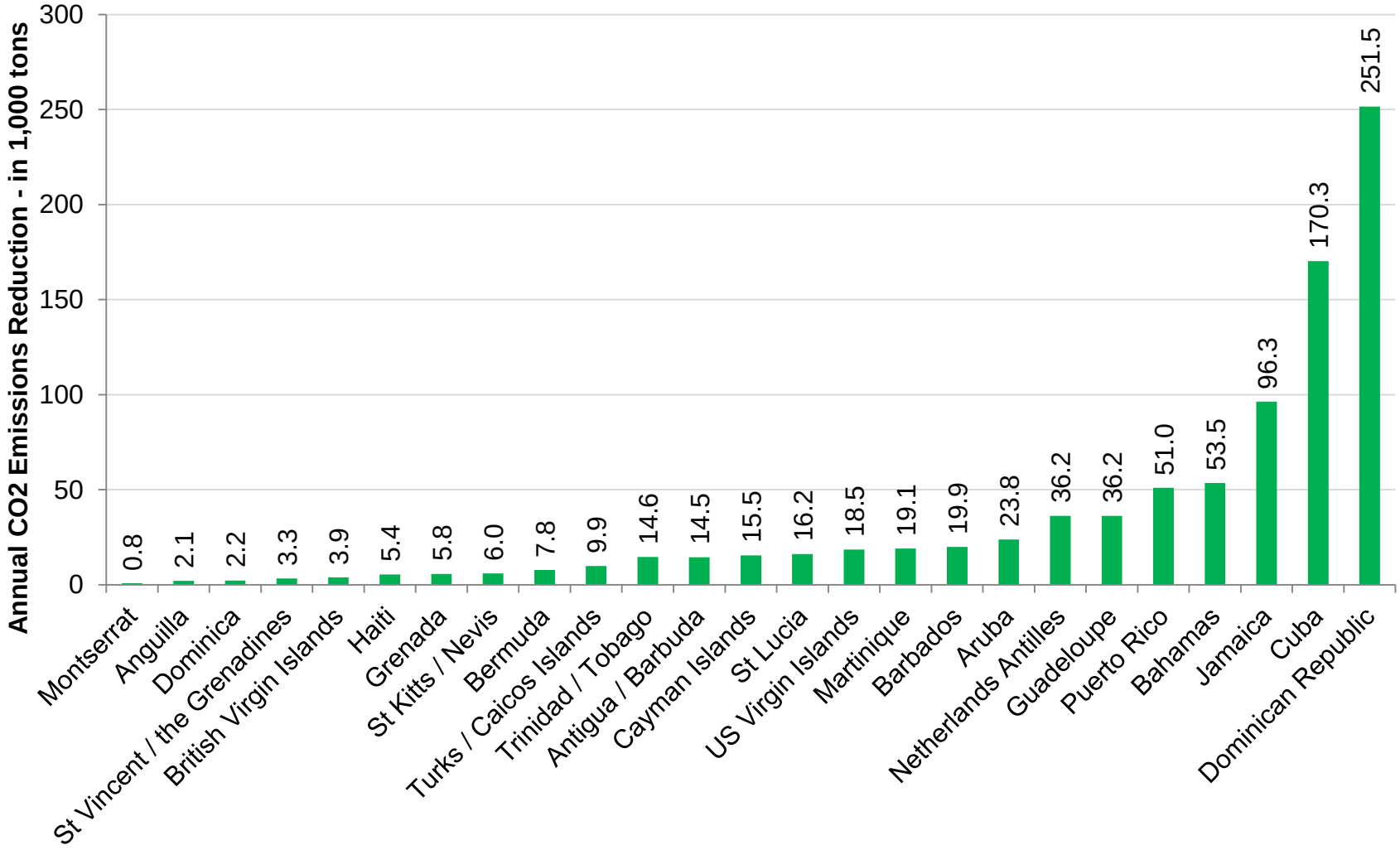
Note that Dominican Republic electricity tariff is based on the private utility at Punta Cana. Electricity rates in other parts of the DR are higher.

Caribbean is an attractive market for a number of EE/RE measures

Equipment	Electricity Saving (GWh)	Cost Saved (US$ - Million)	Investment (US$ - Million)	Payback Period
Air Conditioning	432	134	220	1.6
Lighting	106	31	21	0.7
Controls	97	31	49	1.6
Solar Hot Water	60	10	10	1.0
Window Film	45	12	22	1.9
Solar PV	45	13	46	3.6
Pool Pumps	25	7	4	0.6
Water pumps	10	3	1	0.5
Exhaust Fan	4	1	2	1.4
Total	**824**	**241**	**375**	**1.6**

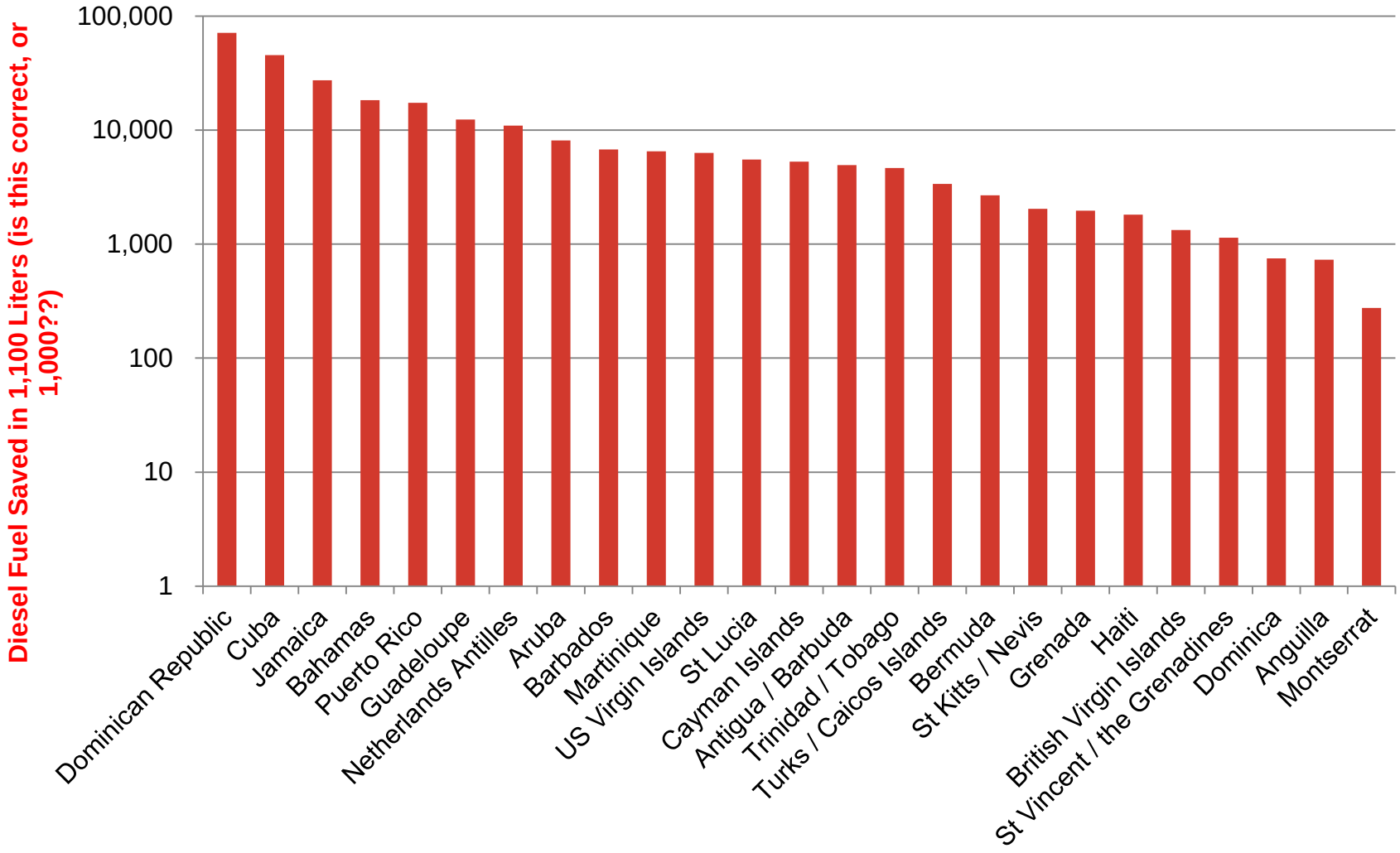
Assumes US$0.40 per kWh electricity tariff.

Annual CO_2e Emissions Reduction – Caribbean Region Hotel Sector



884 thousand tons CO_2e emissions can be avoided annually through EE actions

Diesel/Heavy Fuel Oil Saved



Annually 267,970 kiloliters Diesel/HFO can be saved as a result of EE improvements in hotels across the Caribbean region

Integrated Approach Extracts More Value from EE

Traditional Approach

1. Scope (low/no-cost only)
2. Technologies(locally available)
3. Procurement (price driven)
4. Installation (in-house or local contractors)

Electricity savings: 5-10%

CHENACT Approach

1. Scope (all cost-effective)
2. Studies (audits, feasibility studies)
3. Financing
4. Technologies (advanced)
5. Procurement (EE rating)
6. Installation (trained, outsourced)
7. Operation and maintenance
8. Monitoring
9. Revenue from CERs

Electricity savings: 20-30%

Benefits of CHENACT

Before CHENACT

- Hotels complain about high electricity bills
- EE improvements done incrementally
- Technology application based on local market and word of mouth
- Investment made from cash flow, low cost options only
- Hotels unable to calculate savings (kWh and $) and return on investment
- Hotel industry without access to carbon revenues and associated marketing benefits

After CHENACT

- Hotels benchmark their electricity to see relative efficiency
- EE improvements identified through detailed energy audits
- Proven innovative technologies sourced from global suppliers
- Attractive financing available allowing larger retrofit investments
- Hotels compare investments in increased efficiency to increased room revenue
- Hotels participate in voluntary carbon emission market

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Summary of CHENACT Phase 1 Lesson Learned

- While CHENACT Phase 1 successfully demonstrated the potential for clean energy investment and emissions reduction, realization of the regional potential will require successful implementation in Barbados as well as large (e.g., DR, Jamaica, Bahamas) and small (OECS) markets
- Period of Performance (11 months) was not sufficient achieve and disseminate results given the scope and complexity of CHENACT.
- Significant delays experienced in completing some detailed hotel audits/reports due to challenges in getting hotel energy/occupancy data and delays in preparing audit reports.
- Delays in the PV demonstration was due to unfamiliarity with IADB procurement process and limited response to bid.
- SMART Fund must address hotel industry barriers to investments, e.g., collateral requirements, lack of confidence in financial returns of EE investments.
- It is unlikely that CHTA, CAST and CTO will be effective advocates for CHENACT implementation without additional in-house technical expertise or program implementation partner(s).

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CHENACT Action Plan

Recommended Action	Organizational Responsibility in Barbados	Organizational Responsibility Outside Barbados
Share findings of energy audits and project results to members	BHTA	CHTA, CSHAE
Promote EE as a means of reducing electricity bills	BLP, BDET, BHTA	CARILEC, CHTA
Support the implementation of a model Hotel Clean Energy Policy	BMOE, BMOT, BDOET	CTO, CARICOM Energy Unit, OAS
Promote hotel loan application to the Smart Fund	EGFL, BHTA, BDOET, BMOT	None
Incorporate “carbon neutrality” as a goal of the Tourism Master Plan.	BMOT, BDOET, BHTA	CTO, CHTA, CCCCC
Propose revision to the Tourism Development Act to include additional incentives for energy efficiency (EE) and renewable energy (RE)	BMOT, BHTA	CTO
Review the experience of the CHENACT PV pilot demonstration and prepare a proposal for expanding to other hotels	BLP, BDOET, BHTA	None
Propose a specific guidelines for adopting the Building Energy Efficiency Code for hotels	BHTA, BNSI	None
Develop an energy efficiency rating system for hotels	BHTA, BMOT, BDOET, BOE	None
Adopt an energy-efficient appliance rating system	BHTA, BNSI, BDOET	CHTA, CARICOM CROSQ
Accelerate a training and capacity building program for EE and RE technologies, applications and practices in the hotel sector	BMOT, BDOET, BHTA, BCC	UWI, CHTA
Research and advocate for incentives to electric utilities to finance and implement demand-side management programs for the hotel sector	BLP, BDOET	CARILEC, CARICOM Energy Unit
Investigate CDM Program of Activities for Hotel EE applications	BHTA, BMOE, BMOT, BDOET	CHTA, CTO, CAST, CARICOM Energy Unit
Accelerate the elimination of CFCs and other ozone-depleting substances in the hotel sector	BMOE, BMOT, BHTA	UNEP, CTO
Identify energy equipment and service providers willing to guarantee performance or finance energy savings projects	BHTA	CHTA