

iNDC Emissions Trading System



A Characterisation

By The Energy Chamber of Trinidad and Tobago

15 September 2015

Presentation to: UNFCCC Regional Collaboration Centre
St. George's Grenada West Indies

A collaboration between UNFCCC and WINDREF

NEW MARKET MECHANISM (NMM) TO FUND CLEAN ENERGY SYSTEMS AND SET A COMMON CARBON PRICE IN THE CARIBBEAN

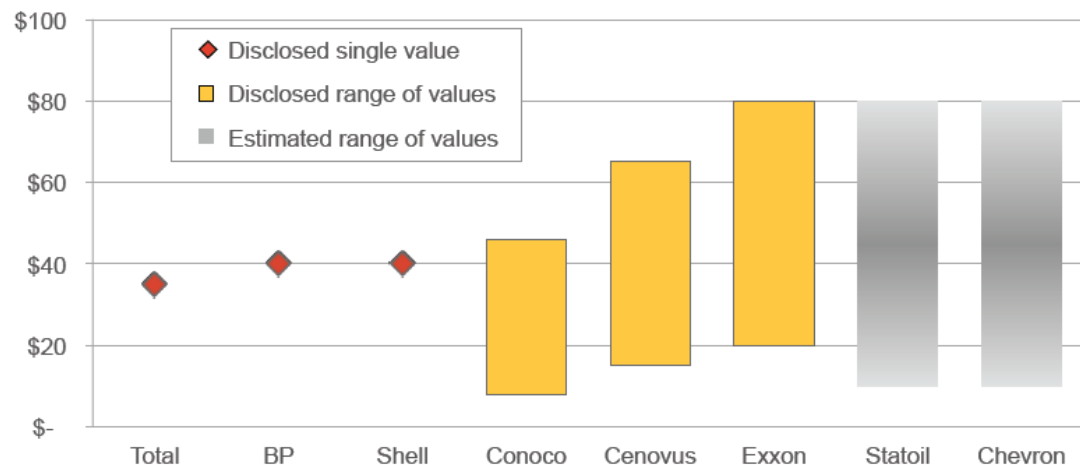
Caribbean Carbon Market (CCM)

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|--------------------------|---|
| Date | 15 September 2015 |
| By | The Energy Chamber of Trinidad and Tobago (ECTT), www.energy.tt |
| Work stream | Climate Mitigation Funding Plan |
| Sector(s) | Renewable Energy Systems Development, Fugitive Emission Recovery and Utilization, Industrial Process Emission Reduction, Transportation Fuel Switch, Energy Efficiency, and Carbon Capture and Sequestration (CCS) |
| Region or country | Caribbean Small Island Developing States (SIDS): Anguilla, Antigua and Barbuda, Bahamas, Barbados, Belize, Cuba, Curacao, Dominica, Dominican Republic, Grenada, Guyana, Haiti, Jamaica, Montserrat, Netherlands Antilles, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago, Turks and Caicos Islands |
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Internal CO₂ costs used by oil & gas majors (US\$/tonne)

Prices in CO₂ project mitigation options as a result of future regulation

Sources: Carbon Disclosure Project, 2013; Exxon Outlook, 2014; interviews with company reps.



DESCRIPTION

Long description

Challenge: Ten million people in the Caribbean are without access to electricity due to a lack of financial resources for needed advancements. The Caribbean transportation and power sectors rely on dirty and expensive fuels. **Solution:** A Caribbean Carbon Market (CCM) to facilitate investment in renewable energy production, manufacturing, the built environment, CCS and the extractive industries. Carbon markets will be a significant part of the Paris agreement that will create international demand and common pricing (exchange rates) for units generated by a regional GHG trading system. **Business Plan:** The European Commission (EC), ECTT and Petrotrin have retrofitted the Trinidad registered UNFCCC Clean Development Mechanism (CDM) programmatic project into an NMM and an Intended Nationally Determined Contribution (iNDC) candidate through the addition of emission market features, such as international transaction logs, an emitter database, GHG inventory and a registry. The CCM will target renewable systems, energy efficiency and low emission development that would not occur organically. **Investment Metrics:** Over 75% of all emissions are derived from fossil fuels. A CCM furthers the region's transition from fossil fuel. The oil sector will lead the global climate debate, and to meet its compliance obligations, it will become a source of investment for a CCM and an advocate of credit system linkage to cap-and-trade systems. The CCM will determine the cost of pollution and catalyze green technologies in the Caribbean.

History

Europe promised long term revenue streams to clean and low emission UNFCCC CDM projects. Trinidad's USD3mn CDM investment was stranded because the European carbon trading system was not designed with enough supply and demand flexibility. It will engage other cap-and-trade markets and its largest emitters to purchase CCM carbon credits. A private-sector-hosted, regional carbon market is a more reliable option as a source for equity for Caribbean states' emission reduction climate intervention projects.

Relevant literature

[1] **World Bank.** *Preparing for Carbon Pricing: Case Studies from Company Experience: Royal Dutch Shell, Rio Tinto, and Pacific Gas & Electric Company.* PMR. 2015 [link](#). [2] **Hsia-kiung, K.** *Strength in Numbers: Linked California-Quebec Market Benefits Environment & Economy.* Environmental Defense Fund. 11 Sep 2014 [link](#). [3] **BNEF, Ernst & Young.** *South Korea's Emissions Trading Scheme White Paper.* 10 May 2013 [link](#). [4] **Schoenberg, M., Weekes, T.** *The CDM: The power of markets should be reignited for the 2015 Paris climate agreement.* CCC. 6 Aug 2014 [link](#).

Scale and scope

Using an integrated strategy to channel concessional resources, a CCM will structure projects and lead syndications to scale the credit system to safeguard project environmental integrity and enforce best practice. USD3.2bn in Trinidad and Tobago target in the first three years will be achieved through the following sectors:

- CCS - USD900mn – Trinidad and Tobago (TT)
- Transportation fuel switch - USD375mn – TT
- Oilfield Vent and Flare Out – USD325mn – Netherland Antilles (NA) / TT
- Petrochemical Plant retrofits – USD450mn – TT
- Refining and Gas Processing facilities - USD600mn – NA / TT
- Renewable and Alternative Energy systems - USD550mn – W.I. / Bahamas

Barriers to implementation

1. Lack of international political will to reach an agreement in Paris 2015.
2. Cap-and-trade systems' reluctance to link with a credit system.
3. Power and influence to bring together Caribbean states to co-host or participate in a Caribbean SIDS-wide credit system.
4. Acquisition of pursuit capital required to organize, coordinate, design and implement the credit system.

QUANTITATIVE ANALYSIS

Analysis

Current market size:

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| 1) Relevant geography and industry: | Caribbean SIDS: renewable energy systems production, energy efficiency, built environment, manufacturing, transportation, CCS, and extractive industries emission reductions. |
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| 2) Market size of industry: | USD80bn (carbon market) |
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| 3) Annual investment in industry: | USD45bn |
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Market growth opportunity:

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| 1) Future potential market size in the first three years: | ~USD3.2bn |
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| 2) Future potential annual investment in industry: | USD133mn |
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Metrics:

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| 1) Annual new concessional finance raised as a result of a Paris Agreement: | ~USD1bn/yr : a negotiated share of the earned system carbon equity and concessional finance will be allocated for climate intervention projects in other Caribbean states. |
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| 2) Expected implementation time: | <1 year |
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| 3) Current stage of development: | Design phase |
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Other benefits of the intervention: Caribbean region job creation, technology transfer, sustainable climate finance, local business opportunity, foreign investment and energy security are just some of the collateral benefits derived from the CCM. Of the projected USD3.2bn, 40% or USD1.3bn will circulate more than once in local economies because of this climate intervention. The CCM also serves as a buffer for oil sector divestment and the stranded reserves challenge due to the CCM natural gas to clean energy systems transitional philosophy.

Trinidad and Tobago's investment in the Caribbean

A carbon market is a plan of action designed to advance both governments and the private sector from fossil fuels as an energy source to renewable energy and alternative energy systems. Trinidad and Tobago's very high per-capita emissions will be monetized by the CCM and the earnings will be shared with select Caribbean and regional Latin American states that suffer from fossil fuel energy dependency resulting in high electricity costs.

Justification for scale metrics

Market size: Point Carbon predicts that by 2017, 11.5Gt of carbon will be traded in the world's carbon markets. Emitters will contract directly with the CCM and work with it from project planning stages to credit delivery. There will be a further boost in growth if there is a successful deal in Paris.

Market growth opportunity: Around the world countries are coming up with ways to put a price on carbon. Emission trading and rising carbon prices will drive the low emission and renewable energy infrastructure development market to USD1tn annually by 2021. Point Carbon expects the CO2 per tonne carbon price to average ~USD15 from 2015 to 2020. It projects an increase to USD27 per tonne from 2021 to 2030. In the first 3 years of operation, the CCM target is for 4% of the annual USD80bn market or USD3.2bn. Private sector investment in the region is calculated at 12.5% or USD133mn per year which will require ~USD1bn per year in concessional finance and carrying costs.

Metrics: Help offset limited trading in first year due to low unit purchases by emitters in other systems and place annual ~USD1bn finance to actualize CCM's energy portfolio. The CCM will drive private placements of USD133mn annually to full fund a credit system that scales to USD3.2bn in 3 years.

Other metrics: The CCM design features are crafted to participate in a global carbon market, whether an agreement is reached in Paris or not. The credit system will employ new and innovative risk mitigation instruments to protect developers, investors and lenders. CCM life-cycle carbon equity will contribute ~20% to each project's operating and developer debt service costs.

PLANNING OUTPUT

Objectives through ECTT

1. Political advocacy re US State Dept./ Japan/ EC.
2. Promotion of the CCM with other cap-and-trade carbon markets.
3. Technical assistance with credit system final design and system marketing and branding.
4. Business plan development support.
5. Introduction to institutional investors and private equity funds.
6. Multilateral development bank networking and technical assistance for loan applications.

Our approach

Fossil fuel is used to produce electricity region-wide. Natural gas, a perfect transitional fuel, is cost-effective and has a carbon output of 30% < diesel. A post registration change of the Trinidad CDM gas recovery and utilization projects are the basis of the CCM market framework. Oil and gas companies and other big emitters will fund soft cost and working capital requirements of the credit system. Transaction fees generated by offset purchases will generate credit system revenues for scale and CCM clean energy investment.

Key individuals and organisations

[1] **Joseph Biden**, Vice President of the United States; [2] **Dr. Hugh Sealy**, Member UNFCCC CDM Executive Board; [3] **Spencer Thomas**, Head Multilateral Environmental Agreements, Government of Grenada; [4] **Pedro Barata**, European Commission NMM Advocate; [5] **Julia Meisel**, US State Dept. iNDC Technical Support; [6] **Nisha Thirumurthy**, Sr. Project Leader, U.S. DOE, National Renewable Energy Laboratory, WDC; [7] **University of the West Indies**; [8] **University of Trinidad and Tobago**; [9] **Ministry of Energy and Energy Affairs**, Government of Trinidad & Tobago.

Action plan + timeline for implementation milestone

Date

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| Energy Chamber Council CCM approval | Apr 2015 |
| Firm up advocacy and formal coalition support metrics with European Commission and US State Department | Jun 2015 |
| Meet iNDC requirements and deadlines for credit system deliverable as outlined by the UNFCCC at http://goo.gl/3I5WZ8 | Jul 2015 |
| Trinidad and Tobago's formal Cabinet approval and upload of its iNDC | Aug 2015 |
| Receipt of capital from onshore oil sector emitters and complete CCM hosting designations and carbon rights agreements | Sep 2015 |
| Approval from UNFCCC to scale existing CDM project to NMM | Oct 2015 |
| CCM GHG targets announced and marginal abatement cost curve set | Nov 2015 |
| Obtain expression of interest to link with other carbon markets (e.g., CARB, Mexico, Costa Rica, and Japan) | Dec 2015 |
| Complete credit system business plan | Jan 2016 |
| Begin registration of low emission and renewable energy projects | Apr 2016 |

ECTT additional responsibilities

1. On behalf of the CCM, liaise as needed with the Ad Hoc Working Group of Durban Platform (AWG-ADP) co-Chairs with regard to their iNDC work products/ideology/opinions. Champion the interests of carbon markets and offsets with the AWG-ADP.
2. Incentivize Caribbean governments, other cap-and-trade systems, companies and entire industries to participate with or in the CCM to meet their caps in the most economical way possible through low emission development, use of green technologies and/or by buying offsets from the CCM.
3. Financial guidance, leverage and delivery of climate finance, assist the CCM with Californian, Canadian, Mexican, Costa Rican and Japanese carbon market policy relative to offset inclusion, facilitate cap-and-trade linking options, system promotion, grant sourcing, private placement identification, donation advocacy, and act as a patron for the CCM with intermediary multilateral and bilateral lenders.