PROGRAMME

TRAINING ON THE ECONOMIC RATIONALE
FOR
ENERGY EFFICIENCY

12-16 SEPTEMBER 2016,
MARRIOTT HOTEL, FRIGATE BAY,
ST. KITTS AND NEVIS

*****

BACKGROUND

Despite the availability of tremendous domestic renewable energy resources, the many CARICOM member countries remain disproportionately dependent on imported fossil fuel, which exposes member countries to volatile oil prices, limits economic development, and degrades local natural resources. Although the electricity prices are very high, the use of electricity is mostly inefficient. For instance, about 40% of the electricity consumption in the Caribbean region is being used for cooling. Due to low efficiency levels and high leakage rates of refrigerant gases with high global warming potential (GWP), the refrigeration and air-conditioning (RAC) sector is responsible for a significant share of global greenhouse gas (GHG) emissions, and this share is expected to rise to 30% by 2030. The rapidly expanding middle class and changing lifestyles translate into growing demand for refrigeration and air-conditioning. In order to mitigate both direct and indirect emissions from the cooling sector, the introduction and diffusion of green cooling technologies is of paramount importance.

There are different financing opportunities, provided by Development Banks and other financial institutions, available or under preparation but many project opportunities are not translated into bankable projects yet. The main challenges and weaknesses include the following:

- Unavailable or insufficient collateral/securities for loans by the borrower,
- Lack of knowledge in terms of financial modelling of RE/EE projects and the translation of technical data, savings, etc. into cash-flows,
- Borrowers being unable to meet the minimum requirements for loan applications due to a lack of capacity and knowledge,
- Investors are cautious in taking long/mid-term investment decisions,
- Lack of fiscal and/or budgetary flexibility at public authorities to refinance EE/ RE investment,
- High transaction cost associated with smaller loans for EE investment,
- Limited offer of EE/RE loans from commercial banks,
- No/little innovative financing schemes available,
- Disproportionate determination of risk for RE/EE projects,
- No risk mitigation mechanism for RE/EE investment available,
- No/little experiences with project finance; only corporate finance available; etc.

Since in the near future additional financing sources are going to be available under the climate regime (e.g. Green Climate Fund, etc.), the regional and national stakeholders have to be increasingly able to meet the political, organizational and technical challenges of the growing energy market in the Caribbean region. Recognizing the

critical role of sustainable energy development in addressing the energy security challenges of CARICOM member countries, the training week focuses on the specific afore-mentioned weaknesses and challenges and intends to strengthen the linkages

between energy, climate and financing experts. After attending the training, the participants will be capable of better integrating EE activities in the cooling sector into climate processes and to perform their own detailed investment grade calculation and financial modelling of EE projects.

The NAMA Development in the Cooling Sector Workshop will examine –

(i) Information about greenhouse gas mitigation potential in the cooling sector in regard to refrigerant and energy use;

(ii) Introduction to Nationally Appropriate Mitigation Action (NAMA) development as contributions to Nationally Determined Contributions (NDCs);

(iii) Linkages between NAMAs and Minimum Energy Performance Standards (MEPS) for cooling equipment with a the focus on the value and benefits from the energy efficiency savings;

(iv) Overview over technical, policy & financing options in the refrigeration & air conditioning sector.

The Investment-Grade Calculation, Analysis and Financial Modelling Workshop will examine –

(i) Introduction to life/project cycle cost calculations;

(ii) Introduction to basics of dynamic economic calculations for energy projects;

(iii) Detailed introduction to a comprehensive calculation tool for energy projects;

(iv) Small working groups to calculate and model actual energy projects; and

(v) Establishment of relationships between project developers, funders and financiers on specific projects.

ORGANIZERS

The Workshop is being hosted by the CARICOM Secretariat in collaboration with the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) Renewable Energy and Energy Efficiency Technical Assistance (REETA) Program, the Caribbean Development Bank (CDB) and with support of the Green Cooling Initiative.

OBJECTIVES

The objective of the Training is two-fold – (i) inform policy makers about the relevance of the cooling sector as well as foster the integration of corresponding energy efficiency solutions into climate processes in form of Nationally Appropriate Mitigation Actions (NAMAs) and (ii) facilitate the development of investment grade calculations, financial modelling and risk mitigation of energy efficiency technologies and services.

TARGET PARTICIPANTS

(i) Project 'owners' or developers – this includes private sector owners, public sector owners and utilities;

(ii) Energy project service providers – consultants, ESCOs and transaction advisors;

(iii) Energy project investors and financiers – including the development banks, commercial banks and others (building societies, credit unions, etc.);

(iv) Policy and regulatory authorities – including ministry staff (in climate, energy and finance) and regulators

NAMA DEVELOPMENT IN THE COOLING SECTOR

Monday 12 September		
Time	**Program**	**Responsible/ Speaker**
08:30	***Arrival and Registration, Coffee***	
09:00	***Welcome***	*tbc*
09:30	***Introduction of Participants***	*Moderation: Marion Geiss/ Nika Greger from GIZ Proklima*
10:00	***Introduction & Overview of Green Cooling Initiative*** · *The benefits of green cooling in the context of integrated ozone and climate protection* · *International setting for Energy & climate and RAC sector* · *Best practices* · *Scope of training* · *Discussion*	*Marion Geiss* *GIZ Proklima/GCI Germany*
10:30	***Climate/ Energy policies for Green Cooling & EE in the in the Caribbean*** · *(I)NDC, NAMA process* · *Discussion*	*tbc*
11:00	***Coffee break***	
11:30	***Rationale for Climate Action RAC&F*** - *Emissions & mitigation potential* - *Advantages/ Disadvantages* - *Growth rates*	*Jonathan Heubes,* *Consultant HEAT Germany*
12:00	***Lunch break***	
13:00	***Inventory to calculate emissions from the RAC&F sector: Establishing NAMA readiness on the national level*** - *Different subsectors and systems* - *IPCC Tier 1 and Tier 2 approach* - *Usefuls Tools: DIS Tool, HFC inventory and projection tool*	*Jonathan Heubes*
13:45	*Discussion*	
14:00	***Interactive session (panel) on climate & ozone link*** *What are synergies, links and different viewpoints of Energy, NAMAs & NDCs dealing with RAC&F*	*Moderation: Nika Greger*

14:45	***Technical Options in the RAC&F sectors*** - *mitigation potential* - *costs* - *availability* - *advantages / disadvantages etc*	*Jonathan Heubes*
15:15	***Coffee break & Godrej movie***	
15:30	***NAMA Development Process*** - *Under the UNFCCC* - *10 steps approach* - *10 steps of RAC&F NAMA Handbook*	*Marion Geiss*
16:30	***Outlook to Day 2 & closing remarks***	*Marion Geiss*

Tuesday 13 September		
Time	**Program**	**Responsible/ Speaker**
8:30	*Welcome Coffee*	
09:00	*Recap of Day 1*	*Nika Greger*
9:30	***Policy Options*** *for mitigation in the RAC&F sectors* *- Policy instruments - refrigerants/energy efficiency* *- Best practice: EU regulation*	*Jonathan Heubes*
10:00	***What is a good NAMA?*** - *transformational change* - *bankability* - *relationship to LEDS and INDCs*	*Marion Geiss*
10:15	***Scenario Calculation - BAU and mitigation scenarios*** - *Using the emission savings & scenario tool* - *Case study supermarket centralized system* - *Technical and economic parameters to consider*	*Jonathan Heubes*
11:00	***Coffee Break***	
11:15	***Financing NAMAs*** - *Financial architecture of NAMAs* - *Leveraging private funds* - *Involving potential financiers* - *Funding opportunities*	*Marion Geiss*
11:45	***Presentation of GCI cost tool - application supermarket centralized system*** - *Investment and operational costs* - *Amortisation* - *Cost-effectiveness* - *Marginal abatement cost curve* - *Up scaling*	*Jonathan Heubes*

12:15	***Lunch Break***	
14:00	***MRV – a key element of NAMAs*** - *formulating good quality, measurable and ambitious NAMA objectives and indicators* - *MRV in the RAC&F sectors*	*Jonathan Heubes*
14:30	***Co-benefits from a NAMA in the RAC&F sectors and the co-benefits tool***	*Jonathan Heubes* *In working groups*
15:00	***Coffee Break***	
15:15	***Co-benefits group work & presentation of the group results***	*In working groups*
16:30	***Summary / reflection / feedback***	*Nika Greger, GIZ Proklima, Germany*

INVESTMENT-GRADE CALCULATION, ANALYSIS AND FINANCIAL MODELLING

Wednesday 14 September		
Time	**Program**	**Responsible/ Speaker**
08:30	**Welcome** Training goals and agenda	CARICOM, GIZ REETA Jan W. Bleyl
09:00	**Introduction to project / life cycle cost concept** - *Investment vs. total cost* - *Different categories of cost* - *Cost comparison examples*	Jan W. Bleyl
09:45	**A few words on Energy Service Contracting** (ESCo, Facilitators) - *Business model: energy supply / energy performance contracting* - *Opportunities for Utilities*	Jan W. Bleyl
10:30	*Coffee break*	
10:45	**Basics of dynamic economics calculation** for EE, RES & ESCo projects - *Static vs. dynamic methods* - *Discounting of cash flows* - *Key Performance Indicators (KPIs)*	Jan W. Bleyl
12:30	*Lunch break*	
13:30	**The GIZ Calculation Tool**: Liability exclusion and NDA - *Intro to calculation tool and manual* - *focus on savings model & cooling* - *Joint calculation example EE in the cooling sector*	Jan W. Bleyl Simon Zellner, Sophie Kazmierczak
15:00	*Coffee break*	
15:15	**1. Group work:** Own calculation of example - *presentation and discussion, incl. financing, risks & communication* - *Q&A*	Participants Simon Zellner, Sophie Kazmierczak & Jan W. Bleyl
16:30	End of day 1 (agenda adjustments possible, subject to training needs)	

Thursday 15 September		
Time	**Program**	**Responsible/ Speaker**
08:30	**Summary from previous day** and Q&A	Simon Zellner, Sophie Kazmierczak & Jan W. Bleyl
08:45	2. **Group work**: Calculation of own projects - Calculation in small groups - Examples provided by participants	Simon Zellner, Sophie Kazmierczak & Jan W. Bleyl
10:30	Coffee break	
10:45	**2. Group work** (cont'd) - *Presentation and discussion of projects* - *KPIs, CFADS, financial engineering, communication of results* - *Manual and automatic sensitivity analyses* - *Deepening of selected training topics based on participants projects*	Participants Simon Zellner, Sophie Kazmierczak & Jan W. Bleyl
12:30	Lunch break	
13:30	Caribbean Development Bank: **Sustainable Energy for the Eastern Caribbean (SEEC) Programme** - *Introduction to the Programme* - *Eligible projects* - *Q&A*	Paul Mondesir, CDB
14:00	Inter-American Development Bank: **Energy Savings Insurance** - *Lower the performance risk for EE investments* - *Insurance product for specifically defined and verifiable EE measures*	Christoph Hoor, IDB (via skype)
15:00	*Coffee break*	
15:15	**Calculation tool as management instrument** for projects: Reporting, risk- + sensitivity analyses, marketing & communication ... - *Wrap up: Q/A, your next steps towards investment projects*	Jan W. Bleyl Participants
16:30	Certificate ceremony and final remark	CARICOM & GIZ REETA

- OPTIONAL -

Friday 16 September		
Time	**Program**	**Responsible/ Speaker**

08:30	One-on-one or small group working sessions with the trainers - *Individual coaching*	Participants Simon Zellner, Sophie Kazmierczak & Jan W. Bleyl
10:30	Coffee break	
10:45	One-on-one or small group working sessions with the trainers (cont'd) - *Individual coaching*	Participants Simon Zellner, Sophie Kazmierczak & Jan W. Bleyl
12:30	Lunch break	