



TRAINING MANUAL

Innovative Fiscal and Regulatory Incentives for Energy Efficiency and Renewable Energy Initiatives

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Supported by:



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The Learning Product – Innovative Fiscal and Regulatory Incentives for Energy Efficiency and Renewable Energy Initiatives in the Caribbean

Course Description:

This course will be designed for the officers within government departments who have responsibility for guiding the country's energy policy and energy management framework. Other stakeholders also will include private sector representatives who have interest in providing energy efficiency equipment and renewable energy solutions to the market towards advancing improvements in both energy efficiency and meeting renewable energy targets.

The course will provide insight into all aspects of energy management with specific emphasis on energy efficiency as well as renewable energy. Emphasis will be placed on highlighting issues and challenges that countries face in pursuing energy efficiency and renewable energy strategies. International and regional best practices will be highlighted as a means of showcasing how various countries have overcome the barriers to advancing renewable energy targets and increasing energy efficiencies towards meeting national energy goals.

The curriculum is divided into five modules and is designed to be covered over a 3-day period. The course will be designed to ensure practical application of the learning. The course also is designed to enable the Caribbean to demonstrate leadership in energy efficiency practices and the adoption of renewable energy strategies, serving as a model for other small island developing states.

Target Group:

The target group is expected to include:

- Officers of Government ministries, departments and agencies (MDAs) and local authorities who are responsible for energy management and who have direct responsibilities for countries' national energy policy, energy efficiency strategies as well as for advancing the introduction and use of renewable energy into their countries' energy mix
- Key private sector entities who have a stake in energy efficiency or renewable energy
- Non-governmental organizations who may focus on energy management projects and who play a role in educating communities or key sections of society on the importance of energy conservation and efficiency and renewable energy

Objectives:

Upon completion of this course, participants will be able to:

Knowledge:

- Understand the importance of energy efficiency and conservation to national development

- Understand the importance of renewable energy technologies to advancing national development agendas
- Understand the core elements required to develop energy efficiency and renewable energy policies

Performance:

- Develop relevant strategies that could help countries advance their energy efficiency and renewable energy agendas
- Know how to develop national energy efficiency and renewable energy policies
- Be able to develop relevant and dynamic national strategies to overcome the barriers and challenges associated with energy efficiency and renewable energy

Attitude:

- Appreciate the importance of pursuing energy efficiency and renewable energy options to support national development

Course Modules

- Module 1: Rationale for Advancing Energy Efficiency and Renewable Energy Policies
- Module 2: Issues and Challenges Facing the Region in the Effective Introduction of Energy Efficiency and Renewable Energy Technologies
- Module 3: Removing the Barriers to Advance the Introduction of Energy Efficiency and Renewable Energy Strategies and Technologies
- Module 4: Developing Energy Efficiency and Renewable Energy Policies and Action Plans – Advancing the EE and RE Agenda of Countries
- Module 5: Train the Trainer

Proposed Curriculum

The training will deliver the five course modules listed above and will include a range of topics as presented below. Note that the topics at this point do not represent an exhaustive list.

Module 1: Rationale for Advancing Energy Efficiency and Renewable Energy Policies

- Energy Basics
- Overview of the energy sector in the Caribbean
- Overview of the CARICOM Energy Policy and some select country national policies (with emphasis on energy efficiency and renewable energy)
- Global trends in energy efficiency
- Global trends in renewable energy – including new and emerging technologies
- Drivers for increasing energy efficiency (economic, social and environmental)

- Drivers for advancing renewable energy (economic, social and environmental)
- Benefits of promoting energy efficiency
- Benefits of establishing renewable energy sectors within countries
- Measuring Energy Usage
- Conducting an Energy Audit

Module 2: Issues and Challenges Facing the Region in the Effective Introduction of Energy Efficiency and Renewable Energy Technologies

- Renewable Energy Use in the Caribbean
- Overview of fiscal and regulatory barriers to implementing energy efficiency measures and renewable energy technologies
- Requirements for Deploying RE Technologies in the Region
- Guidelines towards improving energy conservation and efficiency
- Presentation by countries based on country studies – Belize, Curaçao, Jamaica, Guyana
- Case Studies

Module 3 – Removing the Barriers to Advance the Introduction of Energy Efficiency and Renewable Energy Strategies and Technologies

- Removing the Barriers – Towards Advancing the Renewable Energy Sector – Policies and Strategies to Promote Renewable Energy Development and Deployment
- Power Sector Restructuring Policies that can Influence Renewable Energy Development
- Distributed Generation Policies that can Influence Renewable Energy Development

Module 4: Developing Energy Efficiency and Renewable Energy Policies and Action Plans – Advancing the EE and RE Agenda of Countries

- Key elements of national renewable energy policies
- Key elements of national energy efficiency policies
- Renewable energy indicators and targets
- Energy efficiency indicators and targets
- Developing individual country policies
- Developing individual country action plans

Module 5: Train the Trainer

- Tips to Implement the Course as a Train-the-Trainer Model
- Facilitation Skills
- Training Methods and Materials

Module 1: Rationale for Advancing Energy Efficiency and Renewable Energy Policies

Energy Basics

Defining Energy

Energy is simply defined as the ability to do work. Energy is the engine for the social and economic development in the past, present and future. It is the basis for progress and prosperity of nations and societies.

Demand for energy increases tremendously in order to fulfill technological needs and the development of standards of living in a world with ever increasing individual demands for energy. Meanwhile, conventional energy sources are being depleted; and the development of new and renewable sources of energy has not yet reached an economically feasible level that permits their widespread use as alternative sources.

Consequently, the need has arisen to plan and analyze energy policies within the framework of a country's socio-economic development process – thus the importance of energy efficiency and conservation.

Forms and Sources of Energy

Energy is divided into two broad categories. Kinetic Energy (energy doing work) and Potential Energy (stored energy). There are various forms of energy, mainly:

- Heat – also referred to as thermal energy
- Light – also referred to as radiant energy
- Mechanical
- Electrical
- Chemical
- Nuclear

All forms of energy exist as either renewable or non-renewable energy sources.

Sources of energy fall into two categories, namely:

- Conventional Energy Sources – also referred to as non-renewable energy
- Environmentally Preferable Sources – also referred to as renewable energy sources

Conventional Energy Sources

Most conventional energy sources are also referred to as non-renewable forms of energy as they are not considered to be sustainable energy sources, that is, there exists a limit to these

resources – these resources are exhaustible and can eventually be depleted. Such sources of energy also tend to cause serious environmental impacts as well as pose risks to human health.

Conventional energy sources would not be economically competitive if they were to be sold at their full costs, which would include damage to the environment and human health, security risks and long-term storage costs. Though these costs are not yet reflected in energy bills, they are nonetheless borne by society as they are paid for through higher health insurance premiums and long-term depletion of resources.

Sources of conventional energy include:

- Coal, Oil and Natural Gas – commonly referred to as fossil fuels. Fossil fuels are formed over millions of years by heat action from the earth's core and pressure from rock and soil on the decayed remains of prehistoric plants and animals.
- Nuclear – derived from splitting uranium or plutonium atoms.
- Large hydro-power facilities

Table 1: Environmental Impacts of Some Major Fossil Fuel Industries

Sector	Air	Water	Soil/Land
Coal mining and production	Emissions of dust from extraction, storage and transport of coal. Emission of carbon and sulphur dioxide from burning slag heaps. Methane emissions from underground formations.	Contamination of surface water and ground water by highly saline or acidic mine water.	Major surface disturbance and erosion. The subsiding of the grounds located above the mines. Land degradation as a result of large slag heaps.

预览已结束，完整报告链接和二维码如下：

https://www.yunbaogao.cn/report/index/report?reportId=5_1076

