Webinar

MACROREGIONAL COOPERATION ON PROMOTING GREEN ECONOMIC TRANSITION

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ENERGY EFFICIENCY AND GREEN ECONOMY TRANSITION

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ENERGY EFFICIENCY

Energy efficiency is the ratio between the energy required forfunctioning of the given system (process/operation, heat energy to be introduced into the system - heating, heat energy to be extracted from the system - cooling) and energy input to the system (which must be "paid").

THERMAL EFFICIENCY

The coefficient of efficiency represents the ratio between the obtained, useful work and the input thermal energy

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COP – COEFFICIENT OF PERFORMANCE

Devices in which heat energy is transferred from a system with a lower temperature to a system with a higher temperature, with work input, are called heat pumps.

One system is cooled and the system is heated.

We distinguish two types of efficiency coefficient: COOLING COEFFICIENT and HEATING COEFFICIENT.

RENEWABLE ENERGYSOURCES

Energy sources that can be renewed in a short period of time and are environmental friendly are called RES.

Energy of the Sun

Wind energy

Geothermal energy

Energy of the biomass

Wood residues, agricultural waste, energy crops, biofuels

Agricultural biomass

Energy of the surrounding

GREEN ECONOMY AND RELATED CONCEPT

Green economy is one which is low carbon, resource efficient and socially inclusive (UNEP 2011).

An economy in line with the capacity of the Earth.

The concept of a green economy is provide a solution to both unemployment and environmental issues.

This is the reason why GEC seems to be attractive to both governs and businesses

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BIOECONOMY

Bioeconomy is based on bio-renewable resources. The main reason is to establish a society that lives within its own capabilities, ie to use its own resources efficiently.

In addition, there are additional benefits: waste minimization and more local business opportunities.

If done properly, an economy based on bio-renewable resources can make a significant contribution to the region's food and energy security.

CIRCULAR EWCONOMY

The concept of circular economy is mainly related to the production model of closing the economy within a given system, with the aim of maximizing the efficiency of resource exploitation.

The concepts of Circular Economy, Green Economy and Bio economy are joined by the common idea to fulfill an economic, environmental and social goals The aim of these three concepts is transform the current economy towards a more sustainable one.

Green Economy acts as an ‘umbrella’ concept,

ENERGY EFFICIENCY & GREEN ECONOMY

One of key sectors of the Green Economy include, among others, Energy.

In a green economy, growth in income and employment are driven by investments that reduce negative environmental impacts while enhancing energy and resource efficiency.

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GREEN ENERGY ECONOMY

Green Energy Economy (GEE) is defined as the scientific and policy subject area that focuses on resource efficient and low-carbon energy technology systems, markets and services which can bring together economic, environmental, social and security aspects.

A key focus of a GEE is policies and strategies that are designed to foster the rapid transition towards sustainable energy economy systems.

The GEE transition needs to be accelerated and that a radical transformation is required.

ENERGY EFFICIENCY and GDP

The majority of global energy scenarios anticipate a structural break in the relationship between energy consumption and gross domestic product (GDP.

Several scenarios projecting absolute decoupling, where energy use falls while GDP continues to grow.

However, there are few precedents for absolute decoupling, and current global trends are in the opposite direction.

THE REBOUND EFFECT

The majority of globaThe rebound effect (or take-back effect) is the reduction in expected gains from new EE improvments that increase the efficiency of resource use.

THE REBOUND EFFECT

Direct rebound effect

Cost-effective energy efficiency improvements reduce the effective price of energy services, such as heating and lighting, and hence encourage increased consumption of energy.

Indirect rebound effect

Savings in energy consumption may be spent on other goods and services that also require energy to manufacture and use.

Macroeconomic rebound effects

Adoption of energy efficient equipments/systems may reduce energy demand and hence energy prices, that will in turn encourage increased consumption of energy.

CASE SUDIES

Geneva's energy efficiency program éco21 Switzerland

The present study evaluates the impacts on GDP and employment of Geneva's energy efficiency program portfolio éco21 which is operated by the local utility.

Two programs aiming for electricity savings in the residential sector, one targets social housing and the other focuses on common spaces in buildings.

According to the estimates, each Swiss Franc (CHF) spent within the energy efficiency program creates approximately 0.2 CHF of additional GDP compared to the reference case scenario.

CASE SUDIES

Geneva's energy efficiency program éco21 Switzerland

Net impacts on employment are approximately 0.7 and 1.6 additional jobs in full-time equivalent for 1 million CHF of expenditure.

General conclusions

Energy efficiency programs and policies should be well coordinated with other policies in practice, the roles of stakeholders should be clearly defined, and all stakeholders should be provided with necessary instruments and powers.

CASE SUDIES

The role of energy efficiency policies in Germany

The authors reviewed the impacts of the existing energy efficiency policy instruments in Germany.

Germany has a strategy to transform its energy system to a ‘Green Energy Economy’. The overall objectives of this transformation are to lower greenhouse gas emissions and educe the country’s high dependency on importing energy.

They found evidence, which supports the results of other studies, that enhanced green energy policies trigger tangible economic benefits in terms of GDP growth and new jobs even in the short term..

CASE SUDIES

The role of energy efficiency policies in Germany

These investments in turn mean Germany's GDP grows by 0.4% to 2.6% and about 48,000 additional full-time-equivalent jobs are created.

Conclusions

- Energy efficiency policies play a key role in the transformation to a 'green energy economy';
- Energy transition is simultaneously coupled to economic growth and development and
- The efficiency measures proposed by the government are a necessary but not a sufficient condition for the energy transition.

CONCLUSIONS

- Green economy and other green related polices play a key role in Green economy transition:
- All Green economy and related policies should be well coordinated with each other;
- The roles of stakeholders should be clearly defined;
- The role of energy efficiency measures plays als a key role in this transition:
- Cooperation on Macro regional level is fostering this transition.

Thank you for your attention!

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