

# Renewable Energy Developments, Green Jobs and Sustainability



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19 February 2010



# Outline for Presentation

1. Key Challenges for the green economy
2. Policy of the Thai Government
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# Key Challenges for the green economy





# Key Challenges for the Green Economy

In the past **40** years....

**67** million Rai (10,720,000 Hectare) of forests were destroyed, and now forests cover only **33%** of the country, resulting in;

More frequent and more severe flooding, drought, and natural disasters...

Marine and coastal resources have deteriorated

Mangroves have declined from 2 million to 1.5 million Rai

The seafood catch has been reduced to one third

The conditions of coral and sea grass have deteriorated.

Air and water quality is below standard

Biodiversity is rapidly being destroyed. Human activity that destroys the habitats of various living organisms is changing the ecology and increasing the incidence of extinction of species.



# Key Challenges for the Green Economy

The volumes of refuse and hazardous wastes are increasing faster than the capacity to dispose of them

Hazardous substances used in production are being imported in increasing volumes without adequate mechanisms for controlling production processes, storage, or transport

As a result, these substances have seeped into the environment, and contaminated the food chain.

In addition to the complexities, deficiencies, and failures of implementation, the use of economic and legal measures has been limited

The main reasons for the decline in the quality of the environment are the increase in population and inappropriate lifestyles resulting in increased pollution

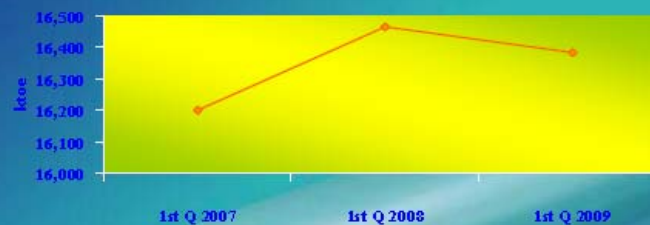
*Sources: 10th National Economics and Social Development Plan*



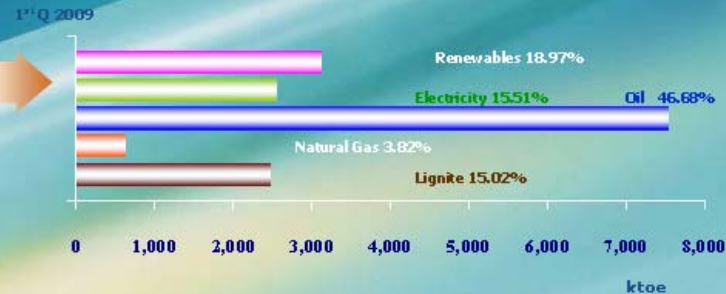
# Key Challenges for the Green Economy

## Energy Consumption

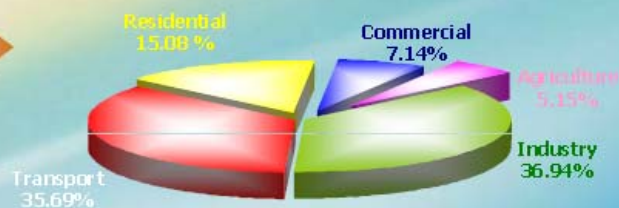
Energy consumption was at 16,385 ktoe (cost at 188,047 million baht cost) in the 1<sup>st</sup> quarter of 2009, reduced 0.49 % from the same period last year



Oil was used at a higher share than other energy resources by 46.68 % of the total energy consumption. Using of renewable, electricity, coal/lignite was used at 18.97 %, 15.51%, 15.02% and 3.82 % respectively.



Industrial sector consumed energy at the highest share by 36.94 % (of which manufacturing, mining and construction was at 36.59%, 0.16% and 0.19% in order). Transport, residential, commercial and agriculture consumed at 35.69%, 15.08%, 7.14% and 5.15% respectively.





# Key Challenges for the Green Economy

- Energy Consumption was at 16,385 ktoe which cost at 188,047 Million Bath cost in the 1<sup>st</sup> quarter of 2009.
- Oil was use at higher share than other energy resources by 46.68% of the total energy consumption.
- Industrial Sector consumed energy at the highest share by 36.94%.
- Transport, residential, commercial and agriculture consumed at 35.69%, 15.08%, 7.14%, and 5.15% respectively.



# Key Challenges for the Green Economy

## Alternative Energy Situation

the crude oil prices had highly increased very fast, we needed to use alternative energy resources for oil substitution.

**Thailand's emissions have been steadily increasing, placing Thailand among the top 25 GHG emitting countries.**

Between 1994 and 2003 Thailand's Greenhouse Gas (GHG) emissions grew from 286.373 MtCO<sub>2</sub>e to 344.2 MtCO<sub>2</sub>e – an annual rate of about 2 percent. More recently, GHG emissions growth from fossil fuel use has been three percent per annum, mostly in the form of petroleum products.

**Thailand as 24th among the World's largest GHG emitters.**

According to the latest data from the Energy Information Administration, US Department of Energy, energy-related GHG emissions of 245 MtCO<sub>2</sub>e in 2006 placed **Thailand as 24th among the World's largest GHG emitters.**



# Key Challenges for the Green Economy

The largest contributor to Thailand's GHG emission is the electricity generation sector. In 2006 more than a third (37.45 percent) of GHG emissions stemmed from the energy sector.

The second largest GHG emission contributor was the transport sector (26.32 percent). The manufacturing sector accounted for almost another quarter (22.96 percent) of emissions, followed by the residential and commercial sectors.

*Sources: Ministry of Energy, 1st quarter of 2009 energy report*

# Policy of the Thai Government





# Policy of the Thai Government

The policy of Thai government on Natural Resources and Environment, policy on Alternative Energy and reducing Carbon Emission for reducing Global Warming, etc, which in this presentation called Green policies can be considered from;

- ▶ the Constitution of the Kingdom of Thailand 2007
- ▶ the Policy Statement of the current government by the Prime Minister Mr. Abhisit Vejjajiva
- ▶ the 10<sup>th</sup> National Economic and Social Development Plan (2007-2011).



# Policy of the Thai Government

the Constitution of the Kingdom of Thailand 2007 on Section 85 and Section 86

- Section 85: The State shall act in compliance with the policy approach on land use, natural resources and the environment
- Section 86: The State shall follow the policy approach on science, intellectual property and energy



# Policy of the Thai Government

Thailand must upgrade its standard of environmental management in order to protect the resource base and maintain the natural balance in the natural environment. Thailand must also adjust processes of producing goods and services to become more environment-friendly, and must increase efficiency in energy usage and develop alternative energy sources to meet the domestic demand for energy

*Sources: National Social and Economic Development Plan 2007- 2011*



# Policy of the Thai Government

The current 10th National Economic and Development Plan (2007-2011) has focused on sustainable development in order to solve all the problems of energy ecology environment crisis and also rehabilitate natural resources as well as reducing global warming.

Mr. Abhisit Vejjajiva the Prime Minister presented his government's policy on natural resources, environment and energy which compatible with the National Economic and Social Development Plan (2007-2011).

Policy on Energy which included the energy security, Alternative energy; supervise energy prices and safety, energy conservation and efficiency and environmental protection.



# Policy of the Thai Government

The government set the policy to support sustainable use of more alternative energy, especially all renewable energy domestically produced as from solar, wind, hydropower, biogas, MSW/refuses, bio fuels (ethanol and biodiesel) and NGV.

*(Please see the current action Plan of the Department of Alternative Energy Development and Efficiency)*

# ILO Initiative for the Green Jobs





## ILO Initiative for the Green Jobs

- The International Labour Conference of June 2008 stated that skills development should form part of an effective response to changing conditions with climate change among others.
- Identifying skills requirements for adaptation to climate change and mitigation measures via reduction of GHG emissions has therefore an important role to play in policy development.
- Meeting skills needs is a critical factor for productivity, employment growth and development.
- The objective of the report is to identify strategic skills development responses of the country in the light of environmental degradation, climate change and the global call for greening economies.



## ILO Initiative for the Green Jobs

**“Green jobs”** are jobs that reduce the environmental impact of enterprises and economic sectors, ultimately to levels that are sustainable. The Green Jobs Report defines “green jobs” as work in agriculture, industry, services and administration that contributes to preserving or restoring the quality of the environment while also meeting requirements of decent work – adequate wages, safe conditions, workers rights, social dialogue and social protection

*(UNEP, ILO, IOE, ITUC 2008)*



## ILO Initiative for the Green Jobs

**“Green-collar jobs”**, like traditional blue-collar jobs, green-collar jobs range from low- as we define them, are well paid, career track jobs that contribute directly to preserving or enhancing skill, entry-level positions to high-skill, higher-paid jobs, and include opportunities for advancement in both skills and wages.

*“Green Jobs: Towards Decent Work in a sustainable, Low –Carbon World,” UNEP/ILO/IOE/ITUC, September 2008*

# The result of the Study





## The result of the Study

- The study found that the main factor to fulfil the green for reducing global warming is human resource.
- Green jobs is new for Thailand.
- There is no formal terminology on 'green jobs', 'green collar jobs' define in Thailand.
- Thailand still has no data base on green skills and green jobs so the identification of the skills needs in the private sector has done by employer or establishment as the result of in house research and development on raw materials, process, and products, etc. Then decided courses of training and provided upgrading skills of workers and also workers of supply chain in order to operate with new skills.
- In case of Multi National Corporations such as automotive industry the blue print, the courses of training and instructors sent from the mother company.



## The result of the Study

- For the public sector the identification of green skills need included in the proposed projects for operation, the courses of training for related people that will operate with the new technology, such as the projects of Ministry of Energy on producing Bio fuel from crude Palm oil, the installation and maintenance of the Wind Turbine energy, the Solar power generation by Solar Thermal Energy, all these projects require different skills to operate so the training of related people is important for the success of the projects.
- For some government training institution the green training courses organized by the demand or market driven .



## The result of the Study

- Line ministries issued the action plans in response to the policy of the government in various programmes and projects. One example is the 15th year Alternative Energy Plan and the DEDE Four-Year Action Plan (2008-2011) have been implemented. In the content of the plan included green skills development for responsible people to operate with the new technologies.
- Line ministries have their own training plan without integration with others which should do for avoiding the duplication and sharing resources to make training to access to all target groups.
- Both public and private organizations are trying to reduce operation cost on energy consuming by development energy efficiency plan and the use of renewable energy.
- The problem of Thailand is on the effective of bringing policy to implement which still need to be improved.

# Recommendation





## Recommendation

- Government should insert skills for green jobs as the National Agenda to holistically support its green policy.
- Strong commitment from the government and the Chief executive Officer (CEO) of the company is important
- Build up the “green mind”, “green behavior” and the awareness of the effected of the global warming to people at all level since the childhood in the family, community and the nations.
- Establish the National Skill Development Plan for Green Jobs which included the training for green skills jobs of all organizations and NGOs.
- Assignment of core organization to responsible to this plan is important for the success of the plan



## Recommendation

- Establish the data base for green jobs, green occupation including the clear definition of green jobs, green collar jobs and green collars occupation for people to know the demand and supply, the mismatch of the green skills shortage and green skills acquired for work in the labour market
- Laws regulations should be strictly enforcement
- Research and development for the innovation of the raw material, process of production, product and strategies to achieve green should be promoted. Then follows by design the curriculum and then organize training

THANK YOU



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