

# Framework of Taiwan's Sustainable Energy Policy

2008.06.05

Ministry of Economic Affairs

## **I. Policy Objective: Win-Win-Win Solution for Energy, Environment and Economy**

Sustainable energy development should balance the objectives of energy security, economic development and environment protection, and consider the need of future generations.

Taiwan is insufficient in natural resources, and constrained by limited environment carrying capacity. In order to create a win-win-win solution in energy, environment, and economy, sustainable energy policies should support the efficient use of limited energy resources, the development of clean energy, and the security of energy supply. Our targets are:

### 1. Improving energy efficiency:

The goal is to improve energy efficiency by more than 2 % per annum, so that when compared with the level in 2005, energy intensity will decrease 20% by 2015. Supplemented by further technological breakthroughs and proper administrative measures, energy intensity will decrease 50% by 2025.

## 2. Developing clean energy:

- (1) Reduce nationwide CO<sub>2</sub> emission, so that total emission could return to its 2008 level between 2016 ~ 2020, and further reduced to the 2000 level in 2025.
- (2) Increase the share of low carbon energy in electricity generation systems from the current 40% to 55% in 2025.

## 3. Securing stable energy supply:

Build a secure energy supply system to meet economic development goals, such as 6% annual economic growth rate from 2008 to 2012, and 30,000 USD per capita income by 2015.

## **II. Policy Principles**

The basic principles of a sustainable energy policy is to establish a high efficiency, high value-added, low emission, and low dependency energy consumption and supply system.

1. High efficiency: improve energy consumption and transformation efficiency.
2. High value-added: increase the value-added of energy consumption.
3. Low emission: adopt energy supply methods and consumption practices that ensure low carbon and low pollution.
4. Low dependence: decrease the dependence on fossil fuels

and imported energy.

### **III. Strategy Framework**

The strategy framework of sustainable energy policy is divided into two parts: cleaner energy supply and rationalized energy demand.

1. Cleaner Energy Supply: restructure energy mix and improve energy efficiency.
  - (1) Develop carbon-free renewable energy. Effectively explore its power generating potential, so that the share of renewable energy in the electricity system could reach 8% by 2025.
  - (2) Increase the utilization of low carbon natural gas, therefore it could account for more than 25% of power generated in 2025.
  - (3) Increase energy supply diversity. Reconsider nuclear power as a no-carbon energy option.
  - (4) Accelerate the replacement of existing power generating units. Formulate a power plant efficiency improvement program to require new built units to apply the best available technology.
  - (5) Introduce clean coal technology and CCS technology through international cooperation to reduce the CO<sub>2</sub> emission of power generating system.

- (6) Rationalize energy price to reasonably reflect the internal cost in the short run, as well as the external cost in the long run.
2. Rationalized Energy Demand: promote energy conservation schemes in various sectors.
    - (1) Industrial sector:
      - a. Reform the industrial sector towards a high value-added and low energy intensive structure, so that its carbon intensity could reduce more than 30% by 2025.
      - b. Allocate emission quotas and reduction duty to push the industry towards an energy-conserving and emission-reducing production and sales model.
      - c. Assist small and medium-sized enterprises to improve their emission reduction capacity. Establish incentive measures and administrative schemes to encourage the application of clean production technology.
      - d. Promote green energy industry, including energy conserving industries and renewable energy industries, to move towards a clean energy economy.
    - (2) Transportation sector:
      - a. Provide a convenient mass transportation system to reduce the usage of private vehicles.
      - b. Construct an intelligent transportation system to

provide instant traffic information and enhance traffic management capacity.

- c. Build a user-oriented and green-oriented municipal transportation environment.
- d. Raise the fuel efficiency standard for private vehicles by 25% in 2015.

(3) Residential and commercial sector:

- a. Improve urban planning, as well as promote forestation in urban areas to create a low carbon city.
- b. Promote low carbon and energy conserving green architecture through energy conserving design of building facades and air-conditioning system.
- c. Raise appliance efficiency standards by 10% to 70% in 2011. Further raise the efficiency standards in 2015 to promote high efficiency products.
- d. Promote energy conserving lighting solutions. Replace conventional lighting devices with high efficiency products.

(4) Public sector:

- a. Reduce the energy use of governmental agencies and schools by 7% in 2015.
- b. Integrate carbon neutral concept into policy planning. Adopt precaution, alert, and selection principles in carbon administration.

- (5) The general public:
  - a. Promote public emission reduction movement, encourage the public to reduce 1 kg of CO<sub>2</sub> foot-print per day.
  - b. Promote emission reduction from central government through municipal governments, enterprises, and communities to develop low-carbon consumption habit and build a low-carbon and recycling society.
3. Provide a comprehensive regulatory framework and relevant mechanisms :
  - (1) Regulatory framework :
    - a. Facilitate the legislation of the “Greenhouse Gas Emissions Reduction Act” to substantially build emission reduction capacity and enforce reduction measures.
    - b. Facilitate the legislation of the “Renewable Energy Development Act” to develop clean energy.
    - c. Draft and legislate the “Regulations on Energy Tax” to reflect the external cost of energy consumption.
    - d. Amend the “Energy Management Act” to effectively promote energy saving measures.
  - (2) Supplementary mechanisms :
    - a. Establish a fair, efficient, and open energy market through deregulating the energy sector, reducing

market entry barriers, and providing high quality energy services.

- b. Design a carbon emission trading scheme, and establish carbon funds to help the industry receive emission quota through various emission reduction programs. Participate in international emission reduction mechanism to increase Taiwan's emission capacity.
- c. Increase the annual energy research budget within the next four years from NTD 5 billion to 10 billion.
- d. Promote energy conservation and emission reduction education.

#### **IV. Follow-up work**

- 1. Government agencies should formulate concrete action plans in accordance with the framework. Quantitative objectives should be established for each task to measure its performance and facilitate implementation.
- 2. Carbon reduction targets should be clearly set in all action plans.
- 3. Monitoring and follow-up mechanisms should be built to regularly review the effectiveness and performances of the said action plans.