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Current New & Renewable Energy Utilization in Chinese Taipei

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Outline



- Current Renewable Power Utilization
- Current Biofuels Utilization
- Fuel Cell Demonstration
- Renewable Energy Development Act

Current Renewable Power Utilization in Chinese Taipei

March 31, 2010	
Renewable Energy	Installed Capacity (MW)
Wind Power	468.2
Hydropower	1,938.9
Biomass – MSW	622.5
Biomass – Agro & Ind Waste	167.5
Biomass – Biogas	24.5
Solar PV	10.8
TOTAL	3,232.4
Rate (%)*	8.22

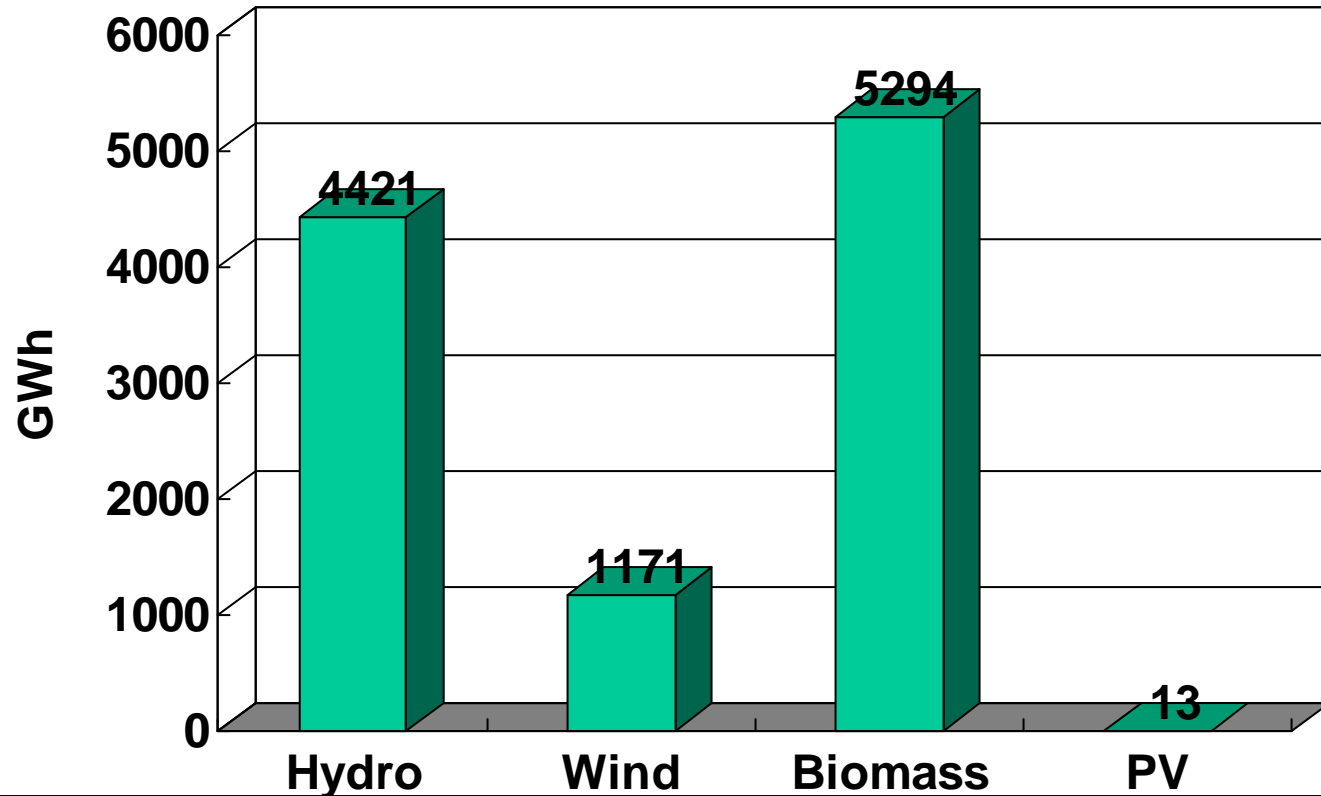
Target			
Year	2010	2015	2025
Rate (%)*	10	11	15

* contribution of RE in terms of total installed capacity

Source: BOE (2009)

Estimated RE Electricity Generation in 2010

- *Contributes ~5% of total electricity generation* -



Generation (hours/yr)	Hydro	Wind	Biomass	PV
2280	2500	6500	1200	

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Current Biofuels Utilization in Chinese Taipei

- **Mandatory B1 since July 2008**
 - Annual consumption of biodiesel ~45,000 kL
 - ~70% domestic production from mostly waste cooking oil
- **Mandatory B2 to be carried out in July 2010**
- **E3 demonstration since Sep. 2007**
 - 13 gas stations in Taipei and Kaohsiung Cities

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Subsidy Program for Fuel Cell Demonstration

January 7, 2009

Objectives:

- Providing an opportunity for fuel cell operation demonstration and technology validation to assist the industry in dominate the technology
- Promoting the development of new products to accelerate establishing the fuel cell industry in Chinese Taipei

Subsidies: Up to 50% of installation cost, incl. fuel cell systems and auxiliary facilities.

Duration: Up to 3 years; the fuel cell system in operation at least one year

Approved Fuel Cell Demonstration Projects

- **16 projects from 10 companies**
- **Unit capacity ranges from 1 to 10 kW, mostly for stationary use and some for scooter use**
- **Total amount of subsidy 60 million NT\$**
- **Total capacity 64 kW**



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Renewable Energy Development Act in Chinese Taipei July 8, 2009

Objectives: To promote the utilization of renewable energy, increase energy diversification, improve environment quality, energize related industries and enhance the national sustainable development

Contains: 23 articles

Definitions: Renewable energy - solar energy, biomass energy, geothermal energy, ocean energy, wind power, non-pumped-storage hydropower, the energy generated directly from domestic general waste and general industrial waste and/or derived from the treatment of said wastes (*incl. Hydrogen energy and fuel cell*)

Renewable Energy Development Act in Chinese Taipei

July 8, 2009

Target for rewarding renewable energy

Power generation: 6,500 MW to 10,000 MW
and the government to set up promotion goals
every two years

Thermal utilization: the government to set up
targets and timeframe shortly



Renewable Energy Development Act in Chinese Taipei July 8, 2009

The breakthrough of market competition and installation barriers for renewables:

Obligation: power utility operating grid obligated of grid connection and purchase of renewable electricity; public constructions prioritized of utilizing renewable energy

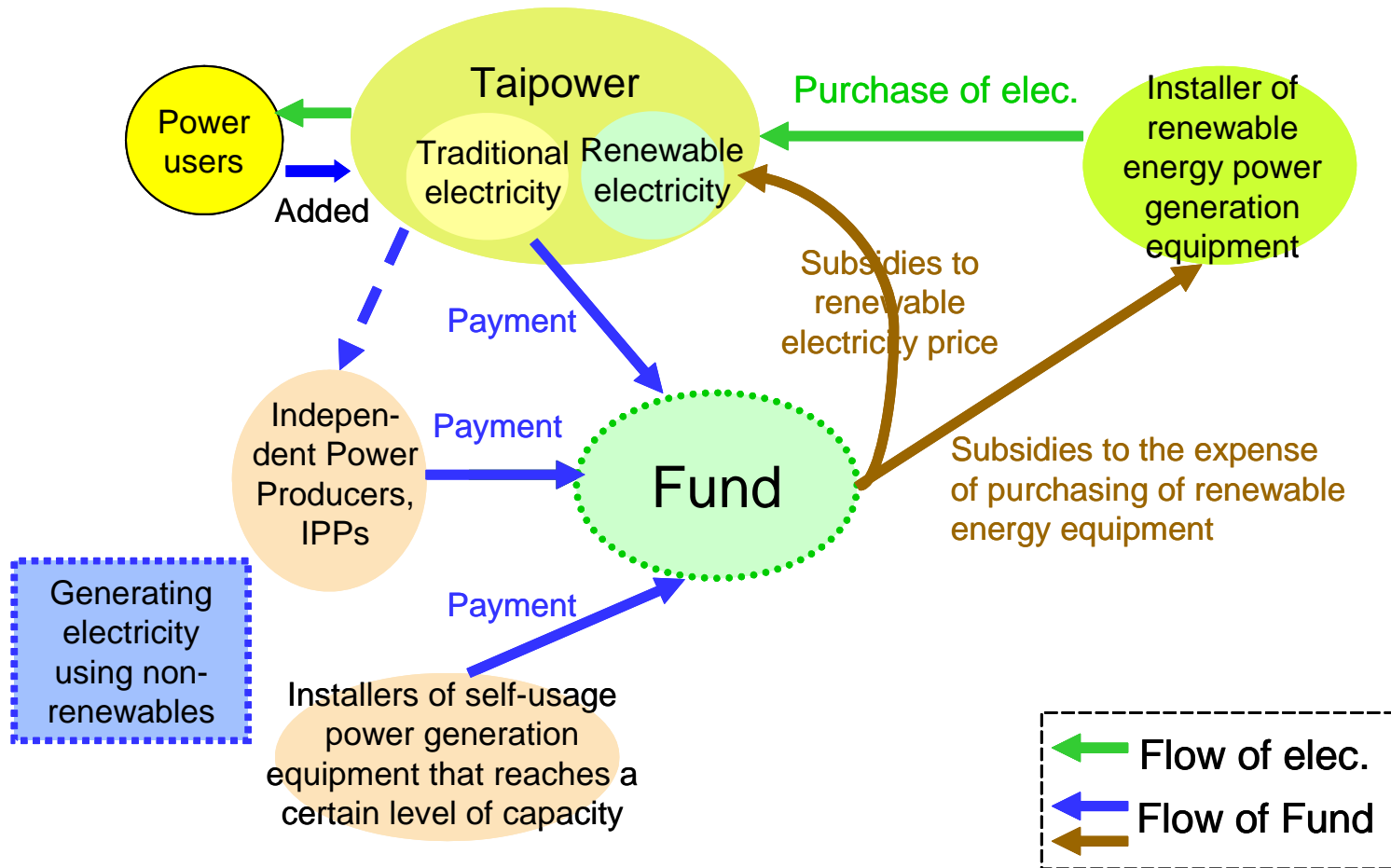
Incentive: fixed feed-in tariffs for renewable electricity; subsidies for installations

Deregulation: removal of limitations for land use and requirements for installing of self-usage power facilities

Renewable Energy Development Act in Chinese Taipei

July 8, 2009

Mechanism of Renewable Energy Development Fund



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Photo: KOC (2009)

Main Stadium for 2009 World Game, Kaohsiung, Chinese Taipei

Thank you for your attention.