# Visions and Realization of a Green Island

Minister Shu-hung Shen EPA, Taiwan

**November 13, 2009** 

#### **Outline**

- 1. Introduction
- 2. Taiwan's Environmental Efforts and Accomplishments
- 3. Current Challenges
- 4. Visions and Realization
- 5. Conclusion





#### Introduction

#### Taiwan's Profile



- Area: 36,000 square kilometers
- Population: 23 million
- Location
   Lies off the southeastern coast of mainland Asia, along the Taiwan Strait
- Natural Disasters
   Typhoons, landslides, floods, and earthquakes. Taiwan is facing serious challenges of climate change.

#### Introduction















- 50,000 species
  - accounting for 1.5% of the world's species
  - one-third is endemic
  - 3,600 flora species
  - 500 bird species
  - nearly 400 butterfly species

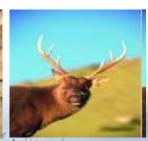














# Introduction Environmental loads

#### **Environmental Loads Compared to Other Countries**

Density (per km²)	Taiwan	USA	Japan	Germany
Population	636	20.1 X	1.9 X	2.8 X
Vehicles	583	22.4 X	2.5 X	3.9 X
Pigs	178	27.7X	6.9 X	2.4 X

Source: http://www.prb.org; http://faostat.fao.org



# Introduction Overview of Taiwan's GHG Emissions

- Major emission indices in 2007
  - ☐ Total energy related CO<sub>2</sub> emissions: 276.18 MT 0.954% of global emissions, global ranking 22<sup>nd</sup> (Taiwan's population 22.78 million (0.349% of global population)
  - □ Per capita emissions: <u>12.08 tons</u>, global ranking <u>18<sup>th</sup></u>
  - □ Emission intensity: 0.43 kg CO<sub>2</sub>/(US\$2000 purchasing power parity)

	Taiwan	Global Rankin g	Global	OECD	Japan	Korea	USA	China
Emissions (MT of CO <sub>2</sub> )	276.18	22	28,962	13,001	1,236.34	488.71	5,769.31	6,027.85
Population (million)	22.86	47	6,609	1,185	127.76	48.46	302.09	1,319.98
Per capita CO <sub>2</sub> (kg)	12.08	18	4.38	10.97	9.68	10.09	19.10	4.57
Emission intensity	0.43	52	0.47	0.40	0.34	0.46	0.50	0.61

Source: International Energy Agency, Key World Energy Statistics 2009



#### Introduction

#### **Establishment of Infrastructure**

- Taiwan EPA was established in 1987
- National Council for Sustainable Development (inter-ministerial level) was established in 1997
- More than 400 environmental laws and regulations
- Ministry of Environment and Natural Resource will be established by 2011



#### Introduction

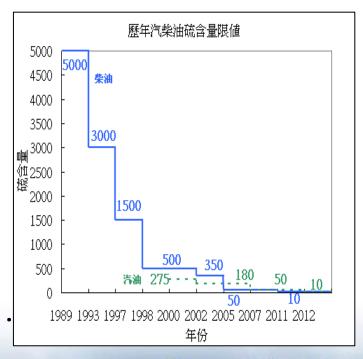


# 2. Taiwan's Environmental Efforts and Accomplishments

### **Air Quality Improvement**

- Tighten Vehicle Emission Standards
  - □ Drafting 5th stage emission standard for gasoline vehicles and 6th stage emission standard for motorcycles
  - □ Drafted 5th stage emission standard for diesel vehicles
- Establish standard for gasoline and diesel quality control
   □To satisfy new engine with low-sulfur fuel, composition control standard for vehicle's fuel was promulgated on July 29, 2009.

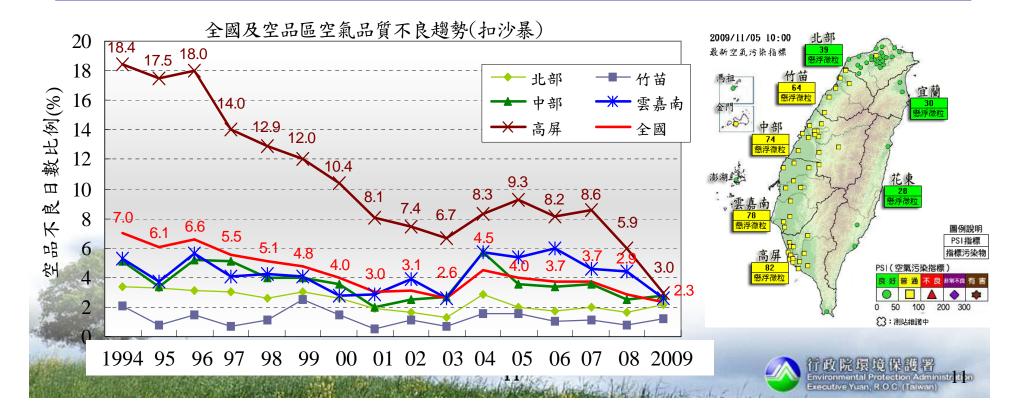
   Sulfur content will be lowered from current 50ppmw to 10ppmw in 2011.



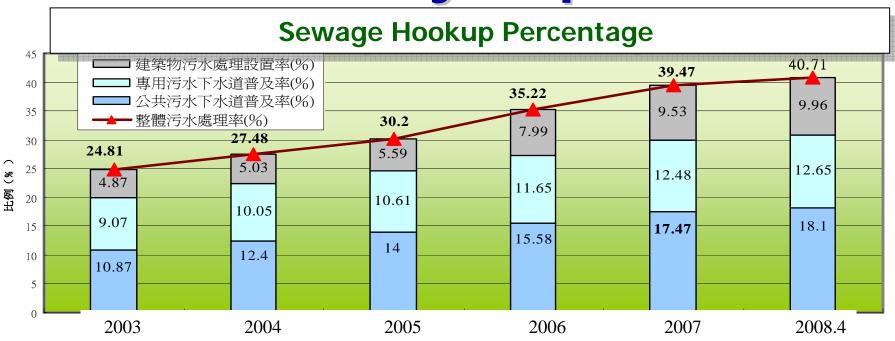
# **Air Quality Improvement**

#### Percentage of poor air quality days (PSI > 100)

- Decreased from 7% in 1994 to 2.87% in 2008 (Not counting the effects of sandstorms from China), and further to 2.4% in August 2009
- Decreased from 18.4% in 1994 to 5.94% in 2008 for Kao-Pin area (further to 3.1% in August 2009)



# Water Quality Improvement



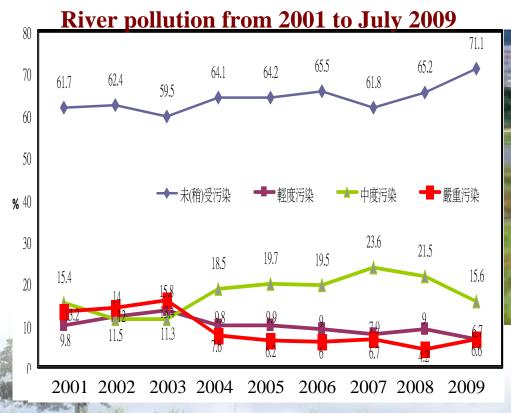
#### By Sep. 2009

- Hookup households have exceeded 1.26 million
- Sewage treatment percentage exceeded 46.68%
- Public sewage hookup percentage: 21.85%
- Special sewage hookup percentage: 13.62%
- Building sewage facility: 11.21%

Hookup percentage and sewage treatment percentage increase 1.65% and 3.66% respectively.

# **River Quality Improvement**

- ♣ In order to improve river, reservoir and ocean water quality, pollution control and in-situ treatment are adopted.
- ♣ As of July 2009, the percentage of seriously-polluted river section has decreased from 13.6% in 2001 to 6.6% in 2009.





Lujiao Creek Artificial Constructed Wetland in Taipei County

# Waste Management

#### **Evolution of Garbage Treatment**



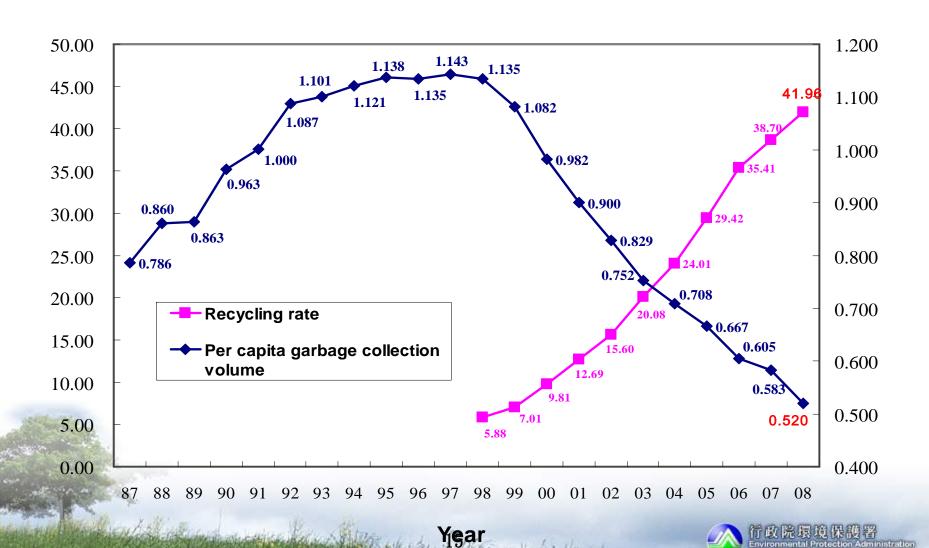


four-in-one plan

bags) **Promote source** reduction

separation

### Recycling and Waste Reduction



# Waste Management

- Increase the reuse rate of industrial waste
  - Industrial waste reuse rate has reached 75%
  - In 2008, 3.9 kg per capita per year recycled for electronic appliances and recycling and reuse rate was 32%.

McKinsey & Company indicated that the amount of recycled electronic appliances will reach US\$10 billion and will continue to grow

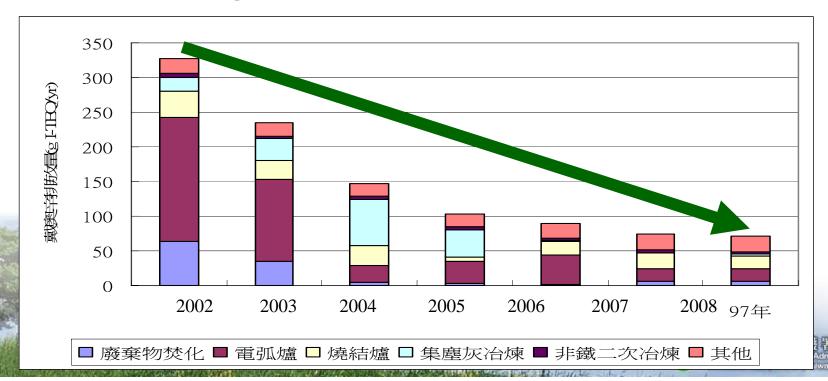


#### **Establish a Nontoxic Homeland**

- Effective reduction of toxic substances
   259 toxic chemical substances are regulated, 45 of which are prohibited and 137 of which require permit to use
- Reduce inappropriate use of environmental toxic substances (for those bio-accumulated and persistent substances such as bisphenol A, nonylphenol mercury)
  - ☐ Bisphenol A was announced as the fourth category toxic chemical substance in 2008.
  - Nonylphenol (NP) and Nonylphenol polyethylene glycol ether (NPEO) Ban on home-use detergents started in 2008
  - Mercury banned as an industrial catalyst on July 31, 2008.
  - ☐ The use of asbestos was reduced in July 2009 and will be banned gradually.

#### **Establish a Non-toxic Homeland**

- Raise the emission inventory and control for dioxin and heavy metals
  - □All dioxins emission sources are under control. The emissions of dioxins decreased from 321g I- TEQ in 2002 to 71g I-TEQ in 2008.



#### **Environmental Impact Assessment**

- 1,000 large-scale construction projects and 5 government development policies undergone EIA Review.
- Follow-up of the compliance of EIA Review conclusions and requirements by inviting experts and scholars to join with inspection teams to monitor each case.



**EIA** review meeting



**EIA** onsite inspection



#### 2.11

#### Compliances on International Environmental Conventions

Taiwan following the requirements of international environmental conventions. For example:

- The Montreal Protocol on Substances that Deplete the Ozone Layer
- The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal
- The Stockholm Convention on Persistent Organic Pollutants
- The Convention on the Prevention of Marine
   Pollution by Dumping Wastes and other Matter
- The Convention on Biological Diversity



# 3. Current Challenges

### **Impact of Climate Change**

# □Global warming speeds up desertification

 According to the UNEP, 40% of earth surface is arid and contains 1/3 of world population.
 Desertification threatens the lives of 1 billion people

# □Global warming threatens the lives of billions

- UN the "4th Water Forum" pointed out that climate change caused by global warming will cut Africa's rainfall by ¼ by the end of 21 century and may lead to conflicts in 17 African countries
- By mid-21 century, 200 million people will be forced to leave their homeland due to sea level rise, serious droughts and floods.



# Unpredictable Weather Impacts

- Typhoon Morakot
  - The deadliest typhoon in Taiwan's recorded history
  - Rainfall reached 2,900 mm within 3 days
  - Direct economic loss of NT\$4.2 billion (US\$292M)
- Climate pattern has changed
  - Months of severe drought before Morakot













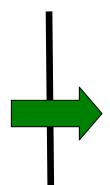
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Taiwan's Vulnerability: Typhoon Morakot



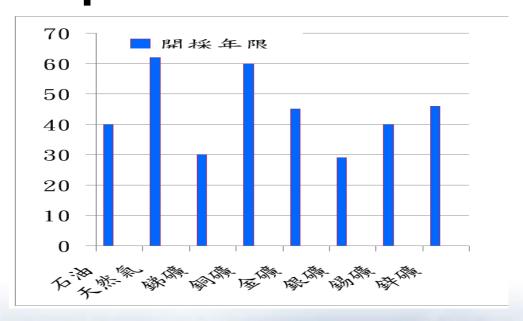
#### **Limited Natural Resources**

- Depletion of fossil fuels
- Lack of precious metals



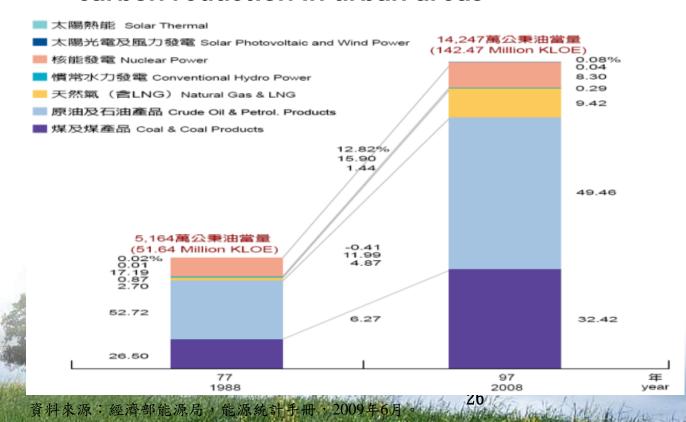
- De-materialization
- Renewable products
- Alternative materials
- Recycling

Global coal reserves may last for another 100 years. Energy sources will be depleted unless renewable energy is available



#### **Taiwan's Current Status of Energy Supply**

- Taiwan's energy demand is growing 5.21% each year
- Self-owned energy sources are limited, 99.34% of energy supply is imported
- Emission from transportation, businesses and residential sectors makes up 32% of the total emission. These are the targets of carbon reduction in urban areas



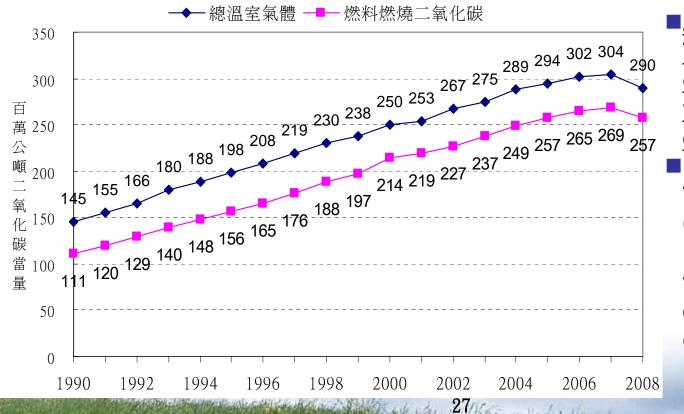
### High percentage of fossil fuels

In 2008, Taiwan's electricity emission factor was 0.636 kg CO<sub>2</sub>e/kWh, higher than USA (0.576), France (0.087), Japan (0.429) and Korea (0.418)



#### **Taiwan's GHG Emission Trend**

- In 2008, Taiwan's per capita CO<sub>2</sub> emission from the energy sector dropped 4.8% while total emission dropped 4.4%.
- Causes: global economic downturn caused by financial crises, oil and electricity prices adjusted according to international market prices, implementation of energy saving and carbon reduction measures.



- About 90% of Taiwan's GHG emission comes from fuel combustion
- ■In 1990-2008,
  Taiwan's total
  GHG emission
  increased 118%
  with fuel
  combustion
  emission
  increasing 132%

#### 4. Vision and Realization

#### **Taiwan EPA's Policy Pillars**

#### Policy pillars

- Institutions Restructuring to Promote Sustainability
- Energy Conservation and Carbon Reduction to Cool the Earth
- Resource Recycling for Zero waste
- Pollution Elimination for ecological Conservation
- Cleaner Homeland with LOHAS

#### **Visions**

Blue Skies and Green Earth

Verdant
Mountains and
Pristine Waters

Health and Sustainability

LOHAS: Lifestyles of Health and Sustainability

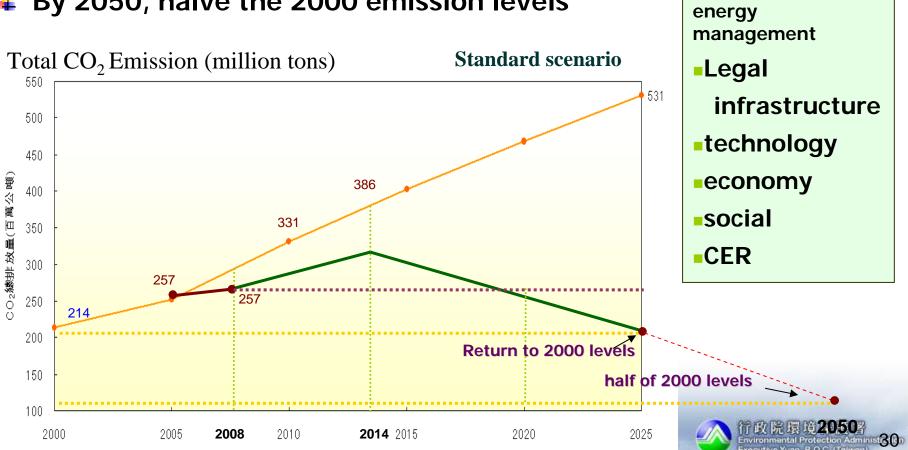
#### Response to Global Vision on Carbon Reduction

Most reduction

done by technology development and

#### Taiwan's carbon reduction targets

- **♣** 2016 to 2020, return to 2008 emission levels
- By 2025, return to 2000 emission levels
- By 2050, halve the 2000 emission levels



# **Sustainable Energy Policy**

#### **Policy Objective**

A Win-Win-Win Solution for Energy, Environment and Economy

#### **Efficiency**

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 wi decrease 20% by 2015. Supplemented by further technological breakthroughs and proper administrative measures, energy intensity will decrease 50% by 2025.

#### Clean

### Developing clean energy

Reduce nationwide CO2 emission, so that total emission could return to its 2008 level between 2016 ~ 2020, and further reduced to the 2000 level in 2025.

Increase the share of low carbon energy in electricity generation systems from the current 40% to 55% in 2025.

#### Stable

## 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.

#### Note:

- Energy intensity has been improved 1.8% in the past 3 years.
- To meet the goal of CO2 emission, the energy efficiency will be increased 3~4% each year after 2015.
- Compared with APEC Energy Leaders' Initiatives of improving 25% from 2005 to 2030., we are more aggressive.

#### Note •

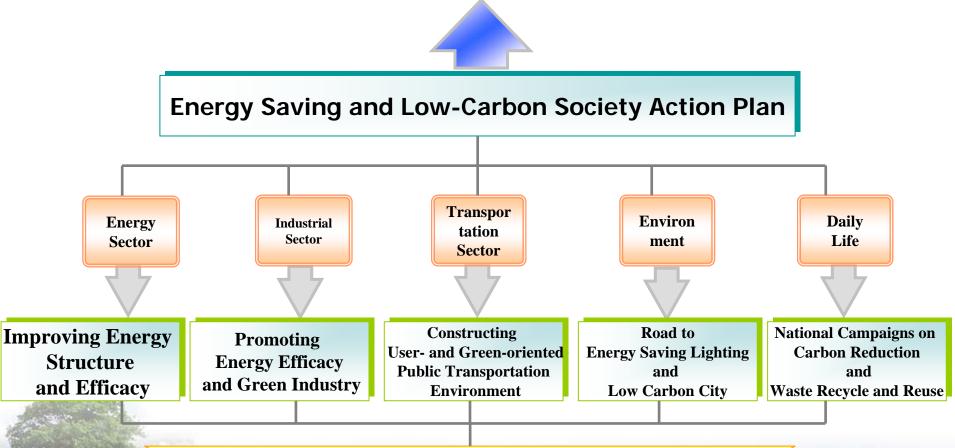
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- The most aggressive emission reduction goal declared by non-Annex I States
- The medium/low carbon energy resources are about 59% and 55% in Japan's and Korea's Electricity Power Systems in 2005.

4.4

# **Sustainable Energy Policy: Action Plan of Energy Saving and Low-Carbon Society**

Energy Saving and Low-Carbon Society



Providing a Comprehensive Regulatory Framework and Supplementary Mechanism

# Emerging Green Energy Industry Promotion Program

Scope of Green Energy Industry

**Domain Industries** 

**Solar Twin Power Stars**)

Technology Innovation Improving and Establishing Critical and Domestic Technology

**Five Strategies** 

from 160 bill in the period 2. Promoting investment b

Solar Power LED Lighting

Critical
Investment

Including Large-scale
Green Energy Investment
Projects in the Priority List
of the National
Development Fund

Providing Opportunities

Establishing National Accrediting Laboratory and Products' Regulations and Standards. Creating Green Energy Industrial Developing Environment.

Potential Emerging
Industries
(Wheel of Wind

& Renewable Power)

Wind Power
Biomass Fuel
Hydrogen Fuel Cells
Smart Grid Network
Electrical Vehicles

Out ports' transformation

Increase Domestic Demand Facilitating the private sectors' investment in the international market

Rationalizing the purchasing rate of renewable energy.
Creating renewable energy market.

Including 10% green design in the Economic Revitalization and Employment Promotion Policy Measures and creating domestic demand. 1.Incresing producing value from 160 billion to 1158 billion in the period of 2008 to 2015.

**2015 Development Goal** 

- 2. Promoting 200 billion investment by private sector.
- 3. Providing 110 thousand job opportunities

#### **Promoting Scenarios**

- 1. Developing Taiwan's industries to the low carbon and high-value modules
- 2. Developing Taiwan into an energytechnical and producing domain state



#### 4.6

# GHG Reduction and Energy Bill Legislation

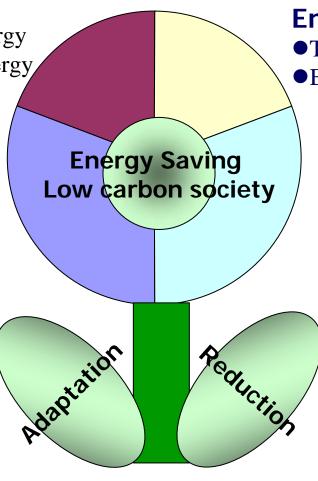
Renewable Energy Development Act

•Subsidize renewable energy

Toward a low carbon energy consumption system

#### Energy Management Law

- Efficiency standards
- •Consumption management
- Subsidize on technologies and research



**Energy Tax Bill (in drafting)** 

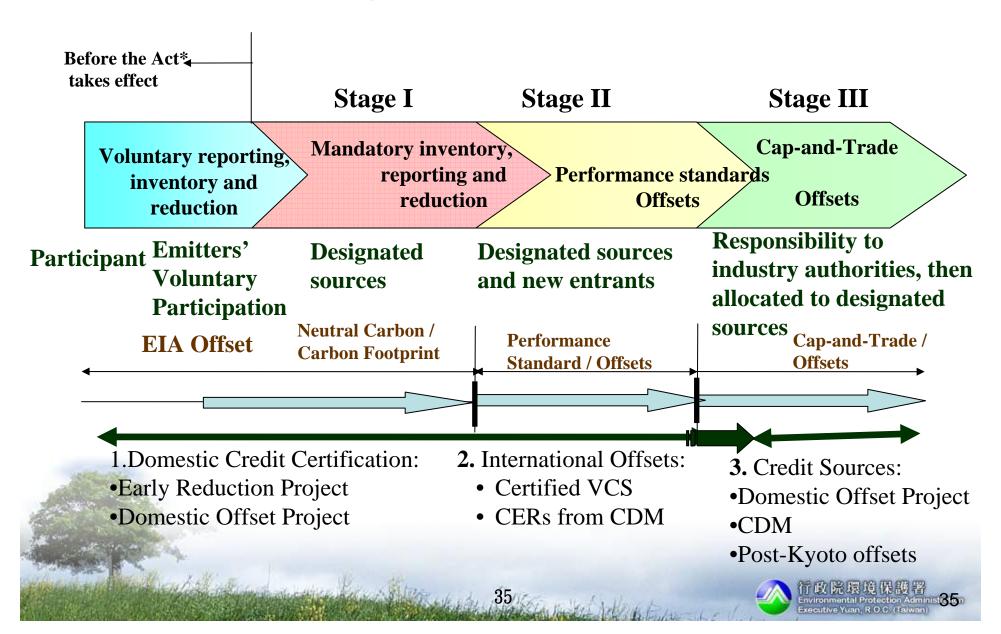
- Tax on suppliers
- Behavioral change

#### Greenhouse Gas Reduction Bill (in reviewing)

- Encouraging early action
- National reduction implementation plan (reduction target included)
- Emissions management
- Emissions intensity
- Cap and trade
- Green procurement and education

#### **Green Policies**

#### On the Way towards Cap-and-Trade



#### **Taipower's Sustainable Energy Policy**

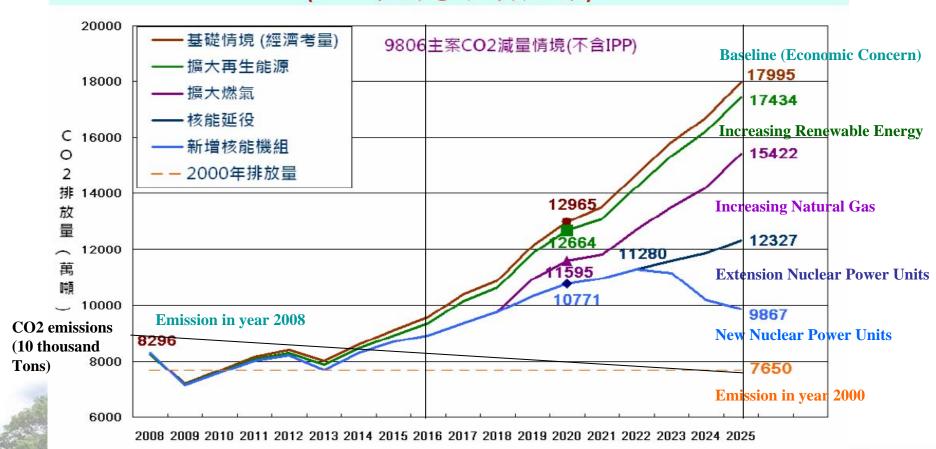
- Policy Objective: A win-win-win solution for energy, environment and economy
  - Reduce companywide CO2 emission, return to its 2008 level by 2016, and further reduced to the 2000 level in 2025, half the 2000 level in 2050.
  - Increase the share of low carbon energy in electricity generation systems from the current 40% to 55% in 2025.
- Measures of Cleaner Energy
  - 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.
  - Increase the utilization of low carbon natural gas, therefore it could account for more than 25% of power generated in 2025.
  - Increase energy supply diversity. Reconsider nuclear power as a no-carbon energy option.
  - Accelerate the replacement of existing power generating units. Formulate a power plant efficiency improvement program to require newly built units to apply the best available technology.

### **Reduction Scenario of Taipower**

(0906 long-term development projects)

### 台電發電端之減量情境

(9806長期電源開發方案)





### Scenario for Achieving Reduction Goal

#### 2020年二氧化碳回歸至2008年之成本估計

一、2008年台	83.0	百萬噸						
二、2020年台		107.7	百萬噸					
三、差異	CO2 Emissi	24.7	百萬噸					
四、需抑低(燃煤)之發電量Reduction of Power Generation					294.9	億度		
五、達成減量目標需新增容量New Capacity for Reduction Goal								
減量措施	國內:	外經營或購買	夏碳權	擴大風力	擴大太陽光電	擴大燃氣發電		
萬瓩				842	2,693	738		
機組數 /		0.00		2,806@3MW	26,933	11 @ 720MW		
頂樓面積				(1,760公里)	萬平方公尺			
六、達成減量目標之成本比較(億元) Cost of Emission Reduction (100 million NT \$)								
減量措施	國內外經	營或購買碳權 30	笙(US\$/噸) <b>50</b>	擴大風力	· ·	擴大燃氣發電		
碳權	82	245	408					
增加發電成本				2,078	5,261	2,469		
替代燃煤發電				770	- 770	- 1,435		
合計(億元)	82	245	408	1,309	4,492	1,034		
七、單位發電成本(元/度) Cost of electricit generation (NT \$/kWh)								
風力	7.05	離岸風力成本(大) 一/度 重覆投資火力電廠之固定費用(1.05元/度)						
太陽光電	17.84	太陽光電成本(15元/度) + 重覆投資火力電廠之固定費用(2.84元/度)						
燃氣發電	4.49	2021年完工均化價位						

註:全國頂樓面積約2億8千9百萬平方公尺 、離案風力成本不含投資報酬率。

2.61 2021年完工均化價位



### **Reasons for Acquiring Overseas CDM Credits**

The necessity for Taiwan to acquire overseas CDM credits

- The major development projects with carbon reduction responsibilities according to their environmental impact assessments review requirements;
- Even their first priority is to conduct domestic reduction, it is still necessary to acquire foreign CDM credits to offset the domestic reduction quota;
- The government will proactively assist the emitters to find low-cost measures and offset project, while ensuring that the foreign offset credits acquired have international credibility;
- During our voluntary reduction period or when Taiwan takes on international reduction commitment in the future, the use of CERs would allow us to gain international recognition for offsetting emissions emit by Taiwan, and providing the best assurance for our emission sources to make such investments.

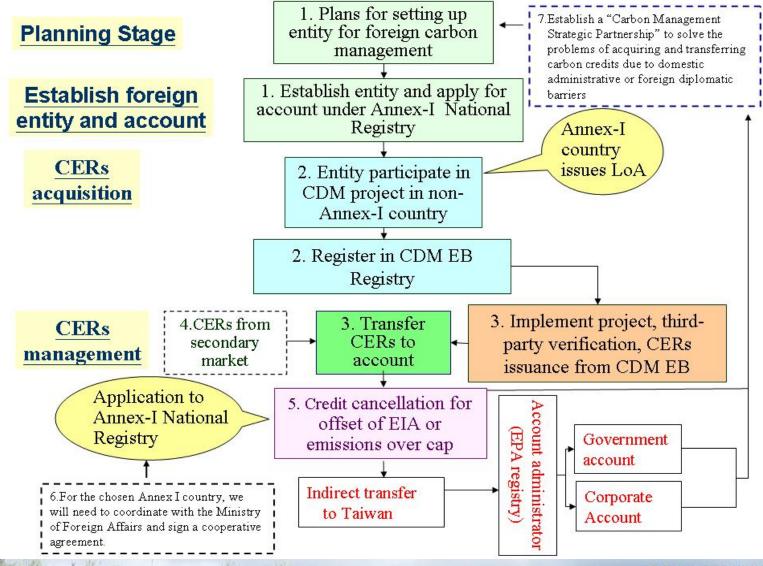
### **Demand on CERs**

- Emissions raised: 28 million metric tons per year from major proposed development projects subjected to EIA review process.
- **■Estimated CERs for Offset Demand: 4 million metric tons per year.**

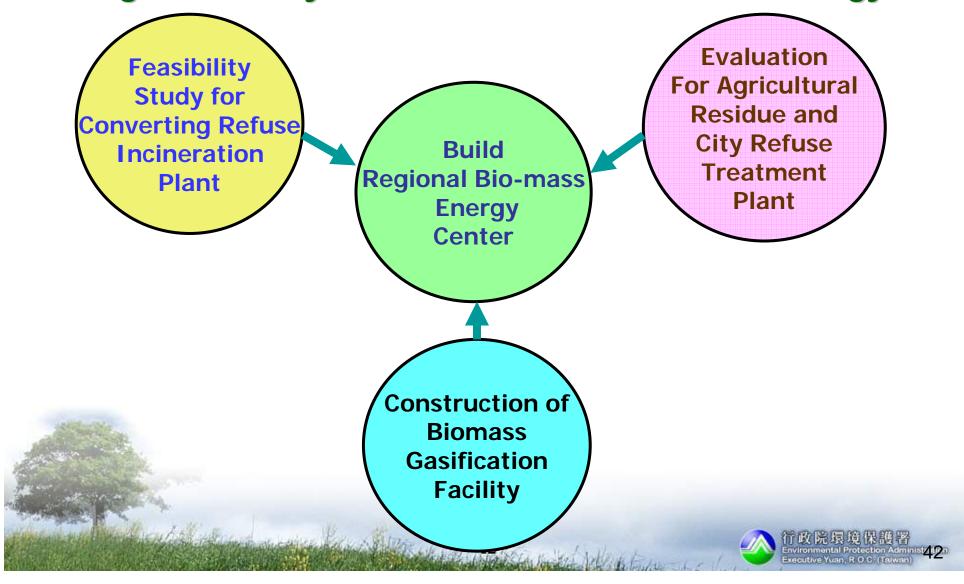
編號	案 名	CO2排放量(含外購購電CO2排放量,單位:萬公噸/年)	外購購電 CO2 排放量 (單位:萬公噸/年)	備註
1	新竹科學工業園區三、五路沿線土地開發計畫環境影響說明 書	146.4	127.1	
2	高雄煉油廠第二媒裂工場環保汽油品質提升計畫環境影響 說明書	4.46	0.3903	
	大林廠興建重油轉化工場暨媒組工場計畫環境影響說明書	160.4		
4	桃園煉油廠第三重油加氫脫硫工場興建計畫環境影響說明 書	30.5		
5	南科液晶電視及產業支援工業區(樹谷園區)開發計畫變更案 環境影響說明	161.9	126.9	
6	中龍鋼鐵股份有限公司第二期第二階擴建計畫環境影響說 明書	260.3	41.54	利用製程產生氣體發電(80MW×2座、65 MW×3座)
7	東和鋼鐵公司辦理桃園廠遷廠及工業區報編計畫環境影響 說明書	47.97	34.5	
8	六輕四期擴建計畫變更環境影響差異分析報告	-1.358		六輕 1-4 期 CO2 排放總量 6750.83 萬公噸/年 本次變更增加部分廠產能,取消 MDI 廠及 XF 廠,故 CO2 排放量減少
9	台灣中油股份有限公司三輕更新計畫環境影響說明書	38.5120		本計畫二氧化碳增量 96.28 萬公噸/年,依審查結論,本計畫二氧化碳增量合計減少達 60%
10	林口電廠更新擴建計畫第 1,2,3 號機環境影響說明書	927		電廠
11	通霄電廠更新擴建計畫環境影響說明書	497.1		電廠
12	深溴發電廠更新擴建計畫環境影響說明書	595.5		
	승 하	2868.684	330.4303	

4.13

# Path to Acquire Overseas Offset Credits

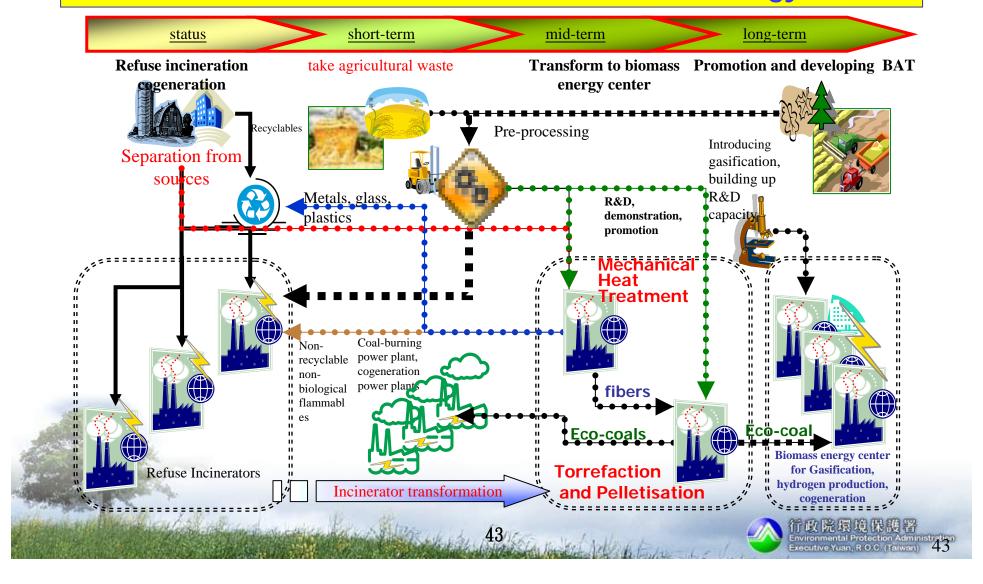


## Global Initiative on Energy Uses Integration High efficiency use for refuse and biomass energy



### Global Initiative on Energy Uses Integration

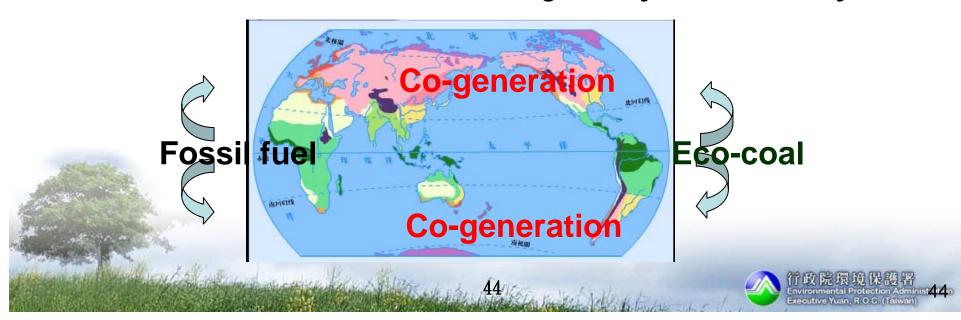
Refuse Incinerators transform to local biomass energy centers



### Global Initiative on Energy Uses Integration

### Most efficient way to harness global fossil and biomass fuel

- Future power plants will provide electricity and heat by cogeneration and should be located in the most heat-demanding temperate and frigid zones, while the tropical and subtropical zones are supplied by transmitted electricity to reach the highest energy efficiency globally.
- Future eco-coal and fossil fuels produced in the tropical and subtropical zones will be transported to the temperate and frigid zones to provide the world with electricity including powering electric vehicles.
- Through international cooperation, the most efficient way of utilizing fossil and biomass fuels will be reached gradually in the next 40 years.

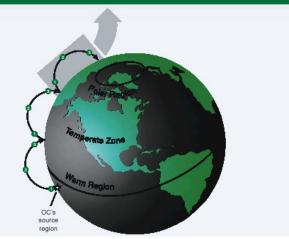


### **Non-toxic Homeland**

### □ Persistent Organic Pollutants (POPs) Control

- Adoption provisions of the Stockholm Convention
  - The competent authorities in environmental protection, agriculture and public health will enact necessary regulations, conduct regular measurement of POPs in the environment and risk communications.
- Introduction of the EU REACH program
  - Adoption of EIA rules, and strengthen chemicals monitoring and control





http://www.on.ec.gc.ca/

POPs possess chronic toxicity and bio-accumulation. They are difficult to degrade in the environment, and will move across national boundaries. Some POPs are endocrine disruptors, which affect the endocrine systems of human and animals and the reproduction system. They pose great threats to the environment.

### Cleaning up Homeland All-citizen Movement

- We will enact "Environmental Sanitation and Beautification Act" to improve the overall visual quality in Taiwan; Our slogans include "We will begin with mobilizing all citizens to clean the neighborhood, as we set Japan and Swiss as our targets." "Garbage should be brought home, and roadway is not a dumpster. We see only the clean environment, and give you a beautiful Taiwan."
- We will promote "Community 5S movement" (Japanese: Seiri、Seiton、Seiso、Seiketsu and Sitsuke) along with street and corridor beautification, green roof, building appearance improvement, in hope that Taiwan will become Eastern Swiss. 46







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### Cleaning up Homeland All-citizen Movement

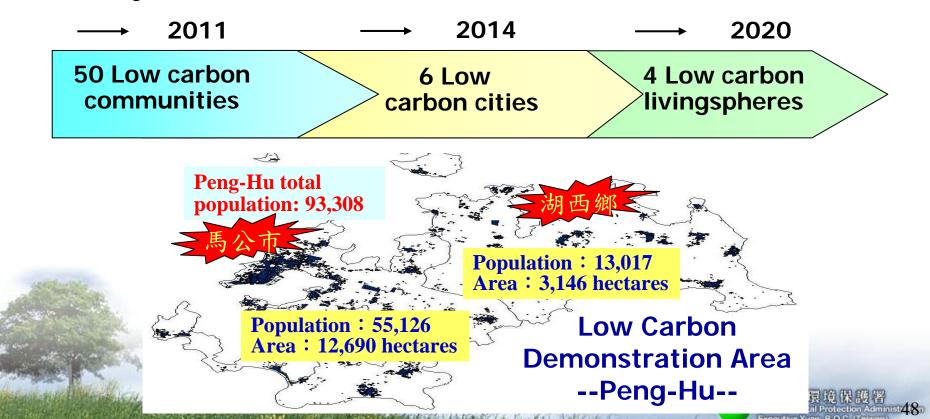
- □ To demonstrate the performance of environmental sanitation and beautification of the villages/boroughs, the Cleaning and Beautification Assistants, and local good-will groups help them set up websites, inspection routes, volunteers' schedules, blogs, and reports
- Environmental Summit was held for the township/borough chiefs to transform the ideas into actions to give Taiwan a new look.





# **Establish Low Carbon Society**-- from communities to cities to society --

- □ Develop "Low Carbon City Promotion Project." Four low carbon life spheres in northern, central, southern, and eastern Taiwan to be completed by 2020.
- Establish a promotion mechanism for the "Renewable Energy Demonstration Life Sphere."



### 4.21

## **Promote Low Carbon and Cycling Eco-Community**

 Wind power, solar energy, and other renewable energy

Quenemable Energy •Biomass: methane to electricity, dry manure as fuel, straws and weeds gasification to electricity

Multiple water resource recycling and utilization

- ✓ Intelligent water network
- **✓** Rain water storage
- **✓** Sewage regeneration
- **✓** Water-saving equipment
- Zero Waste
- Resource Recycling **✓** Green production/green consumption
  - **✓** Source

**Reduction/Resource** 

● Green construction material/green building

Low Carbon Building

Reuse and Re-utilization Use of natural energy and resource

Growing plants for the environment

•Energy saving equipment and raising efficiency

- Loading management
- Energy Conservation • LED lights/Compact **Florescent lights** • Energy-saving appliances

Towards a rich biodiversity and I Transport friendly environment

 Promotion of low carbon vehicles

- •Bicycle path network system
- •LED lights and traffic light and signs







# Low Carbon City Demonstration Area—Peng-Hu

#### **Major Issues**

- Renewable energyWind power, solar heat, and solar photovoltaic cells
- > Energy conservation
  Using energy-saving appliances (high efficiency air conditioners and refrigerators), LED lights, and other energy-saving lights, smart electricity meters, and etc.
- > Low carbon buildings Green buildings and green construction materials
- Resource recyclingRain water storage system and recyclingsystem
- Green transportationElectric mopeds/buses

#### **Anticipated Results**

- ✓ Renewable energy is raised from 0.01% to 69% in terms of electricity percentage, while 2.76% to 51% in terms of energy percentage.
- ✓ Household saving energy up to 10%
- ✓ Garbage recycling/energy (zero output)
- ✓ Total GHG emission is reduced by 59%
- ✓ Per capita GHG emission is reduced from 3.04 tones/man-year to
   1.25 tones/man-year
- ✓ More job opportunities (promising tourism, the community green collar)

## 4.23 All-citizens Carbon Reduction Actions

**EPA** has established an Eco-life website, or the **Green Website, which allows** citizens to sign up and register carbon reduction performance, to manage own electricity, to conduct neighborhood inspection and cleaning, and to propose activities for public participation.

This website invites all citizens to participate in energy saving and carbon reduction to jointly move towards a low carbon society and a sustainable nation.



lecolife.epa.

### **All-citizens Carbon Reduction Actions**

- ▶ President Ma Ying-jeou with all employees of the Office of the President signed the Energy Saving and Carbon Reduction Declaration on June 5, 2008 (Earth Day)
- ➤ EPA invited the former-ministers and vice ministers and local Environmental Protection Bureaus heads to signed the Energy Saving and Carbon Reduction Declaration on August 22, 2008 (EPA's birthday)
- ➤ The mayors/commissioners of Taiwan's 25 counties/cities along with their staff have signed 10 noregret energy saving measures declaration before September 2008

As of October 31, 2009, the number of citizens who signed the declaration has surpassed 770 thousand!



# OPTIMISM FOR TAIWAN'S OFFICIAL PARTICIPATION IN UN'S CAMPAIGN TO HALT GLOBAL CLIMATE CHANGE:

#### A CRITICALLY NEEDED PUSH FROM EUROPE

- The European Union (EU) and Taiwan have long supported each other to the benefits of both our peoples.
- We seek your help now for something we have long strived for – to participate officially in the United Nations Framework Convention on Climate Change (UNFCCC).

- While our attempts in the past had yet to meet with success due to our unique political circumstances, we do believe there is ground now for fresh optimism as evidenced by encouraging recent developments.
- Since its election in 2008, our new administration has taken a pragmatic and constructive approach both internationally and across the Taiwan Strait, and this new approach soon brought desirable results.



- Early 2009, UN member states have for the first time resolved to accept Taiwan as an official observer under the name of Chinese Taipei for the World Health Assembly (WHA) with our Minister of Health as the head of the delegation.
- This positive precedent greatly buoyed our hopes that similar arrangements with our Minister of the Environment heading the delegation may soon be possible with UNFCCC and its affiliated organization and bodies, so that we may finally join the global community in its unified efforts to halt climate change.

- We resolutely believe we deserve your favorable considerations. Over the past 30 years, people of Taiwan have strived to build a systematic environmental protection framework that is both enlightened and comprehensive.
- During this time, we have enacted and implemented more than 400 environmental laws and regulations including the Basic Law of the Environment, and have integrated the principles of all of UN's environmental conventions and protocols for compliance.



- At the same time, we are also keenly aware that, as inhabitants of a densely populated island situated in one of the most geologically and meteorologically sensitive regions of the world, we would be particularly vulnerable to the many threats of accelerating global environmental change.
- The typhoon Morakot which had blown through Southern Taiwan and caused serious calamity was just an acute case in point. Many fear this was just a prelude to things to come. As the world warms, we may very well be at the forefront of considerably more than just storms of increasing intensity.

- What we seek from UNFCCC and its affiliated organizations and bodies is a mechanism through which Taiwan can both contribute its skills and expertise and seek support for the management of its climate-related risks.
- We are optimistic, with the ever-improving cross-Strait relationships, your voice of support from the EU will be a decisive push in the right direction for both Taiwan and EU, and indeed the global campaign to halt climate change.

- We sincerely hope that you, as a distinguished official from EU, would voice your support for this.
- The people of Taiwan will sincerely appreciate your support.

# Taiwan's Position on Global Environmental Protection

- Taiwan is willing to take a fair share of its common but differentiated responsibilities, even though it has no obligations on emission reduction under the UNFCCC.
- Taiwan has implemented domestic reduction efforts and initiated the legislation of the GHG Reduction Act.
- Taiwan is willing to share its experience in environmental management and economic development with developing countries in need through CDM of Kyoto Protocol.



### Taiwan is willing to share its experience Economic Development and Trade

- Taiwan is an important manufacturing center and a major trading nation
- Taiwan's participation will benefit environmental conventions in developing relevant regulations

Taiwan is able to provide funds and technologies for more environment-friendly economic development to the global community.





Thank you for your kind attention

Your comments or questions are Mostly welcome.