

附件九



A Case Study of Energy Star Buildings Program in Taiwan

Robert Shih

General Manager

Advisor, Industrial Technology Research Institute



永智顧問有限公司

YC Consultants Ltd.

IETA Side Event, COP12 & COP/MOP2

14 November 2006



Outline

- Introduction to Energy Star Program
- CDM Case Study
- Recent Domestic Developments
- Linkage of Carbon Markets
- Conclusions



Introduction



- 1999: Cooperative agreement between USEPA and Taiwan EPA for the Energy Star voluntary labeling program
- July 2000: Start labeling applications
- Current labeling for office equipment, covering 52 manufacturers, 521 products:
 - Computers, monitors, scanners, printers, fax machines, copiers, etc.

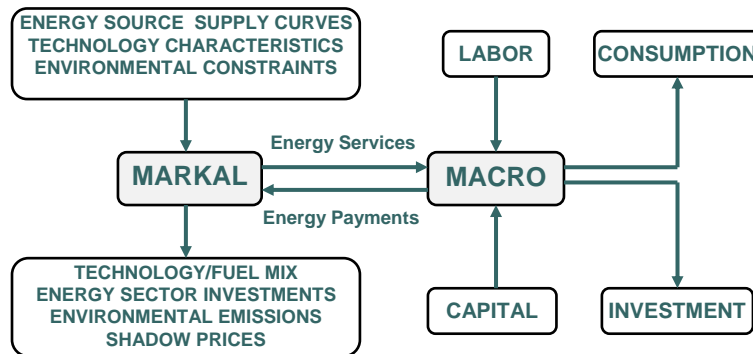


CDM Case Study: Scope

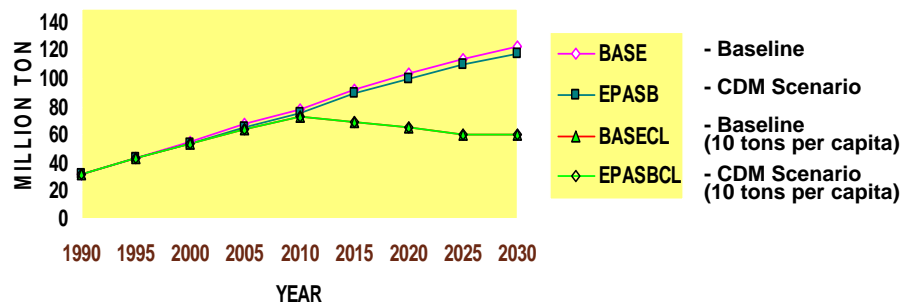
- In 2000, Brookhaven National Laboratory and USEPA conducted a study of introducing the Energy Star Buildings Program (ESBP) for Taiwan, with input from ITRI
- Voluntary program for commercial building owners and operators:
 - High-efficiency lighting
 - Building survey and tune-up
 - Reduction in air-conditioning loads
 - Improvements to air handling system
 - Air-conditioning upgrade

CDM Case Study: Methodology

Overview of MARKAL-MACRO



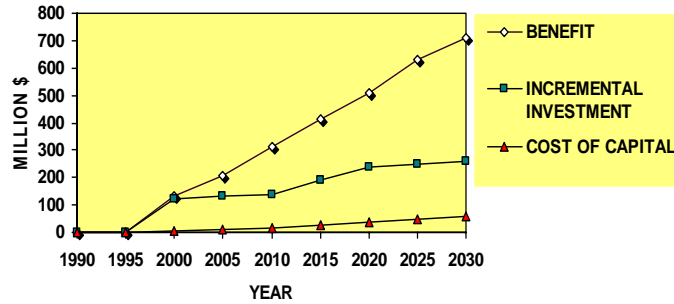
CDM Case Study: Results



- Retrofit existing commercial building with ESBP technologies at a rate of 5% per year, new buildings have the option to install ESBP technologies
- ➔ Reduction of 90 million tons over 40-year project period (1990-2030), about 2% of the baseline emissions



CDM Case Study: Results



- Total incremental investment is about half of the demand-side benefit (measured as increased consumer surplus) generated from the CDM project
- Assuming the incremental investment (government subsidy) is financed interest free by international investors, the average costs of carbon reduction range between 7 to 11 \$ per ton



CDM Case Study

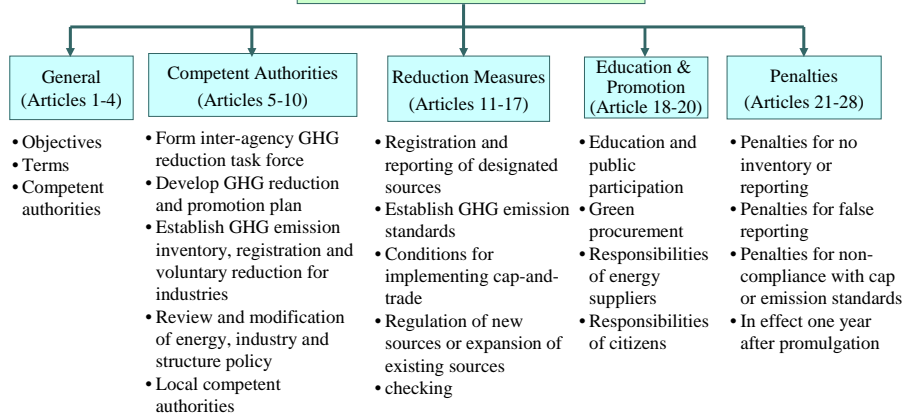
- Advantages of MARKAL-MACRO for programmatic CDM projects
 - Allows *ex ante* estimation of emissions reduction for a programme of activities
 - Evaluates projects implemented in several locations
 - Calculates emissions reduction in one or more sectors
 - Provides introduction of emissions reduction technologies over stages or with different crediting periods



Recent Domestic Developments

- o **GHG Reduction Bill approved by the Cabinet in September 2006, sent to the Legislature**

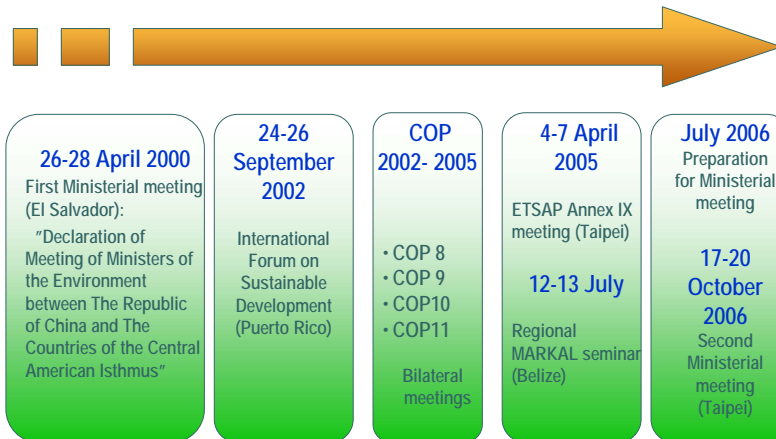
Structure of GHG Legislation



Recent Domestic Developments

- o **Articles related to GHG emissions trading**
 - **Article 9:** Central industry competent authority advise industries...in their participation in international reduction projects, and may provide incentives or subsidies. (*Voluntary action*)
 - **Article 13:** The central competent authority may implement the GHG cap and trade system ... in response to international GHG reduction rules. (*Domestic emissions trading scheme*)
 - **Article 16:** Enterprises may voluntarily submit GHG reduction plan, target and timeline prior to the allocation of emission credit. . . apply to the central competent authority for certification of reduction credits, which may be used for offsets or trading in the GHG cap and trade scheme. (*Early action credit*)

Taiwan EPA's Assistance in establishment of Central American MARKAL-MACRO

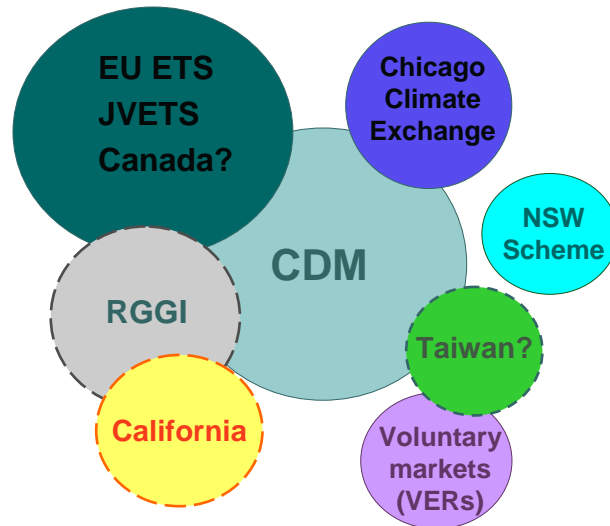


2006 Environmental Ministers' Meeting

- Declaration and Action Plan
 - Continue MARKAL-MACRO capacity building
 - Joint implementation of voluntary GHG reduction projects, such as avoided deforestation, improvement of the efficient and rational use of energy, increase use of alternative fuels and renewable energies
 - Identification and evaluation of potential projects and their development through the ISO 14064 standard for Emission Reduction Certificates in the voluntary market



Linkage of Carbon Markets



Conclusions

- Innovative designs of emissions reduction projects in the voluntary market could provide useful information for expanding the CDM in the future
- Creation of domestic trading market in Taiwan would provide direct or indirect links with the international carbon market (Kyoto or non-Kyoto)
- Capacity building efforts in establishing Central American MARKAL-MACRO will assist the region in evaluating and developing programmatic CDM projects in energy efficiency, including energy, industrial, residential/commercial, and transport sectors



Thank you!

Robert Shih

Email: robshih@yahoo.com

