The Twelfth Asia-Pacific Seminar on Climate Change

Bangkok, Thailand, 30 July-2 August 2002

Preparation for Implementation of CDM in Vietnam

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Background Information

- Vietnam signed the UNFCCC on 11 June 1992, ratified it on 16 November 1994 and signed the Kyoto Protocol (KP) on 3 December 1998.
- The Hydro-meteorological Service of Vietnam (HMS) is assigned by the Government as a National Authority for implementing UNFCCC and KP as well as a National Authority for Clean Development Mechanism (CDM) in Vietnam.
- National Office for Climate Change & Ozone Protection belongs to HMS.

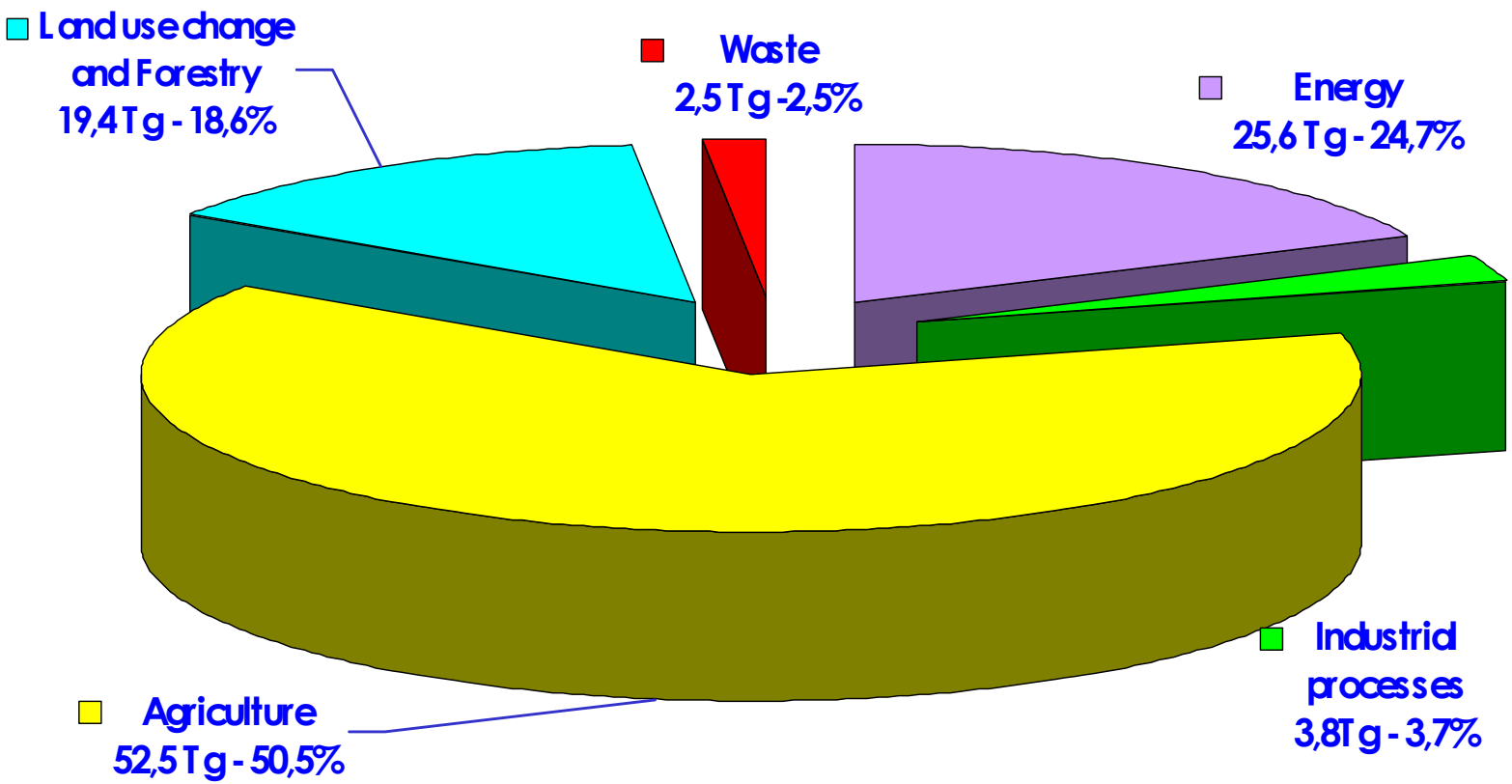
Background Information (Cont.)

- Establishing a Climate Change Country Team and National Technical Expert Team to manage and implement projects regarding climate change issues.
- Vietnam has carried out a number of studies and other activities relevant to the national response to climate change issues:
  - "CC: TRAIN (Phase 1)" supported by UNDP/UNITAR/GEF
  - "Asia Least Cost GHG Abatement Strategy" (ALGAS) Project supported by UNDP/GEF/ADB
  - "Economics of GHG Limitation" (Phase 1) supported by UNEP
  - "Enabling Activities for the Preparation of Initial National Communic Related to UNFCCC" supported by UNEP/G

Background Information (Cont.)

- Completed National GHG Inventories for 1990, 1993 and 1994.
- Preparation for 1998 National GHG Inventory
- National GHG Inventories focused on CO_2, CH_4 and N_2O in Energy, Industrial Processes, Agriculture, Land Use Change and Forestry, Waste Sectors.

Background Information (Cont.)
GHG Inventory Results in 1994



GHG National & Sectoral Projection

Unit: Tg CO_2 equivalent

Year	1994	2000	2010	2020
Energy	25.65	49.97	117.28	232.29
Land use change and Forestry	19.38	4.20	-21.70	-28.40
Agriculture	52.45	52.50	53.39	64.70
Total	97.48	106.67	148.97	268.59

Source: - Initial National Communication,2002
- ALGAS, 1997

Evaluation of Vietnam's Supply Potential

- ✓ Based on National GHG Emission Projection.
- ✓ Bottom-up approach: Development and assessment of GHG mitigation option by option in the three main sectors: energy, agriculture and land use change & forestry
- ✓ 21 GHG mitigation option have been considered for Vietnam NSS on CDM:
  - 15 energy mitigation options (CO_2 abated)
  - 3 agriculture mitigation options (CH_4 abated)
  - 3 forestry mitigation options (enhance carbon sinks)

GHG mitigation options in Vietnam

Energy: Demand Side Management

Sector	Options	Period 2001-2010	
		Kt CO_2 abated	Marginal Cost ($/t$CO_2$)
Industry	E1: Efficiency Improvement in Coal fired industrial boilers	6125.37	-0.22
	E2: Efficiency Improvement in Oil fired industrial boilers	766.86	28.86
	E5: More Efficient Industrial Motors	1771.84	-3.63
	E6: Technological Change in Cement Production	2560.02	41.84
Household	E3: Compact Fluorescent Lamp	415.75	3.84
	E4: Efficiency improvement of coal cooking stoves	293.25	-8.58
Transport	E7:Fuel Efficiency Improvement with Lean Burn Engine in Transportation	95.06	-22.29

GHG mitigation options in Vietnam (Cont.)

Energy: Supply Side

Sector	Options	Period 2001-2010	
		Kt CO_2 abated	Marginal Cost ($/t$CO_2$)
Power	E8: Development of Geothermal power	12218.8	13.18
	E9: Development of Solar power	209.82	154.16
	E10: Development of Wind power	8553.21	7.77
	E11: Upgrading existing coal fired thermal power plants	1388.88	50.65
	E12: Converting existing oil fired thermal power plants to burn gas	6473.95	-4.77
	E13: Small hydropower development	34212.84	8.40
	E14: Use of biomass for production of electricity	2613.48	1.81
	E15: Use of biogas for production of electricity	1194.73	2.15

GHG mitigation options in Vietnam (Cont.)

Agriculture (Period 2001- 2010)

Options	Abated CH_4 (Mt CO_2 eq.)	Mitigation Cost ($/t$CO_2$)
Water management	17.7	2.7
Food processing for animal	2	5.7
Utilization of biogas	6.5	4.0
Total	26.2	

GHG mitigation options in Vietnam (Cont.)

Forestry (Period 2001- 2010)

Options	*Area (Kha)*	*Carbon Sink (Mt CO_2)*	*Reduced Cost ($/t$CO_2$)*
Long-term rotation reforestation	200	33.44	0.71
Short-term rotation reforestation	140	10.17	0.90
Afforestation of protection forests	60	8.56	0.82
Total	400	52.17	

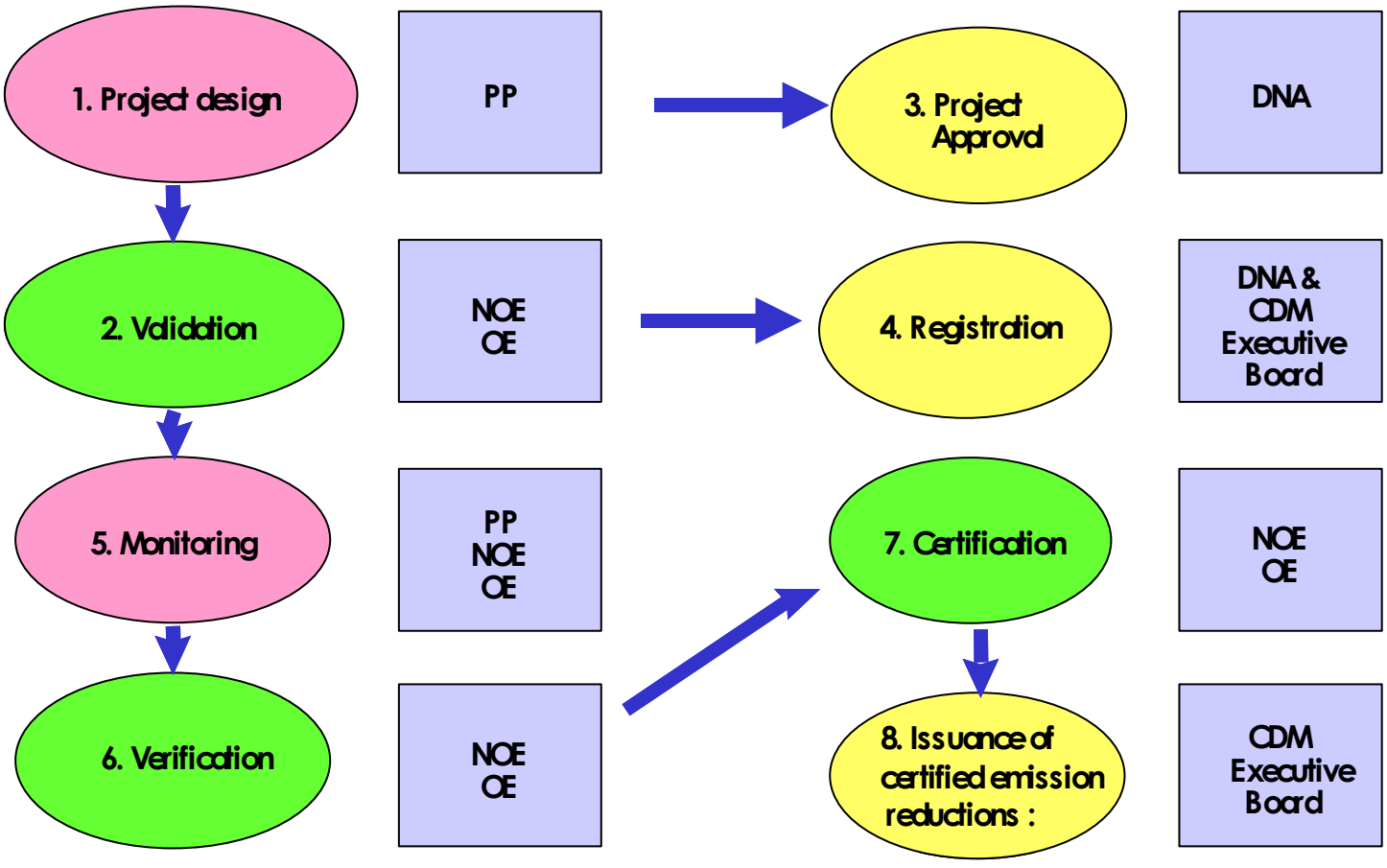
Approval Process for CDM Projects

1. **Project design:** Design and feasibility study of project carried out by parties of Project including foreign partners
2. **Validation:** Project design validated independently by International accredited Operational Entities (OE)
3. **Endorsement & submission:** by Designed National Authority (DNA) (at present DNA is HMS)
4. **Registration:** once validated and approved by the Host Count DM project should be signed up by CDM cutive Board (EB)

Approval Process for CDM Projects (Cont.)

5. **Registration (domestic):** CDM projects registered by COP/MOP should be registered by the DNA
6. **Monitoring:** Carried out by project partners or accredited operational entities
7. **Verification:** Assessed independently by accredited Operational Entities
8. **Certification:** The written assurance of the performance of CDM projects should be given by accredited Operational Entities
9. **Issuance:** After agreement by the DNA, CDM project credits should be approved and emitted by the CDM Executive Board accredited by COP.

Vietnam CDM Project Cycle



Domestic Prerequisites

- To ratify KP
- To revise and upgrade existing laws, to create new laws due to economic transition
- Additional amendment to environment related issues in existing laws, regulations, sectoral development plans in connection to climate change subjects
- Improvement of awareness of policymakers and business circle of CDM
- Manpower development
- Institutional building

Portfolio of CDM Projects

Abatement option Type	Options No	Priority	Project Description	Propo-nent	Capac-ity	GHG Avoided $KtCO_2/year$
Fuel switching oil to gas	E12	H SD H CV	Project 1: Fuel switching of Thu Duc oil fired power plant to gas power plant	EVN	165 MW	384.1
Biomass for electricity	E14	H SD H CV	Project 9: Biomass Project	EVN and Hanoi	15 MW	28.9
Technological change in construction material production	E4	H SD L CV	Project 5: Advanced Sedimentary Brick Kiln	Local Province	400mil.pieces per year	40.9
Technological change in cement production	E4	H SD L CV	Project 10: Improvement of energy efficiency in Song Da cement factory as an experiment	Songda Cement factory	85,000tcement/year	18.2

Portfolio of CDM Projects (Cont.)

Abatement option Type	Options No	Priority	Project Description	Proponent	Capa-city	GHG Avoided $KtCO_2$/year
Development of solar power	E9	H SD L CV	Project 7: Solar energy Project	EVN	1 MW	3.1
Development of Wind power	E10	H SD H CV	Project 3: Construction of Windfarm for electric generation in Quang Tri Province (Central Region of Vietnam)	COMA and Province	20 MW	1,380 (total 2004-2027)
Development of Wind power	E10	H SD L CV	Project 4: Construction of Wind+Diezel Mix Generation at Phu Quy Island, Binh Thuan Province	EVN	1 MW	3.1
Biogas for electricity generation	E15	H SD L CV	Project 8: Biogas Project (EVN)	EVN	10,000 digesters	35.0

Portfolio of CDM Projects (Cont.)

Abatement option Type	Options No	Priority	Project Description	Propo-nent	Capac-ity	GHG Avoided $KtCO_2$ /year
Upgrading existing coal fired thermal power plants	E11	L SD H CV	Project 2: Refurbishment of Pha Lai power plant No1 for improving energy efficiency	EVN	440 MW	378
Development of Geothermal power	E8	L SD L CV	Project 6: Geothermal Power Plant in quang Ngai Province (Central Region of Vietnam)	ORMAT Private	50MW	310.5
Efficiency improvement of oil fired boilers	E2	L SD H CV	Project 11: Improvement of energy in Dong Nai Pulp and Paper Factory	Dongnai paper factory	25,000t of paper factory	4.3

Portfolio of CDM Projects (Cont.)

Abatement option Type	Options No	Priority	Project Description	Propo-nent	Capac-ity	GHG Avoided $KtCO_2$ /year
Compact Fluorescent lamp	E3	H SD L CV	Project 12: Implementation of high technology in production of electronic ballasts for fluorescent and compact lamps	Factories in Hanoi and Hochiminh	3 mil. pieces /year	80.0
Compact Fluorescent lamp	E3	H SD L CV	Project 13: Improvement efficiency of public lighting system in Hanoi, Hochiminh, Danang and Haiphong Cities	Hanoi, Hochiminh, Danang, Haiphong	100,000 units	190

Next steps for implementation of CDM

- Submitting KP to the Government for ratification
- Formulation of National Action Plan to implement UNFCCC, including CDM
- Institutional set up to obtain the maximum possible benefit from participation in the CDM
- Establishing new institutions:
  - Designated National Authority
  - National Executive Board
- Reforming existing structure
- Capacity development for CDM

Thank you for your attention