



Final Workshop; “Lessons Learnt and Way Forward”, November 28, 2006

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ASEAN Wind 2005

Feasibility Assessment and Capacity Building
for Wind Energy Development
in Cambodia, Philippines and Vietnam

Final Workshop; “Lessons Learnt and Way Forward”

November 28, 2006

PNOC Energy Development Corporation

Fort Bonifacio, Taguig City, Metro Manila
Philippines

Project reference: EuropeAid/119920/C/SV

Document reference: Task8/Final Workshop Manila

Version: 201206/RISO/NECL (Final)

RISØ



IED



MerCapto
ApS

PNOC-EDC



IE



MIME



ASEAN Wind 2005 - Fact Sheet

Main project data

Full project title: Feasibility Assessment and Capacity Building for Wind Energy Development in Cambodia, The Philippines and Vietnam

Objective: The main objective of the project is to promote wind energy development and facilitate investments on wind energy projects in The Philippines, Vietnam and Cambodia through feasibility assessment and capacity building.

Start: February 2005

End: December 2006

Total effort: 64.5 man-month

Contracting Authority: EC-ASEAN Energy Facility (www.aseanenergy.org/eaef)

Budget / Support: € 1 000 000 / € 500 000 by European Community

Tasks

Task 1: Wind Resource Assessments	RISO + IED; PNOC-EDC; IE	(10.5 MM)
Task 2: Power System Analyses	RISO + PNOC-EDC; IE	(7.5 MM)
Task 3: Policy & Market Studies	RISO + IED; Mercapto; PNOC-EDC; IE	(9.5 MM)
Task 4: Technical Feasibility Studies	RISO + PNOC-EDC; IE	(10 MM)
Task 5: Economic Feasibility Studies	IED + RISO; PNOC-EDC; IE	(7 MM)
Task 6: CDM Project Studies	Mercapto + All	(5.5 MM)
Task 7: Financial Framework	IED + All	(5.5 MM)
Task 8: Dissemination	RISO + All	(4.5 MM)

Project partners

RISO	RISØ National Laboratory	Denmark	Niels-Erik Clausen	niels-erik.clausen@risoe.dk
IED	Innovation Energie Développement	France	Anjali Shanker	a.shanker@ied-sa.fr
Mercapto	Mercapto Consult	Denmark	Bernt Frydenberg	bernt@frydenberg.dk
PNOC-EDC	PNOC Energy Development Corporation	Philippines	Samuel Hernando	hernando@energy.com.ph
IoE	Institute of Energy	Vietnam	Pham Khanh Toan	toanpk@fpt.vn
MIME	Ministry of Industry, Mines & Energy	Cambodia	Sovanna Toch	mimedet@forum.org.kh

The present report documents the project activity:

‘Final project workshop’, 28 November 2006, Manila, Philippines

covering all project activities, but with emphasis on financing, lessons learnt and dissemination of results.

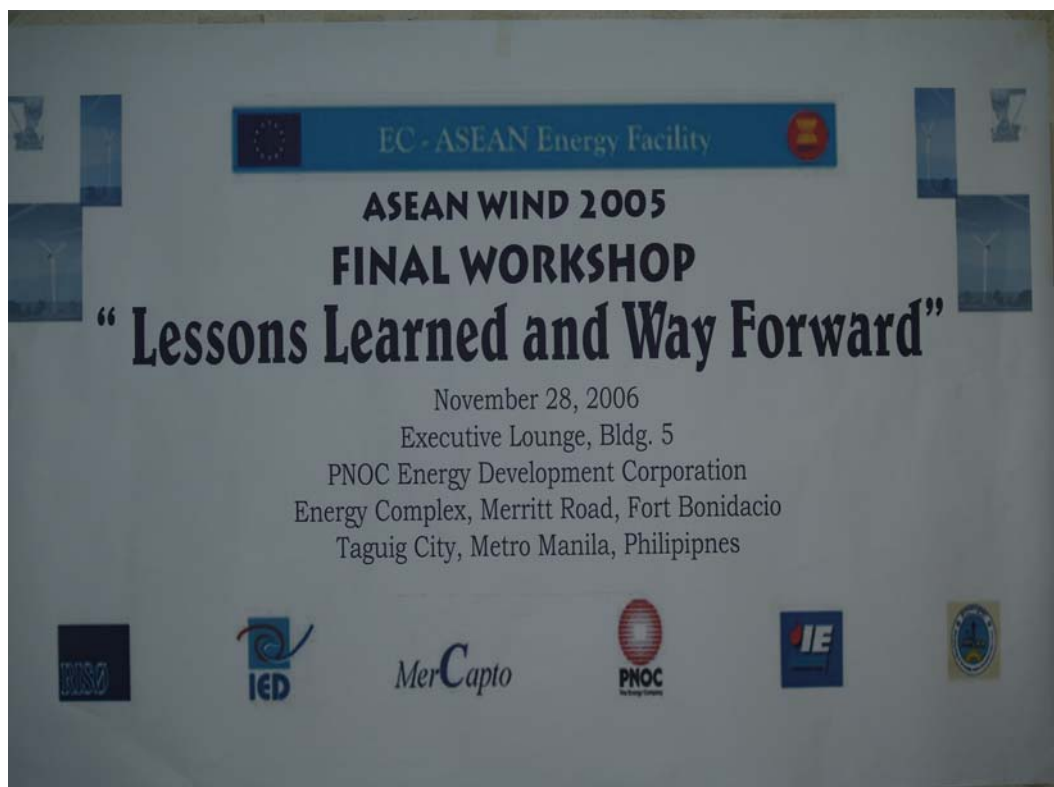
The report forms one of the deliverables of the project.

The report has been edited by

Niels-Erik Clausen
RISØ National Laboratory

January 2007

Workshop banner





Group photo of workshop participants

The workshop

The final Project Workshop was held 28 November 2006 at PNOC-EDC board room, Fort Bonifacio, Taguig City, Metro Manila.

The **objective** of the workshop was to exchange knowledge and discuss methodologies and findings between the relevant stakeholders on feasibility analyses of wind power in both grid-connected and island wind power applications in the Philippines.

The **target groups** for the workshop were energy planners, physical planners, power utilities, project developers, investors and consultants within the area.

On basis of the two case studies selected for the Project, the workshop presented and discussed selected elements in the technical and especially financial feasibility analyses, including financing options for wind power in the Philippines. A representative for the private developers, Niels Jacobsen, NorthWind gave his view on the present conditions and institutional framework for developers of wind project in the Philippines.

The invitation letter, the actual programme, the list of participants and a list of the presentations are presented in the annexes. The programme of the workshop was planned by RISØ in cooperation with the host PNOC-EDC, while PNOC-EDC was responsible for all practical arrangements.

Some impressions from the workshop



Annexes

Workshop introduction

(Part of the invitation letter)

In the framework of EC-ASEAN Energy Facility, the consortium of RISOE National Laboratory (Denmark), Innovation Energie Développement (France), Institute of Energy (Vietnam), Philippine National Oil Company (PNOC), MerCapto (Denmark), and MIME (Cambodia) is implementing the project “*Feasibility Assessment and Capacity Building for Wind Energy Development in Cambodia, the Philippines and Vietnam*”.

The main objective of the project is to promote wind energy development and facilitate investments in wind energy projects in Cambodia, the Philippines and Vietnam through feasibility assessment and capacity building with focus on on-grid wind power. Key activities of the project include the development of policy and institutional framework on wind energy, feasibility studies, and economic and financial studies. The desired outputs of the project to promote the development of wind energy correspond to the key strategies of Programme Area no. 5 (Renewable Energy) of the ASEAN Plan of Action for Energy Cooperation (APAEC) 2004-2009.

As the project will be finalised in December 2006, various studies and reports have been produced for Philippines, Vietnam and Cambodia. From results of the studies some lessons have been learned concerning policy and regulatory framework in each country. Common constraints of wind power development in these countries include the following:

- Lack of information on wind energy resources
- Lack of technical know-how on wind energy assessments, measurements and feasibility studies
- Lack of policy and regulatory frameworks supporting wind power development
- Lack of or little private investments on wind energy projects
- Lack of successful business models for wind energy development
- Lack of financing for renewable energy in general.

The final workshop on "Lessons Learnt and Way Forward" follows other workshops already conducted; on WASP in Bangkok (June 2005), Policy and wind project planning in Manila (December 2005) and Hanoi (March 2006), Wind resource and technical feasibility studies in Hanoi (July 2006), and Economic and Financial Analysis Workshops in Philippines (September 2006) and Cambodia (October 2006).

The final workshops are being organised in Philippines and Vietnam for the purpose of discussions among partners and stakeholders on lessons learnt from the project, and as to how these can be applied in the future work. It will also include possibilities of further work to carry on from the point where the current project ends.

Stakeholders, that have a role in the development of renewable energy, particularly in wind energy, will be invited to participate in the workshops. These include:

1. Governments as the policy makers, who are also involved in the development planning and financial & economic policy support for wind energy development
2. Project developers and other entities active in the sector
3. Utilities and grid operators
4. Financing institutions; national, bilateral and multilateral
5. Designated National Authorities for the CDM projects
6. Other identified stakeholders.

PROGRAM SCHEDULE

Venue : PNOC-EDC Bldg. V, 5th Floor Executive Lounge, Energy Center,
Fort Bonifacio, Taguig City, Metro Manila

Date : November 28, 2006

8:30 AM	Registration		
	Opening Session		
9:00 AM	Introduction	Ester Guerzon	PNOC-EDC
9:10 AM	Welcome to the Workshop		EC Philippines/ASEAN Energy
9:15 AM	Opening of the Workshop	Mario Marasigan	DOE
9:20 AM	Brief on the ASEAN Wind Project	Niels-Erik Clausen	Riso National Laboratory
9:35 AM	Session 1: Financing	Chair: Jyoti Painuly	Risø National Laboratory
	Financing Options for Wind Power and Success Factors	Emmanuel Huard / Tuan Nguyen	IED
	Impact of CDM on St. Ana and Dinagat projects	Bernt Frydenberg	Mercapto
	CDM Presentation on other local projects	Reinna Sevilla	TUV Philippines
	Grid access costs, priority dispatch and wheeling charges for wind projects	Melchor Aquino	TransCo
	<i>Discussion</i>		
11:00 AM	Tea break and Photo Session		
11:30 AM	Session 2 : Financing Continued	Chair: Anaflor Candelria / Emmanuel Huard	PNOC-EDC / IED
	Financial Feasibility Analysis for Sta. Ana	Jyoti Painuly	Risø National Laboratory
	Views from financing community on financing renewable energy projects with special reference to wind.	Jaime Azurin / Rustico Noli Cruz	First Metro Investments / DBP
	<i>Discussion</i>		
12:45 PM	Lunch break		

1:45 PM	Session 3 : Philippine Experiences	Chair: Niels-Erik Clausen	Risø National Laboratory
	North wind project experience (Bangui Bay) : lessons learned on development and operational costs. Difficulties and recommendations on financing wind project	Niels Jacobsen	Northwind
	Updates from the Department of Energy (DOE)	Rey Liganor	DOE
	<i>Discussion</i>		
3:00 PM	Tea Break		
3:15 PM	Session 4 : Lessons Learned and the Way Forward	Chair: Samuel Hernando	PNOC-EDC
	Introduction to Best practice guidelines	Niels-Erik Clausen	Risø National Laboratory
	Lessons learned from the project and plans for the future	Florencio S.M. Castro	PNOC-EDC
	Panel discussion <i>The Way Forward</i>	Jyoti Painuly Niels-Erik Clausen Tuan Nguyen Niels Jacobsen Rey Liganor Bernt Frydenberg	
5:00 PM	Closing Remarks	Samuel Hernando	PNOC-EDC

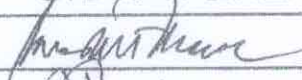
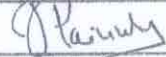
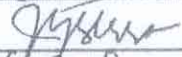
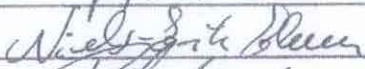
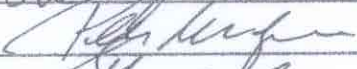
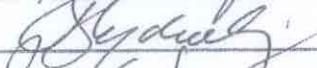
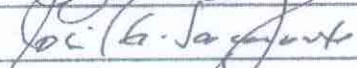
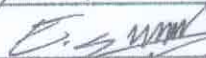
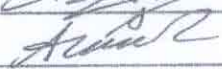
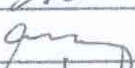
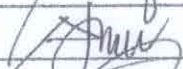
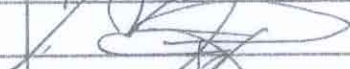
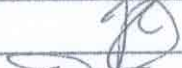
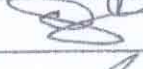
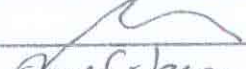
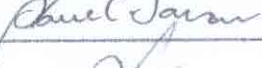




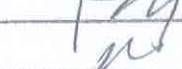
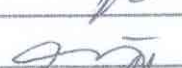
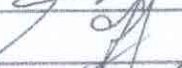
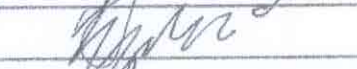


List of participants

EC - ASEAN ENERGY FACILITY

Introduction to the Final Workshop of the Project Asian Wind 2005 on
" LESSONS LEARNED AND WAY FORWARD "

28 November 2006

Bldg. 5, Executive Lounge

	NAME	COMPANY	SIGNATURE
1	BENEDICT m. VOCAL	LAND BANK OF THE PHILS.	
2	Jyoti Prasad Raindy	RISD	
3	Jet Solvaferna	DBP	
4	NIELS-EIK CLAUSEN	RISD NATIONAL LAB	
5	PETER LUDF SPKJENSEN	EAEF	
6	Bernt Frydlenberg	MERCAPTO	
7	JOSE G. SAWANTE	SAN CARLOS WIND	
8	Emmanuel HUARD	I.E.D.	
9	TUAN NGUYEN	ied	
10	Rustico Noli Cruz	DBP	
11	ALEX MADAYAG	3i POWERGEN	
12	M. A. AQUINO	TransCo	
13	Ruel B. Calano	PEM C	
14	Orto V. /am	AUPC	
15	MARK ANTHONY TAEUM	PNOC - EDC	
16	Paul C. Tancunan	PNOC - EDC	
17	JOEL A. NICOLASRA	PNOC - EDC	
18	JUANCHO ARGAYOSO	PNOC CDC	
19	JENETTE J. MERCADO	PNOC - EDC	
20	Ester R. Guezzon	do	
21	ERWIN S. NONATO	SBC	
22	Joy SUMAN	SBC	
23	ELEAZER B TADINA	PANELCO III	
24	FERNANDO P. MARZAN	PANELCO III	
25	RICHARD MURRAY	TBLV 500	
26	JAIME AZURIN	First Mojro	

EC - ASEAN ENERGY FACILITY

Introduction to the Final Workshop of the Project Asian Wind 2005 on
" LESSONS LEARNED AND WAY FORWARD "

28 November 2006

Bldg. 5, Executive Lounge

	NAME	COMPANY	SIGNATURE
27	FRANCISCO R. SILVERIO	PNOC-EDC	
28	DOMINICO RAMOS JR	EPZC	
29	LETICIA L. GARCIA	EAEF	
30	ELEANOR C. PELAYO	DBP	
31	JIMMY VILLAFLORES	EDC	
32	JD Villanueva	WESM	
33	A.F. TORRALBA	REMD-DOE	
34	G.S. ORENDE	EDC	
35	T.M.R. LUGUE	EDC	
36	KPZ Peniano	EDC	
37	Rcinna Sevilla	TUV-SHD	
38	HAROLD FANTILLAS	PNOC-EDC	
39	F. SM. CASTRO	PNOC-EDC	
40	Carlos Carrion	EUROMA.	
41	OLY S. SERAFICA	REAP/MATEC	
42	Niels Jacobsen	NorthWind	
43	GIOVANNI MACAPORANG	NPDC	
44	LS Villalobos	PNOC-EDC	
45	A.M.L. Del Rosario	PNOC-EDC	
46	S.M. CUENCA	PNOC-EDC	
47	R.F. ABELLANA	PNOC-EDC	
48	ALEX J. ALMENDRAS	PNOC-EDC	
49	A.L. Candelaria	PNOC-EDC	
50	Laurie Acerra	IRG	
51	Samuel D. Hernandez	PNOC-EDC	
52	MARIVI M. GABUSOS	PNOC-EDC	

Presentations (available on request)

1. Niels-Erik Clausen; Risø National Laboratory: Introduction to the ASEAN Wind project 2005-06
2. Tuan Nguen & Emmanuel Huard, IED: Financial options for wind-power development and case studies in the Philippines
3. Jyoti Painuly, Risø National Laboratory, Some Results of Financial Analysis for St. Ana Wind Power Project
4. Bernt Frydenberg Mercapto Consult: Impact of CDM on St. Ana and Dinagat projects
5. Reinna Sevilla TUV Philippines, CDM Presentation on other local projects
6. Melchor Aquino, TransCo, Grid access costs, priority dispatch and wheeling charges for wind projects
7. Rey Liganor, Dept. of Energy, Updates on Philippine wind energy development
8. Niels Jacobsen, Northwind , North wind project experience (Bangui Bay): lessons learned on development and operational costs. Difficulties and recommendations on financing wind project.
9. Florencio S.M. Castro, PNOC-EDC, Lessons learnt from the project and plans for future
10. Rustico Noli Cruz, Development Bank of Philippines, Financing renewable energy
11. Jimmy Azurin, First Metro Bank, Introduction to the First Metro Bank
12. Niels-Erik Clausen Risø National Laboratory: Introduction to Best practice guidelines for project development and lessons learnt