

“Matchmaking between CDM project owners & EU stakeholders and other forms for business cooperation in the field of sustainable energy”

Biomass and Biogas : 25 Feb 2008

Working Session 3 – Financing CERs – Financing Institutions

MR. ANAT PRAPASAWAD

Managing Director, ADVANCE ENERGY PLUS

Advance Energy Plus

ADVANCE ENERGY PLUS develops, implements and operates projects focusing on energy project through our experiences in financing and our diligence into the project to ensures attractive returns and less risk for our project partners and investors alike.



Our CDM Service Customers



Danish Energy Management

CDM Services

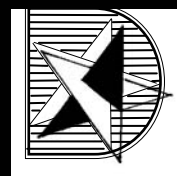


Sumitomo Corporation, Japan

CDM Services

3 projects

CERs Amt. 390,000 t CO₂/ year



Deevanich, Chachoengsao

CDM & Financial Services

Project Value 160 M.THB



Danish Energy Management

CDM Services

11 sub -projects

CERs Amt. 60,000 t CO₂/year

South Pole Carbon Asset Management Ltd. Switzerland



CDM Services

3 projects

CERs Amt. 200,000 t CO₂/year

MSW Udonthani

CDM & Financial Services

Project Value 900 M.THB

AEP Experiences in CDM projects

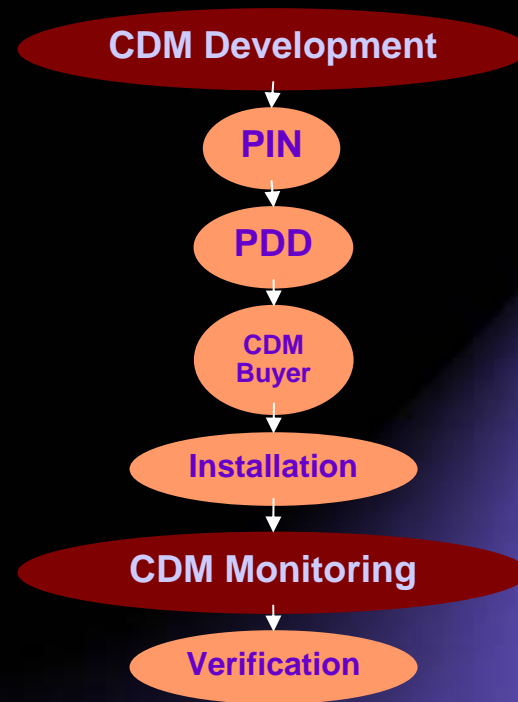
No	Type of Project	Sector	Capacity	Location	Status				
					PIN	PDD	SD / IEE / Seminar	DOE	DNA
1	WWT with Biogas System	Starch	430 tpd	Nakorn Ratchasima	✓	✓	✓	✓	✓
2	WWT with Biogas System	Starch	280 tpd	Chacheongsao	✓	✓	✓	✓	✓
3	WWT with Biogas System	Starch	400 tpd	Kampaengpeth	✓	✓	✓		
4	WWT with Biogas System	Starch	300 tpd	Nakorn Ratchasima	✓	✓	✓	<i>soon</i>	<i>submitted</i>
5	WWT with Biogas System	Starch	300 tpd	Roi-Et	✓	✓	✓	<i>soon</i>	<i>submitted</i>
6	WWT with Biogas System	Starch	300 tpd	Nakorn Ratchasima		✓	✓	<i>validating</i>	✓
7	WWT with Biogas System	Starch	300 tpd	Kalasin	<i>soon</i>				
8	WWT with Biogas System	Starch	300 tpd	Cholburi	✓	<i>soon</i>			
9	WWT with Biogas System	Starch	300 tpd	Chantaburi		✓	<i>soon</i>		
10	WWT with Biogas System	Starch	300 tpd	Nakorn Ratchasima	✓				
11	WWT with Biogas System	Starch	300 tpd	Nakorn Ratchasima			✓		<i>submitted</i>
12	WWT with Biogas System	Starch	300 tpd	Nakorn Ratchasima			✓		<i>submitted</i>
13	WWT with Biogas System	Starch	300 tpd	Kalasin			✓		<i>submitted</i>
14	WWT with Biogas System	Starch	500 tpd	Nakorn Ratchasima			✓		
15	WWT with Biogas System	Starch	300 tpd	Nakorn Ratchasima			<i>soon</i>		
16	WWT with Biogas System	Starch	300 tpd	Sakaeo			✓		
17	WWT with Biogas System	Palm Oil	60 tph	Surat Thani		✓	✓	<i>validating</i>	✓
18	WWT with Biogas System	Palm Oil	90 tph	Chumporn	✓				
19	WWT with Biogas System	Palm Oil	90 tph	Surat Thani	✓	✓	✓		
20	WWT with Biogas System	Palm Oil	90 tph	Surat Thani	✓	✓	✓		
21	WWT with Biogas System	Palm Oil	60 tph	Surat Thani	✓	✓	✓		
22	WWT with Biogas System	Palm Oil	60 tph	Surat Thani	✓	✓	✓		
23	WWT with Biogas System	Palm Oil	45 tph	Trang	✓	✓	✓		
24	Biomass Powerplant (Rice Husk)	Powerplant	7 MW (net)	Nakorn Ratchasima	✓	✓	✓		<i>submitted</i>
25	Biomass Powerplant (Rice Husk)	Powerplant	8 MW (net)	Nakorn Ratchasima	✓				
26	Biomass Powerplant (Rice Husk)	Powerplant	8 MW (net)	Nakorn Ratchasima		<i>soon</i>			
27	Biomass Powerplant (Rice Husk)	Powerplant	8 MW (net)	Udorn Thani	<i>soon</i>				
28	Biomass Powerplant (Wood Barks)	Powerplant	8 MW (net)	Buriram	✓	✓	✓		<i>submitted</i>
29	WWT with Biogas System	4 Pig Farm	170,000 heads	Ratchburi	✓				
30	WWT with Biogas System	Liquor		Chacheongsao	<i>soon</i>				
31	WWT with Biogas System (DLD & WB program)	12 Pig Farm	125,000 heads	Ratchburi, Cholburi		<i>soon</i>			

Project Cycle

Project Management Service



Clean Development Mechanism Service



Project Management and Advisory Services

- Program Development/Management
- Energy Projects Development
- Feasibility Study
- Investment Structuring
- Loan & Equity Arrangement

CDM Services

- 1. Reporting Service**
- 2. Facilitation Service**
- 3. Selling Service**
- 4. Carbon Asset Management**

Barrier

CDM Project Barrier

Project Development Barrier

CDM Project Barriers

- National-level barriers not related to CDM
- National-level barriers related to CDM
- Project related issues
- International-level barriers

National-level barriers not related to CDM

- Politic
- Economics
- Policy or legislative framework in the country

National-level barriers related to CDM

- Policy legislative framework within which a CDM project operated (e.g. electricity-related regulations that contain generation by independent power producers)
- Institutional capability / effectiveness or lack of awareness about CDM (cause delays in host country approved)

Project related issues (Typical Barriers)

- High transaction
- Relatively small size
- Low marginal return
- Perceived weak credit worthiness of companies
- Resource availability and supply risk
- Country risk (political & economy instability)
- Other priority investment
- Unfamiliarity with technologies
- Collateral problem
- Lack of expertise in company
- FI lack of knowledge
- Benefit sharing

International-level barriers

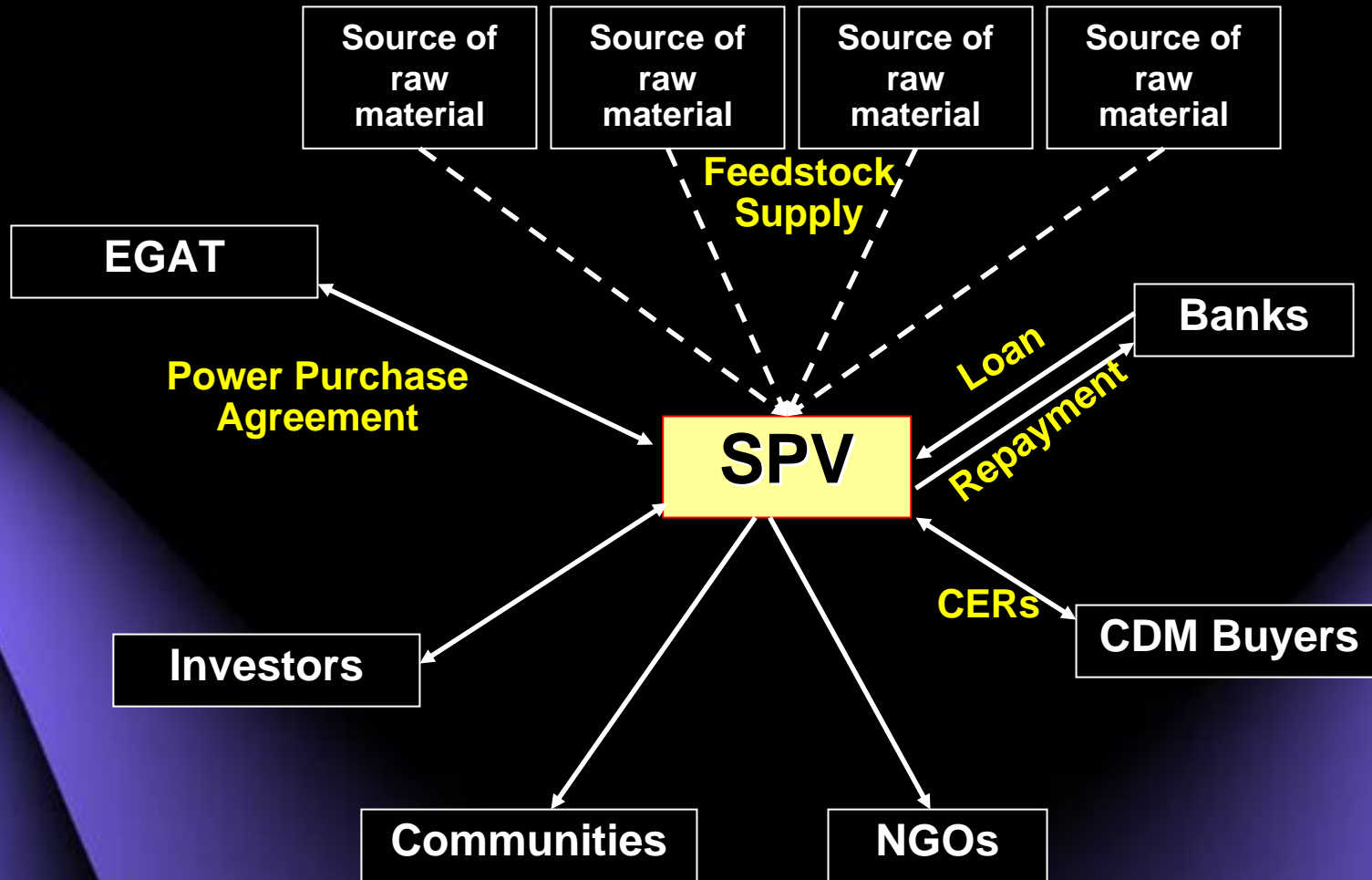
- Constrains on project eligibility
 - Size of projects / CDM
 - No Approved Methodology support
 - Change of approval methodology

Removal of National barriers

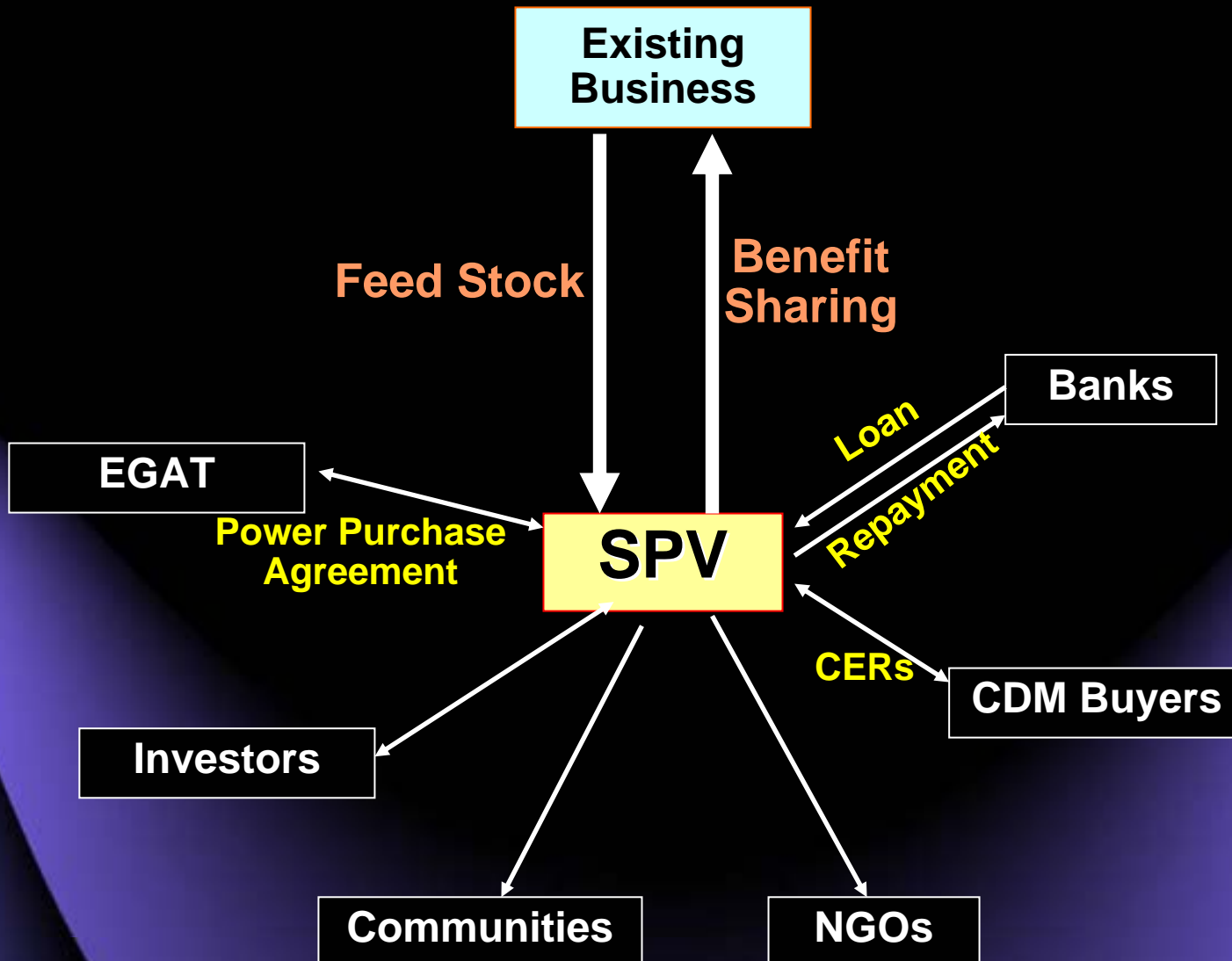
- Improving CDM specific frameworks and institutions
 - Establishment of special institutions
 - Providing an appropriate tax and incentives
 - Capacity building/awareness raising
 - Etc.
- Establishing a simple, timely and transparent CDM project approval process
- Clear policy on CDM-relevant issues such as ownership of CDM, eligibility of certain project types
- Others such as IPP scheme, % of foreign shareholders

Biomass & Biogas Project Barriers

Stand Alone Project



Related to Existing Business



Solution

- Identifying Barriers
- Removal of Barriers through many instruments with the help of CDM

Risk Management Instruments

- Contracts (gov., supplier, consultant, ESCO)
- Insurance / Reinsurance
- Credit Enhancement products
- Alternative risk transfer instruments
- Guarantee fund
- Private sector risk management
- Risk Pooling
- Securitization structure
- Bundling small projects (reduce transaction cost)
- Mezzanine Capital / Finance
- Carbon Finance

Impact of Carbon Finance on Project Financing

Impact of CDM on IRR

(Biogas & Biomass - Thailand Case)

Project	Project Type	Investment (MB)	CERs Amount t CO2e	IRR (%)		IRR Change	Remark
				w/o CERs	w CERs		
Starch1	Methane Capture	44	31,454	9.5	20.8	11.3	Open Lagoon and change to Biogas to replace Oil (100%) @ Boiler
Starch2	Methane Capture	35	19,369	2.1	26.0	23.9	Open Lagoon and change to Biogas to replace Oil (100%) @ Boiler
Palm1	Methane Capture	50	17,095	9.3	24.0	14.7	Open Lagoon and change to Biogas
Palm2	Methane Capture	50	14,078	11.5	22.5	11.0	Open Lagoon and change to Biogas
Biomass1	Renewable Energy	492	39,224	5.1	8.0	2.9	Biomass Power Plant

THANK YOU