Overview of financing energy projects

2004 Cogeneration Week in Cambodia
8 June 2004
Inter-Continental Hotel, Phnom Penh

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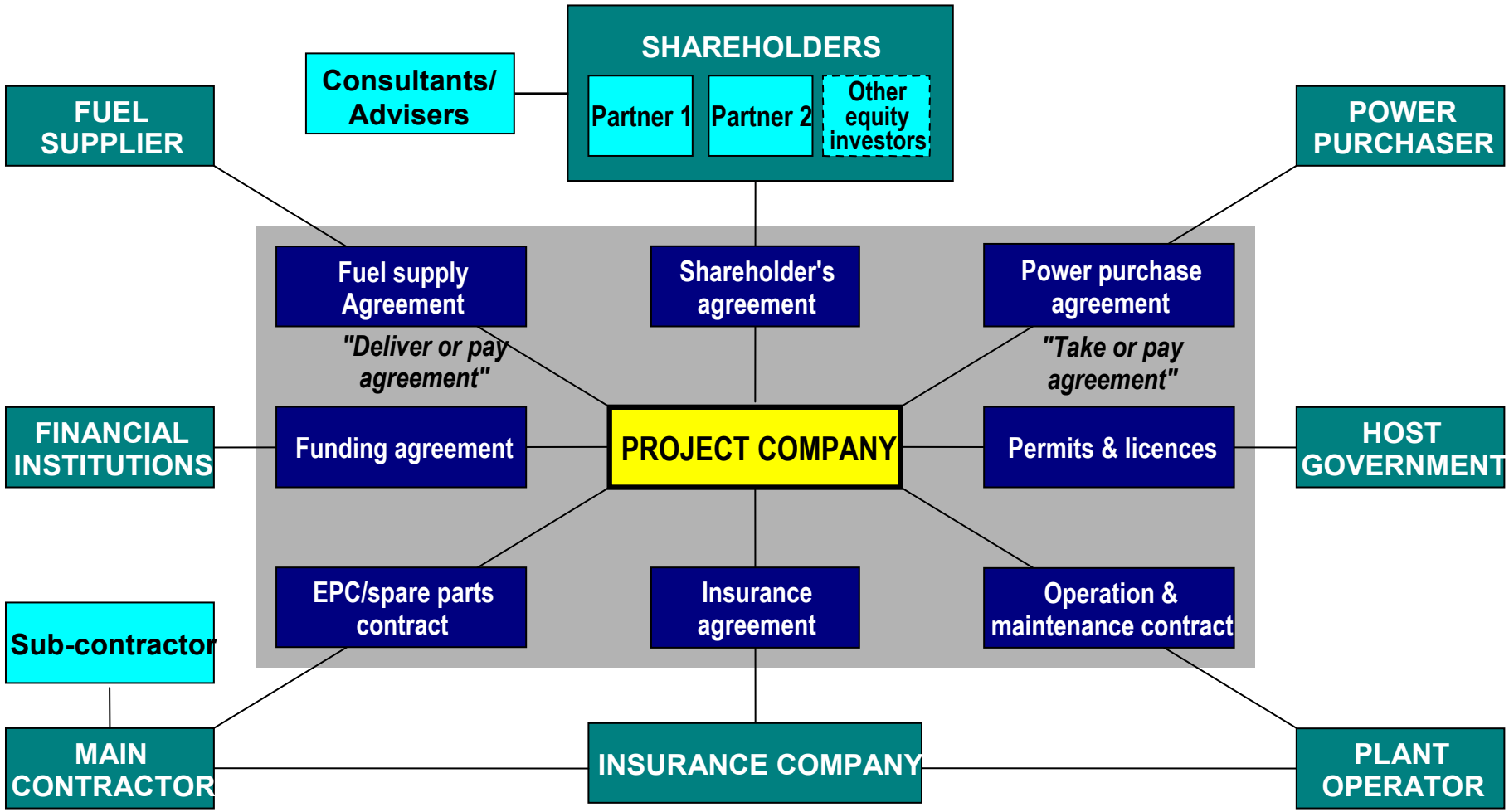
STAKEHOLDERS



COGEN 3 FSDPs in ASEAN

CAMBODIA
Angkor Kasekam Roongroeung Co. Ltd.
1.5 MW rice husk-fired cogeneration plant

MALAYSIA
Bell Thermal Power Sdn. Bhd.
6 MW cogeneration plant using oil palm empty fruit bunches (EFBs), shells & fibers as fuels

BB Biogas Sdn. Bhd.
1.5 MW cogeneration plant using biogas produced from palm oil milling effluent (POME)

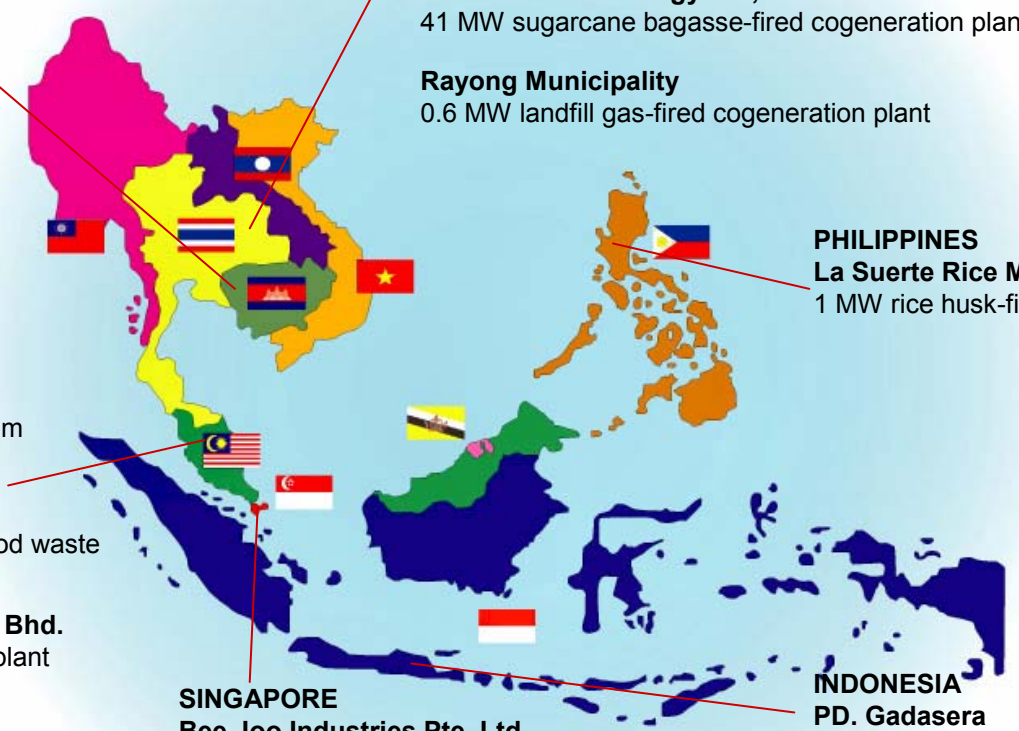
Bumi Biopower Sdn. Bhd.
6 MW cogeneration plant using oil palm EFBs and shells as fuels

ENCO Energy Sdn. Bhd.
0.5 MW cogeneration plant using wood waste & oil palm pressed fibre as fuels

Kelang Beras Co., Titi Serong Sdn. Bhd.
1.5 MW rice husk-fired cogeneration plant

Kumpulan Guthrie Berhad
2 MW cogeneration plant using oil palm fibres and shells as fuels

TSH Bio-Energy Sdn. Bhd.
14 MW cogeneration plant using oil palm EFB as fuel



THAILAND
Dan Chang Bio-Energy Co., Ltd.
41 MW sugarcane bagasse-fired cogeneration plant

Karoon Farm Biogas
0.3 MW cogeneration plant using biogas produced from pig manure

Phu Khieo Bio-Energy Co., Ltd.
41 MW sugarcane bagasse-fired cogeneration plant

Rayong Municipality
0.6 MW landfill gas-fired cogeneration plant

PHILIPPINES
La Suerte Rice Mill
1 MW rice husk-fired cogeneration plant

SINGAPORE
Bee Joo Industries Pte. Ltd.
1 MW wood waste-fired cogeneration plant

ECO Special Waste Management Pte. Ltd.
0.5 MW wood waste-fired cogeneration plant

INDONESIA
PD. Gadasera
4.2 MW rice husk-fired cogeneration plant

PT Ecco Indonesia
1.2 MW cogeneration plant using waste from tanning process

OVERVIEW OF FINANCING TRENDS

Corporate loan or On-balance-sheet financing

Mechanism/Structure:

- Project sponsor takes out the loan to finance the project
- Loan is reflected on the balance sheet of the sponsor

Conditions/Security arrangement:

- Acceptable D/E ratio
- Collateral/guarantee to cover the amount of the loan

Documentation:

- Documents related to the creditworthiness of the sponsor

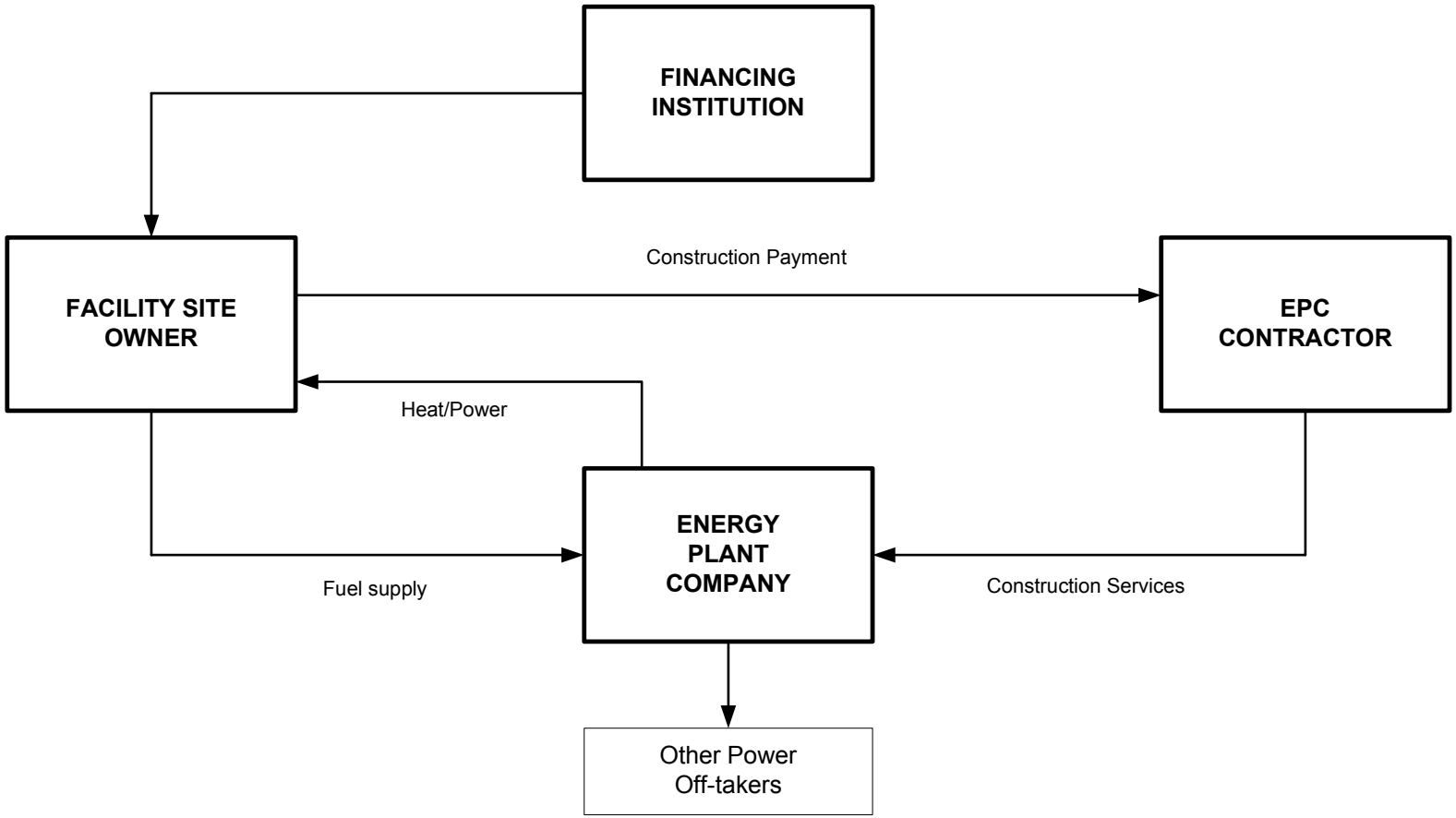
Advantages:

- Can be arranged quickly if conditions are met
- Simple documentation and security arrangements

Disadvantages:

- Risks are mainly carried by the sponsors
- Loan increases the debt burden on the balance sheet of the sponsors
- Likely to be used only by strong corporate sponsors
- Repayment periods are not long (normally < 10 yrs)

On-Balance-Sheet Financing Model
Facility Owner-Operated and Financed



OVERVIEW OF FINANCING TRENDS

Project finance

Mechanism:

- Special purpose company takes out the loan to finance the project
- The source of debt service (interest & principal) is primarily the cash flow from the project
- Lending entity has no or limited recourse to the sponsors

Conditions:

- Acceptable D/E ratio
- Fuel supply security
- Established viability on reliable cashflow projections
- Acceptable debt service coverage ratio

Typical structure:

- Strong involvement of local banks
- Use of both local and foreign currency tranches
- Maturity of >10 years

OVERVIEW OF FINANCING TRENDS

Project finance (cont.)

Security arrangements:

- Assets pledged as security to the bank
- Assignment of contracts to the bank (PPA, SSA, etc.)
- Covenants related to shareholding structure, issuance of dividends, additional loan
- Accounts pledged to the lenders
- Construction guarantee
- Partial guarantee

Documentation:

- Information memorandum
- Contracts (PPA, SSA, EPC, FSA, EIA)

OVERVIEW OF FINANCING TRENDS

Project finance (cont.)

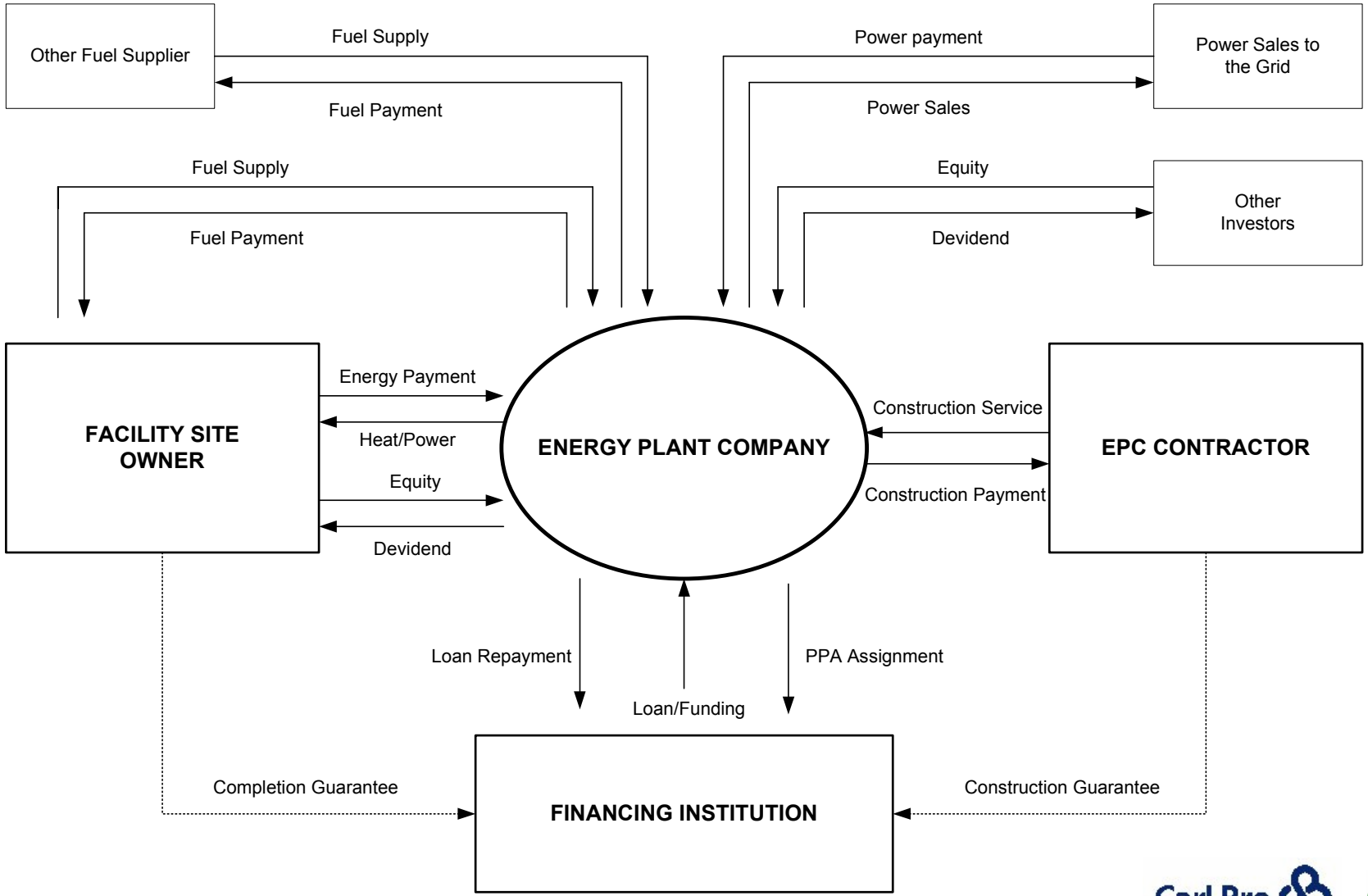
Advantages:

- Minimum risk carried by the sponsors
- Loan does not appear on the balance sheet of the sponsor
- Long maturity of loan possible to achieve

Disadvantages:

- May take longer time to reach financial close
- Involves complex legal documentation and contractual arrangements
- Strict requirements for due diligence as well as legal and technical assessments
- High compliance for administration & reporting requirements

Project Finance Model
Financing Directly to Project



CASE STUDIES

Case study 1: *1.5 MWe Rice husk-Fired Cogeneration Project*

Owner/developer: Kelang Beras Co., Titi Serong Sdn. Bhd.
Project type: Rice husk-fuelled energy plant
Location: Parit Buntar, Perak, Malaysia
Description: In TITI SERONG Cogeneration plant, high pressure steam from boiler is led into KKK Twin turbines AFA 46-Gt5, extraction condensing system, to generate between 700 to 1500 kWe of electricity and low pressure steam for process demand. Rice husk from own rice mill is used as fuel. High quality ash is produced as by-product.
Commercial operation date: September 2004

CASE STUDIES

Case study 1: *1.5 MWe Rice husk-Fired Cogeneration Project*

Total project cost: EURO 1.714 million
Shareholders' equity: ~56 % = EURO 922,000
Loan: ~44 % = EURO 792,000
Financing institution: OCBC Bank (M) Berhad
Interest rate: MLR + 1.75%
Maturity: 5 years (including grace period)
Grace period: 1 year
Security arrangements:

- Mortgage of all land, building and equipment to the bank
- Additional joint and several guarantee of all the directors of the company
- Leverage ratio not to exceed 3.0x and current ratio not fall below 0.6x
- All risk insurance for equipment & all assets in the name of the bank.

CASE STUDIES

Case study 2: *65 MWe Bagasse-Fired Cogeneration Project*

Owner/developer: Phu Khieu Bio-Energy Co., Ltd.
Project type: Bagasse-fuelled energy plant
Location: Phu Khieu, Chaiyapoom, Thailand
Description: Phu Khieu Bio-energy, a special purpose company, owns a 65 MW cogeneration project consisting of 41 MW new equipment and 24 MW existing equipment from the sugar mill. The plant is a state-of-the-art high pressure system implemented to supply power and steam to the adjacent sugar mill, which in turn will supply bagasse as fuel. The excess power will be sold to the Electricity Generating Authority of Thailand (EGAT).
Power Purchase Agreement: "Firm" contract, 21 years
Tariff: 1) energy payment, indexed to natural gas price
2) capacity charge, indexed to Dollar exchange rate
Incentives: BOI privileges
Commercial operation date: June 2004

CASE STUDIES

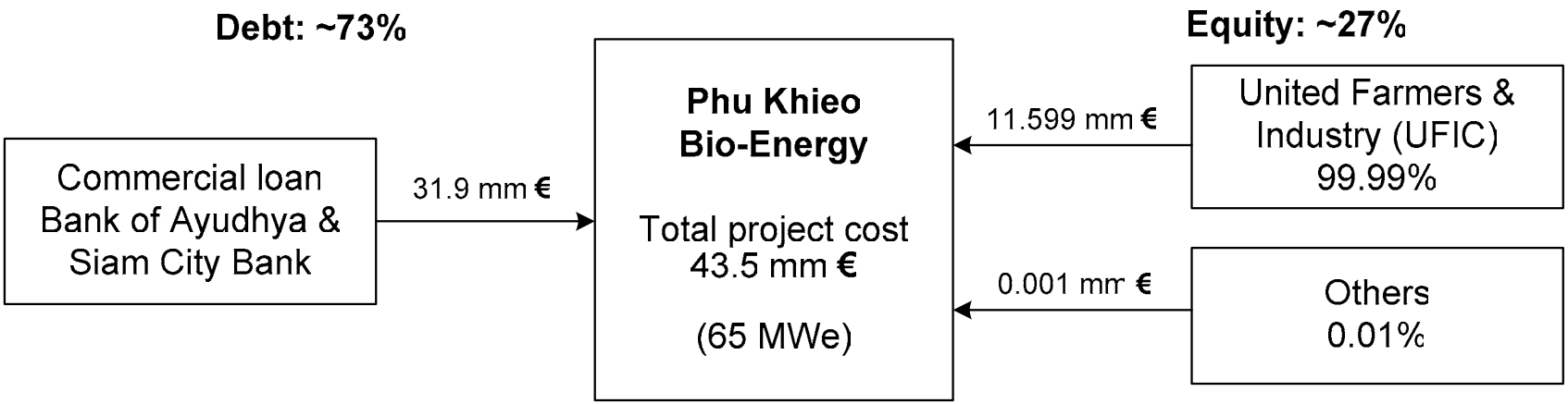
Case study 2: *65 MWe Bagasse-Fired Cogeneration Project*

Total project cost: THB 2.175 million
Shareholders' equity: ~27 % = THB 580 million
Loan: ~73 % = THB 1,595 million
Financing institution: Syndicated Loan from Bank of Ayudhya and Siam City Bank
Interest rate: Fixed for 1st 3 yrs, MLR – 0.5% afterwards
Maturity: 11 years (including grace period)
Grace period: 2 years
Security arrangements:

- Mortgage of all land, building and equipment to the bank
- Assignment of PPA (PK vs. EGAT)
- Assignment of Utilities Supply Agreement (PK vs. MP)
- Corporate guarantee for the whole portion of the loan (to be released when the above arrangements are fulfilled)
- All risk insurance for equipment & all assets in the name of the bank.

CASE STUDIES

Financing structure of Phu Khieo Bio-Energy Co. Ltd.



For more information,
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http://www.cogen3.net

Thank You !