



Overview of financing energy projects in Thailand

2004 Cogeneration Week in Thailand

23 - 25 March 2004

Miracle Grand Convention Hotel, Bangkok

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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:

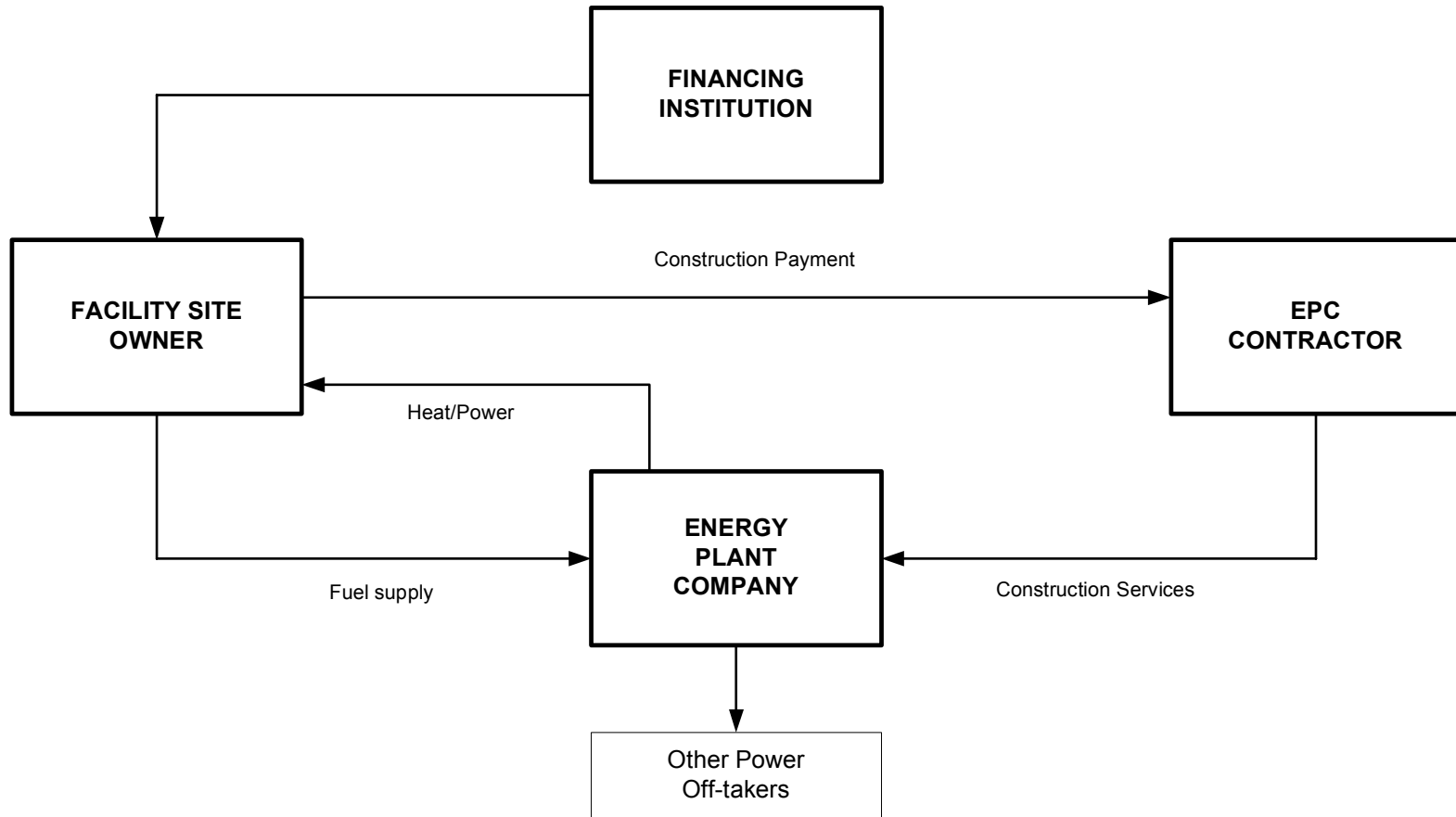
- Can be arranged quickly if conditions are met
- Simple documentation and security arrangements

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 Thai Baht and foreign currency tranche
- 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:

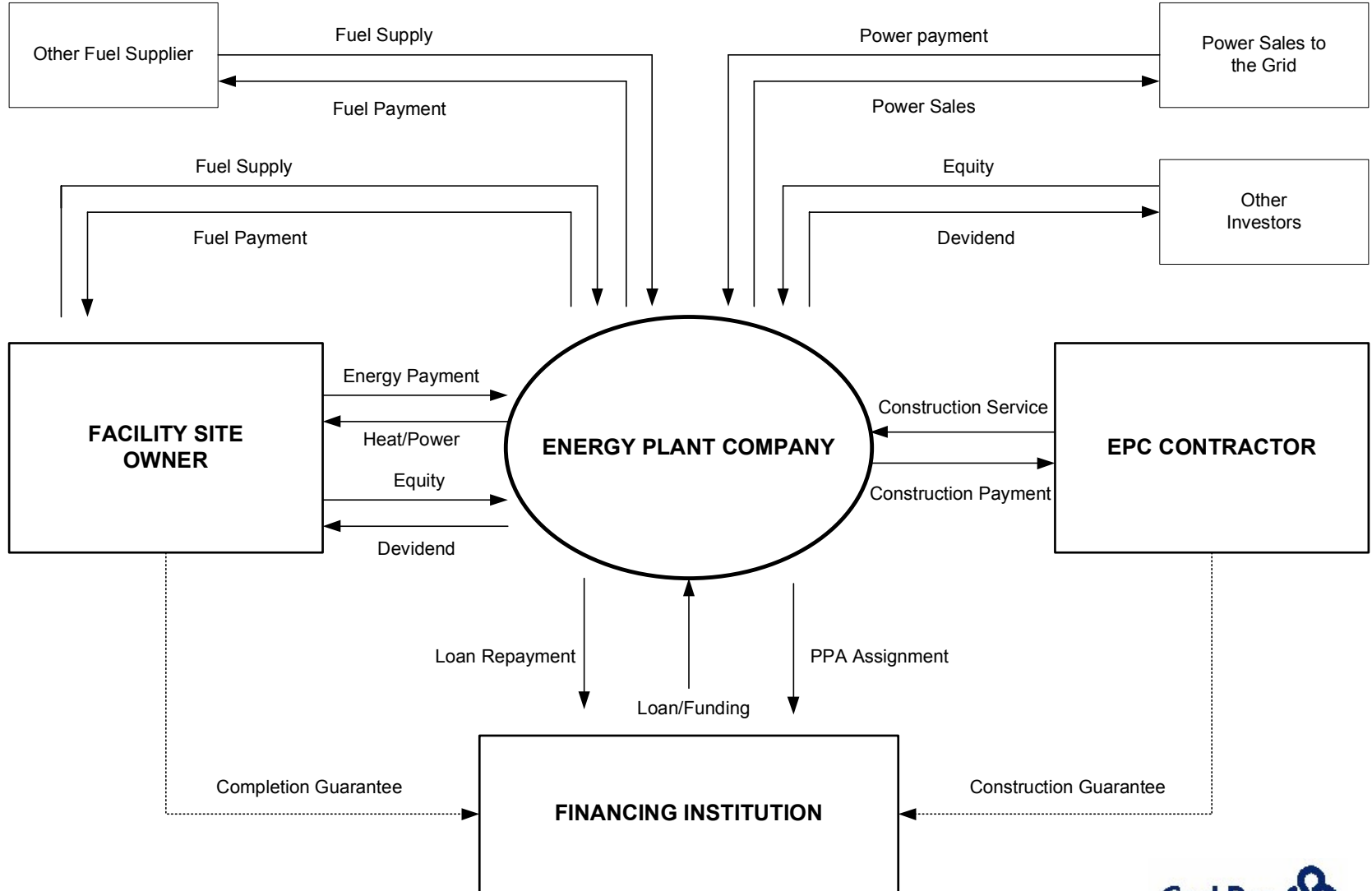
- Minimum risk carried by the sponsors
- Loan does not appear on the balance sheet of the sponsor
- Long maturity of loan possible to achieve

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: 53 MWe Bagasse-Fired Cogeneration Project

Owner/developer: Dan Chang Bio-Energy Co., Ltd.

Project type: Bagasse-fuelled energy plant

Location: Dan Chang, Suphanburi, Thailand

Description: Dan Chang Bio-Energy is a special purpose company set up to implement this cogeneration project. The plant is located adjacent to a sugar mill which will supply bagasse as fuel. The electricity generated from the project will be sold to the sugar mill and the excess power to the Electricity Generating Authority of Thailand (EGAT). The project consists of new equipment (41 MW) & old transferred from the sugar mill.

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, EPPO subsidy

Commercial operation date: May 2004



CASE STUDIES

Case study 1: 53 MWe Bagasse-Fired Cogeneration Project

Total project cost: THB 2,170 million

Shareholders' equity: ~29 % = THB 620 million

Loan: ~71 % = THB 1,550 million

Financing institution: Siam Commercial Bank

Interest rate: MLR before operation, Fixed for 1st yr, MLR-1.00% afterwards

Maturity: 11 years (including grace period)

Grace period: 2 years

Security arrangements:

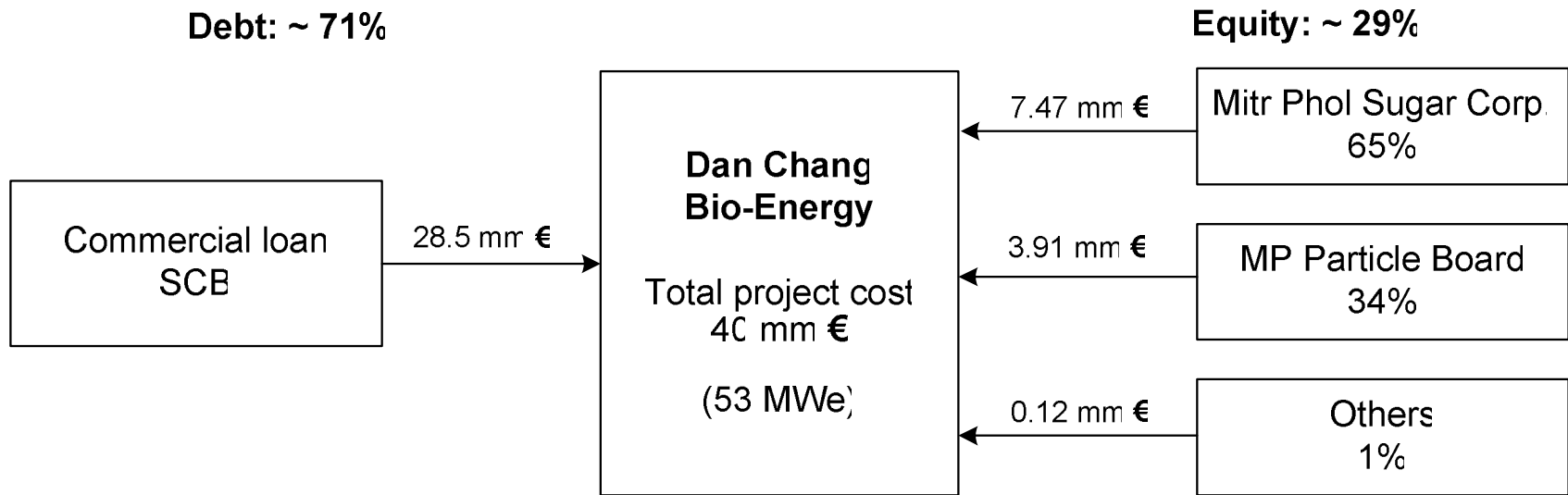
- Mortgage of all land, building and equipment to the bank
- Assignment of PPA (DC vs. EGAT)
- Assignment of Utilities Supply Agreement (DC vs. MP)
- Corporate guarantee for the whole portion of the loan (to be released when listed in SET)
- All risk insurance for equipment & all assets in the name of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





CASE STUDIES

Financing structure of Dan Chang Bio-Energy Co. Ltd.





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:

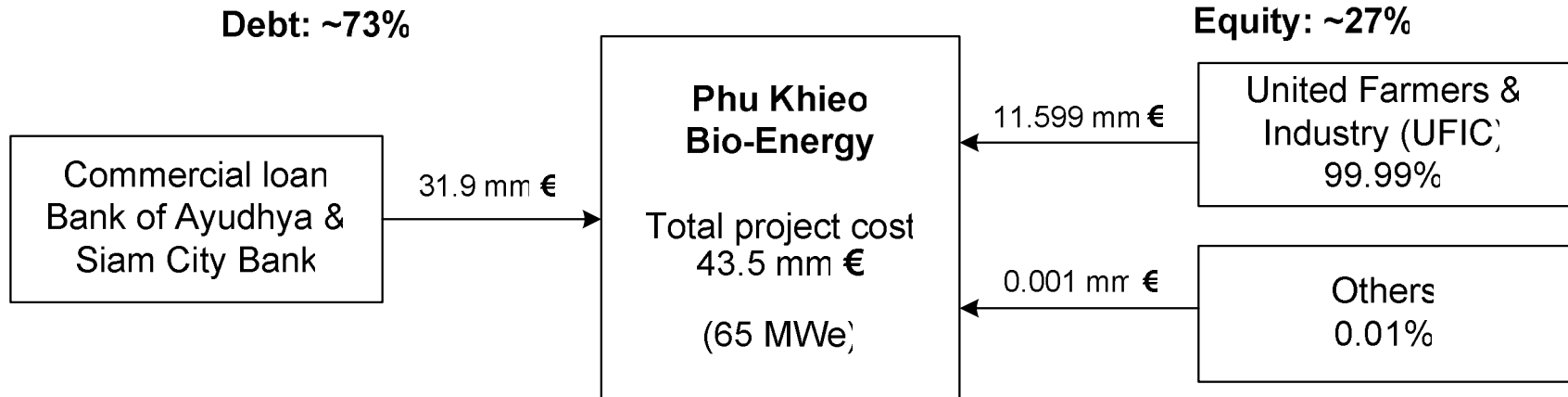
- Mortgage of all land, building and equipment to the bank
- Assignment of PPA (PK vs. EGAT)
- Assignment of Utilities Supply Agreement (PK vs. MP)
- Corporate guarantee for the whole portion of the loan (to be released when the above arrangements are fulfilled)
- All risk insurance for equipment & all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





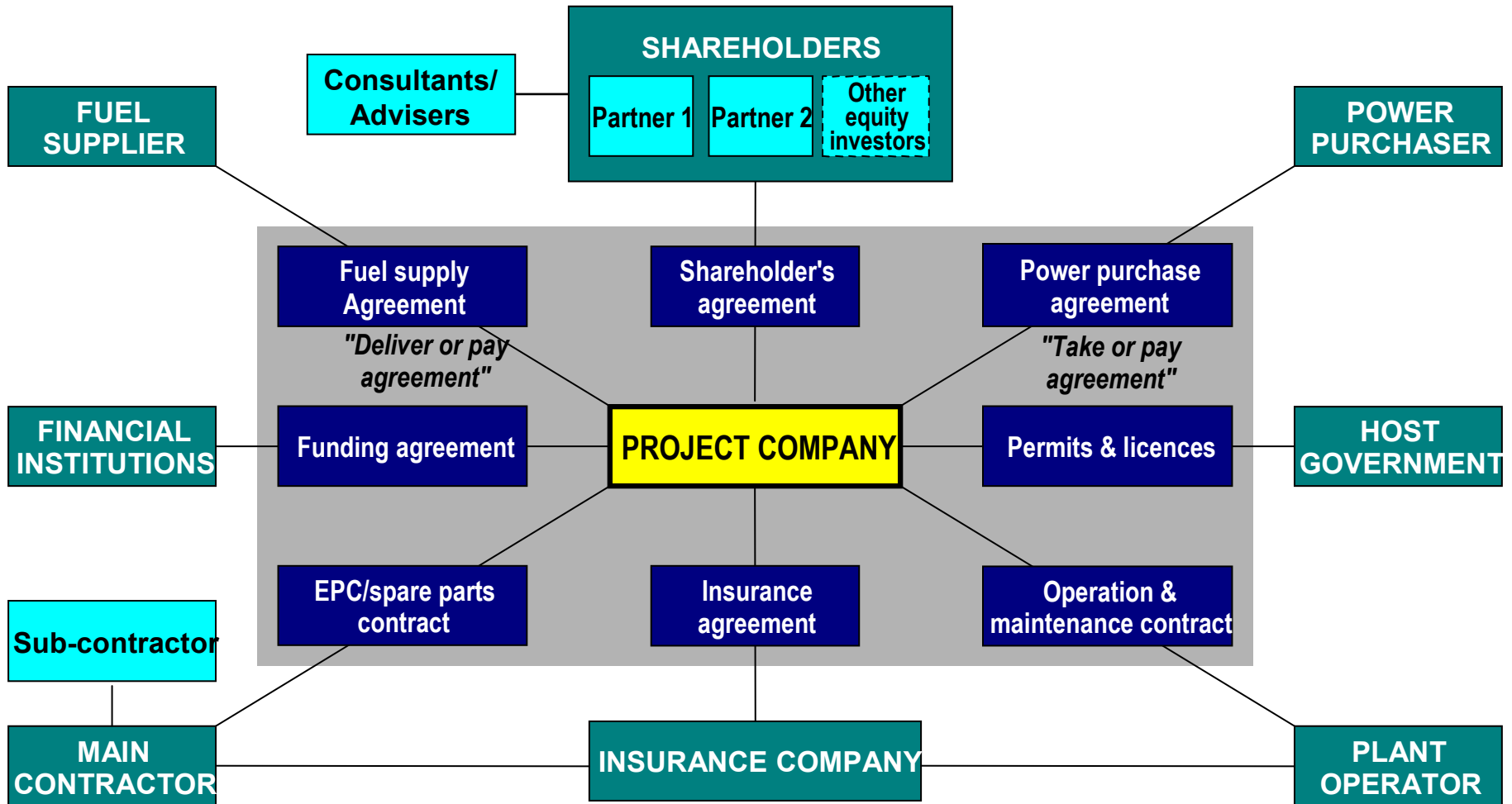
CASE STUDIES

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





STAKEHOLDERS





For more information,
please visit COGEN 3 Website at:

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Thank You !