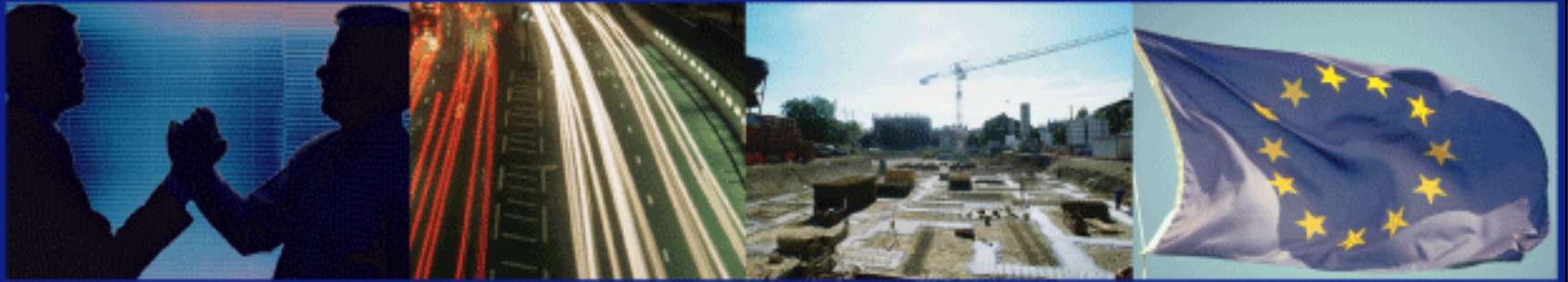


Wind Farm Project Finance

Financing and Technical Requirements

Gabriele Ferrante

PPP Task Force, Presidency of the Council of Ministers, Italy



Burgas, 2007



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AGENDA

- ❖ **Project Finance: definitions and main characteristics**
- ❖ **Due Diligence and Risk Analysis in a Wind Farm Project**
- ❖ **Financial instruments for evaluation of a Wind Farm Project**



Project Finance: Definitions and Main Characteristics

- ❖ Project Finance is a multi-discipline approach to the funding of specific investments characterised by wide levels of structural complexity as well as the possibility to resort to large financing from the banking sector.
- ❖ The main guarantee of debt payment are Project cash flows – required to prove certain – and effective management of the initiative-related risks – which allows limiting the possibility of failure of envisaged cash flows.
- ❖ The evaluation of economic/financial sustainability of single initiatives is exclusively based on the quality (to be intended as the capacity to generate cash flows versus a given risk level) of single projects, rather than on the credit merit of single shareholders.



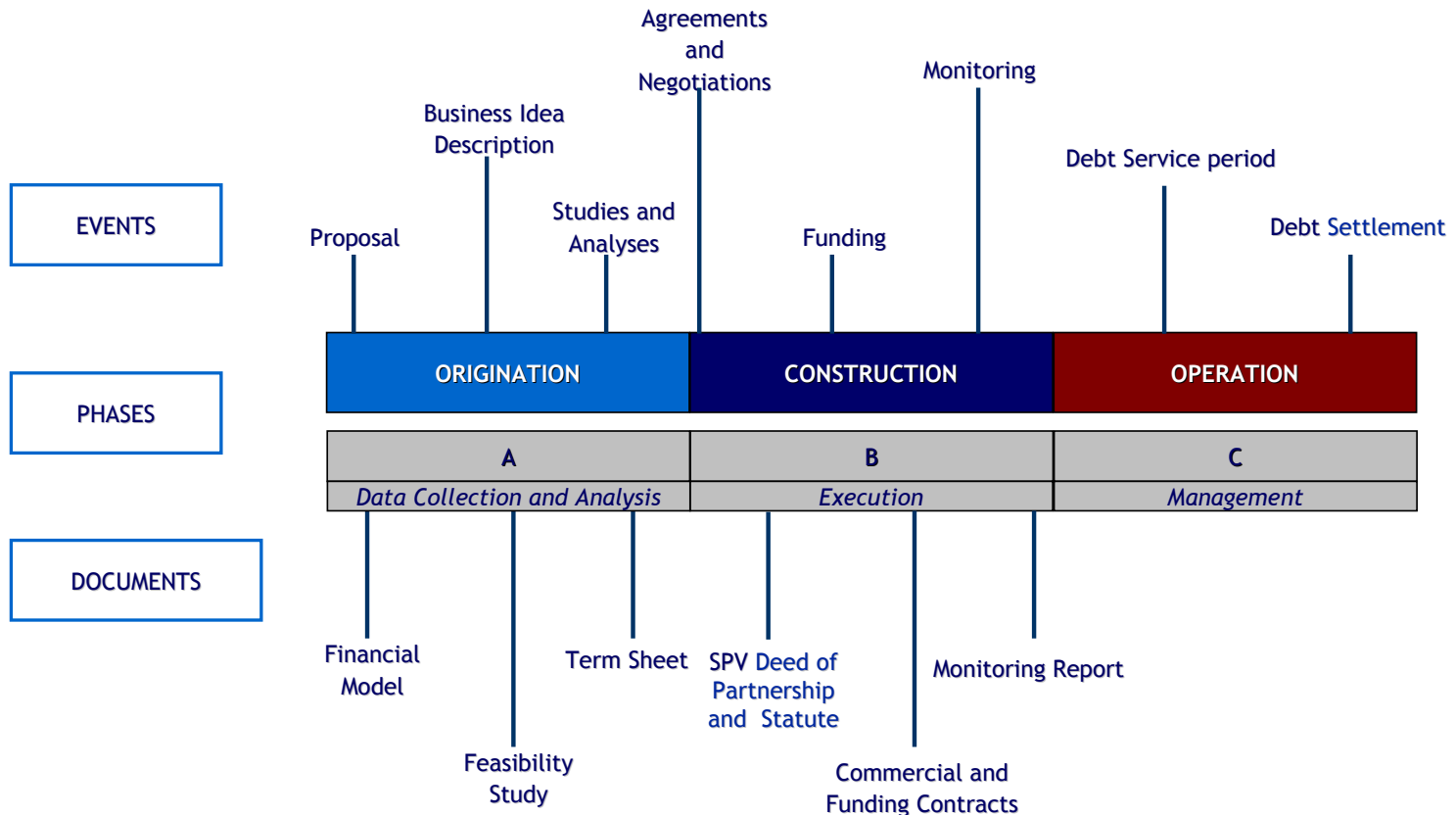
Project Finance: Definitions and Main Characteristics

- ❖ The operational phase (likewise construction) is of primary importance, as only effective and high-quality management allows generating the necessary cash flows to satisfy banks and shareholders.
- ❖ The “editing” of the operation is characterised by an important process of negotiations amongst the various subjects involved (i.e. shareholders, banks, commercial counterparts), with variable duration and aiming to distribute initiative-related risks amongst the various actors involved.



Project Finance: Definitions and Main Characteristics

Project Finance Step-by-Step

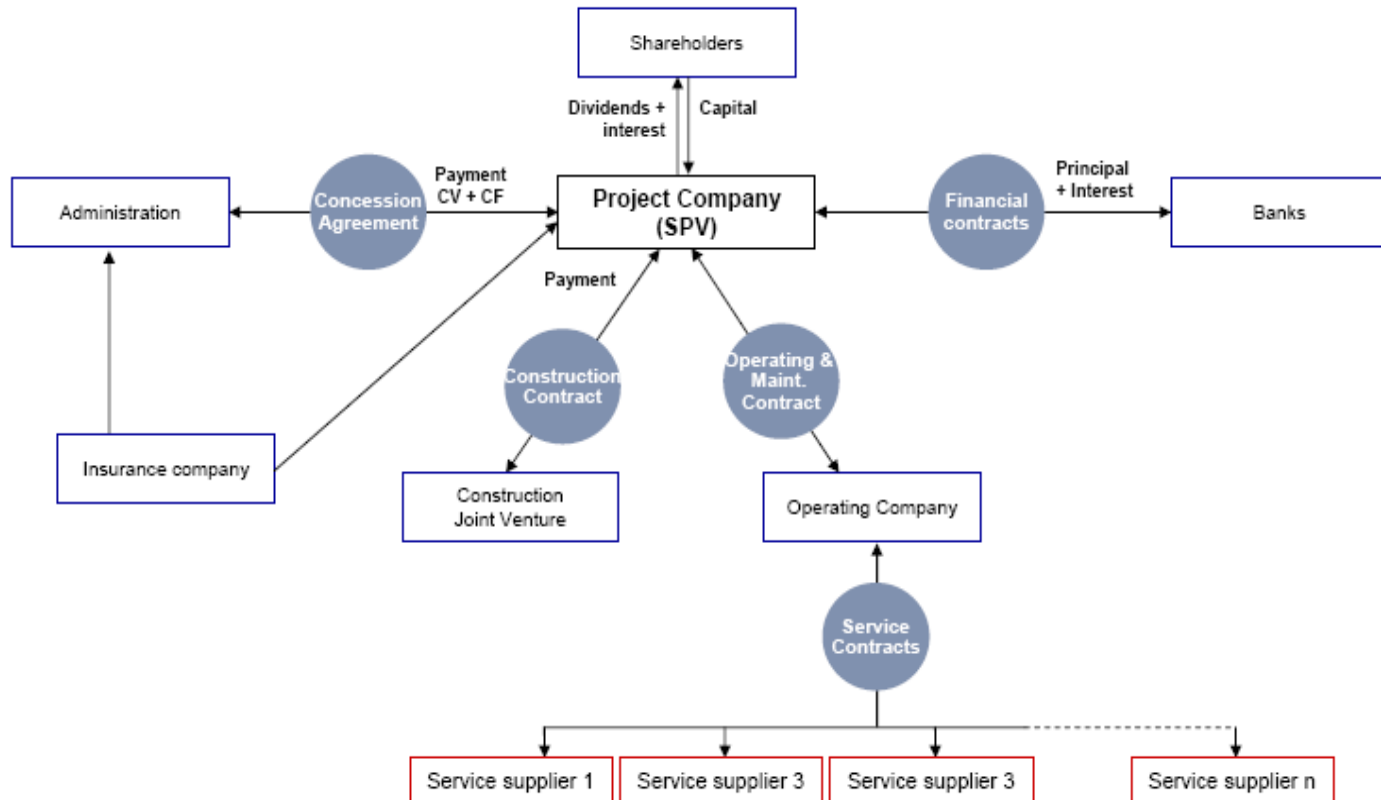


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Project Finance: Definitions and Main Characteristics

DESIGN BUILD FINANCE OPERATE



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Due Diligence and Risk Analysis

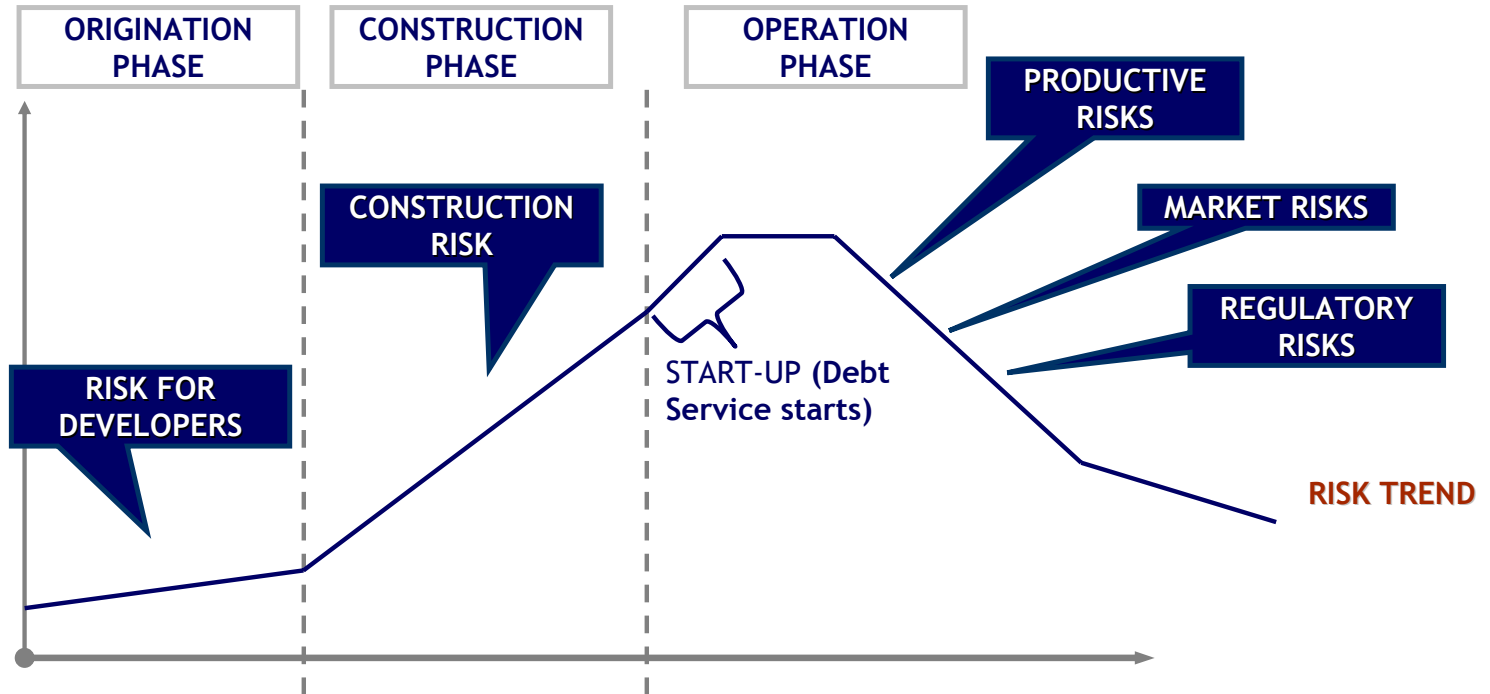
Loan Banks, supported by external consultants – professional, independent, and well-reputed on the financial market – resort to Due Diligence for:

- ❖ Correct assessment of risks linked to the Project's nature and structure so as to identify the possibility to mitigate such risks
- ❖ Establish funding terms and conditions
- ❖ Create a robust Project structure also via a financial model capable of supporting sensitivity analysis
- ❖ Evaluate Project actual financiability



Due Diligence and Risk Analysis

Risk Trend



Due Diligence and Risk Analysis

Risk Analysis and Risk Allocation of a Wind Farm Project

Price Risks/Market Risks

Identification

- Energy price trend

Mitigation

- Long-term projection of energy prices through adequate market surveys carried out by independent external consultants
- Annual revision mechanisms for prices envisaged in the funding contract
- Mechanisms of anticipated debt payment in the hypothesis of cash sweep
- **Power Purchase Agreement** : fixed-term and fixed-price energy sale contracts



Due Diligence and Risk Analysis

Risk Analysis and Risk Allocation of a Wind Farm Project

Productive Risks

Identification

- Analysis of site windiness
- Turbine and system availability factor
- Turbine technology

Mitigation

- Evaluation of wind energy production
- Guarantee mechanisms of turbine supplier and manager through appropriate EPC and O&M contracts
- Turbine selection



Due Diligence and Risk Analysis

Risk Analysis and Risk Allocation of a Wind Farm Project

Construction Risks/Completion Risks

Identification

- Construction price variations
- Construction delays
- Turbine performance risk

Mitigation

- Multi-site construction programme
- Constructor evaluation
- Turn Key construction contract with guaranteed prices and deadlines
- Penalty mechanisms for constructor
- Reserve mechanisms for possible increase in Project costs (guarantee both on availability and productive capacity)



Due Diligence and Risk Analysis

Risk Analysis and Risk Allocation of a Wind Farm Project

Regulatory Risks

Identification

- Obtain necessary authorisations and permits
- Environmental Impact Assessment (E.I.A.)

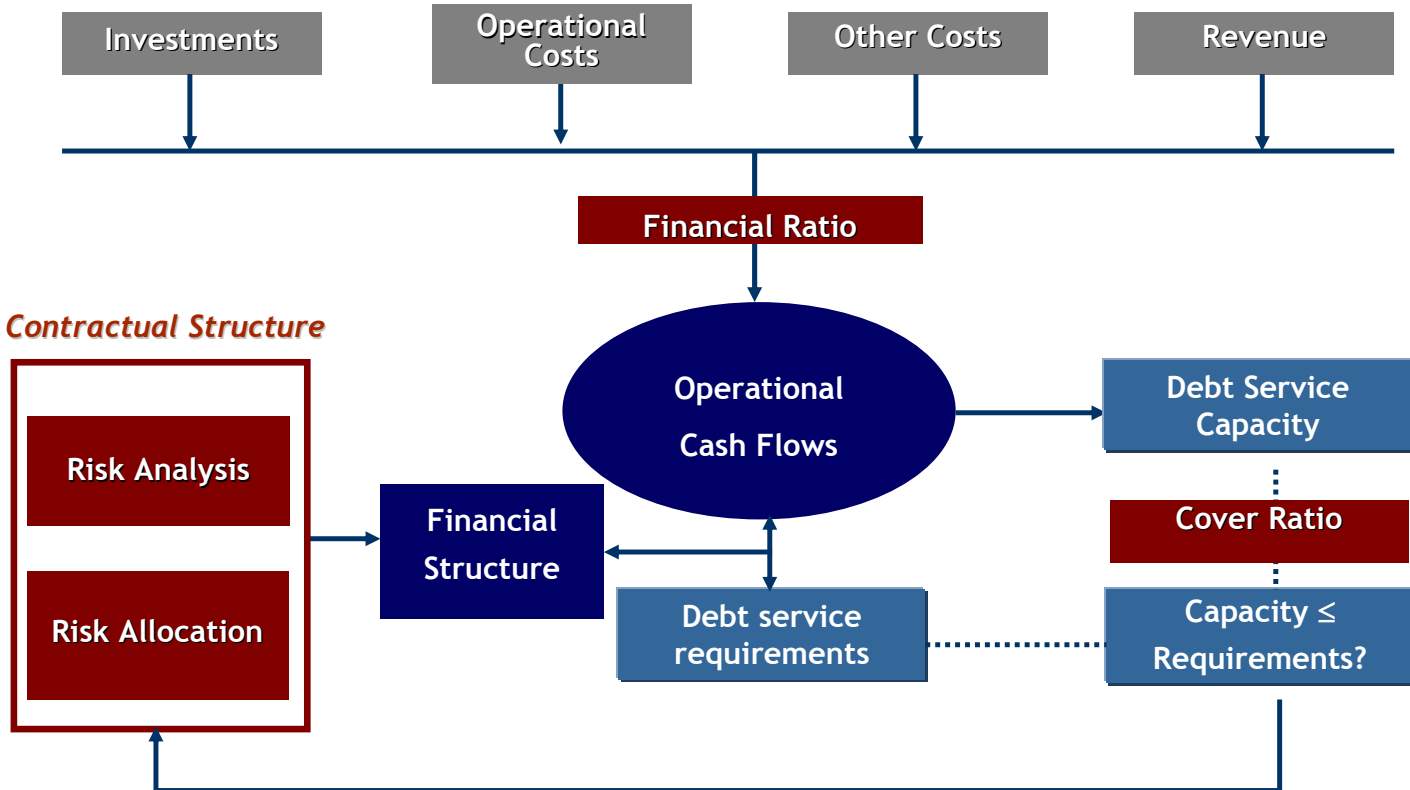
Mitigation

- Revision of Project authorisations and permits
- Analysis of land contracts



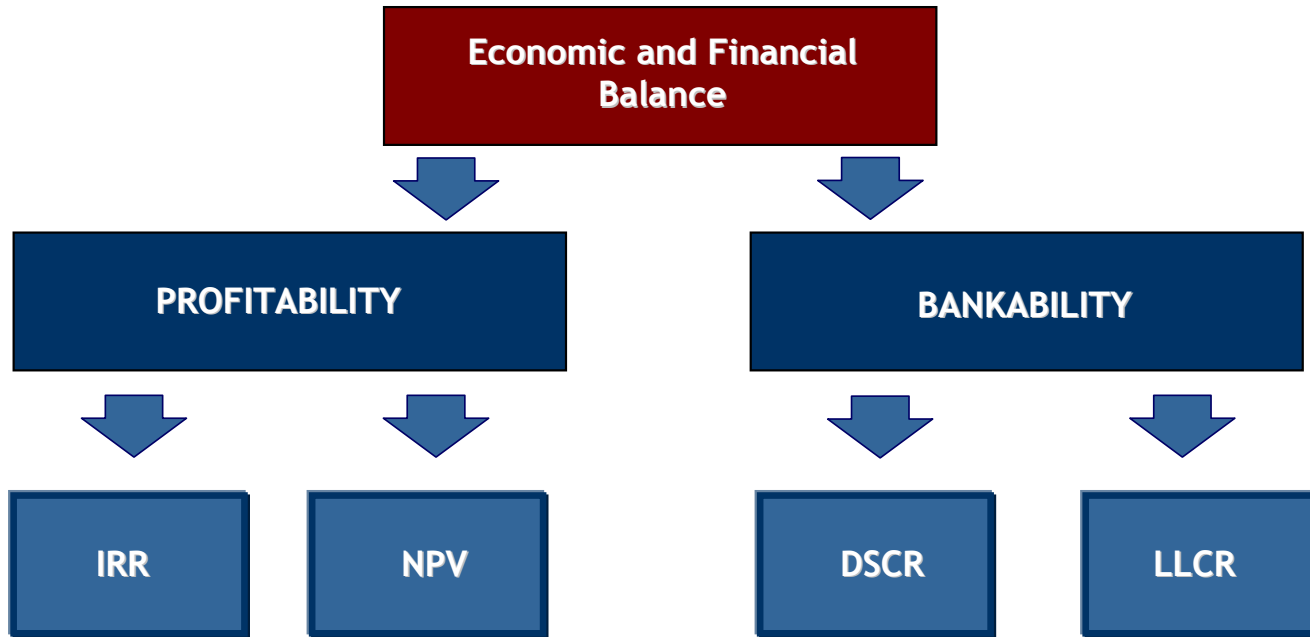
Financial Instruments

Financial Strategy and Economic and Financial balance



Financial Instruments

Economic and Financial Balance



Financial Instruments

Profitability

PROFITABILITY



Project capacity of: (a) creating value; (b) generating adequate level of profitability of the invested capital versus private investor's expectations, and possibility to activate project financing.



IRR



NPV



Financial Instruments

Bankability

BANKABILITY



Project capacity to generate sufficient cash flows to guarantee debt payment, compatibly with adequate return for private investors involved in the realisation and management of the initiative.



DSCR

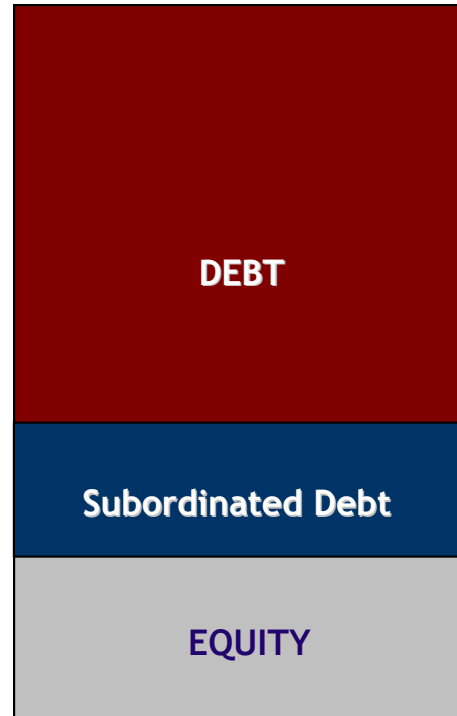


LLCR



Financial Instruments

Financial Structure



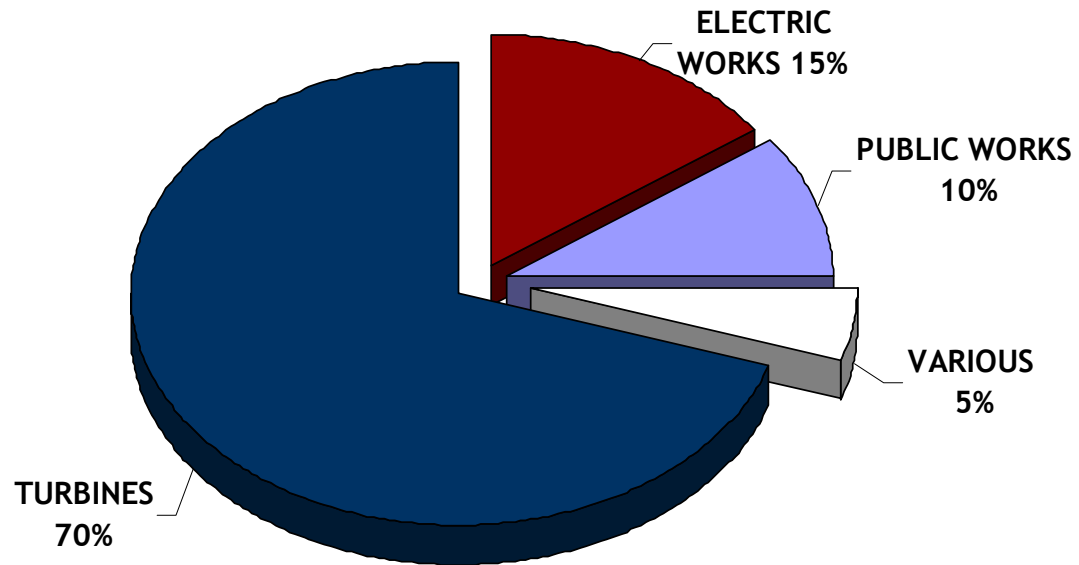
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Financial Instruments

Creating a Wind Farm: Percentage Cost



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