



ALTERNATIVE ENERGY – KEY FINANCING PERSPECTIVES

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ALTERNATIVE ENERGY

ALTERNATIVE ENERGY IN CONTEXT

- Alternative energy refers to any source of usable energy intended to replace fuel sources without the undesired consequences (such as fossil fuels) of the replaced fuels.
- The name is synonymous with Renewable energy, Green Energy and Clean Energy amongst others.



WHY ALTERNATIVE ENERGY?

- Alternative energy sources cannot be depleted. This is one of the most important alternative energy benefits, because renewable energy will always be in abundant supply for mass use, and will not run out like fossil fuels. The sun, wind, tides, and other natural elements will always be there for us to take advantage of;
- Alternative energy will entail utilization of indigenous energy sources, which will reduce the economy's dependence on imported fuel sources and ease the pressure on GDP;
- Environment-friendly alternative energy sources provide solutions to the problems of global warming, and they may reverse some of the damage that has already been caused by the use of fossil fuels;
- Alternative energy projects should find an eager audience in banks and financial institutions in Pakistan that are now seeking fuel diversification in their power portfolio.
- Banking sector's committed exposure on the power sector is estimated to be around PKR 480 billion, which includes approximately PKR 300 billion in the public sector (backed by GoP Guarantee) while the remaining exposure is in IPPs.



WHY HAVE WE NOT EMBRACED ALTERNATIVE ENERGY YET?

- Despite a yawning supply demand gap, and growing environmental concerns, the transition to alternative power has remained considerably slackened;
- Some of the key reasons are:
 - **High capital costs** – Given below is a snapshot comparison of thermal and alternative energy sources:

Source	Cost (US\$/MW)
Combined Cycle Thermal (Oil/Gas)	1.185
Wind	2.604
Hydropower	2.690
Biomass	1.863
Solar Thermal	3.149

Source: Internal Estimates and US Energy Information Administration

- **Technology** – Most of the technology employed in renewable energy is not as “tried and tested” as thermal; hence it makes the offtaker and developer uncomfortable. Further, renewable energy is “always on”; therefore offtakers are picky about technology it from a grid management perspective.
- **Lack of Policy Framework** – Pakistan’s Renewable Energy Policy was released in late 2006 after a considerable delay, while a thermal policy framework has been in place since the 1990s. This improved level of interest over the past few years needs to be sustained to ensure that this industry crosses the nascent stage;

WHY HAVE WE NOT EMBRACED ALTERNATIVE ENERGY YET?

- **Longer Gestation Period** – Although not applicable to all renewables, non-thermal projects, especially hydel, have typically longer construction periods hence making them less attractive compared to thermal projects;
- **Country Risk** – High country risk, including law and order situation, has deterred foreign commercial lenders and investors from investing in Pakistan in general. This has effected the investment in Alternative Energy as well.
- **Contractors and Suppliers** – Level of interest from this set of stakeholders was previously low:
 - This has changed over the past couple of years due to economic slowdown in the west;
 - Presents a window of opportunity for Pakistan’s alternative energy industry to engage these stakeholders.



ALTERNATIVE ENERGY PROJECTS –INDUSTRY CONCERNS

- **Concession Documents** – Attempts were made to match the concession documents of renewable energy projects with thermal power, despite the differences in the nature of the project:
 - Renewable Technology is always on;
 - Absence of fossil fuel in renewable energy;
 - No concept of ‘Declared Availability’ possible in renewable energy;
 - Factors affecting efficiency are different, for example in Wind, it is not just the wind speed but direction as well that effect efficiency.

- **Issues with Provincial governments -**
 - Wind Power – Pre-partition land ownership documents not available, which causes problems for banks in security perfection
 - Hydel Power - Federal government should provide the maximum support to cut ‘red tape’ in negotiations with Provincial Government’s Water Use Agreement, Charges and other concessionary documents as these have known to cause delays;

Provincial governments (or the Federal Government) need to assist investors with resettlement compensation negotiations.



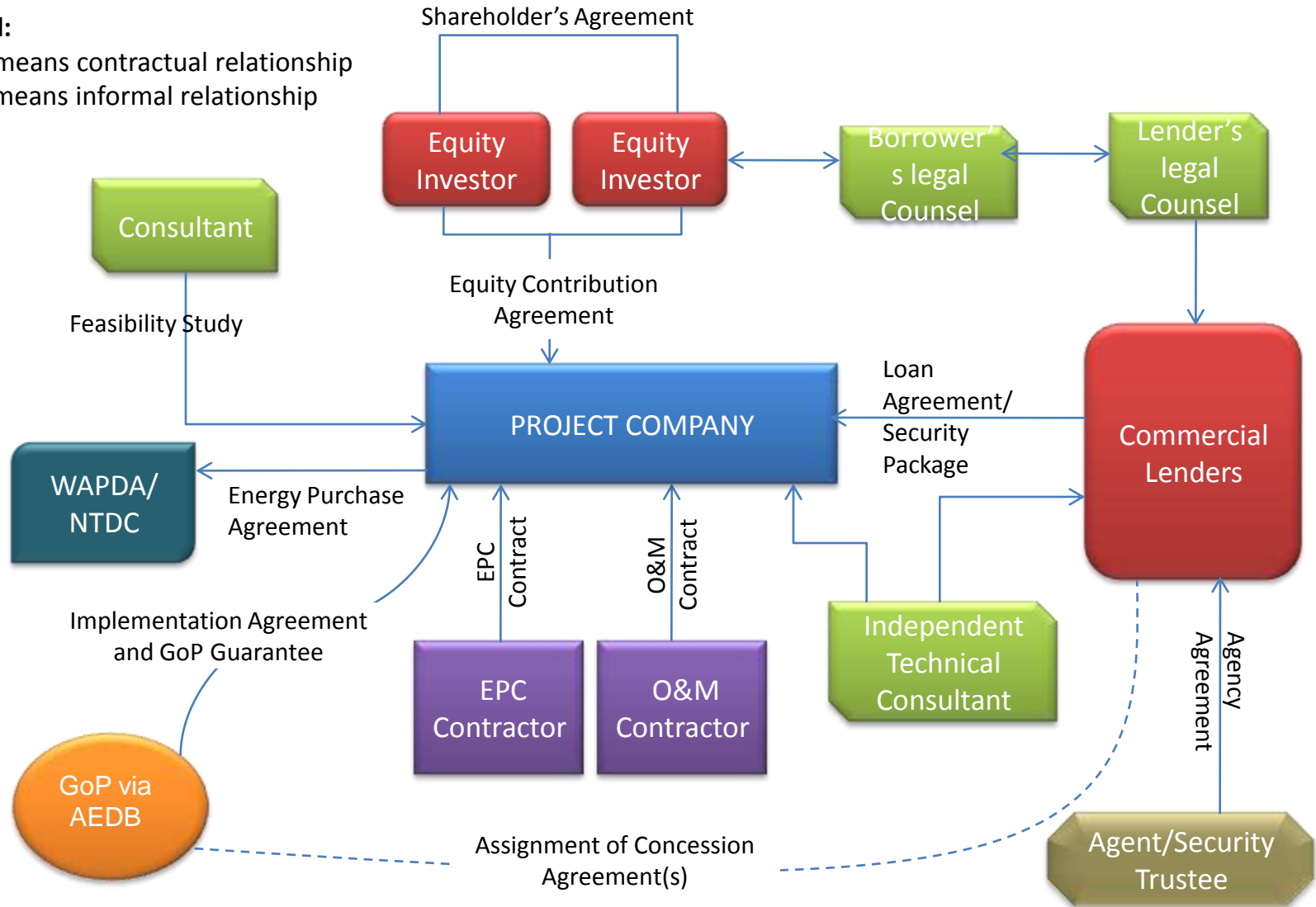
ALTERNATIVE ENERGY PROJECTS –INDUSTRY CONCERNS

- **Burgeoning NTDC Receivables** - Circular Debt and NTDC's increasing receivables situation is the single largest factor discouraging a significant majority of investors and lenders from undertaking renewable energy projects. This needs to be settled soon:
 - Approximately PKR 300 billion has been housed in Power Holding Company and WAPDA/NTDC as bank debt. This was the amount of circular debt upto September, 2009.
 - A further circular debt of PKR 250-300 billion (conservative estimate) has arisen since September, 2009 which needs to be resolved now.
 - In summary, total circular debt since 2008 now amounts in excess of PKR 550 billion, as a conservative estimate.

PROJECT FINANCE – CONTRACTUAL STRUCTURE

Legend:

- means contractual relationship
- - - means informal relationship



THANK YOU