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TOPIC 1 – BROWNFIELD AND GREENFIELD

1. INTRODUCTION AND OBJECTIVE

This article attempts to discuss on some basic principles that should be considered to evaluate an investment in power plant deciding whether investment is a brown field or green field. First, I shall attempt to define only for the purpose of this article the meaning of brown field and green field.

Type of power plant	Meaning
Brownfield	Means a fully constructed and operational power plant
Greenfield	Means a power plant to be constructed or in the various stage of construction pending commercially being operated.

2. METHOD OF VALUATION

A. Brownfield.

As the power plants are operational, the construction risk has been substantially or almost completely removed. In addition, the fair equity value for the independent power plant could be applied objectively based on the financial statistics that could be gathered from the plant.
Discounted cash flow to equity or firm to measure both the Net Present Value (NPV) to equity and capital providers could be used as a primary technique. Relative valuation techniques could be a supplemented valuation technique, such as multiples on price over *actual* earnings and performance indicators such as *actual* annual production in GWh per MW could be used in comparison with other similar comparable projects / companies having closely similar source of power and capacity.

B. Greenfield.

As the power plants are not yet operational, construction risk is an area of concern and hence, the value ascribed is affected by the extent of the ability of the project sponsor to manage the construction risk. This risk is translated to the equity valuation by a higher discount rate to be used, to commensurate for the uncertainties of the construction risk that the project has to bear.

Discounted cash flow to equity or firm is still a method of choice to measure both the Net Present Value (NPV) to equity and capital providers. It is expected that the discount rate to be used is generally higher for Greenfield's than for Brownfield's investment appraisal, for reasons as stated below:-

(a) The funding cost is generally higher as lenders will price in the construction risk as part of the total lending cost.

(b) Due to construction risk, equity providers will price in a risk premium to compensate for the additional risk that the equity providers have to bear. Likely, this additional risk premium is more likely a subjective assessment rather than supported by any theoretical basis of derivation. Relative valuation techniques, could be a supplemented valuation technique, such as multiples on price over *projected* earnings and performance indicators such as *projected* annual production in GWh per MW could be used in comparison with other similar comparable projects / companies having closely similar source of power and capacity.

C. RESULTS

The final output upon the use of discounted cash flow to equity and firm is arriving at the net present value to equity and capital providers of an entity respectively. Instead of arriving at a fair equity or firm valuation in monetary values, the results can also be presented in percentage measurement as Internal Rate of Return (IRR). This is also known as equity IRR percentage or project IRR percentage. For any profitable projects, this shall result in project IRR Percentage being always lesser than equity IRR, which in a way means that equity providers earns more returns those debt providers.

THANKS FOR READING.

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