3.9 Case Study: Santa Anna Hydroelectric Power Scheme

Santa Anna Hydroelectric Power Scheme (HEPS) is a project similar to the examples concerning the Santa Clara HEPS studied in Chapter 1. The main difference is that the construction, and hence the investment, all occurs in the first year. A new company, Santa Anna HEPS Company Limited has been launched to pursue this opportunity.

The total cost of the project is $400 million. In order to fund this project, $200 million in equity has been obtained from the company's owners and the company has borrowed $250 million from a syndication of investment banks. The capital cost is to be depreciated on a straight-line basis over 35 years. This means that each year the assets are depreciated by $400/35 = \$11.4$ million. The book value of the investment for each can be determined in the form of a depreciation schedule, shown in Table 3.7.

The projectwill generate electricity, and hence revenue, from year 2. The revenue in year 2 is 68% of the final revenue of $161.2 million per year, while that in year 3 is 97% of the final amount. After that, it is expected that the revenue will be $161.2 million per year.

The direct costs of producing the electricity are estimated to be 5% of the revenue, while indirect costs for the administration of the operations is expected to be about $10 million per year. Both local and federal authorities charge tax; the aggregate tax rate is 35%. From this information the project financials can be constructed.

Compute the cash flow for the first 6 years of the project. Compute the payback period for the project (discounted and not discounted). Compute de Internal Rate of Return of the project and the NPV (Net present value) assuming a required rate of return of 10%.