Chapter 13
Benefit - Cost Ratio and Financial Return

13.1 General

Krishna (Srisailam)-Pennar link project is a major project which comprises of construction of embankments for a length of about 21 km along the natural streams of Nippulavagu and Galeru and 4 mini hydel schemes by providing diversion weirs. This project is proposed to be completed in five years. The estimated cost for the whole project is Rs. 81.29 crore.

13.2 Benefit – Cost Ratio of the Project

In order to examine the economic viability of the scheme, the benefit-cost ratio of the project has been worked out based on the guidelines given in the working group report "Guidelines for preparation of detailed project reports of irrigation and multipurpose projects" prepared by Govt. of India, Ministry of Irrigation. From this link, there are no enroute benefits except power generation. The irrigation benefits will be in Pennar basin and beyond. Presently, the gross value of the benefits of the project is taken only on the power generation. The annual cost is computed allowing for 10% of interest on total estimated cost of the project. Depreciation cost and maintenance cost of the project is taken separately for powerhouses and embankments. The working details of B.C. ratio for the project on the basis of cost-benefit method and discounted cash flow method are discussed in following paras. The B.C ratio for this independent link is only indicative, which may not reflect, the overall economics of the link system. Hence, it would be more appropriate to assess the overall benefits from the integrated Peninsular link system from Mahanadi to Cauvery after the same are firmed up.

13.2.1 Benefit - Cost Ratio of the Project by Cost Benefit Method

Benefit-Cost ratio of the project has been computed as 2.50 by the cost-benefit method considering the life of the project as 100 years. Details are given in Table 13.1.

Table 13.1
Benefit-cost ratio by cost-benefit method

Sl. No	Description		Rs. in Crore
1.	Total estimated cost of the project		81.29
2.	Annual Cost.		
i)	Interest @ 10% on the estimated cost of the project	8.13	
ii)	Working expenses on embankments		
	a) Depreciation cost @ 2% of I-Works	0.08	
	b) Maintenance cost @ 4% of I-Works	0.16	
iii)	Working expenses on power component		
	a) Depreciation cost @ 3% on cost of power component	2.31	
	b) O&M charges @ 1% on cost of power component	0.77	
	c) General revenue @ 0.5% on cost of power component	0.38	
	Sub-total	11.83	11.83
3	Annual benefits (Considering only power generation)		
	Gross revenue that would be realised at a tariff of Rs. 4 per unit on the energy available for sale (74.04 MU)		29.61
4.	Benefit-Cost ratio : Annual benefits/ Annual cost : 29.61/11.83		2.50

13.2.2 Benefit-Cost Ratio by Discount Cash Flow Method

Benefit-cost ratio for the whole project has been computed by discounted cash flow method which works out to 2.91.

13.3 Internal Rate of Return

The internal rate of return for the whole project has been computed with and without considering distributional and employment effect which works out to 29.35% and 25.57% respectively.