Monju Khola Mini-hydro Project (512 kW)

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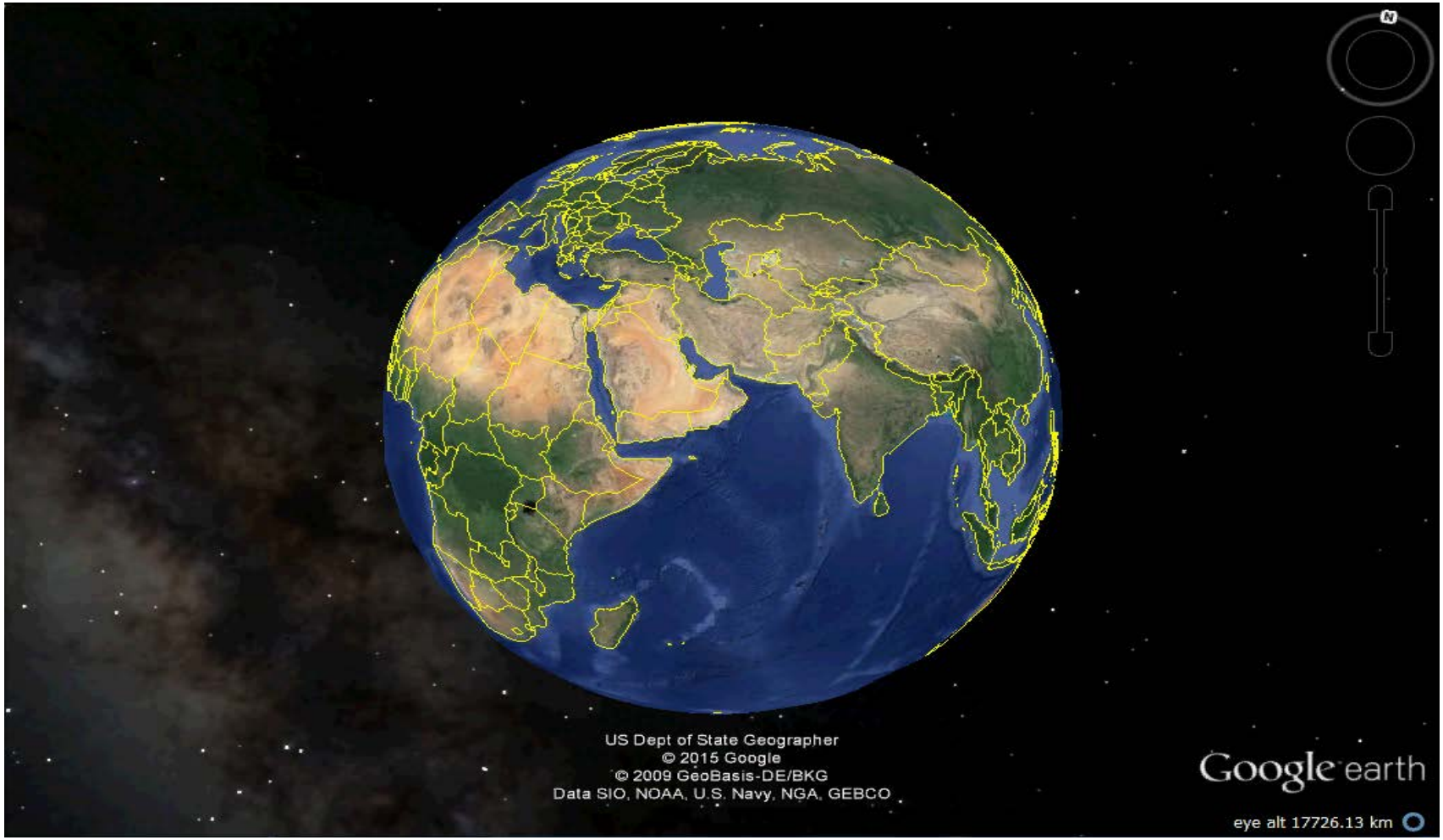
Introduction

1. Located in Chaurikharka VDC of Solukhumbu district
2. Situated in the major tourist destination (trekking route to Mt. Everest)
3. ROR type project with water source from Monju Khola
4. Total installed capacity of the plant is 512 kW
5. 476 beneficiary households with 2,115 population, 200 hotels & restaurants
6. Project site is reachable directly from Kathmandu to Lukla flight [45 minutes] and 4 hours Lukla to Monju trekking

Project Location



Courtesy: CSD Consult

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Project Catchment Area

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Project Attractiveness

1. Situated in major trekking route (destination to Mt. Everest)
2. Provides continuous electricity to businesses (200 hotels and restaurants where 10 hotels are 3 star rated) - for room heating, cooking, hot water, and communication
3. Replaces the costly LPG (NPR 6,000 to NPR 8,000/cylinder) and firewood (NPR 40/kg)
4. More than 35,000 tourists visit every year
5. Remaining electricity can be supplied to Lukla and Namche
6. Plant load factor is around 60%

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Major Load Centers

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Project Management

1. Currently being managed by Mini-hydro Functional Group
2. The functional group will establish cooperative or company to effectively run the project

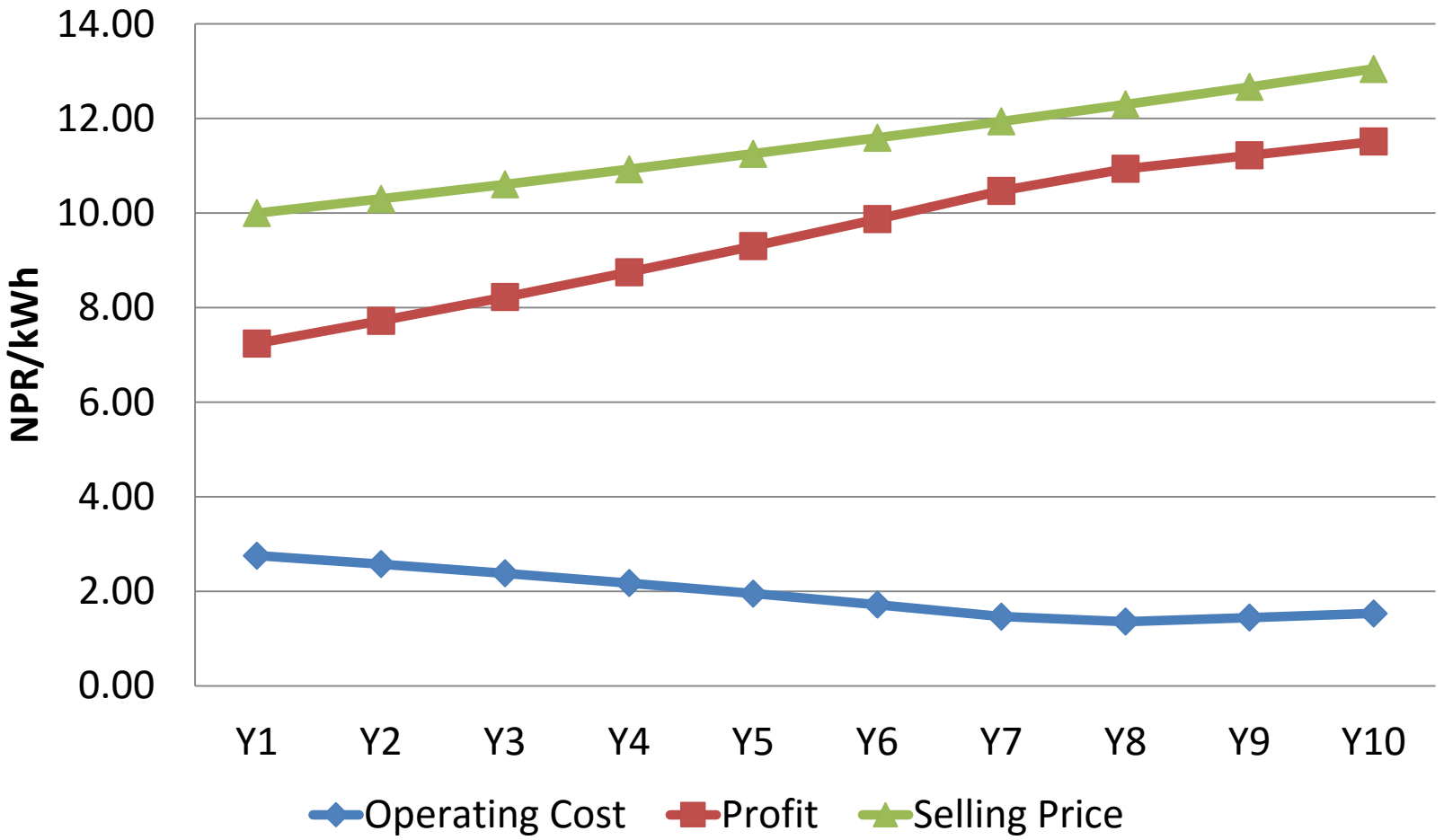
Project Cost

SN	Description	Amount (Million NPR)	Share (%)
1	Civil works	20.45	11.94
2	Hydro mechanical works	27.70	16.17
3	Electromechanical works	28.75	16.78
4	Transmission and interconnection	53.45	31.21
5	Engineering, supervision, insurance, management, VAT, office expenses etc.	40.90	23.88
	Total Project Cost	**171.25**	**100**
	Cost/kW	**334,482**	

Financing Mix

SN	Source	Amount (Million NPR)	Share (%)	Remarks
1	AEPC subsidy	32.51	18.98	
2	Community Equity	69.78	40.74	(Cash+Kind)
4	Bank loan	68.96	40.26	
	Total Financing Sources	**171.25**	**100**	

10 Year kWh Operating Cost, Revenue and Profit



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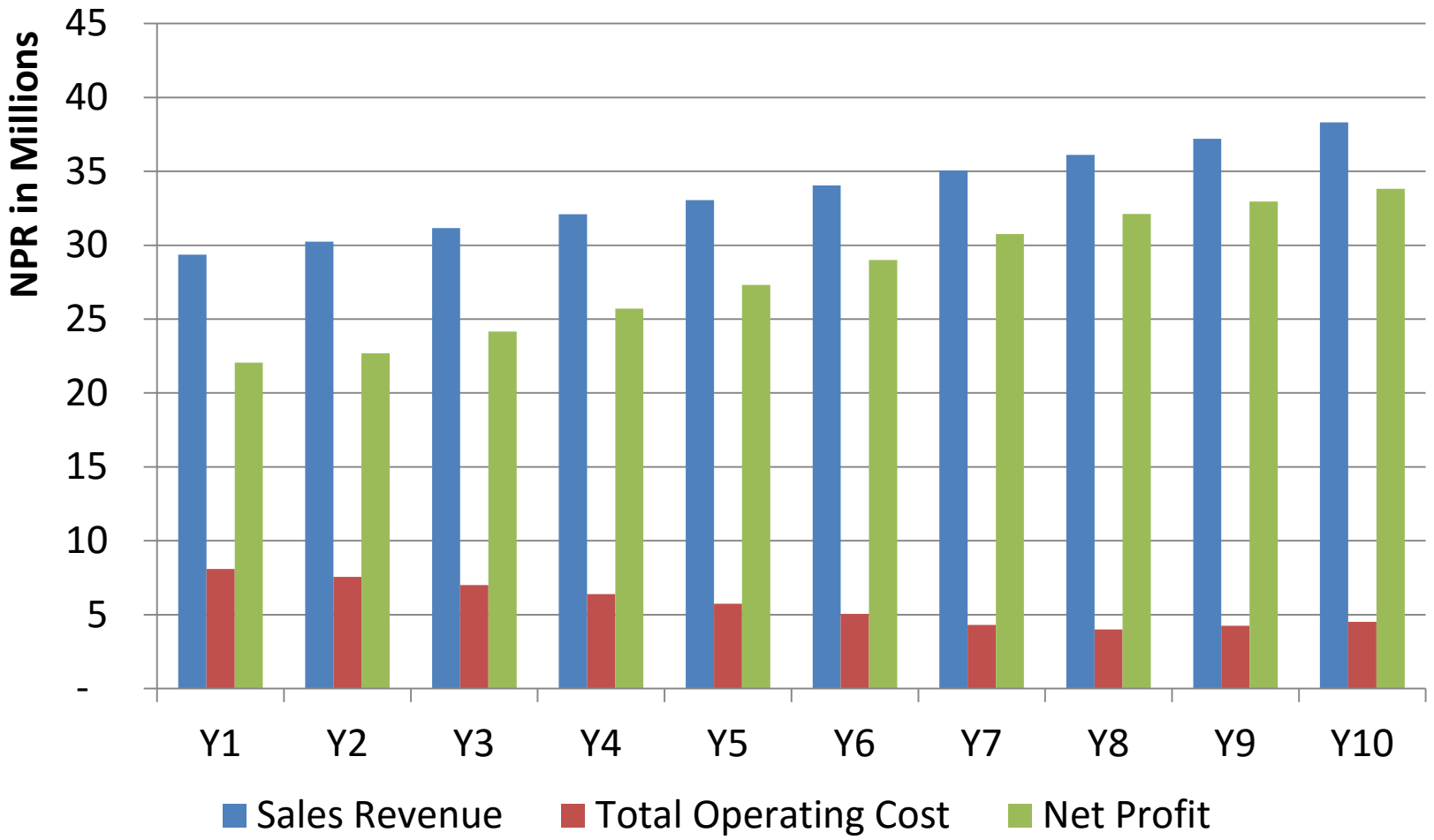
10 Year Revenue, Operating Cost and Profit Analysis



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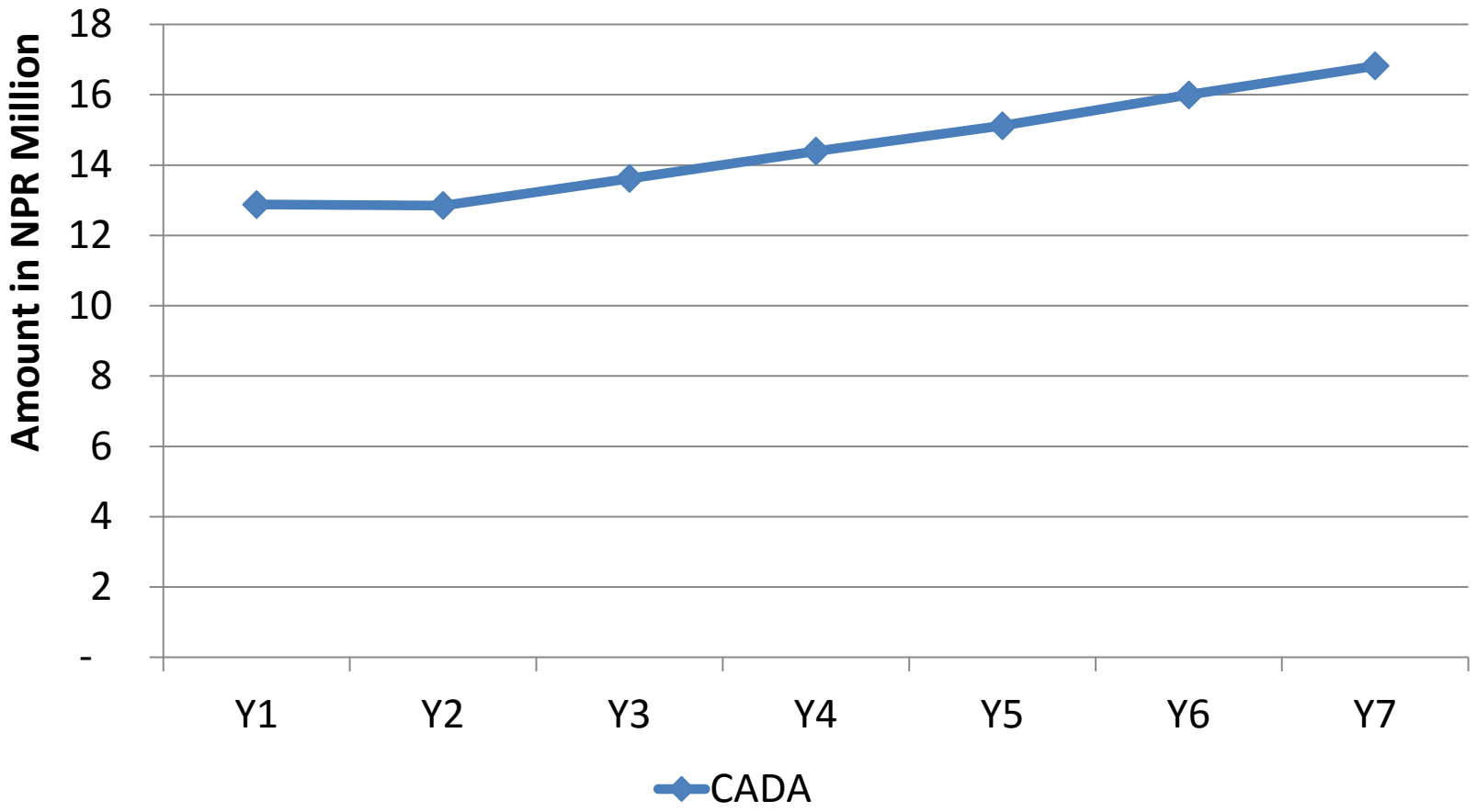
7 Year Cash After Debt Amortization (CADA) Analysis



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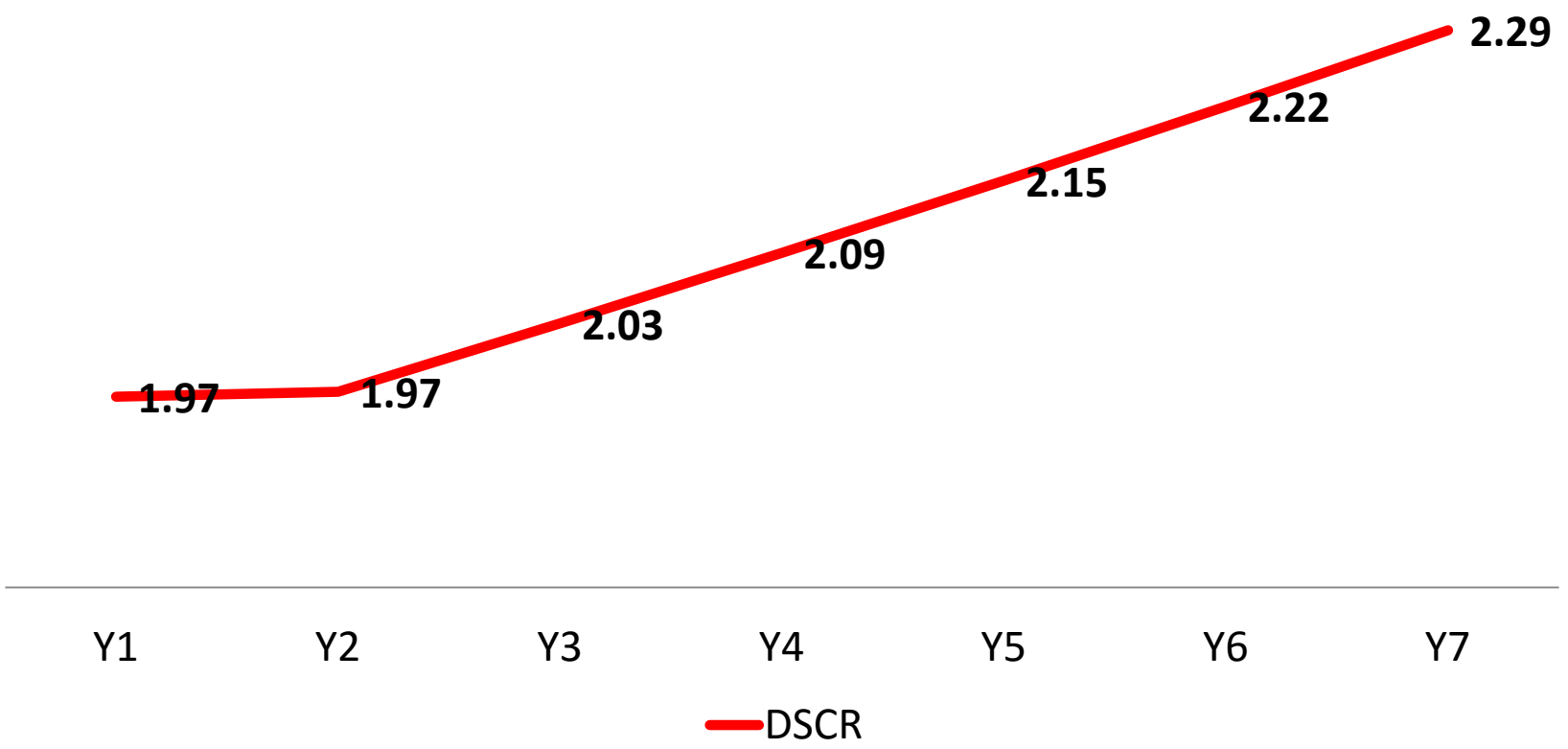
7 Year Debt Service Coverage Ratio (DSCR)



Sensitivity Analysis

Parameters	Impact
Project cost increases by 20%	Positive net profit and CADA
Revenue decreases by 20% and project cost increases by 20%	Positive net profit and CADA
Revenue decreases by 20%, project cost increases by 20% and Interest on LTD increases from 7% to 10%	Positive net profit and CADA

Conclusion

Financially Attractive for Bank Loan

Conclusion

1. The project is technically and financially feasible for bank loan since it's DSCR is above 1.5, CADA is positive and project is located in major trekking destination
2. Willingness to pay for electricity is very high (around NPR 15/kWh) since the cost of other energy sources (LPG, Firewood) is very expensive
3. The purchasing power of the people is very high since 80% of the beneficiaries are engaged in business

Thank you