

ANNEXES

Annex Table 1: Economic Evaluation of Biogas Technology
Net Discounted Benefit at $r = 13\%$

YEAR	TOTAL REVENUE (NRs)	DISCOUNTED BENEFIT (NRs)	TOTAL COST	DISCOUNTED COST (NRs)	NET DISCOUNTED BENEFIT (NRs)
1	2816	2492	5363	4746	-2254
2	2958	2316	4723	3699	-1383
3	3106	2152	4104	2844	-692
4	3261	2064	3504	2149	-85
5	3424	1858	2921	1585	273
6	3595	1727	2353	1130	597
7	3774	1604	1800	765	839
8	3962	1490	1355	510	980
9	4160	1385	1277	418	967
10	4368	1287	1209	356	931
11	4586	1195	1151	300	895
12	4815	1111	1102	254	857
13	5056	1032	1061	216	816
14	5309	959	1028	186	773
15	5574	891	1001	160	731
16	5852	828	981	139	689
17	6145	768	967	121	647
18	6452	715	957	106	909
19	6774	664	956	94	570
20	7113	632	957	83	749
Total		27370		19861	7509

Source: Pokhrel 1990.

$$\begin{aligned} \text{NPV} &= \text{Discounted Benefit} - \text{Discounted Cost} \\ &= 27370 - 19861 = 7509 \end{aligned}$$

$$\begin{aligned} \text{Benefit Cost Ratio} &= \frac{\text{Discounted Benefit}}{\text{Discounted Cost}} \\ &= \frac{\text{Rs. } 27370}{\text{Rs. } 19861} = 1.38 \end{aligned}$$

The B/C Ratio is greater than 1, hence the biogas technology is economically viable.

**Annex Table 3: Total Cost for Biogas Operation and Maintenance
for 10 cubic metre Capacity Plant**

YEAR	OPERATING COST (NRs)	INTEREST PAYMENT (15%) (NRs)	DEPRECIATION (10%) (NRs)	TOTAL COST (NRs)
0	0	0	0	0
1	271	3055	2037	5363
2	285	2605	1833	4723
3	299	2155	1650	4104
4	314	1705	1485	3504
5	330	1255	1336	2921
6	346	805	1202	2353
7	363	355	1082	1800
8	381		974	1355
9	400		977	1277
10	420		789	1209
11	441		710	1151
12	463		639	1102
13	486		575	10
14	510		518	1028
15	535		466	1001
16	562		419	981
17	590		377	967
18	619		338	957
19	650		305	956
20	682		275	957

Source: Pokhrel 1990.

**Annex Table 4: Estimated Average Capital Cost for Biogas Plant
Construction fro 10 Cubic Metre Capacity Plant**

YEAR	CAPITAL EXPENDITURE (NRs)	INTEREST PAYMENT (15%) (NRs)	ANNUAL DEPRECIATION (10%) (NRs)	VALUE OF CAPITAL STOCK (NRs)
0	20369	0		
1	17369	3055	2037	20369
2	14369	2605	1833	18332
3	11369	2155	1650	16499
4	8369	1705	1485	14849
5	5369	1255	1336	13364
6	2369	805	1202	12028
7	0	355	1082	18025
8			974	9742
9			877	8768
10			789	7891
11			710	7102
12			639	6392
13			575	5753
14			518	5178
15			466	4660
16			419	4194
17			377	3775
18			338	3397
19			305	3057
20			275	2751
Total		11935	17888	2476

Source: Pokhrel 1990.