

ANNEXURE 14

SENSITIVE ANALYSIS FOR THE 13.50 MW IGCC POWER PLANT

a) Project Capital Cost

Capital Cost Case	Relative Change (%)	Capital Cost (€)	LAC Current (€/kWh)	LAC Constant (€/kWh)	Relative Change in COE (%)
Formula Values			0.0449	0.0428	
-10	-100	0	-0.1268	-0.1198	0
-9	-90	185	-0.1268	-0.1198	0
-8	-80	369	-0.1268	-0.1198	0
-7	-70	554	-0.1268	-0.1198	0
-6	-60	739	-0.1268	-0.1198	0
-5	-50	924	-0.1268	-0.1198	0
-4	-40	1,108	-0.1268	-0.1198	0
-3	-30	1,293	-0.1268	-0.1198	0
-2	-20	1,478	-0.1268	-0.1198	0
-1	-10	1,662	-0.1268	-0.1198	0
Base	0	1,847	-0.1268	-0.1198	0
1	1	1,862	-0.1268	-0.1198	0
2	2	1,878	-0.1268	-0.1198	0
3	2	1,893	-0.1268	-0.1198	0
4	3	1,908	-0.1268	-0.1198	0
5	4	1,924	-0.1268	-0.1198	0
6	5	1,939	-0.1268	-0.1198	0
7	6	1,954	-0.1268	-0.1198	0
8	7	1,969	-0.1268	-0.1198	0
9	7	1,985	-0.1268	-0.1198	0
10	8	2,000	-0.1268	-0.1198	0

b) Fuel Cost (Additional incomes from own fuel source, poplar gasif. fuel)

Fuel Cost Case	Relative Change (%)	Fuel Cost (€/t)	LAC Current (€/kWh)	LAC Constant (€/kWh)	Relative Change in COE (%)
Formula Values			0.0449	0.0428	
-10	-100	0.00	-0.0339	-0.0321	-122
-9	-90	4.60	-0.0153	-0.0144	-110
-8	-80	9.20	0.0034	0.0032	-98
-7	-70	13.80	0.0221	0.0209	-86
-6	-60	18.40	0.0408	0.0385	-73
-5	-50	23.00	0.0595	0.0562	-61
-4	-40	27.60	0.0781	0.0738	-49
-3	-30	32.20	0.0968	0.0915	-37
-2	-20	36.80	0.1155	0.1091	-24
-1	-10	41.40	0.1342	0.1267	-12
Base	0	46.00	0.1529	0.1444	0
1	12	51.40	0.1748	0.1651	14
2	23	56.80	0.1967	0.1858	29
3	35	62.20	0.2186	0.2065	43
4	47	67.60	0.2406	0.2272	57
5	59	73.00	0.2625	0.2480	72
6	70	78.40	0.2844	0.2687	86
7	82	83.80	0.3064	0.2894	100
8	94	89.20	0.3283	0.3101	115
9	106	94.60	0.3502	0.3308	129
10	117	100.00	0.3721	0.3515	143

c) Heat Price (Important for the future additional income)

Heat Price Case	Relative Change (%)	Heat Price (€/kWh)	LAC Current (€/kWh)	LAC Constant (€/kWh)	Relative Change in COE (%)
Formula Values			0.0449	0.0428	
-10	-100	0	-0.0757	-0.0715	-150
-9	-90	9	-0.0528	-0.0499	-135
-8	-80	17	-0.0300	-0.0283	-120
-7	-70	26	-0.0071	-0.0067	-105
-6	-60	34	0.0157	0.0149	-90
-5	-50	43	0.0386	0.0364	-75
-4	-40	51	0.0614	0.0580	-60
-3	-30	60	0.0843	0.0796	-45
-2	-20	68	0.1072	0.1012	-30
-1	-10	77	0.1300	0.1228	-15
Base	0	85	0.1529	0.1444	0
1	2	87	0.1569	0.1482	3
2	4	88	0.1609	0.1520	5
3	5	90	0.1650	0.1558	8
4	7	91	0.1690	0.1596	11
5	9	93	0.1730	0.1634	13
6	11	94	0.1771	0.1673	16
7	12	96	0.1811	0.1711	18
8	14	97	0.1851	0.1749	21
9	16	99	0.1892	0.1787	24
10	18	100	0.1932	0.1825	26

d) Debt Ratio (30% own equity participation is 15% material and 15% cash)

Debt Ratio Case	Relative Change (%)	Debt Ratio (%)	LAC Current (€/kWh)	LAC Constant (€/kWh)	Relative Change in COE (%)
Formula Values			0.0449	0.0428	
-10	-50	2.5	0.1350	0.1276	-12
-9	-45	2.8	0.1367	0.1292	-11
-8	-40	3.0	0.1384	0.1308	-9
-7	-35	3.3	0.1402	0.1324	-8
-6	-30	3.5	0.1419	0.1341	-7
-5	-25	3.8	0.1437	0.1357	-6
-4	-20	4.0	0.1455	0.1374	-5
-3	-15	4.3	0.1473	0.1391	-4
-2	-10	4.5	0.1491	0.1409	-2
-1	-5	4.8	0.1510	0.1426	-1
Base	0	5.0	0.1529	0.1444	0
1	20	6.0	0.1606	0.1517	5
2	40	7.0	0.1687	0.1593	10
3	60	8.0	0.1772	0.1674	16
4	80	9.0	0.1862	0.1759	22
5	100	10.0	0.1956	0.1848	28
6	120	11.0	0.2056	0.1942	34
7	140	12.0	0.2162	0.2042	41
8	160	13.0	0.2273	0.2147	49
9	180	14.0	0.2392	0.2259	56
10	200	15.0	0.2518	0.2379	65

e) Debt Interest Rate (5% as per CEB's fixed Interest Rate)

Debt Interest Rate Case	Relative Change (%)	Debt Interest Rate (%)	LAC Current (€/kWh)	LAC Constant (€/kWh)	Relative Change in COE (%)
Formula Values			0.0449	0.0428	
-10	-50	2.5	0.1350	0.1276	-12
-9	-45	2.8	0.1367	0.1292	-11
-8	-40	3.0	0.1384	0.1308	-9
-7	-35	3.3	0.1402	0.1324	-8
-6	-30	3.5	0.1419	0.1341	-7
-5	-25	3.8	0.1437	0.1357	-6
-4	-20	4.0	0.1455	0.1374	-5
-3	-15	4.3	0.1473	0.1391	-4
-2	-10	4.5	0.1491	0.1409	-2
-1	-5	4.8	0.1510	0.1426	-1
Base	0	5.0	0.1529	0.1444	0
1	20	6.0	0.1606	0.1517	5
2	40	7.0	0.1687	0.1593	10
3	60	8.0	0.1772	0.1674	16
4	80	9.0	0.1862	0.1759	22
5	100	10.0	0.1956	0.1848	28
6	120	11.0	0.2056	0.1942	34
7	140	12.0	0.2162	0.2042	41
8	160	13.0	0.2273	0.2147	49
9	180	14.0	0.2392	0.2259	56
10	200	15.0	0.2518	0.2379	65

f) Cost of Equity

Cost of Equity Case	Relative Change (%)	Cost of Equity (%)	LAC Current (€/kWh)	LAC Constant (€/kWh)	Relative Change in COE (%)
Formula Values			0.0449	0.0428	
-10	-33	10.0	0.1797	0.1695	17
-9	-30	10.5	0.1763	0.1662	15
-8	-27	11.0	0.1730	0.1632	13
-7	-23	11.5	0.1700	0.1604	11
-6	-20	12.0	0.1671	0.1577	9
-5	-17	12.5	0.1644	0.1551	7
-4	-13	13.0	0.1618	0.1527	6
-3	-10	13.5	0.1594	0.1504	4
-2	-7	14.0	0.1571	0.1483	3
-1	-3	14.5	0.1549	0.1463	1
Base	0	15.0	0.1529	0.1444	0
1	23	18.5	0.1415	0.1338	-7
2	47	22.0	0.1340	0.1269	-12
3	70	25.5	0.1292	0.1225	-15
4	93	29.0	0.1264	0.1199	-17
5	117	32.5	0.1249	0.1187	-18
6	140	36.0	0.1245	0.1184	-18
7	163	39.5	0.1249	0.1189	-18
8	187	43.0	0.1258	0.1199	-17
9	210	46.5	0.1272	0.1213	-16
10	233	50.0	0.1290	0.1231	-15

g) Net Station Efficiency

Net Station Efficiency Case	Relative Change (%)	Efficiency (%)	LAC Current (€/kWh)	LAC Constant (€/kWh)	Relative Change in COE (%)
Formula Values			0.0449	0.0428	
-10	-100	0.0	0.1529	0.1444	0
-9	-90	3.1	0.1529	0.1444	0
-8	-80	6.2	0.1529	0.1444	0
-7	-70	9.3	0.1529	0.1444	0
-6	-60	12.4	0.1529	0.1444	0
-5	-50	15.5	0.1529	0.1444	0
-4	-40	18.6	0.1529	0.1444	0
-3	-30	21.7	0.1529	0.1444	0
-2	-20	24.8	0.1529	0.1444	0
-1	-10	27.9	0.1529	0.1444	0
Base	0	31.0	0.1529	0.1444	0
1	6	32.9	0.1529	0.1444	0
2	12	34.8	0.1529	0.1444	0
3	18	36.7	0.1529	0.1444	0
4	25	38.6	0.1529	0.1444	0
5	31	40.5	0.1529	0.1444	0
6	37	42.4	0.1529	0.1444	0
7	43	44.3	0.1529	0.1444	0
8	49	46.2	0.1529	0.1444	0
9	55	48.1	0.1529	0.1444	0
10	61	50.0	0.1529	0.1444	0

h) Capacity Factor

Capacity Factor Case	Relative Change (%)	Capacity Factor (%)	COE Current (€/kWh)	COE Constant (€/kWh)	Relative Change in COE (%)
Formula Values			0.0449	0.0428	
-10	-99	1.0	28.7415	27.1488	18,702
-9	-89	7.7	3.4944	3.3008	2,186
-8	-79	14.4	1.7411	1.6446	1,039
-7	-69	21.1	1.1013	1.0403	620
-6	-59	27.8	0.7699	0.7272	404
-5	-49	34.5	0.5672	0.5358	271
-4	-39	41.2	0.4304	0.4066	182
-3	-30	47.9	0.3319	0.3135	117
-2	-20	54.6	0.2576	0.2433	69
-1	-10	61.3	0.1995	0.1884	31
Base	0	68.0	0.1529	0.1444	0
1	5	71.2	0.1337	0.1263	-13
2	9	74.4	0.1162	0.1097	-24
3	14	77.6	0.1001	0.0945	-35
4	19	80.8	0.0853	0.0805	-44
5	24	84.0	0.0716	0.0676	-53
6	28	87.2	0.0589	0.0556	-61
7	33	90.4	0.0471	0.0445	-69
8	38	93.6	0.0362	0.0342	-76
9	42	96.8	0.0259	0.0245	-83
10	47	100.0	0.0163	0.0154	-89

CONCLUSION

The Project is technically and economically feasible for an operating capacity of 80% of its total installed capacity. Based on the assumption used in this study and the neglected incomes on byproducts (export of steam, ash and hot and chilled water), we can conclude that the Project is still bankable for an operating capacity of 70% of its total installed capacity with the selling price of electricity and without the generation of other incomes from byproducts from coal and water.

It is important to note that the project has the potential to sell the extra generated electricity to NBET through the national grid.