

Project title: Guangzhou Xingfeng Landfill Gas Recovery and Electricity Generation CDM Project, reference No.1075  
Project participants: Guangzhou Huijing Environment Protection Technology Co., Ltd., ICECAP Carbon Portfolio Limited  
DOE: Japan Consulting Institute, JCI

### JCI's response on the request for review

#### 1. Request 1 for review

*Full details of the sensitivity analysis conducted by the project participant should be included in the PDD. The DOE should confirm that it has validated this sensitivity analysis.*

#### **JCI's Response:**

JCI confirmed that three financial parameters, total investment, electricity tariff and O&M cost, are considered as critical factors for the proposed project activity, and reviewed the sensitivity analysis results of the below table.

Table Sensitivity analysis results

Change rate	-10%	-5%	0% (Base case)	5%	10%
Total investment	-1.47%	-2.45%	-3.37%	-4.24%	-5.06%
Electricity tariff	N/A <sup>1</sup>	N/A <sup>1</sup>	-3.37%	0.19%	3.03%
O&M cost	1.97%	-0.41%	-3.37%	N/A <sup>1</sup>	N/A <sup>1</sup>

The calculation sheets for three cases, -10% of total investment, +10% of electricity tariff and -10% of O&M cost, which were provided by the project participant, were justified by JCI and JCI confirmed that the IRR of these cases was lower than 8% of the benchmark and this sensitivity analysis have been validated. These calculation sheets are attached in this document as **Annex 1**.

The PP will attach these calculation sheets in the revised PDD.

#### 2. Request 2 for review

*The statement regarding the benchmark of the Hangzhou project in the common practice analysis is unclear (P.13 of the PDD), "After five years, ..., in the case that electricity price is 0.8 yuan/kWh, the internal return rate of Hangzhou project is 8.37%, lower than the 8%, benchmark of internal return rate set in that analysis." Further clarification is required.*

#### **JCI's Response:**

This sentence is editorial mistake.

In the previous PDD, the PP adopted 12% as the benchmark, but after the result of

<sup>1</sup> Negative, the calculation results showed multi-solutions.

discussion based on the clarification item by JCI, the benchmark was changed to 8% which was justified by JCI. As mentioned in the above item 1, in case of +10% of tariff (0.69 yuan/kWh), IRR is 3.03%, therefore, if 0.8 yuan/kWh (+27% of 0.63 yuan/kWh-base case) is adopted as the tariff, IRR maybe more than 8% of the benchmark as well as the case of Hangzhou project. However, the 0.69 yuan/kWh of the tariff (+10% of base case) is almost the maximum price in this area of China, therefore the IRR shall be lower than the benchmark 8% as the result of the sensitivity analysis and it was justified by JCI that the proposed project is financially unattractive.

The PP will revise the PDD “After five years,....., in the case that electricity price is 0.8 yuan/kWh, the internal return rate of Hangzhou project is 8.37%, lower than the 8%, benchmark of internal return rate set in that analysis.” to “After five years,....., in the case that electricity price is 0.8 yuan/kWh, the internal return rate of Hangzhou project is 8.37%. If 0.69 yuan/kWh is adopted as the tariff even in case of Hangzhou project, the IRR shall be lower than 8% of the benchmark of internal return rate set in that analysis.”

JCI justified this revision.

### 3. Request 3 for review

*PP used the Simple Adjusted OM to calculate the emission factor of the Southern Grid for the project activity, on the grounds that low-cost/must-run resources in Southern China constitute less than 50% of the Grid resource mix. However, this assumption is not substantiated. According to footnote 5 in page 6 of ACM0002 v6: “Low operating cost and must run resources typically include hydro, geothermal, wind, low-cost biomass, nuclear and solar generation. If coal is obviously used as must-run, it should also be included in this list.....”. If coal is a low-cost/must-run in this case, then calculation of OM must be re-evaluated and calculated using the Average OM, and the baseline might need to undergo modifications.*

#### **JCI’s Response:**

The PP used the Simple OM not the Simple Adjusted OM to calculate the emission factor of the South China Power Grid. However, in case of the Simple OM, the average of the five (5) most recent years of low-cost/must-run resources must be less than 50% according to ACM0002.

As for South China Power Grid that is dominated by coal-fired electricity, coal-fired electricity obviously does not belong to the one of low-cost/must-run resources. This is common understanding in China and also admitted by Chinese DNA. In this Grid, hydro, nuclear and other are defined as low-cost/must-run resources.

The PP provided the “Electricity Generation of South China Power Grid in 2000, 2001, 2002, 2003 and 2004” (**Annex 2**) and JCI reviewed these data and confirmed the average of the five (5) most recent years is 32.40% less than 50%.

The PP will reflect the above matter describing the average of the five (5) most recent years in the revised PDD, and attach this **Annex 2** in the Annex 3 of the revised PDD.

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With JCI's and PP's responses to the request for review comments issued by CDM Executive Board Members, we wish that the issues have been fully and appropriately addressed. We sincerely hope that the CDM Executive Board would approve the proposed project activity for registration.

## Annex 1

Table 1 IRR calculation sheet of -10% decrease of total investment (without CERs)

Project Cashflow (without CDM)		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
	Unit	9	12	13	15	18	18	18	18	18	18	16	15	13	12	11	10	9	8	7	6	5
Net Revenues - 1st Product		31,401,502	41,868,670	45,357,726	52,335,837	62,803,005	62,803,005	62,803,005	62,803,005	62,803,005	62,803,005	55,824,893	52,335,837	45,357,726	41,868,670	38,379,614	34,890,558	31,401,502	27,912,447	24,423,391	20,934,335	17,445,279
Production(power generation)	kwh/yr	49,843,654.56	66,458,206.08	71,996,389.92	83,072,757.60	99,687,309.12	99,687,309.12	99,687,309.12	99,687,309.12	99,687,309.12	99,687,309.12	88,610,941.44	83,072,757.60	71,996,389.92	66,458,206.08	60,920,022.24	55,381,838.40	49,843,654.56	44,305,470.72	38,767,286.88	33,229,103.04	27,990,919.20
Sales Price	¥/kwh	0.630	0.630	0.630	0.630	0.630	0.630	0.630	0.630	0.630	0.630	0.630	0.630	0.630	0.630	0.630	0.630	0.630	0.630	0.630	0.630	0.630
the fixed assets salvage recovery	¥																					
liquid assets recovery	¥																					
1 Inflow	¥	31,401,502	41,868,670	45,357,726	52,335,837	62,803,005	62,803,005	62,803,005	62,803,005	62,803,005	62,803,005	55,824,893	52,335,837	45,357,726	41,868,670	38,379,614	34,890,558	31,401,502	27,912,447	24,423,391	20,934,335	17,445,279
2 Outflow	¥	100,948,466	47,681,954	73,801,450	52,609,443	60,588,033	60,976,133	59,664,133	48,685,033	48,563,333	48,563,333	43,680,612	41,357,443	37,432,450	35,409,954	32,917,458	31,244,962	29,282,466	27,319,969	25,357,473	23,394,977	21,432,481
2.1 operation cost	¥	24,570,000	28,620,000	29,970,000	32,170,000	36,220,000	36,220,000	36,220,000	36,220,000	36,220,000	36,220,000	33,520,000	32,170,000	29,470,000	28,120,000	26,770,000	25,420,000	24,070,000	22,720,000	21,370,000	20,020,000	18,670,000
Biogas fuel	¥	4,500,000	6,000,000	6,500,000	7,500,000	9,000,000	9,000,000	9,000,000	9,000,000	9,000,000	9,000,000	8,000,000	7,500,000	6,500,000	6,000,000	5,500,000	5,000,000	4,500,000	4,000,000	3,500,000	3,000,000	2,500,000
Power and oil Fuel	¥	2,250,000	3,000,000	3,250,000	3,750,000	4,500,000	4,500,000	4,500,000	4,500,000	4,500,000	4,500,000	4,000,000	3,750,000	3,250,000	3,000,000	2,750,000	2,500,000	2,250,000	2,000,000	1,750,000	1,500,000	1,250,000
Labor & Welfare	¥	2,420,000	2,420,000	2,420,000	2,420,000	2,420,000	2,420,000	2,420,000	2,420,000	2,420,000	2,420,000	2,420,000	2,420,000	2,420,000	2,420,000	2,420,000	2,420,000	2,420,000	2,420,000	2,420,000	2,420,000	2,420,000
Repairs and Maintenance	¥	5,400,000	7,200,000	7,800,000	9,000,000	10,800,000	10,800,000	10,800,000	10,800,000	10,800,000	10,800,000	9,600,000	9,000,000	7,800,000	7,200,000	6,600,000	6,000,000	5,400,000	4,800,000	4,200,000	3,600,000	3,000,000
Rent	¥	7,000,000	7,000,000	7,000,000	6,500,000	6,500,000	6,500,000	6,500,000	6,500,000	6,500,000	6,500,000	6,500,000	6,500,000	6,500,000	6,500,000	6,500,000	6,500,000	6,500,000	6,500,000	6,500,000	6,500,000	6,500,000
Administration	¥	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000
Fixed asset investment	¥	67,086,000	10,692,000	35,019,000	10,692,000	12,312,000	12,519,000	10,953,000														
Current asset	¥	3,780,000	1,020,000	650,000	560,000	590,000	550,000	540,000	240,000	-50,000	-50,000	0	0	0	0	-500,000	-300,000	-300,000	-300,000	-300,000	-300,000	-300,000
depreciation	¥	11,411,400	11,411,400	11,411,400	11,411,400	11,411,400	11,411,400	11,411,400	11,411,400	11,411,400	11,411,400	11,411,400	11,411,400	11,411,400	11,411,400	11,411,400	11,411,400	11,411,400	11,411,400	11,411,400	11,411,400	11,411,400
amortization	¥	20,000	20,000	20,000	20,000	20,000	20,000	20,000														
interest	¥		1,670,000	2,330,000	2,990,000	2,790,000	2,140,000	1,340,000	510,000													
(-) added tax	¥	5,338,255	7,117,674	7,710,813	9,897,092	10,676,511	10,676,511	10,676,511	10,676,511	10,676,511	10,676,511	9,490,232	9,897,092	7,710,813	7,117,674	6,524,534	5,931,395	5,338,255	4,745,116	4,151,976	3,558,837	2,965,697
(+)withholdings	¥	326,923		472,222	644,872	653,846	653,846	653,846	653,846	653,846	653,846	581,197	544,872	472,222	435,897	399,573	363,248	326,923	290,598	254,274	217,949	181,624
2.2 Added tax	¥	5,011,332	6,681,776	7,238,591	9,352,221	10,022,665	10,022,665	10,022,665	10,022,665	10,022,665	10,022,665	8,909,035	8,352,221	7,238,591	6,681,776	6,124,962	5,568,147	5,011,332	4,454,518	3,897,703	3,340,888	2,784,074
2.3 city and education added tax	¥	501,133	668,178	723,859	935,222	1,002,266	1,002,266	1,002,266	1,002,266	1,002,266	1,002,266	890,904	835,222	723,859	668,178	612,496	556,815	501,133	445,452	389,770	334,089	278,407
2.4 total tax	¥	5,512,466	7,349,954	7,962,450	9,187,443	11,024,931	11,024,931	11,024,931	11,024,931	11,024,931	11,024,931	9,799,939	9,187,443	7,962,450	7,349,954	6,737,458	6,124,962	5,512,466	4,899,969	4,287,473	3,674,977	3,062,481
2.5 total cost	¥	36,081,400	41,721,400	43,731,400	46,591,400	50,441,400	49,771,400	48,971,400	48,141,400	47,631,400	47,631,400	44,931,400	43,581,400	40,881,400	39,531,400	38,181,400	36,831,400	35,481,400	34,131,400	32,781,400	31,431,400	30,081,400
2.6 profit/yr	¥	-10,112,363	-7,202,684	-6,336,125	-3,443,005	1,336,674	2,006,674	2,806,674	3,636,674	4,146,674	4,146,674	1,093,554	433,005	-3,486,125	-5,012,684	-6,539,244	-8,065,804	-9,592,363	-11,118,923	-12,645,482	-14,172,042	-15,698,602
2.7 income tax	¥	0	0	0	0	441,102	662,202	926,202	1,200,102	1,368,402	1,368,402	360,873	0	0	0	0	0	0	0	0	0	0
3 Net cash flow (after tax)	¥	-69,546,963	-5,813,284	-28,243,725	-273,605	2,214,971	1,826,871	3,138,871	14,117,971	14,239,671	14,239,671	12,144,081	10,978,395	7,925,275	6,398,716	5,462,156	4,645,596	3,829,837	3,012,457	2,195,837	1,378,837	61,837

IRR=-1.47%

Table 2 IRR calculation sheet of -10% decrease of O&M cost (without CERs)

Project Cashflow (without CDM)																							
	Unit	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	
		9	12	13	15	16	18	18	18	18	18	16	15	13	12	11	10	9	8	7	6	5	
Net Revenues - 1st Product		31,401,502	41,868,670	45,357,726	52,335,837	62,803,005	62,803,005	62,803,005	62,803,005	62,803,005	62,803,005	55,824,893	52,335,837	45,357,726	41,868,670	38,379,614	34,890,558	31,401,502	27,912,447	24,423,391	20,934,335	17,445,279	
Production(power generation)	kwh/yr	49,843,654.56	66,458,206.08	71,996,389.92	83,072,757.60	99,687,309.12	99,687,309.12	99,687,309.12	99,687,309.12	99,687,309.12	99,687,309.12	88,610,941.44	83,072,757.60	71,996,389.92	66,458,206.08	60,920,022.24	55,381,838.40	49,843,654.56	44,305,470.72	38,767,286.88	33,229,103.04	27,690,919.20	
Sales Price	¥/kwh	0.630	0.630	0.630	0.630	0.630	0.630	0.630	0.630	0.630	0.630	0.630	0.630	0.630	0.630	0.630	0.630	0.630	0.630	0.630	0.630	0.630	
the fixed assets salvage recovery	¥																						
liquid assets recovery	¥																						
1 inflow	¥	31,401,502	41,868,670	45,357,726	52,335,837	62,803,005	62,803,005	62,803,005	62,803,005	62,803,005	62,803,005	55,824,893	52,335,837	45,357,726	41,868,670	38,379,614	34,890,558	31,401,502	27,912,447	24,423,391	20,934,335	17,445,279	
	year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	
2 outflow	¥	¥105,981,427	¥46,055,903	¥74,547,395	¥50,640,378	¥59,577,482	¥59,988,582	¥58,502,582	¥46,306,482	¥46,184,782	¥46,184,782	¥41,477,806	¥39,099,318	¥34,537,395	¥32,705,903	¥30,284,411	¥28,742,919	¥26,911,427	¥25,079,935	¥23,248,443	¥21,416,951	¥19,585,459	
2.1 operation cost	¥	¥22,113,000	¥25,758,000	¥26,973,000	¥28,953,000	¥32,598,000	¥32,598,000	¥32,598,000	¥32,598,000	¥32,598,000	¥32,598,000	¥30,168,000	¥28,953,000	¥26,523,000	¥25,308,000	¥24,093,000	¥22,878,000	¥21,663,000	¥20,448,000	¥19,233,000	¥18,018,000	¥16,803,000	
Biogas fuel	¥	¥4,050,000	¥5,400,000	¥5,850,000	¥6,750,000	¥8,100,000	¥8,100,000	¥8,100,000	¥8,100,000	¥8,100,000	¥8,100,000	¥7,200,000	¥6,750,000	¥5,850,000	¥5,400,000	¥4,950,000	¥4,500,000	¥4,050,000	¥3,600,000	¥3,150,000	¥2,700,000	¥2,250,000	
Power and oil Fuel	¥	¥2,025,000	¥2,700,000	¥2,925,000	¥3,375,000	¥4,050,000	¥4,050,000	¥4,050,000	¥4,050,000	¥4,050,000	¥4,050,000	¥3,600,000	¥3,375,000	¥2,925,000	¥2,700,000	¥2,475,000	¥2,250,000	¥2,025,000	¥1,800,000	¥1,575,000	¥1,350,000	¥1,125,000	
Labor & Welfare	¥	¥2,178,000	¥2,178,000	¥2,178,000	¥2,178,000	¥2,178,000	¥2,178,000	¥2,178,000	¥2,178,000	¥2,178,000	¥2,178,000	¥2,178,000	¥2,178,000	¥2,178,000	¥2,178,000	¥2,178,000	¥2,178,000	¥2,178,000	¥2,178,000	¥2,178,000	¥2,178,000	¥2,178,000	
Repairs and Maintenance	¥	¥4,860,000	¥6,480,000	¥7,020,000	¥8,100,000	¥9,720,000	¥9,720,000	¥9,720,000	¥9,720,000	¥9,720,000	¥9,720,000	¥8,640,000	¥8,100,000	¥7,020,000	¥6,480,000	¥5,940,000	¥5,400,000	¥4,860,000	¥4,320,000	¥3,780,000	¥3,240,000	¥2,700,000	
Rent	¥	¥6,300,000	¥6,300,000	¥6,300,000	¥5,850,000	¥5,850,000	¥5,850,000	¥5,850,000	¥5,850,000	¥5,850,000	¥5,850,000	¥5,850,000	¥5,850,000	¥5,850,000	¥5,850,000	¥5,850,000	¥5,850,000	¥5,850,000	¥5,850,000	¥5,850,000	¥5,850,000	¥5,850,000	
Administration	¥	¥2,700,000	¥2,700,000	¥2,700,000	¥2,700,000	¥2,700,000	¥2,700,000	¥2,700,000	¥2,700,000	¥2,700,000	¥2,700,000	¥2,700,000	¥2,700,000	¥2,700,000	¥2,700,000	¥2,700,000	¥2,700,000	¥2,700,000	¥2,700,000	¥2,700,000	¥2,700,000	¥2,700,000	
Fixed asset investment	¥	¥74,540,000	¥11,880,000	¥38,910,000	¥11,880,000	¥13,680,000	¥13,910,000	¥12,170,000															
Current asset	¥	¥3,780,000	¥1,020,000	¥650,000	¥560,000	¥590,000	¥550,000	¥540,000	¥240,000	¥-50,000	¥-50,000	¥0	¥0	¥0	¥0	¥-500,000	¥-300,000	¥-300,000	¥-300,000	¥-300,000	¥-300,000	¥-300,000	
depreciation	¥	¥11,411,400	¥11,411,400	¥11,411,400	¥11,411,400	¥11,411,400	¥11,411,400	¥11,411,400	¥11,411,400	¥11,411,400	¥11,411,400	¥11,411,400	¥11,411,400	¥11,411,400	¥11,411,400	¥11,411,400	¥11,411,400	¥11,411,400	¥11,411,400	¥11,411,400	¥11,411,400	¥11,411,400	
amortization	¥	¥20,000	¥20,000	¥20,000	¥20,000	¥20,000	¥20,000																
interest	¥		¥1,670,000	¥2,330,000	¥2,990,000	¥2,790,000	¥2,140,000	¥1,340,000	¥510,000														
(-) added tax	¥	¥5,338,255	¥7,117,674	¥7,710,813	¥8,897,092	¥10,676,511	¥10,676,511	¥10,676,511	¥10,676,511	¥10,676,511	¥10,676,511	¥9,490,232	¥8,897,092	¥7,710,813	¥7,117,674	¥6,524,534	¥5,931,395	¥5,338,255	¥4,745,116	¥4,151,976	¥3,558,837	¥2,965,697	
(+)withholdings	¥	¥294,231	¥392,308	¥425,000	¥490,385	¥588,462	¥588,462	¥588,462	¥588,462	¥588,462	¥588,462	¥523,077	¥490,385	¥425,000	¥392,308	¥350,615	¥326,023	¥294,231	¥261,538	¥228,846	¥195,154	¥163,462	
2.2 Added tax	¥	¥5,044,025	¥6,725,366	¥7,285,813	¥8,406,708	¥10,088,049	¥10,088,049	¥10,088,049	¥10,088,049	¥10,088,049	¥10,088,049	¥8,967,155	¥8,406,708	¥7,285,813	¥6,725,366	¥6,164,919	¥5,604,472	¥5,044,025	¥4,483,577	¥3,923,130	¥3,362,683	¥2,802,236	
2.3 city and education added tax	¥	¥504,402	¥672,537	¥728,581	¥840,671	¥1,008,805	¥1,008,805	¥1,008,805	¥1,008,805	¥1,008,805	¥1,008,805	¥896,715	¥840,671	¥728,581	¥672,537	¥616,492	¥560,447	¥504,402	¥448,358	¥392,313	¥336,268	¥280,224	
2.4 total tax	¥	¥5,548,427	¥7,397,903	¥8,014,395	¥9,247,378	¥11,096,854	¥11,096,854	¥11,096,854	¥11,096,854	¥11,096,854	¥11,096,854	¥9,863,870	¥9,247,378	¥8,014,395	¥7,397,903	¥6,781,411	¥6,164,919	¥5,548,427	¥4,931,935	¥4,315,443	¥3,698,951	¥3,082,459	
2.5 total cost	¥	¥33,544,400	¥38,859,400	¥40,734,400	¥43,374,400	¥46,819,400	¥46,149,400	¥45,349,400	¥44,519,400	¥44,009,400	¥44,009,400	¥41,579,400	¥40,264,400	¥37,934,400	¥36,719,400	¥35,504,400	¥34,289,400	¥33,074,400	¥31,859,400	¥30,644,400	¥29,429,400	¥28,214,400	
2.6 profit/yr	¥	¥7,691,325	¥4,380,633	¥3,391,069	¥2,051,941	¥4,886,751	¥5,556,751	¥6,356,751	¥7,106,751	¥7,696,751	¥7,696,751	¥4,381,623	¥2,724,059	¥1,591,069	¥2,248,633	¥3,986,197	¥5,563,761	¥7,221,325	¥8,878,889	¥10,536,453	¥12,194,016	¥13,851,580	
2.7 income tax	¥	¥0	¥0	¥0	¥0	¥1,612,628	¥1,833,728	¥2,097,728	¥2,371,628	¥2,539,928	¥2,539,928	¥1,445,935	¥898,939	¥0	¥0	¥0	¥0	¥0	¥0	¥0	¥0	¥0	
3 Net cash flow (after tax)	¥	¥7,457,925	¥4,187,233	¥2,919,669	¥1,095,459	¥3,225,523	¥2,814,423	¥4,300,423	¥4,616,223	¥4,616,223	¥4,616,223	¥14,347,087	¥13,236,519	¥10,820,331	¥9,162,767	¥8,095,203	¥6,147,639	¥4,490,075	¥2,832,511	¥1,174,947	¥-482,616	¥-2,140,180	

IRR=1.97%

Table 3 IRR calculation sheet of +10% increase of electricity tariff (without CERs)

Project Cashflow (without CDM)																							
	Unit	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	
		9	12	13	15	18	18	18	18	18	18	16	15	13	12	11	10	9	8	7	6	5	
Net Revenues - 1st Product		34,541,653	46,055,537	49,893,498	57,569,421	69,083,305	69,083,305	69,083,305	69,083,305	69,083,305	69,083,305	61,407,382	57,569,421	49,893,498	46,055,537	42,217,575	38,379,614	34,541,653	30,703,691	26,865,730	23,027,768	19,189,807	
Production(power generation)	kwh/yr	49,843,654.56	66,458,206.08	71,996,389.92	83,072,757.60	99,687,309.12	99,687,309.12	99,687,309.12	99,687,309.12	99,687,309.12	99,687,309.12	88,610,941.44	83,072,757.60	71,996,389.92	66,458,206.08	60,920,022.24	55,381,838.40	49,843,654.56	44,305,470.72	38,767,286.88	33,229,103.04	27,690,919.20	
Sales Price	¥/kwh	0.693	0.693	0.693	0.693	0.693	0.693	0.693	0.693	0.693	0.693	0.693	0.693	0.693	0.693	0.693	0.693	0.693	0.693	0.693	0.693	0.693	
the fixed assets salvage recovery	¥																						
liquid assets recovery	¥																						
1 inflow	year	34,541,653	46,055,537	49,893,498	57,569,421	69,083,305	69,083,305	69,083,305	69,083,305	69,083,305	69,083,305	61,407,382	57,569,421	49,893,498	46,055,537	42,217,575	38,379,614	34,541,653	30,703,691	26,865,730	23,027,768	19,189,807	
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	
2 outflow	¥	¥108,989,674	¥49,652,898	¥78,340,640	¥55,044,049	¥64,815,391	¥65,226,491	¥63,740,491	¥51,544,391	¥51,422,691	¥51,422,691	¥46,222,463	¥43,597,349	¥38,347,121	¥36,252,898	¥33,635,157	¥31,897,415	¥29,869,674	¥27,841,932	¥25,814,191	¥23,786,449	¥21,758,708	
2.1 operation cost	¥	¥24,570,000	¥28,620,000	¥29,970,000	¥32,170,000	¥36,220,000	¥36,220,000	¥36,220,000	¥36,220,000	¥36,220,000	¥36,220,000	¥33,520,000	¥32,170,000	¥29,470,000	¥28,120,000	¥26,770,000	¥25,420,000	¥24,070,000	¥22,720,000	¥21,370,000	¥20,020,000	¥18,670,000	
Biogas fuel	¥	¥4,500,000	¥6,000,000	¥6,500,000	¥7,500,000	¥9,000,000	¥9,000,000	¥9,000,000	¥9,000,000	¥9,000,000	¥9,000,000	¥8,000,000	¥7,500,000	¥6,500,000	¥6,000,000	¥5,500,000	¥5,000,000	¥4,500,000	¥4,000,000	¥3,500,000	¥3,000,000	¥2,500,000	
Power and oil Fuel	¥	¥2,250,000	¥3,000,000	¥3,250,000	¥3,750,000	¥4,500,000	¥4,500,000	¥4,500,000	¥4,500,000	¥4,500,000	¥4,500,000	¥4,000,000	¥3,750,000	¥3,250,000	¥3,000,000	¥2,750,000	¥2,500,000	¥2,250,000	¥2,000,000	¥1,750,000	¥1,500,000	¥1,250,000	
Labor & Welfare	¥	¥2,420,000	¥2,420,000	¥2,420,000	¥2,420,000	¥2,420,000	¥2,420,000	¥2,420,000	¥2,420,000	¥2,420,000	¥2,420,000	¥2,420,000	¥2,420,000	¥2,420,000	¥2,420,000	¥2,420,000	¥2,420,000	¥2,420,000	¥2,420,000	¥2,420,000	¥2,420,000	¥2,420,000	
Repairs and Maintenance	¥	¥4,500,000	¥7,200,000	¥7,800,000	¥9,000,000	¥10,800,000	¥10,800,000	¥10,800,000	¥10,800,000	¥10,800,000	¥10,800,000	¥9,000,000	¥9,000,000	¥7,800,000	¥7,200,000	¥6,600,000	¥6,000,000	¥5,400,000	¥4,800,000	¥4,200,000	¥3,600,000	¥3,000,000	
Rent	¥	¥7,000,000	¥7,000,000	¥7,000,000	¥6,500,000	¥6,500,000	¥6,500,000	¥6,500,000	¥6,500,000	¥6,500,000	¥6,500,000	¥6,500,000	¥6,500,000	¥6,500,000	¥6,500,000	¥6,500,000	¥6,500,000	¥6,500,000	¥6,500,000	¥6,500,000	¥6,500,000	¥6,500,000	
Administration	¥	¥3,000,000	¥3,000,000	¥3,000,000	¥3,000,000	¥3,000,000	¥3,000,000	¥3,000,000	¥3,000,000	¥3,000,000	¥3,000,000	¥3,000,000	¥3,000,000	¥3,000,000	¥3,000,000	¥3,000,000	¥3,000,000	¥3,000,000	¥3,000,000	¥3,000,000	¥3,000,000	¥3,000,000	
Fixed asset investment	¥	¥74,540,000	¥11,880,000	¥38,910,000	¥11,880,000	¥13,680,000	¥13,910,000	¥12,170,000															
Current asset	¥	¥3,780,000	¥1,020,000	¥650,000	¥560,000	¥590,000	¥550,000	¥540,000	¥240,000	¥-50,000	¥-50,000	¥0	¥0	¥0	¥0	¥-500,000	¥-300,000	¥-300,000	¥-300,000	¥-300,000	¥-300,000	¥-300,000	
depreciation	¥	¥11,411,400	¥11,411,400	¥11,411,400	¥11,411,400	¥11,411,400	¥11,411,400	¥11,411,400	¥11,411,400	¥11,411,400	¥11,411,400	¥11,411,400	¥11,411,400	¥11,411,400	¥11,411,400	¥11,411,400	¥11,411,400	¥11,411,400	¥11,411,400	¥11,411,400	¥11,411,400	¥11,411,400	
amortization	¥	¥20,000	¥20,000	¥20,000	¥20,000	¥20,000																	
interest	¥		¥1,670,000	¥2,330,000	¥2,990,000	¥2,790,000	¥2,140,000	¥1,340,000	¥510,000														
(-) added tax	¥	¥5,872,081	¥7,829,441	¥8,481,895	¥9,786,802	¥11,744,162	¥11,744,162	¥11,744,162	¥11,744,162	¥11,744,162	¥11,744,162	¥10,439,265	¥9,786,802	¥9,481,895	¥7,829,441	¥7,176,988	¥6,524,534	¥5,872,081	¥5,219,628	¥4,567,174	¥3,914,721	¥3,262,267	
(+)withholdings	¥	¥326,923	¥435,897	¥472,222	¥644,872	¥653,846	¥653,846	¥653,846	¥653,846	¥653,846	¥653,846	¥581,197	¥544,872	¥472,222	¥435,897	¥399,673	¥363,248	¥326,923	¥290,598	¥254,274	¥217,949	¥181,624	
2.2 Added tax	¥	¥5,545,158	¥7,393,544	¥8,009,672	¥9,241,930	¥11,090,316	¥11,090,316	¥11,090,316	¥11,090,316	¥11,090,316	¥11,090,316	¥9,858,058	¥9,241,930	¥8,009,672	¥7,393,544	¥6,777,415	¥6,161,287	¥5,545,158	¥4,929,029	¥4,312,901	¥3,696,772	¥3,080,643	
2.3 city and education added tax	¥	¥554,516	¥739,354	¥800,967	¥924,193	¥1,109,032	¥1,109,032	¥1,109,032	¥1,109,032	¥1,109,032	¥1,109,032	¥985,808	¥924,193	¥800,967	¥739,354	¥677,742	¥616,129	¥554,516	¥492,903	¥431,290	¥369,677	¥308,064	
2.4 total tax	¥	¥6,099,674	¥8,132,898	¥8,810,640	¥10,166,123	¥12,199,347	¥12,199,347	¥12,199,347	¥12,199,347	¥12,199,347	¥12,199,347	¥10,843,864	¥10,166,123	¥8,810,640	¥8,132,898	¥7,455,157	¥6,777,415	¥6,099,674	¥5,421,932	¥4,744,191	¥4,066,449	¥3,388,708	
2.5 total cost	¥	¥36,061,400	¥41,721,400	¥43,731,400	¥46,591,400	¥50,441,400	¥49,771,400	¥48,971,400	¥48,141,400	¥47,631,400	¥47,631,400	¥44,931,400	¥43,581,400	¥40,881,400	¥39,531,400	¥38,181,400	¥36,831,400	¥35,481,400	¥34,131,400	¥32,781,400	¥31,431,400	¥30,081,400	
2.6 profit/yr	¥	¥7,559,421	¥3,798,761	¥2,640,542	¥8,111,898	¥6,442,558	¥7,112,558	¥7,912,558	¥8,742,558	¥9,252,558	¥9,252,558	¥5,632,118	¥3,821,898	¥2,014,581	¥1,608,761	¥1,419,981	¥1,229,201	¥1,039,421	¥849,641	¥659,861	¥470,081	¥280,301	
2.7 income tax	¥	¥0	¥0	¥0	¥267,926	¥2,126,044	¥2,347,144	¥2,611,144	¥2,885,044	¥3,053,344	¥3,053,344	¥1,858,599	¥1,261,226	¥66,481	¥0	¥0	¥0	¥0	¥0	¥0	¥0	¥0	
3 Net cash flow (after tax)	¥	¥7,448,021	¥3,597,361	¥2,847,142	¥2,525,372	¥4,267,914	¥3,856,814	¥5,342,814	¥7,153,914	¥7,660,614	¥7,660,614	¥15,184,919	¥13,972,072	¥11,546,377	¥9,802,639	¥8,582,419	¥7,467,979	¥6,467,979	¥5,547,979	¥4,627,979	¥3,707,979	¥2,787,979	

IRR=3.03%

## Annex 2

For the most recent 5 years (2000-2004), the low-cost/must run resources (Hydro Nuclear and other) of total electricity generation in South China Power Grid constitute less than 50% of total: 34.27%, 33.76%, 32.98%, 31.06%, and 29.95% for 2000, 2001, 2002, 2003 and 2004, and the average is 32.40%.

Table 1 Electricity Generation of South China Power Grid in 2000 (10<sup>8</sup>kWh)

	Total	Hydro power	Thermal power	Nuclear power	Other
<b>Guangdong</b>	1353.46	155.74	1049.35	147.01	1.36
<b>Guangxi</b>	289.09	168.88	120.21		
<b>Yunnan</b>	317.46	216.08	101.38		
<b>Guizhou</b>	315.98	90.95	225.03		
<b>Total</b>	<b>2275.99</b>	<b>631.65</b>	<b>1495.97</b>	<b>147.01</b>	<b>1.36</b>

Source: China Electric Power Yearbook 2001

Table 2 Electricity Generation of South China Power Grid in 2001 (10<sup>8</sup>kWh)

	Total	Hydro power	Thermal power	Nuclear power	Other
<b>Guangdong</b>	1433.27	190.73	1091.19	150	1.35
<b>Guangxi</b>	297.19	176.09	121.1		
<b>Yunnan</b>	359.53	216.48	143.05		
<b>Guizhou</b>	369.41	95.65	273.76		
<b>Total</b>	<b>2459.4</b>	<b>678.95</b>	<b>1629.1</b>	<b>150</b>	<b>1.35</b>

Source: China Electric Power Yearbook 2002

Table 3 Electricity Generation of South China Power Grid in 2002 (10<sup>8</sup>kWh)

	Total	Hydro power	Thermal power	Nuclear power	Other
<b>Guangdong</b>	1610.08	169.13	1230.81	208.77	1.35
<b>Guangxi</b>	317.03	186.34	130.69		
<b>Yunnan</b>	408.49	250.62	157.87		
<b>Guizhou</b>	427.43	95.12	332.31		
<b>Total</b>	<b>2763.03</b>	<b>701.21</b>	<b>1851.68</b>	<b>208.77</b>	<b>1.35</b>

Source: China Electric Power Yearbook 2003

Table 4 Electricity Generation of South China Power Grid in 2003 (10<sup>8</sup>kWh)

	Total	Hydro power	Thermal power	Nuclear power	Other
<b>Guangdong</b>	1895.77	171.36	1433.51	289.3	1.59
<b>Guangxi</b>	363.67	192.88	170.79		
<b>Yunnan</b>	458.91	268.37	190.55		
<b>Guizhou</b>	513.14	80.19	432.95		
<b>Total</b>	<b>3231.49</b>	<b>712.8</b>	<b>2227.8</b>	<b>289.3</b>	<b>1.59</b>

Source: China Electric Power Yearbook 2004

Table 5 Electricity Generation of South China Power Grid in 2004 (10<sup>8</sup>kWh)

	Total	Hydro power	Thermal power	Nuclear power	Other
<b>Guangdong</b>	2121.33	141.14	1693.89	284.81	1.49
<b>Guangxi</b>	373.72	172.29	201.43		
<b>Yunnan</b>	536.72	293.5	243.22		
<b>Guizhou</b>	731	233.79	497.2		
<b>Total</b>	<b>3762.77</b>	<b>840.72</b>	<b>2635.74</b>	<b>284.81</b>	<b>1.49</b>

Source: China Electric Power Yearbook 2005