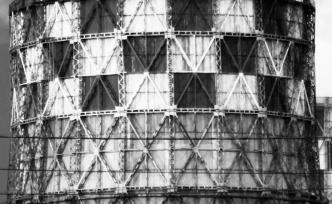
[Annex] Financing a Paris-Aligned Coal Exit in South Korea





[Annex] Financing a Paris-Aligned Coal Exit in South Korea March 2023

Authors

Joojin Kim | Managing Director (SFOC) | joojin.kim@forourclimate.org Seukyoung Lee | Program Lead (SFOC) | seukyoung.lee@forourclimate.org

Acknowledgment

Dr. Yonghyun Song | NEXT Group Haewoong Jeon | Attorney at Law Jinsol Choi | SFOC Malika Maxutova | SFOC

Contact

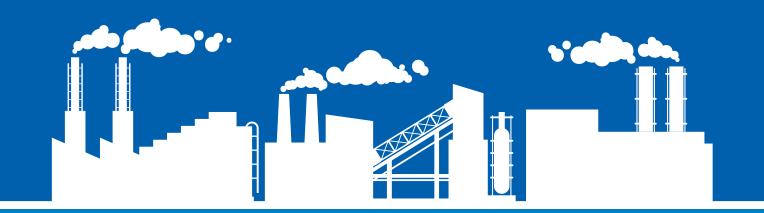
solutions@forourclimate.org

[Annex] Financing a Paris-Aligned Coal Exit in South Korea

Contents

1. Executive Summary	4
- Goseong Hai	5
- Bukpyeong Thermal Power	6
- Samcheok Thermal Power	7
- Gangneung Anin	8
- KEPCO GENCO Plants	9
2. Detailed Balance Calculation (based on Samcheok)	10

1. Executive Summary



Summary of Goseong Hai Shareholder and Creditor Balance Calculation

The NPV (Net Present Value) estimations for shareholders and creditors for each scenario of the Goseong Hai Units 1 and 2 are as follows.

Shareholder and Creditor NPV Estimation Results

Category	Scenario1 (Reference)	Scenario2 (Comparison)	Scenario3
Capacity Factor Assumption (*)	Current Policy	2030 Coal Exit	2035 Coal Exit
SMP Assumption	100	100	100
Shareholder's NPV (FCFE Dividend Base)	3,911	2,130	6,388
- Strategic Investor NPV	2,268	1,236	3,705
- Financial Investor NPV	1,642	895	2,683
Creditor's NPV	35,735	19,980	34,457
- Senior Loan (Fixed) Creditor NPV	23,573	13,649	22,415
- Senior Loan (Variable) Creditor NPV	10,250	5,409	10,127
- Subordinated Loan Creditor NPV	1,912	921	1,914

The balance for shareholders and creditors of the Goseong Hai Units 1 and 2 is as follows.

Shareholder and Creditor Estimated Balance Results

	Balance afte	r 2030 coal exit	Balance before 2030 coal exit			
Category	Lump sum payment in 2024Fixed annual payment over 2024-2030		Lump sum payment in 2024	Fixed annual payment over 2024-2030		
Shareholder	482 84		areholder 482 84		1,518	264
- Strategic Investor	280 49		880	153		
- Financial Investor	203	203 35		111		
Creditor	10,474 1,691		6,453	1,044		
- Tranche #1 Senior Loan (Fixed)	7,116	1,150	3,545	573		
- Tranche #2 Senior Loan (Variable)	2,862	455	2,291	364		
- Tranche #3 Subordinated Loan	495	86	617	107		

Summary of Bukpyeong Thermal Power Shareholder and Creditor Balance Calculation

The NPV estimations for shareholders and creditors for each scenario of the Bukpyeong Thermal Power Units 1 and 2 are as follows.

Shareholder and Creditor NPV Estimation Results

Category	Scenario1 (Reference)	Scenario2 (Comparison)	Scenario3	
Capacity Factor Assumption (*)	Current Policy	2030 Coal Exit	2035 Coal Exit	
SMP Assumption	100	100	100	
Shareholder's NPV (FCFE Dividend Base)	2,660	3,448	2,991	
- Strategic Investor NPV	2,660	3,448	2,991	
Creditor's NPV	8,636	5,168	7,825	
- Senior Loan (Variable) Creditor NPV	4,023	2,284	3,613	
- Senior Loan (Fixed) Creditor NPV	4,013	2,284	3,613	
- Medium-term Loan Creditor NPV	600	600	600	

The balance for shareholders and creditors of the Bukpyeong Thermal Power Units 1 and 2 is as follows.

Shareholder and Creditor Estimated Balance Results

Category	Balance after	2030 coal exit	Balance before 2030 coal exit		
	Lump sum payment in 2024	Fixed annual payment over 2024-2030	Lump sum payment in 2024	Fixed annual payment over 2024-2030	
Shareholder	-	-	-	-	
- Strategic Investor	-	-	-	-	
Creditor	-	-	4,532	738	
- Tranche #1 Senior Loan (Fixed)	-	-	2,273	370	
- Tranche #2 Senior Loan (Variable)	-	-	2,259	368	
- Tranche #3 Subordinated Loan	-	-	-	-	

Summary of Samcheok Thermal Power Shareholder and Creditor Balance Calculation

The NPV estimations for shareholders and creditors for each scenario of the Samcheok Thermal Power Units 1 and 2 are as follows.

Shareholder and Creditor NPV Estimation Results

Category	Scenario1 (Reference)	Scenario2 (Comparison)	Scenario3	
Capacity Factor Assumption (*)	Current Policy	2030 Coal Exit	2035 Coal Exit	
SMP Assumption	100	100	100	
Shareholder's NPV (FCFE Dividend Base)	6,063	1,909	3,330	
- Strategic Investor NPV	1,860	77	684	
- Financial Investor NPV	4,203	1,832	2,646	
Creditor's NPV	18,330	(2,540)	7,982	
- Corporate Bonds Creditor NPV	5,578	2,165	4,418	
- Long-term Loan Creditor NPV	12,752	(4,705)	3,565	

The balance for shareholders and creditors of the Samcheok Thermal Power Units 1 and 2 is as follows.

Shareholder and Creditor Estimated Balance Results

	Balance after	2030 coal exit	Balance before 2030 coal exit		
Category	Lump sum payment in 2024	Fixed annual payment over 2024-2030	Lump sum payment in 2024	Fixed annual payment over 2024-2030	
Shareholder	4,042	703	626	109	
- Strategic Investor	1,739	303	264	46	
- Financial Investor	2,302	401	362	63	
Creditor	20,752	3,375	3,748	616	
- Corporate Bonds	5,547	874	-	-	
- Long-term Loan	15,205	2,500	3,748	616	

Summary of Gangneung Anin Shareholder and Creditor Balance Calculation

The NPV estimations for shareholders and creditors for each scenario of the Gangneung Anin Units 1 and 2 are as follows.

Shareholder and Creditor NPV Estimation Results

Category	Scenario1 (Reference)	Scenario2 (Comparison)	Scenario3
Capacity Factor Assumption (*)	Current Policy	2030 Coal Exit	2035 Coal Exit
SMP Assumption	100	100	100
Shareholder's NPV (FCFE Dividend Base)	(4,027)	(6,350)	(4,453)
- Strategic Investor NPV	(130)	(205)	(144)
- Financial Investor NPV	(3,897)	(6,145)	(4,309)
Creditor's NPV	35,910	22,184	30,343
- Senior Loan (Short-term) Creditor NPV	10,199	10,199	10,199
- Senior Loan (Long-term) Creditor NPV	22,446	9,883	17,024
- Subordinated Loan (Long-term) Creditor NPV	3,265	2,101	3,120

The balance for shareholders and creditors of the Gangneung Anin Units 1 and 2 is as follows.

Shareholder and Creditor Estimated Balance Results

	Balance after	2030 coal exit	Balance before 2030 coal exit		
Category	Lump sum payment Fixed annual payment I in 2024 over 2024-2030		Lump sum payment in 2024	Fixed annual payment over 2024-2030	
Shareholder	233	41	2,402	424	
- Strategic Investor	8	1	77	14	
- Financial Investor	225	40	2,324	410	
Creditor	12,142	2,023	2,869	476	
- Senior Loan (Short-term)	-	-	-	-	
- Senior Long-term Loan Creditor	10,966	1,809	2,701	446	
- Subordinated Long-term Loan Creditor	1,177	214	168	31	

Summary of KEPCO GENCO Plants Balance Calculation

The valuation results for KEPCO GENCO Plants by scenario are as follows.

FCFF-based NPV Estimation Results (Assumption of discount rate = 5.0%)

Category	Scenario1 (Reference)	Scenario2	Scenario3
Capacity factor Assumption (*)	Current Policy	2030 Coal Exit	2035 Coal Exit
SMP Assumption	100	100	100
Yeongheung 5 & 6	13,114	10,342	14,175
Samcheok Green Power 1 & 2	15,232	6,675	17,025
Dangjin 9 & 10	23,683	16,596	19,751
Taean 9 & 10	18,115	12,068	17,134
Shin Boryeong 1 & 2	18,235	12,969	16,216
Yeosu 1	-	1,170	1,170
Shin Seocheon 1	12,231	7,810	11,994

The balance for KEPCO GENCO Plants is as follows.

KEPCO-owned Power Plants Estimated Balance Results

	Balance after	2030 coal exit	Balance before 2030 coal exit		
Category	Lump sum payment in 2024	Fixed annual payment over 2024-2030	Lump sum payment in 2024	Fixed annual payment over 2024-2030	
Yeongheung 5 & 6	-	-	3,056	515	
Samcheok Green Power 1 & 2			10,381	1,751	
Dangjin 9 & 10	10,472 1,766		-	-	
Taean 9 & 10			6,667	1,124	
Shin Boryeong 1 & 2	3,951	3,951 666		313	
Yeosu 1	-	-	-	-	
Shin Seocheon 1	Shin Seocheon 1 3,397 573		1,477	249	

2. Detailed Balance Calculation

Based on Samcheok Thermal Power



1. Key Estimation Assumptions

Key estimation assumptions for calculating shareholder and creditor balances.

Key Estimation Assumptions

Category	Assumption	Scenario 1 (SMP=100, Current Pol	licy) Sce	nario 2 (SMP=100, 2030) Coal Exit)		
	Start date of construction	• 1/1/2018 (#1) • 7/1/2018 (#2)	• Sa	Same as on left			
Duration of business	Completion date of construction	• 9/30/2023 (#1) • 3/31/2024 (#2)	• Sa	• Same as on left			
	Commercial operation date	• 4/1/2024 (based on #2)	• Sa	me as on left			
	Completion date of commercial operation	• 12/31/2045	• 12,	/31/2029			
Valuation base date	Valuation base time	• 1/1/2022	• Sa	me as on left			
Macroeconomic variables	Inflation rate	 Payroll : 3.4% Routine/Planned maintenance : 3.7% Other operating cost : 2.0% 	% • Sa	me as on left			
	Installed capacity	• 2,100MW(1,050MW x 2 Unit)	• Sa	me as on left			
	Capacity factor	Unit 2025 2030 2035 2040 2045 2 #1 75% 75% 75% 75% 9.3% #2 75% 75% 75% 75% 9.3%	2050 Uni 0% #1 0% #2	75% 0% 0% 0%	2045 2050 0% 0% 0% 0%		
Sales	In-house consumption rate	• 5.56%	• Sa	me as on left			
	SMP	• Maintain 100 won/kWh		Same as on left			
	Capacity Price	• 9.34 won/kWh	• Sa	• Same as on left			
	Adjustment Factor	• Upper limit (1.0)	• Sa	• Same as on left			
	Return on investment	• 5.0%	• Sa	Same as on left			
	Fuel consumption compared to power generation	• 2.08 Gcal/MWh	• Sa	me as on left			
Fuel cost	Degradation	• 0.04% p.a.	• Sa	Same as on left			
	Average calorie cost over operating period	• 25,865 won/Gcal	• 22	• 22,587 won/Gcal			
				Drivers Unit	Amount		
				sumption '00 Million Won/'000Gcal sumption '00 Million Won/'000Gcal	0.0015 0.0001		
		-		sumption '00 Million Won/'000Gcal	0.0001		
	Operating cost_Consignee	Maintenance materials and others	FC	'00 Million Won/year	104		
	operating cost_consigned	Payroll F	FC	'00 Million Won/year	399		
		5	FC	'00 Million Won/year	125		
			=C =C	'00 Million Won/year '00 Million Won/year	345 87		
				Drivers Unit	Amount		
Operating cost			FC	'00 Million Won/year	40		
		·		sumption '00 Million Won/'000Gcal	0.002		
				sumption '00 Million Won/'000Gcal	(0.001)		
			-	eneration won/kWh	0.098		
			VC Power g FC	eneration won/kWh '00 Million Won/year	0.30 30.23		
	Operating cost_Consignor		-C -C	'00 Million Won/year	30.23 25.75		
		0	-C -C	'00 Million Won/year	20.96		
			FC	'00 Million Won/year	1.94		
		Port facility performance guarantee for restoration deposit	FC	'00 Million Won/year	5.22		
			FC	'00 Million Won/year	60.30		
		Tax charge F	FC	'00 Million Won/year	60.49		

Key Estimation Assumptions

Category	Assumption	Scenario 1 (SMP=1	100, Current Policy)	Scenario 2 (SMP=100, 2030 Coal Exit)
	Base return rate	Strategic Investor: 4.0%Financial Investor: 6.5%		• Same as on left
Capital Investment	Agreement amount	 Strategic Investor conver 371.4 billion won Financial Investor convert 492.4 billion won 		• Same as on left
Agreement	Conditions for stock conversion	1st round: 681.4 billion wo2nd round: 182.4 billion w		• Same as on left
	Conditions for early repayment	 Comprehensive completion Start of repayment of long Simple DSCR above 1.1 Debt ratio below 400% 		• Same as on left
		Corporate Bond	Long-term Loan	• Same as on left
	Financing amount	• 1 trillion won	• 2 .9 trillion won	Same as on left
	Interest rate	• 2.9%	• 4.2%	Same as on left
Debt Financing	Conditions for repayment	• Schedule of repayment (matures in 2042)	 6 years grace period, 19 years principal repayment in equal installments 	• Same as on left
	Arrangement fee	• 2.0%		Same as on left
	DSRA	 Construction completion Reserve for scheduled pri the next three month 		• Same as on left
Dividend	Dividend rest rictions	Same as in conditions for capital investment agreem		• Same as on left
Shareholder's r	equired rate of return	• 6.0%		Same as on left
Tangible assets	Useful life	• 30 years		

2. Total Investment Cost & Financing Plan

Based on the IM, the estimated total investment cost is KRW 4.3 trillion, and the total financing requirement, including construction interest, is KRW 4.9 trillion. The total investment cost is assumed to be financed at a ratio of 20% equity (including capital investment agreement) and 80% debt.

(Unit : '00 Million Won)	Total	2018	2019	2020	2021	2022F	2023F	2024F
Land acquisition	329	267	62	-	-	-	-	-
Direct construction cost	35,630	3,412	4,166	4,269	8,589	8,140	5,952	1,102
Indirect construction cost	6,604	1,072	870	606	822	774	1,320	1,140
Total (TIC)	42,563	4,751	5,098	4,875	9,411	8,914	7,272	2,242
Construction interest	4,582	-	293	516	720	1,105	1,492	456
Consulting fee	879	879	-	-	-	-	-	-
Initial net working capital	770	-	-	-	-	-	385	385
Total (Financing Requirement)	48,794	5,630	5,391	5,391	10,131	10,019	9,149	3,083

Total Investment Cost

Financing Plan

(Unit : '00 Million Won)	Total	2018	2019	2020	2021	2022F	2023F	2024F
Equity	1,120	1,120	-	-	-	-	-	-
Strategic Investor	482	482	-	-	-	-	-	-
Financial Investor	638	638	-	-	-	-	-	-
Capital Investment Agreement	8,638	4,510	414	-	2,505	-	-	1,209
Strategic Investor Capital Investment Agreement (Common Stock)	3,714	-	-	-	2,505	-	-	1,209
Financial Investor Capital Investment Agreement (Preferred Stock)	4,924	4,510	414	-	-	-	-	-
Debt	39,036	-	4,977	5,391	7,626	10,019	9,149	1,874
Tranche #1 Corporate Bond	10,000	-	1,000	1,700	2,800	2,600	1,900	-
Tranche #2 Long-term loan	29,036	-	3,977	3,691	4,826	7,419	7,249	1,874
Total (Financing Amount)	48,794	5,630	5,391	5,391	10,131	10,019	9,149	3,083

(Source: Information Memorandum & SFOC)

• The annual investment cost and financing plan are mainly based on the IM.

[•] The financing schedule based on the borrowing and fee assumptions was considered in calculating finance charges and construction interest (separate from the amount indicated in the IM).

[•] The total investment cost is assumed to be financed in the ratio of 20% equity (including capital investment agreement) and 80% debt.

3. Projected Income Statement

The Projected Income Statement for the operating period under Scenario 1 (SMP=100, current policy) is as follows.

Projected Income Statement

(Unit	: '00 Million Won)	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F	2032F	2033F	2034F	2035F	2036F
Sales		1,464	10,001	11,881	11,945	12,154	12,289	12,397	12,503	12,596	12,714	12,783	12,904	13,009	13,037
	CP payment	152	1,068	1,379	1,379	1,379	1,383	1,379	1,379	1,379	1,383	1,379	1,379	1,379	1,383
	Energy payment	1,311	8,933	10,502	10,566	10,775	10,906	11,018	11,124	11,217	11,331	11,404	11,524	11,630	11,654
Operatir	ng costs	900	7,673	9,123	9,266	9,436	9,639	9,818	9,994	10,165	10,360	10,510	10,710	10,894	10,977
	Fuel cost	720	5,168	5,991	6,093	6,220	6,379	6,513	6,642	6,764	6,910	7,008	7,155	7,284	7,313
	Operation and maintenance (O&M)	180	1,312	1,542	1,583	1,626	1,670	1,715	1,762	1,810	1,861	1,912	1,965	2,020	2,074
	Depreciation cost	-	1,193	1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590
EBIT		564	2,328	2,758	2,679	2,718	2,650	2,579	2,509	2,431	2,353	2,274	2,194	2,115	2,060
% of reve	enue	38.5%	23.3%	23.2%	22.4%	22.4%	21.6%	20.8%	20.1%	19.3%	18.5%	17.8%	17.0%	16.3%	15.8%
Interest		-	1,390	1,978	1,897	1,445	1,332	1,224	1,114	1,028	947	865	787	706	624
Remissio	on of debts	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Тах		132	222	184	185	303	314	323	333	335	336	336	336	336	343
Net Inco	ome	432	716	596	598	969	1,003	1,031	1,063	1,068	1,071	1,072	1,070	1,073	1,093
EBITDA		564	3,521	4,348	4,269	4,308	4,240	4,169	4,099	4,021	3,943	3,863	3,783	3,705	3,650
% of reve	enue	38,5%	35,2%	36,6%	35,7%	35,4%	34.5%	33.6%	32.8%	31.9%	31.0%	30.2%	29.3%	28.5%	28.0%

(Unit : '00 Million Won)	2037F	2038F	2039F	2040F	2041F	2042F	2043F	2044F	2045F	2046F	2047F	2048F	2049F	2050F
Sales	13,038	13,310	13,418	13,557	13,525	10,697	7,792	6,403	2,992	-	-	-	-	-
CP payment	1,379	1,379	1,379	1,383	1,379	1,379	1,379	1,383	1,379	-	-	-		-
Energy payment	11,659	11,931	12,038	12,174	12,146	9,317	6,412	5,020	1,612	-	-	-		-
Operating costs	11,043	11,433	11,620	11,839	11,887	9,646	7,907	7,111	18,135	-	-	-		-
Fuel cost	7,323	7,648	7,772	7,926	7,909	5,658	3,896	3,052	981	-	-	-		-
Operation and maintenance (O&M)	2,130	2,196	2,258	2,323	2,389	2,398	2,421	2,469	2,450	-	-	-		-
Depreciation cost	1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590	14,705	-	-	-		-
EBIT	1,995	1,877	1,798	1,719	1,638	1,050	(115)	(708)	(15,144)	-	-	-	-	-
% of revenue	15.3%	14.1%	13.4%	12.7%	12.1%	9.8%	(1.5%)	(11.1%)	(506.2%)	0.0%	0.0%	0.0%	0.0%	0.0%
Interest	547	465	384	306	224	143	64	-	-	-	-	-		-
Remission of debts	-	-	-	-	-	-	-	-	-	-	-	-		-
Тах	346	337	338	337	337	215	-	-	-	-	-	-		-
Net Income	1,103	1,075	1,077	1,075	1,076	692	(179)	(708)	(15,144)	-	-	-		-
EBITDA	3,585	3,467	3,388	3,309	3,228	2,640	1,475	882	(439)	-	-	-	-	-
% of revenue	27.5%	26.0%	25.2%	24.4%	23.9%	24.7%	18.9%	13.8%	(14.7%)	0.0%	0.0%	0.0%	0.0%	0.0%

The Projected Income Statement for the operating period under Scenario 2 (SMP=100, 2030 coal exit) is as follows.

(Unit : '00 Million Won)	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F	2032F	2033F	2034F	2035F	2036F
Sales	1,464	10,001	11,881	11,945	12,154	7,916	7,034	-	-	-	-	· -		-
CP payment	152	1,068	1,379	1,379	1,379	1,383	1,379	-	-		-	· -		-
Energy payment	1,311	8,933	10,502	10,566	10,775	6,533	5,655	-	-			· -		-
Operating costs	900	7,673	9,123	9,266	9,436	6,364	44,587	-	-	-	-			-
Fuel cost	720	5,168	5,991	6,093	6,220	3,189	2,827	-	-	· -				-
Operation and maintenance (O&M)	180	1,312	1,542	1,583	1,626	1,585	1,617	-	-	-	-			-
Depreciation cost	-	1,193	1,590	1,590	1,590	1,590	40,143	-	-	-				-
EBIT	564	2,328	2,758	2,679	2,718	1,552	(37,552)	-	-	-	-			-
% of revenue	38.5%	23.3%	23.2%	22.4%	22.4%	19.6%	(533.9%)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Interest	-	1,390	1,978	1,897	1,445	1,269	1,275	-	-			· -		-
Remission of debts	-	-	-	-	-	-	27,996	-	-		-	· -		-
Тах	132	222	184	185	303	64	-	-	-		-	· -		-
Net Income	432	716	596	598	969	219	(10,831)	-	-	-	-			-
EBITDA	564	3,521	4,348	4,269	4,308	3,142	2,590	-	-	-	-			-
% of revenue	38.5%	35.2%	36.6%	35.7%	35.4%	39.7%	36.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Projected Income Statement

4. Projected Statement of Cash Flows

The Projected Statement of Cash Flows for the operating period under Scenario 1 (SMP=100, current policy) is as follows.

Projected Statement of Casl	h Flows	S												
(Unit : '00 Million Won)	2022F	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F	2032F	2033F	2034F	2035F
Cashflow from Operating Activities	-	425	1,186	1,969	2,180	2,657	2,592	2,614	2,650	2,649	2,651	2,650	2,646	2,651
Sales	-	1,464	10,001	11,881	11,945	12,154	12,289	12,397	12,503	12,596	12,714	12,783	12,904	13,009
Operating costs	-	(900)	(6,480)	(7,533)	(7,676)	(7,846)	(8,049)	(8,229)	(8,404)	(8,575)	(8,771)	(8,920)	(9,120)	(9,304)
ΔNet working capital	-	(139)	(814)	(179)	(8)	(21)	(12)	(16)	(12)	(11)	(10)	(12)	(14)	(12)
Corporate tax	-	-	(132)	(222)	(184)	(185)	(303)	(314)	(323)	(333)	(335)	(336)	(336)	(336)
Payment of interest	-	-	(1,390)	(1,978)	(1,897)	(1,445)	(1,332)	(1,224)	(1,114)	(1,028)	(947)	(865)	(787)	(706)
Cashflow from Investment Activities	(10,019)	(8,764)	(2,698)	-	-	-	-	-	-	-	-	-	-	-
PP&E investment	(10,019)	(8,764)	(2,698)	-	-	-	-	-	-	-	-	-	-	-
Cashflow from Financing Activities	10,019	8,880	2,443	(2,108)	(3,512)	(2,657)	(2,592)	(2,614)	(2,149)	(2,609)	(2,614)	(2,582)	(2,754)	(2,611)
Capital Investment	-	-	1,209	-	-	-	-	-	-	-	-	-	-	-
Increase of borrowings	10,019	9,149	1,874	-	-	-	-	-	-	-	-	-	-	-
Repayment of borrowings	-	-	-	(2,128)	(2,128)	(1,988)	(2,128)	(2,128)	(1,988)	(2,128)	(2,128)	(1,988)	(2,128)	(2,128)
DSRA transfer (credit)	-	(269)	(641)	20	55	195	20	55	(16)	20	55	(16)	20	55
Early repayment of capital investment agreement	-	-	-	-	(1,440)	(864)	(484)	(541)	(145)	-	-	-	-	-
Payment of dividend	-	-	-	-	-	-	-	-	-	(501)	(541)	(578)	(647)	(538)
Change in cash balance	-	541	930	(139)	(1,333)	-	-	-	501	40	37	68	(109)	40

(Unit : '00 Million Won)	2036F	2037F	2038F	2039F	2040F	2041F	2042F	2043F	2044F	2045F	2046F	2047F 2	048F 2	049F 2	050F
Cashflow from Operating Activities	2,689	2,691	2,625	2,654	2,652	2,664	2,438	1,470	1,014	199	-	-	-	-	-
Sales	13,037	13,038	13,310	13,418	13,557	13,525	10,697	7,792	6,403	2,992	-	-	-	-	-
Operating costs	(9,387)	(9,453)	(9,844)	(10,030)	(10,249)	(10,298)	(8,056)	(6,317)	(5,521)	(3,430)	-	-	-	-	-
ΔNet working capital	(1)	(5)	(30)	(13)	(12)	(2)	279	274	132	638	-	-	-	-	-
Corporate tax	(336)	(343)	(346)	(337)	(338)	(337)	(337)	(215)	-	-	-	-	-	-	-
Payment of interest	(624)	(547)	(465)	(384)	(306)	(224)	(143)	(64)	-	-	-	-	-	-	-
Cashflow from Investment Activities	-	-	-	-	-	-	-	-	-	329	-	-	-	-	-
PP&E investment	-	-	-	-	-	-	-	-	-	329	-	-	-	-	-
Cashflow from Financing Activities	(2,582)	(2,793)	(2,656)	(2,556)	(2,758)	(2,627)	(2,465)	(1,685)	(340)	(1,542)	-	-	-	-	-
Repayment of borrowings	(1,988)	(2,128)	(2,128)	(1,988)	(2,128)	(2,128)	(2,028)	(1,528)	-	-	-	-	-	-	-
DSRA transfer (credit)	(16)	20	55	(16)	20	45	145	398	-	-	-	-	-	-	-
Payment of dividend	(578)	(685)	(583)	(552)	(651)	(545)	(581)	(555)	(340)	(1,542)	-	-	-	-	-
Change in cash balance	107	(102)	(31)	98	(106)	36	(26)	(215)	674	(1,014)	-	-	-	-	-

16

The Projected Statement of Cash Flows for the operating period under Scenario 2 (SMP=100, 2030 coal exit) is as follows.

(Unit : '00 Million Won)	2022F	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F	2032F	2033F	2034F	2035F
Cashflow from Operating Activities	-	425	1,186	1,969	2,180	2,657	1,983	1,998	-		-	-		
Sales	-	1,464	10,001	11,881	11,945	12,154	7,916	7,034	-		-	-		
Operating costs	-	(900)	(6,480)	(7,533)	(7,676)	(7,846)	(4,774)	(4,444)	-		-	-		
∆Net working capital	-	(139)	(814)	(179)	(8)	(21)	414	747	-		-	-		
Corporate tax	-	-	(132)	(222)	(184)	(185)	(303)	(64)	-		-	-		
Payment of interest	-	-	(1,3 90)	(1,978)	(1,897)	(1,445)	(1,269)	(1,275)	-		-	-		
Cashflow from Investment Activities	(10,019)	(8,764)	(2,698)	-	-	-	-	329	-		-	-	-	
PP&E investment	(10,019)	(8,764)	(2,698)	-	-	-	-	-	-		-	-		
Cashflow from Financing Activities	10,019	8,880	2,443	(2,108)	(3,512)	(2,657)	(1,983)	(2,327)	-		-	-		
Capital Investment	-	-	1,209	-	-	-	-	-	-		-	-		
Increase of borrowings	10,019	9,149	1,874	-	-	-	-	-	-		-	-		
Repayment of borrowings	-	-	-	(2,128)	(2,128)	(1,988)	(1,285)	(3,510)	-		-	-		
DSRA transfer (credit)	-	(269)	(641)	20	55	195	(698)	1,336	-		-	-		
Early repayment of capital investment agreement	-	-	-	-	(1,440)	(864)	-	-	-		-	-		
Payment of dividend	-	-	-	-	-	-	-	-	-		-	-	- ·	
Change in cash balance	-	541	930	(139)	(1,333)	-	-	-	-		-	-		

Projected Statement of Cash Flows

5. Shareholder NPV Valuation

The shareholder NPV valuation under Scenario 1 was estimated to be approximately KRW 606.3 billion (Strategic Investor: KRW 186 billion, Financial Investor: KRW 420.3 billion).

Shareholder's NPV Valuation (Scenario 1)

Strategic Investor CF (FCFE_Dividend base)

(Unit : '00 Million Won)	2022F	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F	2032F	2033F	2034F	2035F
Capital Investment	-	-	(1,209)	-	-	-	-	-	-					-
Capital Investment Agreement_base return	-	-	75	149	149	31	20	12	2					-
Capital Investment Agreement_early repayment	-	-	-	-	619	281	208	233	62					-
Annual dividends	-	-	-	-	-	-	-	-	-	216	233	249	278	231
Liquidation dividends	-	-	-	-	-	-	-	-	-					-
FCFE_dividends	-	-	(1,134)	149	768	312	228	245	65	216	233	249) 278	231

(Unit : '00 Million Won)	2036F	2037F	2038F	2039F	2040F	2041F	2042F	2043F	2044F	2045F	2046F	2047F	2048F	2049F	2050F
Capital Investment	-	-		-	-		- ·	- ·	-				-	-	-
Capital Investment Agreement_base return	-	-		-	-		-	-	-				-	-	-
Capital Investment Agreement_early repayment	-	-	-	-	-				-				-	-	-
Annual dividends	249	295	251	238	280	234	1 250) 239	9 146	6 436) -		-	-	-
Liquidation dividends	-	-	-	-	-				-	- 227			-	-	-
FCFE_dividends	249	295	251	238	280	234	250) 239) 146	664	ι -		-	-	-

Financial Investor CF (FCFE_Dividend base)

(Unit : '00 Million Won)	2022F	2023F 2	024F 2	2025F 2	2026F 2	027F 2	028F 2	029F 2	030F 2	031F 2	032F 2	033F 2	034F 2	035F
Capital Investment	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Capital Investment Agreement_base return	-	-	240	320	320	68	43	25	5	-	-	-	-	-
Capital Investment Agreement_early repayment	-	-	-	-	821	372	276	309	83	-	-	-	-	-
Annual dividends	-	-	-	-	-	-	-	-	-	285	308	330	368	306
Liquidation dividends	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FCFE_dividends	-	-	240	320	1,141	440	319	334	88	285	308	330	368	306

(Unit : '00 Million Won)	2036F	2037F	2038F 2	2039F	2040F	2041F	2042F	2043F	2044F	2045F	2046F	2047F	2048F	2049F	2050F
Capital Investment	-	-	-	-	-	-		-		-	-		-	-	-
Capital Investment Agreement_base return	-	-	-	-	-	-				-	-		-	-	-
Capital Investment Agreement_early repayment	-	-	-	-	-	-				-	-		-	-	-
Annual dividends	329	390	332	315	371	310) 331	316	5 194	578	-		-	-	-
Liquidation dividends	-	-	-	-	-	-		-		301	-		-	-	-
FCFE_dividends	329	390	332	315	371	310	331	316	5 194	879	-	-	-	-	-

Category	Scenario 1 (Reference)
Ke (Shareholder Required Rate of Return)	6.0%
Shareholder's NPV (FCFE Dividend Base)	6,063
- Strategic Investor NPV	1,860
- Financial Investor NPV	4,203

The shareholder NPV valuation under Scenario 2 was estimated to be approximately KRW 190.9 billion (Strategic Investor: KRW 7.7 billion,

Financial Investor: KRW 183.2 billion).

Shareholder's NPV Valuation (Scenario 2)

Strategic Investor CF (FCFE_Dividend base)

(Unit : '00 Million Won)	2022F 20	23F 20	024F	2025F	2026F	2027F	2028F	2029F 2	2030F :	2031F 2	2032F 2	033F 2	2034F 2	035F
Capital Investment	-	- (1	,209)	-	-	-	-	-	-	-	-	-	-	-
Capital Investment Agreement_base return	-	-	75	149	149	31	-	17	-	-	-	-	-	-
Capital Investment Agreement_early repayment	-	-	-	-	619	371	-	-	-	-	-	-	-	-
Annual dividends	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Liquidation dividends	-	-	-	-	-	-	-	66	-	-	-	-	-	-
FCFE_dividends	-	- (1	,134)	149	768	403	-	82	-	-	-	-	-	-

Financial Investor CF (FCFE_Dividend base)

(Unit : '00 Million Won)	2022F	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F	2032F	2033F	2034F	2035F
Capital Investment	-	-	-	-	-	-	-	-	-	-		- ·	- ·	
Capital Investment Agreement_base return	-	-	240	320	320	68	-	36	-					
Capital Investment Agreement_early repayment	-	-	-	-	821	492	-	-	-	-				
Annual dividends	-	-	-	-	-	-	-	-	-	-				
Liquidation dividends	-	-	-	-	-	-	-	87	-					
FCFE_dividends	-	-	240	320	1,141	560	-	123	-	-	•	-		

Category	Scenario 2 (Comparison)
Ke (Shareholder Required Rate of Return)	6.0%
Shareholder's NPV (FCFE Dividend Base)	1,909
- Strategic Investor NPV	77
- Financial Investor NPV	1,832

6. Creditor NPV Valuation

The creditor NPV valuation under Scenario 1 was estimated to be approximately KRW 1.833 trillion (corporate bond: KRW 557.8 billion, long-term loan: KRW 1.2752 trillion).

Creditor's NPV Valuation (Scenario 1)

Corporate Bonds Creditor Estimated CF

(Unit : '00 Million Won)	2022F	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F	2032F	2033F	2034F	2035F
Corporate bonds investment	(2,600)	(1,900)	-	-	-	-	-		-	-	-		-	-
Repayment principal & interest	160	235	289	890	873	715	842	824	667	794	776	619	746	728
Corporate Bonds Creditor's CF	(2,441)	(1,665)	289	890	873	715	842	824	667	794	776	619	746	728

(Unit : '00 Million Won) 2036F 2037F 2038F 2039F 2040F 2040F 2041F 2042F 2043F 2044F 2044F 2045F 2046F 2047F 2048F 2049F 2050F

Corporate Bonds Creditor's CF	571	697	680	523	649	632	515	-	-	-	-	-	-	-	-
Repayment principal & interest	571	697	680	523	649	632	515	-	-	-	-	-	-	-	-
Corporate bonds investment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Long-term Loan Creditor Estimated CF

(Unit : '00 Million Won)	2022F	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F	2032F	2033F	2034F	2035F
Long-term loan investment	(7,419)	(7,249)	(1,874)	-	-	-	-	-	-	-	-	-	-	-
Repayment principal & interest	525	836	1,138	2,748	2,684	2,619	2,555	2,491	2,427	2,363	2,298	2,234	2,170	2,106
Long-term Loan Creditor's CF	(6,894)	(6,412)	(737)	2,748	2,684	2,619	2,555	2,491	2,427	2,363	2,298	2,234	2,170	2,106

(Unit : '00 Million Won)	2036F	2037F	2038F	2039F	2040F	2041F	2042F	2043F	2044F	2045F	2046F	2047F	2048F	2049F	2050
Long-term loan investment	-	-	-	-	-	-	-	-					-		
Repayment principal & interest	2,042	1,978	1,913	1,849	1,785	1,721	1,657	1,592		-	-	· -	-	· -	
Long-term Loan Creditor's CF	2,042	1,978	1,913	1,849	1,785	1,721	1,657	1,592	- :		-	-	-	-	

Category	Scenario 1 (Reference)
Kd (Creditor Required Rate of Return)	Corporate Bonds: 2.9%, Long-term Loan: 4.2%
Creditor's NPV	18,330
- Corporate Bonds Creditor NPV	5,578
- Long-term Loan Creditor NPV	12,752

The creditor NPV valuation under Scenario 2 was estimated to be approximately (-)KRW 254 billion (corporate bonds: 216.5 billion won, long-term loans: (-) 470.5 billion won).

Creditor's NPV Valuation (Scenario 2)

Corporate Bonds Creditor Estimated CF

(Unit : '00 Million Won)	2022F	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F	2032F	2033F	2034F	2035F
Corporate bonds investment	(2,600)	(1,900)	-	-	-	-	-	-	_	-			-	
Repayment principal & interest	160	235	289	890	873	715	842	3,735	-	-	-			
Corporate Bonds Creditor's CF	(2,441)	(1,665)	289	890	873	715	842	3,735	-	-	-		-	

Long-term Loan Creditor Estimated CF

(Unit : '00 Million Won)	2022F	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F	2032F	2033F	2034F	2035F
Long-term Loan Investment	(7,419)	(7,249)	(1,874)	-	-	-	-	-					-	
Repayment principal & interest	525	836	1,138	2,748	2,684	2,619	1,712	998	-	· -			-	-
Long-term Loan Creditor's CF	(6,894)	(6,412)	(737)	2,748	2,684	2,619	1,712	998	-	-			-	-

Category	Scenario 2 (Comparison)	
Kd (Creditor Required Rate of Return)	Corporate Bonds: 2.9%, Long-term Loan: 4.2%	
Creditor's NPV	(2,540)	
- Corporate Bonds Creditor NPV	2,165	
- Long-term Loan Creditor NPV	(4,705)	

7. Scenario Analysis

As a result of the scenario analysis based on capacity factor and SMP assumptions, shareholder NPV ranges from KRW 190.9 to KRW 606.3 billion and creditor NPV ranges from (-)KRW 254 billion to KRW 1.83 trillion.

Shareholder and Creditor NPV Estimation Results

Category	Scenario1 (Reference)	Scenario2 (Comparison)	Scenario3	
Capacity factor Assumption (*)	Current Policy	2030 Coal Exit	2035 Coal Exit	
SMP Assumption	100	100	100	
Shareholder's NPV (FCFE Dividend Base)	6,063	1,909	3,330	
- Strategic Investor NPV	1,860	77	684	
- Financial Investor NPV	4,203	1,832	2,646	
Creditor's NPV	18,330	(2,540)	7,982	
- Corporate Bonds Creditor NPV	5,578	2,165	4,418	
- Long-term Loan Creditor NPV	12,752	(4,705)	3,565	

8. Shareholder and Creditor Balance

As a result of the calculation of the expected balance for shareholders and creditors of Samcheok Thermal Power, based on a lump sum payment in 2024, shareholders will receive KRW 404.2 billion and creditors will receive KRW 2.1 triillion.

Shareholder and Creditor Estimated Balance Results

Category	Balance after 2030 coal exit		Balance before 2030 coal exit	
	Lump sum payment in 2024	Fixed annual payment over 2024-2030	Lump sum payment in 2024	Fixed annual payment over 2024-2030
Shareholder	4,042	703	626	109
- Strategic Investor	1,739	303	264	46
- Financial Investor	2,302	401	362	63
Creditor	20,752	3,375	3,748	616
- Corporate Bonds	5,547	874	-	-
- Long-term Loan	15,205	2,500	3,748	616



[Annex]

Financing a Paris-Aligned Coal Exit in South Korea