

# S-OIL Corporation 4Q 2023 Results

February 2024



# Highlights



## 209.8 billion Won

Net income in 4Q

Despite one-off inventory loss from oil price decline and decrease of refining margin, the Company posted 209.8 billion Won of net income in 4Q thanks to effective FX risk management and investment tax credit



## Favorable Supply-Demand Condition

Favorable fundamental conditions are expected to sustain in 2024: (1) steady demand growth for transportation fuel, (2) wave of PX capacity addition coming to an end, and (3) no material capacity increase in lube



## Decarbonization Roadmap

With the target of 35% emission reduction compared to the Business-As-Usual scenario by 2030, the Company has established the decarbonization roadmap including concrete initiatives, and has put it into action

## DISCLAIMER

Financial results for 4Q 2023 are provisional and subject to change according to the outside independent auditors' audit.

This presentation contains forward-looking statements that are based on our current expectation, assumptions, estimates and projections about S-OIL and the refinery industry. We caution you not to place undue reliance on any forward-looking statement which may involve various risks and uncertainties.

Please also note that although we believe that the assumptions on which our forward-looking statements are based are reasonable, any of those assumptions could prove to be inaccurate, and, as a result, the forward-looking statements based on those assumptions could be incorrect. Except as required by law, we do not undertake to release the results of any revisions of these forward-looking statements to reflect future events or circumstances.



## 4Q 2023 Performance & Outlook

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## Supplementary Information

# 4Q 2023 Performance & Outlook

- 4Q 2023 Financial Result
- Financial Status
- Refining
- Petrochemical
- Lube



# 4Q 2023 Financial Result

(Unit: bil. Won)	4Q 23	3Q 23	QoQ	4Q 22	2023	2022
<b>Revenue</b>	<b>9,830.4</b>	<b>8,999.6</b>	<b>9.2%↑</b>	<b>10,594.0</b>	<b>35,727.2</b>	<b>42,446.0</b>
<b>Operating Income</b>	<b>7.6</b>	<b>858.9</b>	<b>99.1%↓</b>	<b>-160.4</b>	<b>1,418.6</b>	<b>3,405.2</b>
(Margin)	0.1%	9.5%	-	-1.5%	4.0%	8.0%
Refining	-265.7	666.2	Turn to Loss↓	-381.8	399.1	2,344.3
Petrochemical	47.0	45.4	3.5%↑	-58.3	203.7	-49.8
Lube	226.2	147.2	53.7%↑	279.7	815.7	1,110.7
<b>Finance &amp; Other Income</b>	<b>130.0</b>	<b>-121.9</b>	<b>-</b>	<b>490.1</b>	<b>-222.9</b>	<b>-506.6</b>
- Net Interest gain	-53.5	-46.5	-	-35.1	-180.5	-120.2
- Net F/X gain*	162.3	-89.5	-	516.4	-101.3	-355.3
- Others	21.2	14.1	-	8.8	58.9	-31.1
<b>Income before tax</b>	<b>137.6</b>	<b>737.0</b>	<b>81.3%↓</b>	<b>329.7</b>	<b>1,195.7</b>	<b>2,898.5</b>
<b>Net Income</b>	<b>209.8</b>	<b>545.4</b>	<b>61.5%↓</b>	<b>228.9</b>	<b>998.2</b>	<b>2,104.4</b>

\* Including gain/loss from F/X derivatives for hedging

## Operating Income

- 7.6 bil. Won in operating income
  - Refining segment recorded a loss due largely to negative one-off impact from oil price decline
  - Petrochemical and lube segments saw a QoQ income rise, particularly marked by a rebound of lube spread
- \* Inventory-related impact : -144.0 bil. Won

## Income before Tax

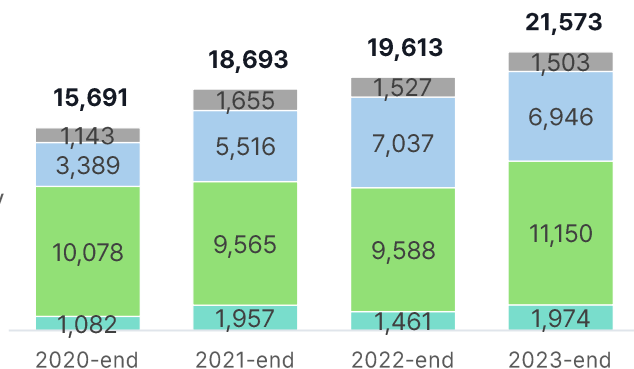
- 137.6 bil. Won of income before tax due to effective FX risk management
  - F/X rate change
    - 4Q : -55.4 ₩/\$
    - 3Q : +32.0 ₩/\$

# Financial Status

## Assets

(Unit: bil. Won)

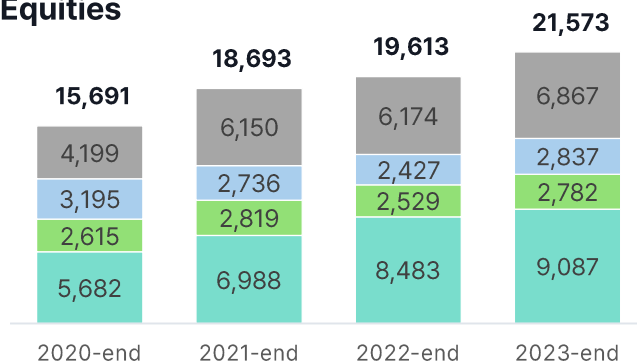
- Others
- A/R & inventory
- Tangible asset
- Cash



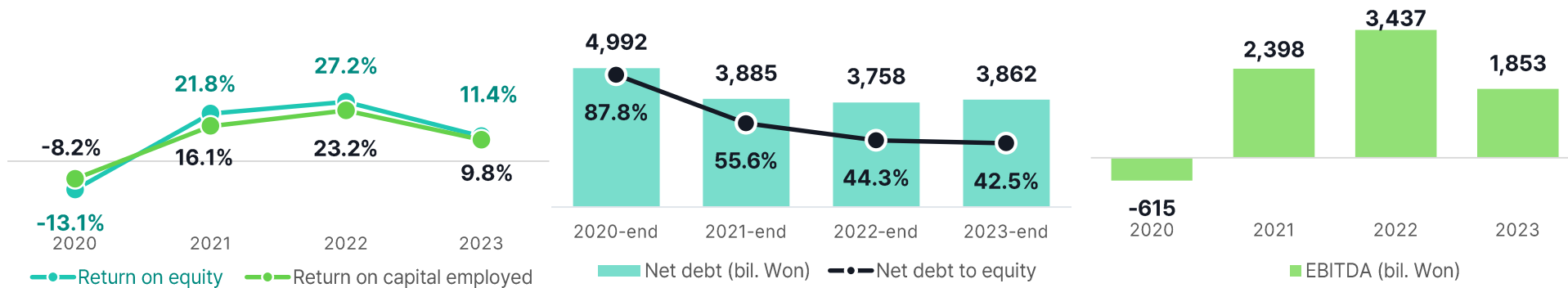
## Liabilities & Equities

(Unit: bil. Won)

- Other liabilities
- L-T borrowing
- S-T borrowing
- Equity



## Financial Highlights

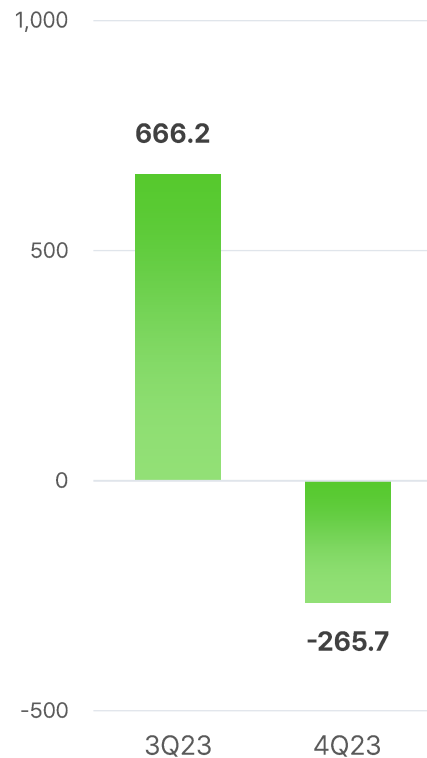


\* Net debt: Short-term borrowing + Long-term borrowing + Lease obligation - Cash

\* EBITDA: Income before tax + Net interest expense + Depreciation (Excluding catalyst amortization cost)

# Refining

## Operating Income (Unit: bil. Won)



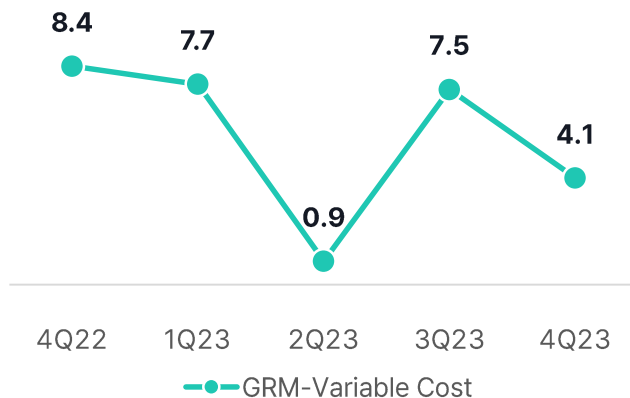
## 4Q 23 Market Environment

- **Regional refining margins** slightly narrowed due to off-seasonal demand slowdown for transport fuels and milder-than-usual early winter weather, but low inventory levels offered support
- **Dubai crude price** declined largely due to increased non-OPEC crude oil output, yet the downside was restrained by extension of OPEC+ production cuts

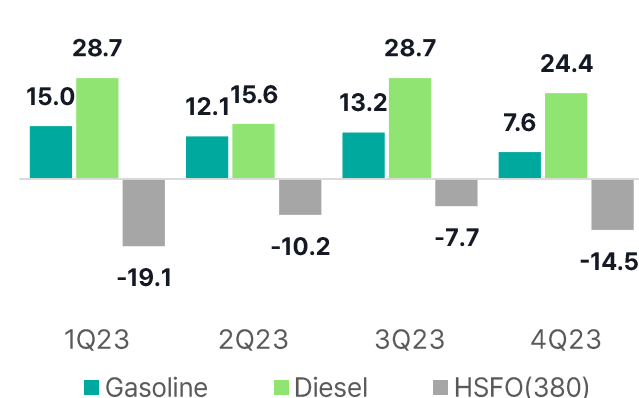
## 2024 Outlook

- **Regional refining margins** are forecast to maintain an above-average level by steady demand growth coupled with low inventory levels
  - Heating demand in winter and spring maintenance season to support margins in 1Q. Following summer mobility demand to drive margin expansion
  - With uncertainties on start-up timing and pace of major new refineries, market impact is estimated to be restricted in 2H or beyond

## Singapore Margin (Unit:\$/bbl)



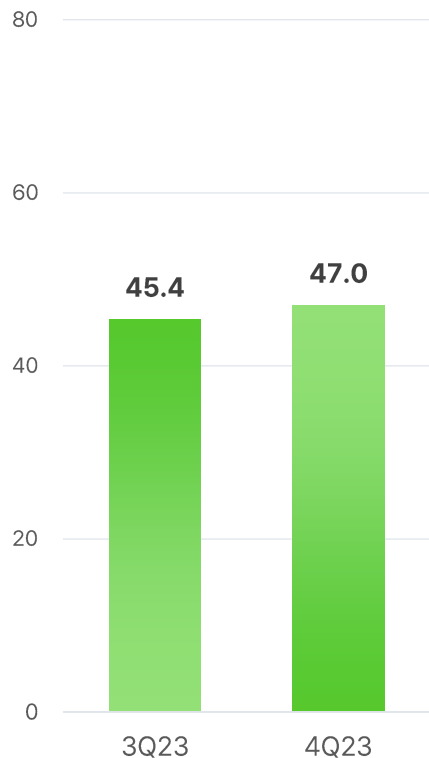
## Products Spread over Dubai (Unit:\$/bbl)





# Petrochemical

## Operating Income (Unit: bil. Won)



## 4Q 23 Market Environment

### Aromatics

- PX and BZ markets were slightly adjusted due to seasonal lull demand for downstream & gasoline blending, but supported at solid level by fresh demand from start-up of new downstream plants

### Olefin downstream

- PP and PO markets weakened by stagnant downstream demand linked to sluggish Chinese economy and year-end destocking activities

## 2024 Outlook

### Aromatics

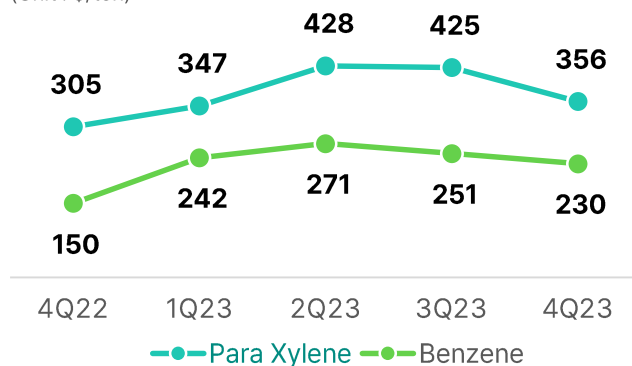
- PX and BZ markets are projected to be supported by firm demand growth amid drastically reduced new capacity addition
  - Demand increase from new downstream expansions and continuing healthy demand for gasoline blending are expected

### Olefin downstream

- PP and PO markets are likely to gradually improve in tandem with pace of China's economic recovery, while pressure from capacity addition continues

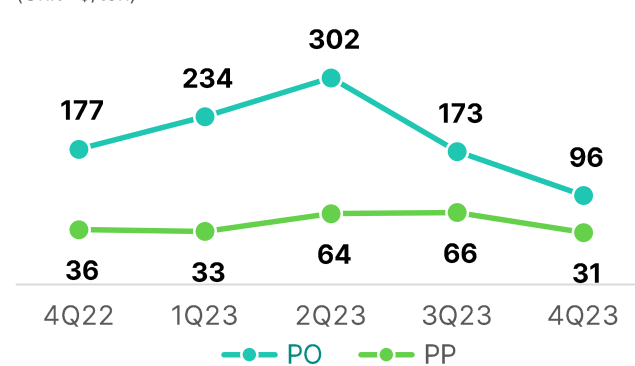
### Aromatics Spread over Naphtha

(Unit : \$/ton)

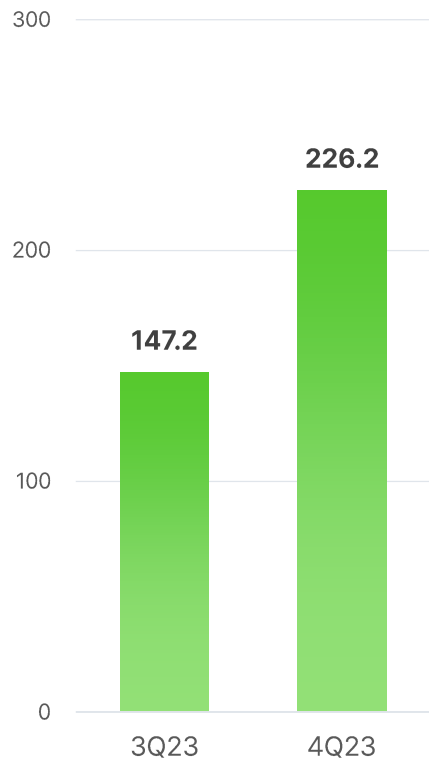


### Olefin downstream Spread over Propylene

(Unit : \$/ton)



## Operating Income (Unit: bil. Won)



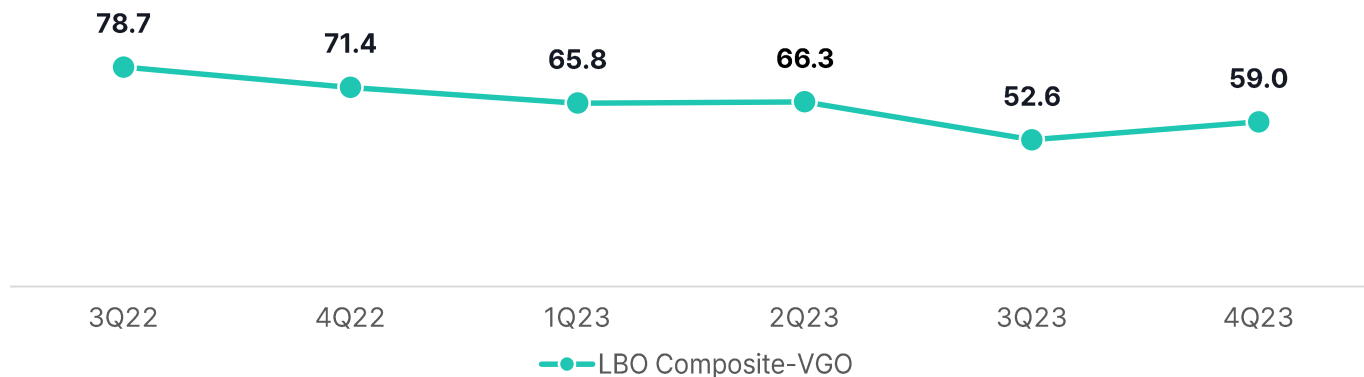
## 4Q 23 Market Environment

- **LBO Spread** showed an upturn due to rebounding demand after off-peak season under lowered feedstock cost

## 2024 Outlook

- **LBO Spread** is forecast to maintain a solid level by limited capacity addition and sustained demand growth for high quality base oils
  - Demand is expected to regain strength with beginning of spring lubricant change season

## Products Spread (Unit : \$/bbl)



# Key Business Update

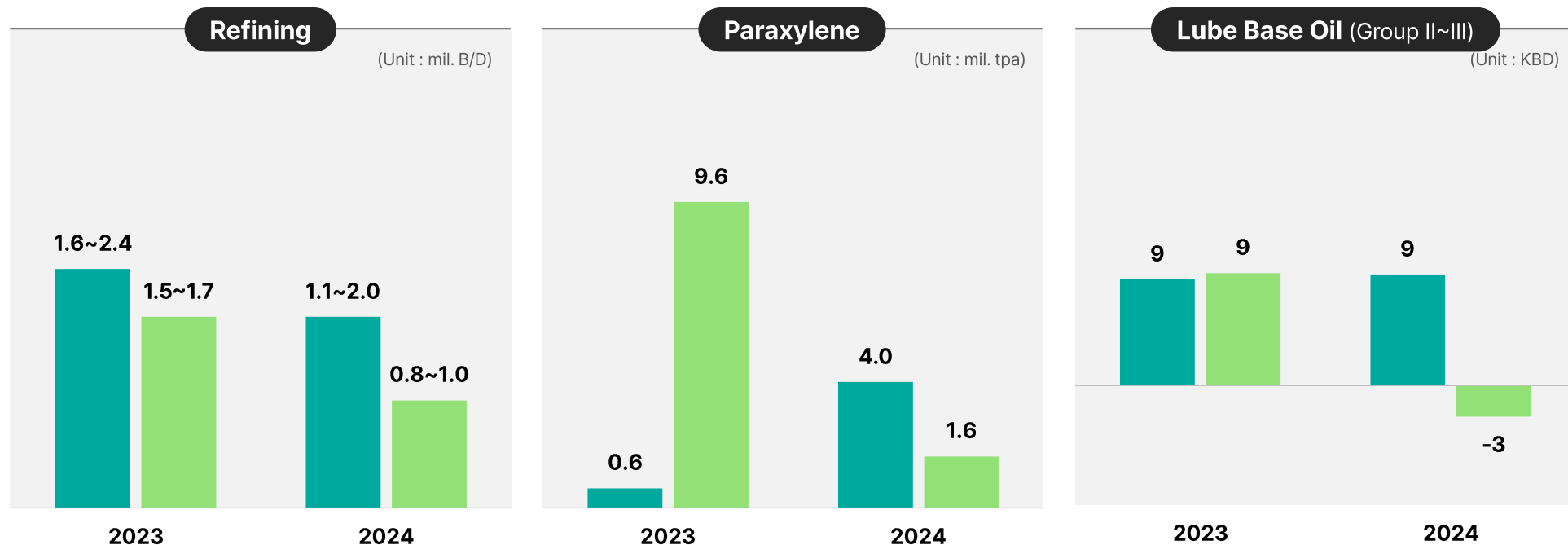
- Favorable Supply-Demand Condition
- Decarbonization Roadmap

# Favorable Supply-Demand Condition

- Steady demand rise in transport fuel is forecast, whereas uncertainty lingers over timeline for new refining facility entry
- With multi-year wave of PX capacity addition coming to a close, and no material capacity increase in lube base oil expected, the favorable environment is anticipated to be sustained in 2024

Demand Growth and Net Capacity Increase Forecast (2023~24)

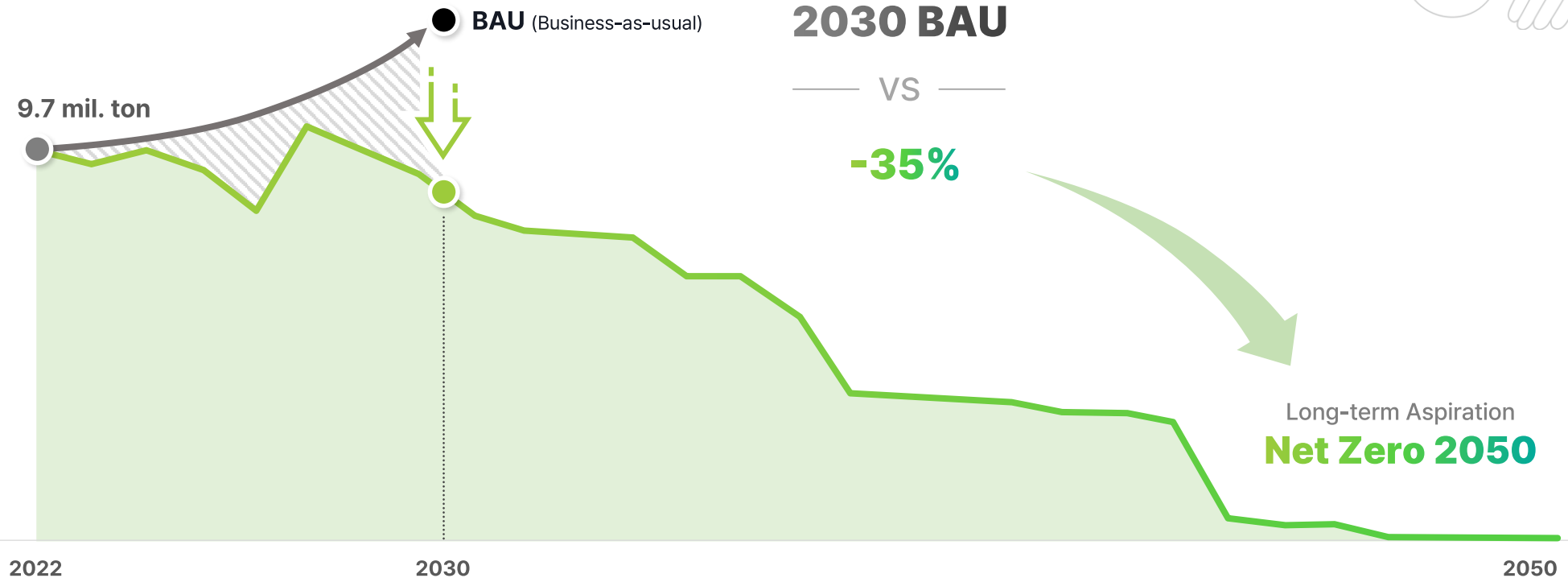
■ Demand Growth ■ Net Capacity/Supply Increase



# Decarbonization Roadmap

- Target for carbon emission reduction: -35% vs. BAU by 2030
- We have established and regularly updates the decarbonization roadmap featuring a detailed reduction pathway

## S-OIL Carbon Reduction Target and Pathway



# Decarbonization Initiatives

- Initiatives with feasibility and economics are implemented with higher priority
- Operational levers and low carbon utility will contribute to over 70% of planned reduction amount until 2030

**Carbon Reduction Contribution by Initiatives** (out of total planned reduction amount until 2030)

**70%~**



## Operational Lever

- **Energy saving investment**
  - ✓ Heater efficiency improvement
  - ✓ Waste heat recovery
  - ✓ Process heat integration
- **MRV<sup>2)</sup> enhancement**
- **Flare gas recovery**



## Low Carbon Utility<sup>1)</sup>

- **Gas turbine cogeneration**
  - ✓ FEED in progress (approx. 100MW)
- **Renewable energy through PPA<sup>3)</sup>**
- **Low carbon steam import**
- **Solar power generation**
  - ✓ Idle site in the refinery and terminal

**~30%**



## Hydrogen

- **External hydrogen import**
- **Hydrogen firing for gas turbine**



## CCUS

- **CO2 sales for industrial use**
  - ✓ Expansion of CO2 sales (100KTA → 200KTA)
- **CCS for Scope-1 emission**



## Offset / Others

- **SDM / Green ODA**

1) Electricity, Steam 2) Measurement, Reporting, Verification 3) Power Purchase Agreement



# Decarbonization Achievement

➤ We have put our plan into action and are making tangible progress in reducing carbon emissions every year

## Carbon Reduction Items under Implementation (2023~)



### Operational Lever

**34** items

- Energy Efficiency Improvement



### Low Carbon Utility

**1** item

- Solar Cell in Incheon Terminal



### CCUS

**1** item

- Additional CO2 sales to DongKwang by CCU



**249 KTA**



**Annual Abatement  
in 2023**

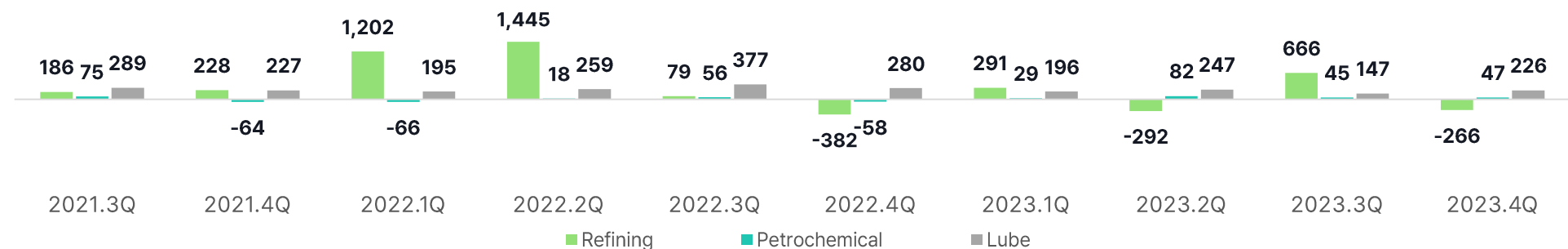


# Supplementary Information

# Performance by Business Segment

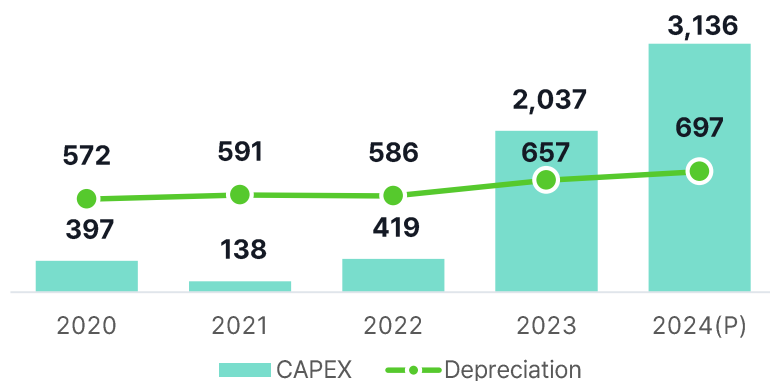
Segment	(Unit: bil. Won)	4Q 23	3Q 23	QoQ	4Q 22	2023	2022
Refining	Revenue	7,781.8	7,198.7	8.1%↑	8,558.0	28,257.1	34,004.9
	Operating Income	-265.7	666.2	Turn to Loss↓	-381.8	399.1	2,344.3
	(Margin)	-3.4%	9.3%		-4.5%	1.4%	6.9%
Petrochemical	Revenue	1,212.3	1,124.8	7.8%↑	1,195.5	4,384.8	5,025.5
	Operating Income	47.0	45.4	3.5%↑	-58.3	203.7	-49.8
	(Margin)	3.9%	4.0%		-4.9%	4.6%	-1.0%
Lube	Revenue	836.3	676.1	23.7%↑	840.4	3,085.4	3,415.6
	Operating Income	226.2	147.2	53.7%↑	279.7	815.7	1,110.7
	(Margin)	27.1%	21.8%		33.3%	26.4%	32.5%
Total	Revenue	9,830.4	8,999.6	9.2%↑	10,594.0	35,727.2	42,446.0
	Operating Income	7.6	858.9	99.1%↓	-160.4	1,418.6	3,405.2
	(Margin)	0.1%	9.5%		-1.5%	4.0%	8.0%

## Operating Income Trend (Unit: bil. Won)



# CAPEX & Operation

## CAPEX & Depreciation



(Unit: bil. Won)	2022	2023	2024(P)
Shaheen Project	40.6	1,461.9	2,716.0
Upgrade & Maintenance	272.0	437.4	298.0
Marketing related expenditure	39.1	45.9	58.0
Others	67.3	91.9	64.2
<b>Total CAPEX</b>	<b>418.9</b>	<b>2,037.2</b>	<b>3,136.2</b>
<b>Depreciation</b>	<b>586.2</b>	<b>656.8</b>	<b>696.6</b>

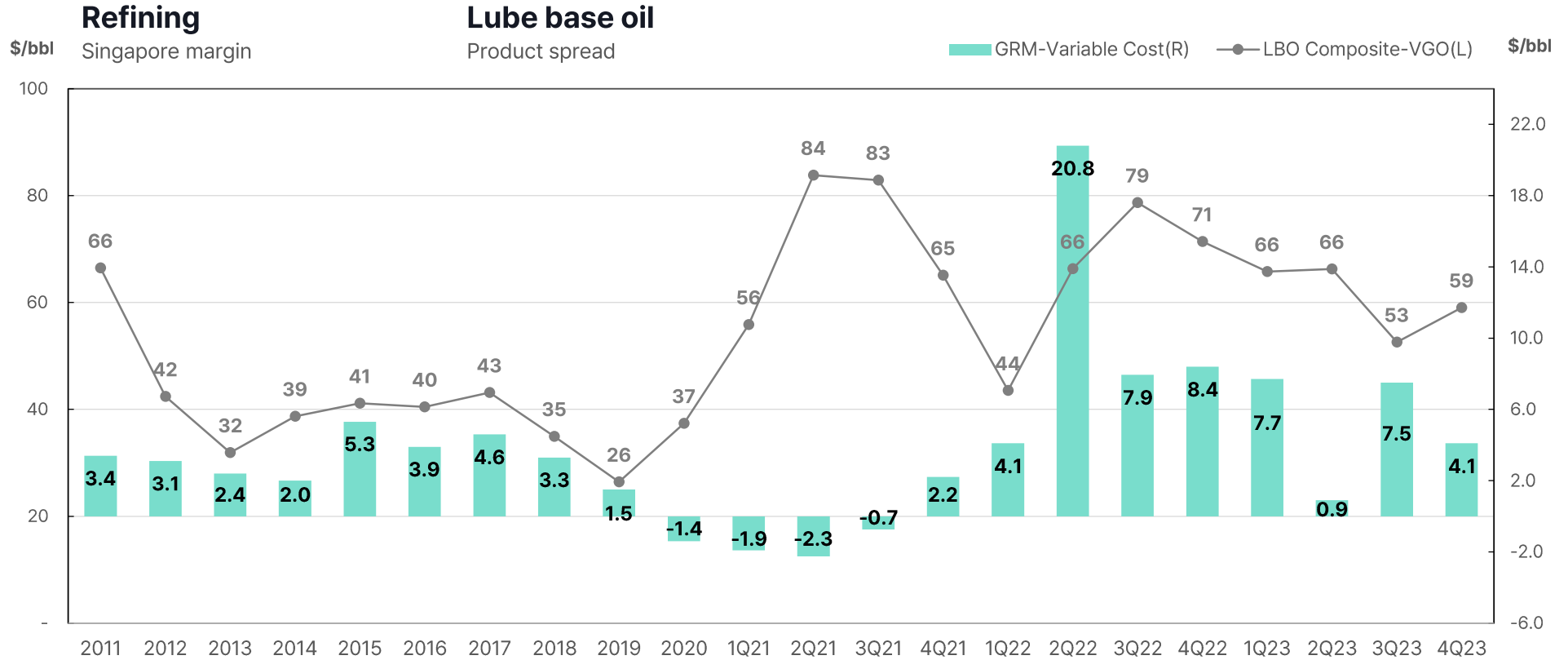
## Maintenances

	2021	2022	2023	2024(P)
Refining	-	#2 CDU	#3 CDU/CFU	#1 CDU
	-	#1 RFCC	#2 RFCC/HYC	-
Petrochemical	-	#1 PX/PO	#2 PX/PP	-
Lube	-	-	-	#1 HDT

## Utilization Rate

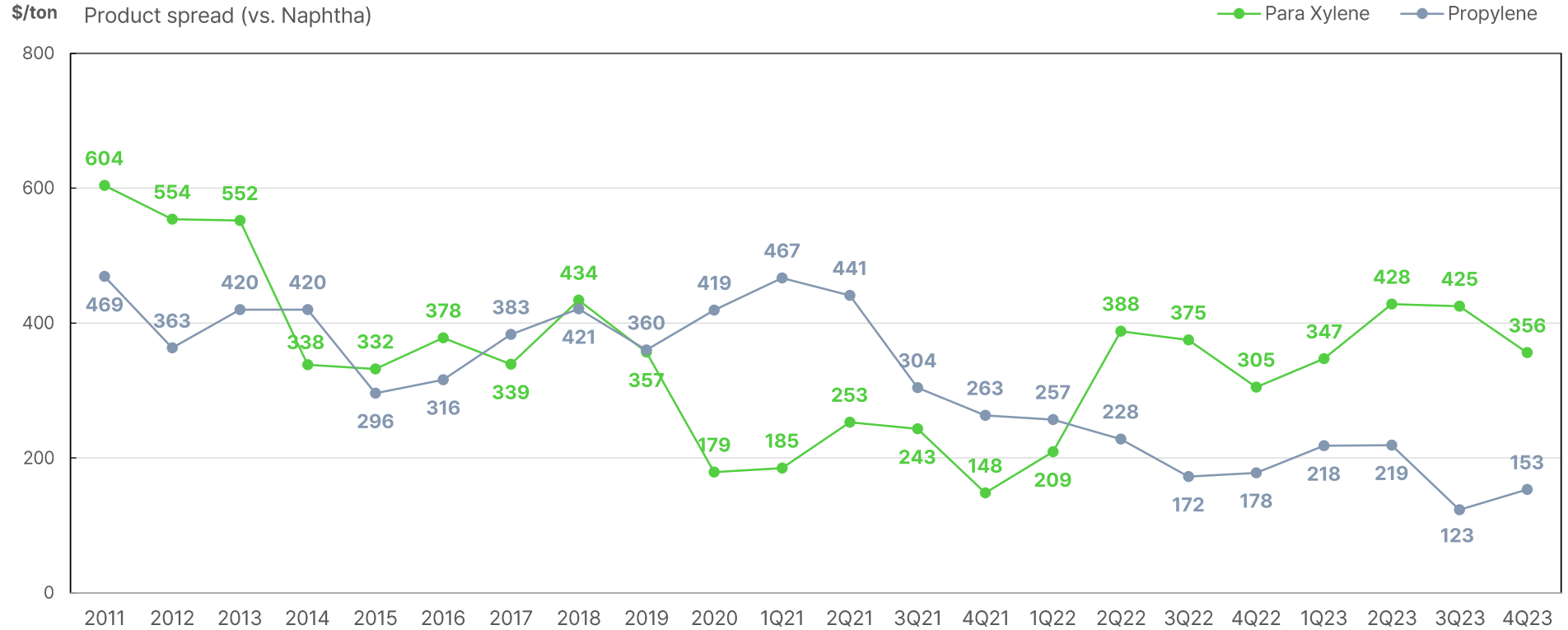
	2021	2022	2023	4Q 23
CDU	97.8%	92.6%	90.4%	94.0%
RFCC/HYC	97.0%	92.3%	90.7%	98.8%
PX Plants	91.6%	80.2%	75.1%	84.7%
PP/PO Plants	102.8%	78.7%	77.5%	72.3%
Lube Plants	99.2%	94.6%	88.0%	97.8%

# Long-term Margin Trend



# Long-term Margin Trend

## Petrochemical



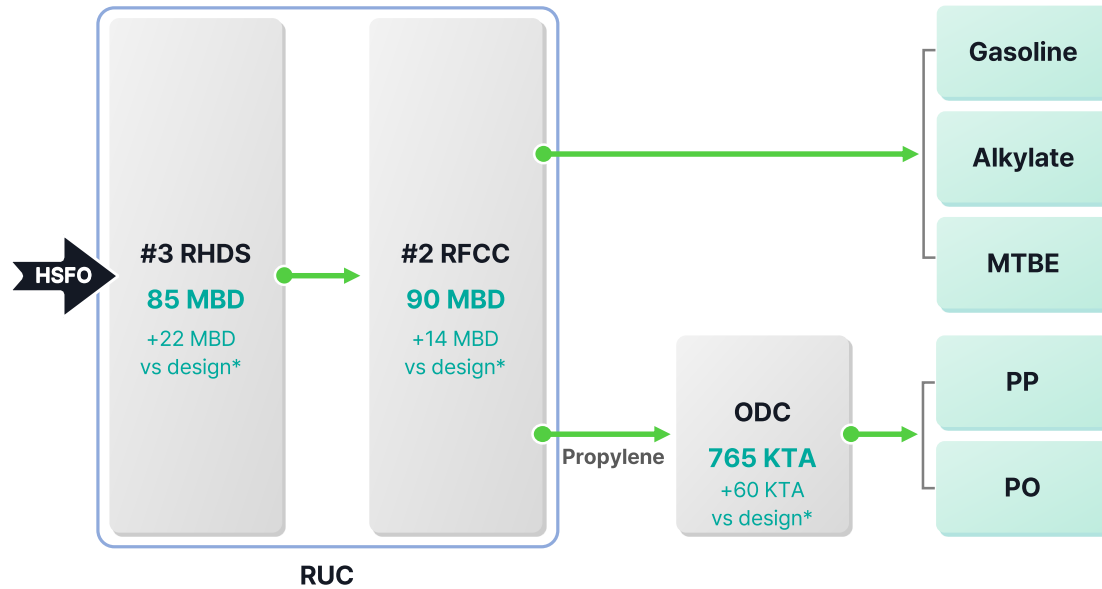


# Enhanced Profitability by RUC/ODC

- S-OIL is one of the best positioned to benefit from refining margin strength with superior facility competitiveness
- Profitability of RUC has remarkably widened by upgrading heavily discounted HSFO

## RUC/ODC Project

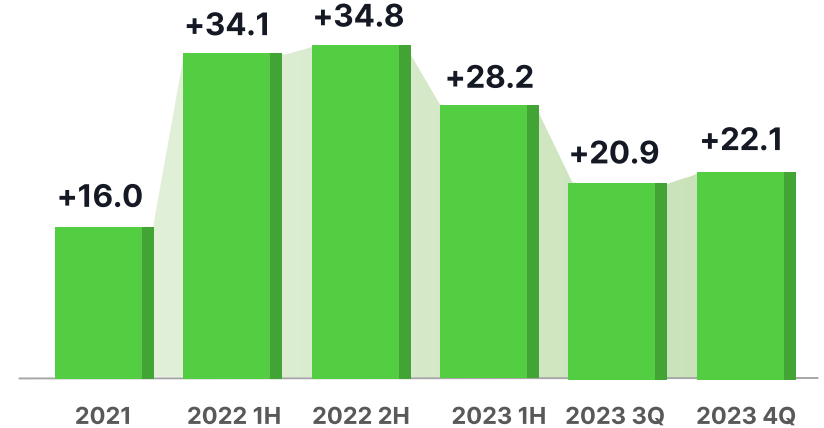
(Residue Upgrading Complex & Olefin Downstream Complex)



\* Capacity increase through facility improvements

## Gasoline Spread over HSFO

(Unit : \$/bbl)



# S-OIL's Green Initiatives

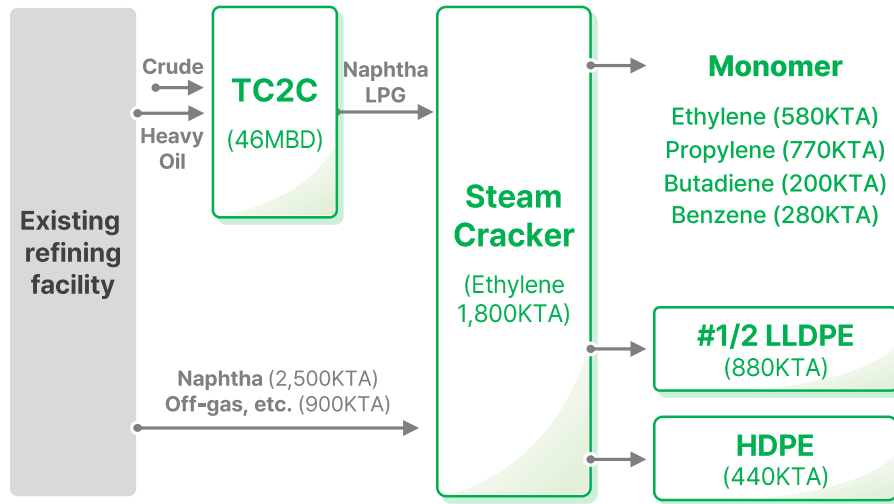
- Green Initiatives set forth strategic directions to deliver sustainable and competitive returns as we transition to a greener future maintaining focus on our unique capabilities



# Shaheen Project Progress

- The Company is consolidating all of its capabilities to successfully carry out Shaheen Project, which will enhance the enterprise value in response to the energy transition
- Site preparation and EPC work is under full-fledged execution with the actual progress going smoothly according to the plan

## Configuration



Estimated EBITDA margin impact

▲ 4.5+α \$/B in 2027

## Project Progress (Dec 2023)



Target Schedule

Mechanical Completion by 1H 2026

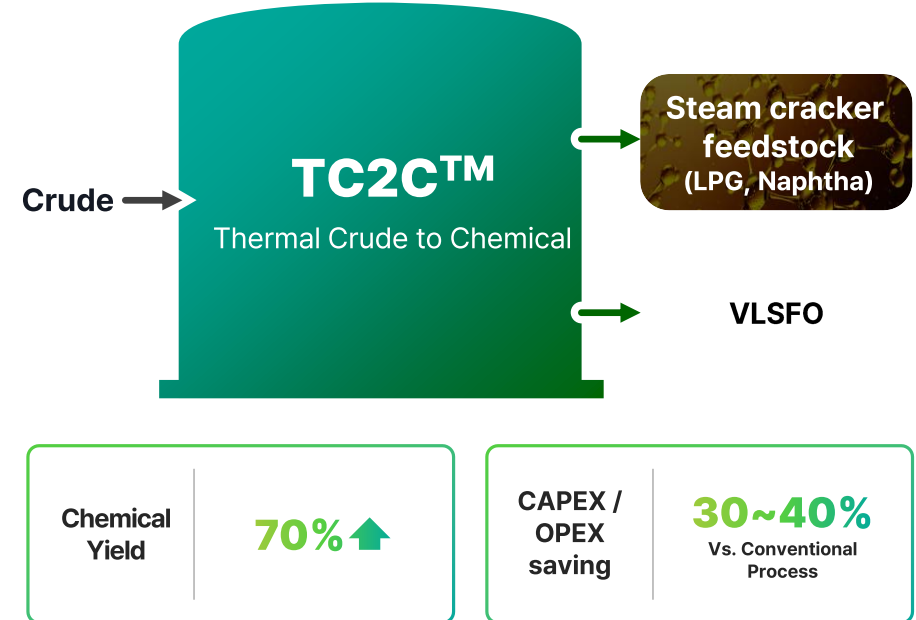
# Shaheen Project Competitiveness

- Shaheen Project is a pivotal expansion into chemical business with industry-leading competitiveness, which will enable another leap forward in future profit generation capacity

## Core competitiveness

- 1 Refining & chemical integration synergy in feedstock, facility and operation
- 2 New TC2C technology to maximize chemical yield
- 3 Industry-leading energy efficiency and carbon intensity
- 4 1st quartile cost competitiveness in NE Asia

## New TC2C Technology



# MOU with Saudi Aramco on Low Carbon Energy Solutions

In January 2022, S-OIL signed four MOUs with Saudi Aramco to enhance mutual partnership and alignment in pursuing carbon neutral and eco-friendly energy business covering clean hydrogen, thermal crude-to-chemical(TC2C), venture investment, and R&D



## Collaboration for Clean Hydrogen Business

- Conduct feasibility study for blue ammonia and blue hydrogen supply and distribution in Korea
- Evaluate potential partnership models, and development plans for cooperation of the production and supply of blue ammonia and blue hydrogen

## Deployment of the First Commercial Scale TC2C Technology

- Exchange information related to Saudi Aramco's TC2C technology
- Explore feasibility of potential collaboration related to Shaheen project's development & execution
- Explore Value Engineering opportunities and share operational experience



## Mutual Investment into Ventures in New Energy & De-carbonization Sectors

- Explore promising Korean ventures and co-investment with Aramco Ventures in areas such as hydrogen value chain, carbon capture utilization & storage (CCUS)

## R&D Collaboration on Low Carbon Energy Solutions

- Explore opportunities and feasibility of high-efficient hydrogen production with CCUS, carbon neutral e-fuel, and plastic recycling

**Dow Jones  
Sustainability Indices**

In Collaboration with RobecoSAM



S-OIL is the only company named to DJSI World for the 14th consecutive year among Asia Pacific refiners and the winner of Best Excellence Company in 2021 ESG awards from Korean Corporate Governance Service.

**S-OIL Investor Relations**

[www.s-oil.com](http://www.s-oil.com)

