

MUCC Coal Terminal: Its Strategic Role in Japan's Coal Supply Chain

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Mitsubishi UBE Cement Corporation



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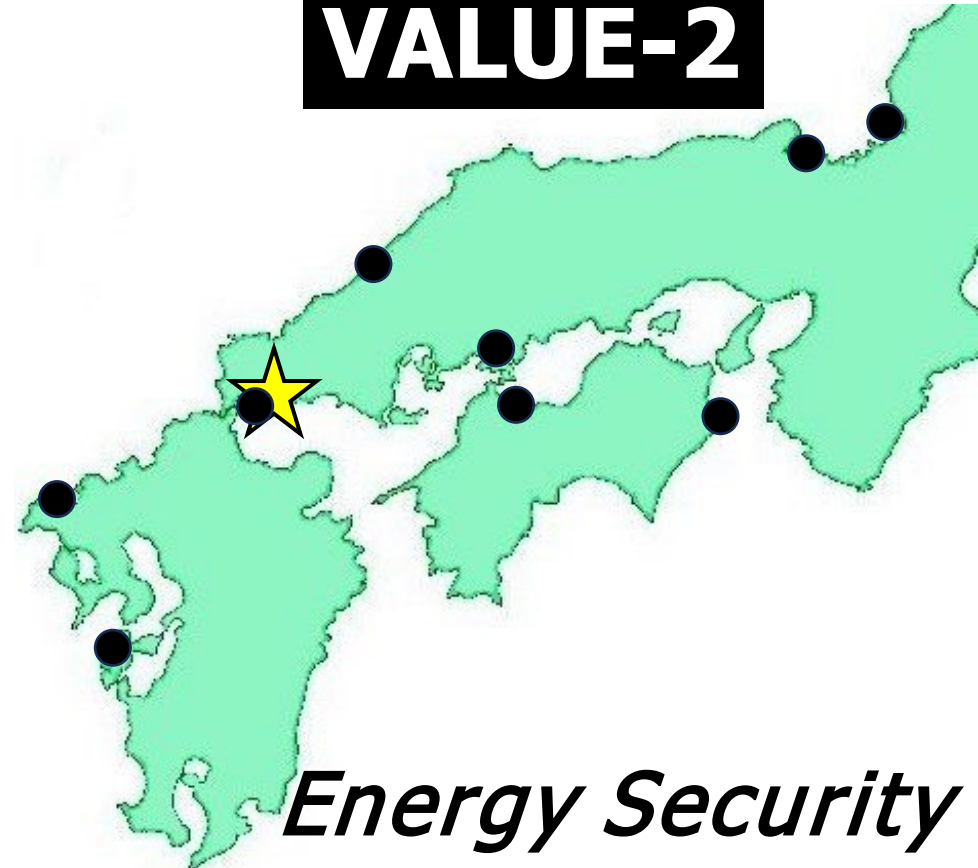
To contribute to maintaining the resilience of Japan's coal supply chain, **MUCC Coal Terminal** offers **two VALUES**.

VALUE-1



Sustainability

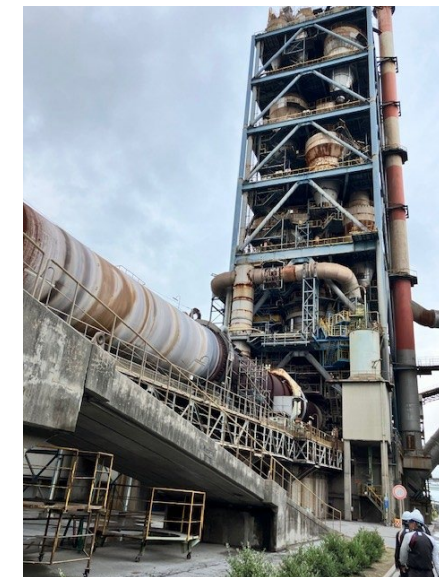
VALUE-2



Energy Security

MUCC is Japan's second-largest^(*) **cement producer**,
and also actively involved in the coal value chain:

- [1] Operating our own coal terminal,
- [2] Consuming coal in our own plants, and
- [3] Reselling coal to domestic customers.



MUCC Cement Plant

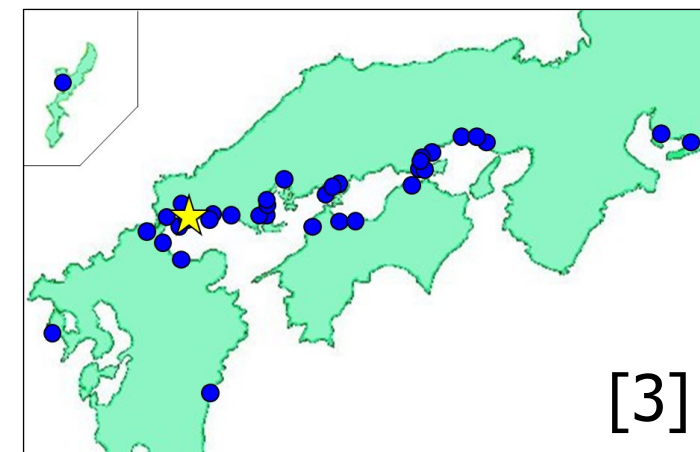
* FY2025 domestic cement production: approx. 11 million tonnes



[1]

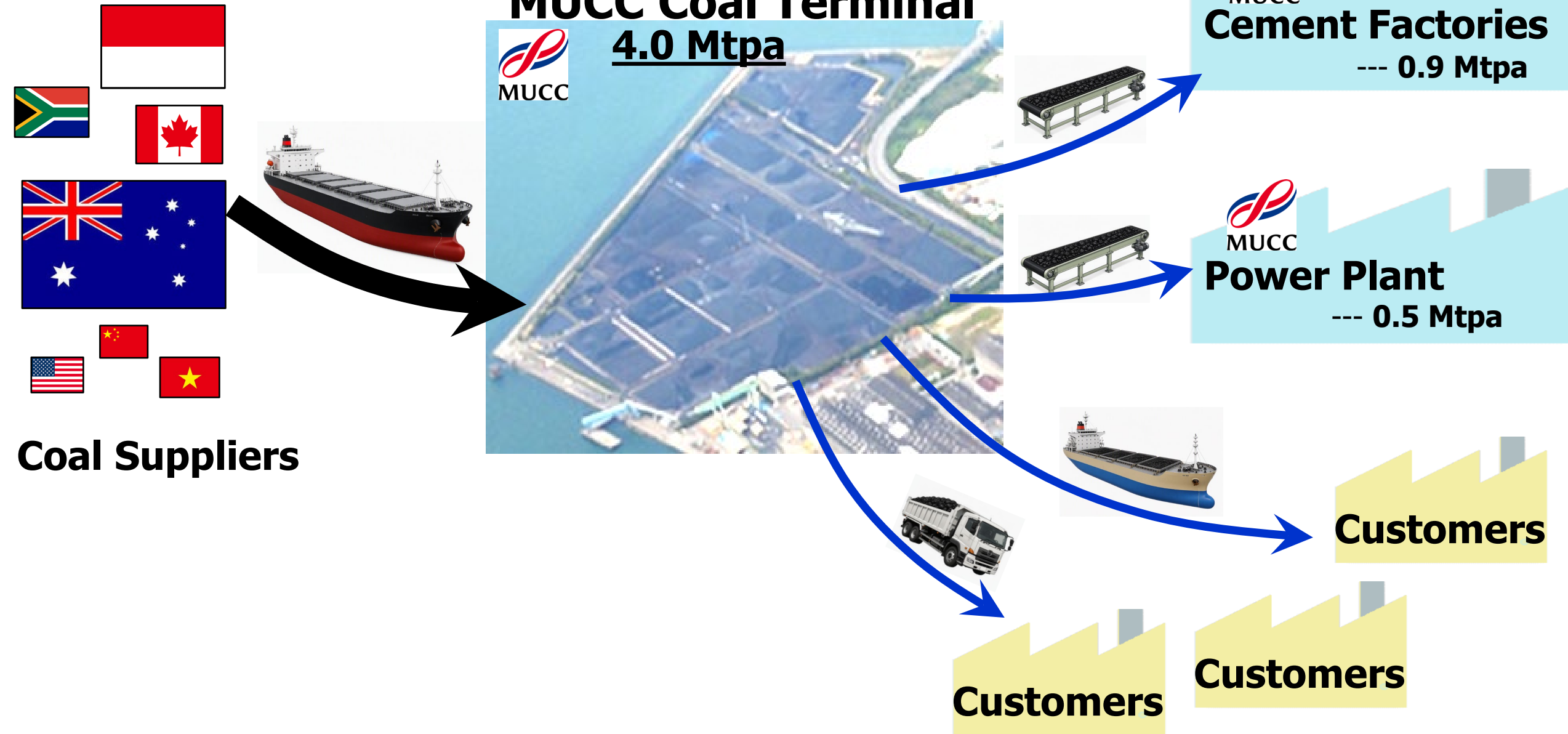


[2]

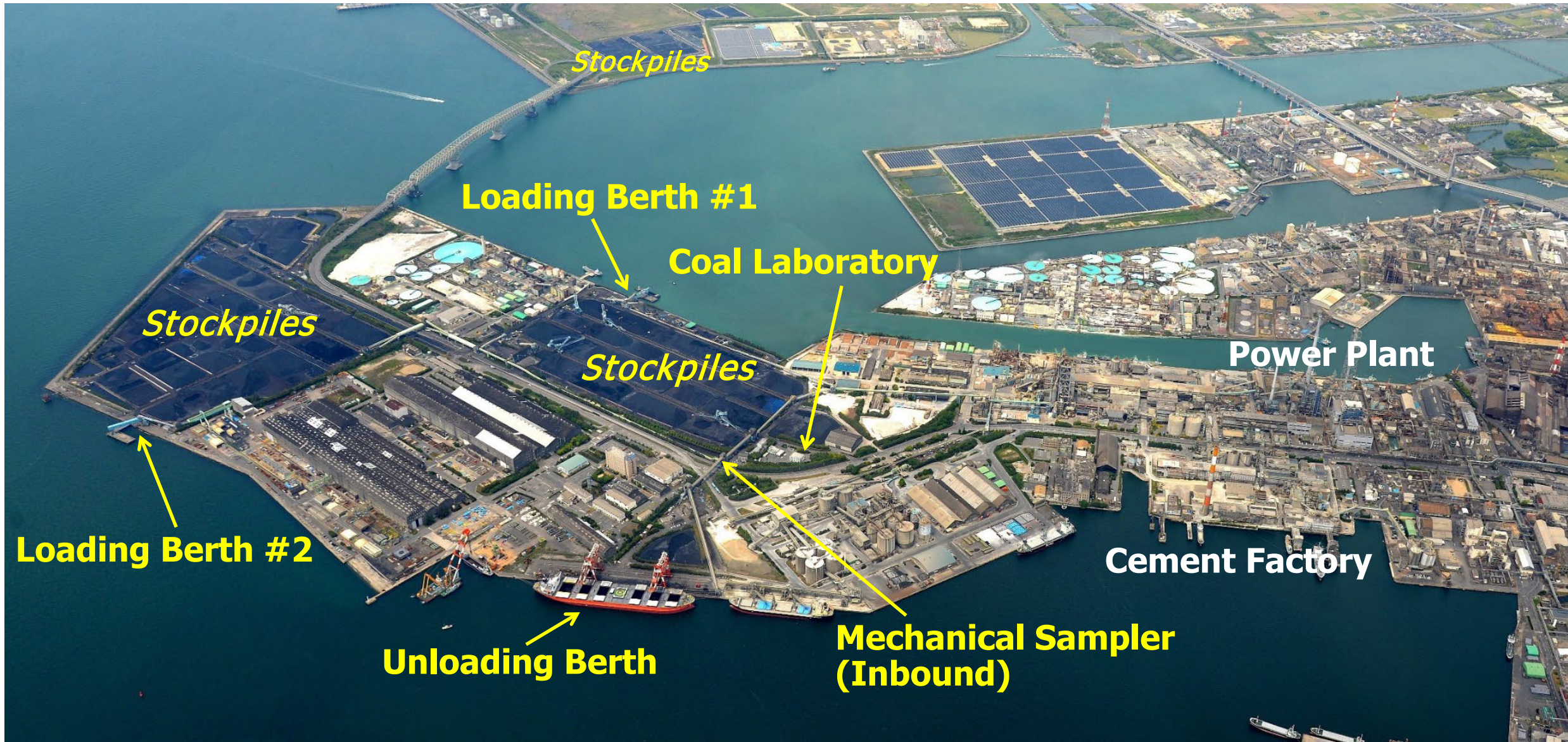


[3]

MUCC's Coal Flow

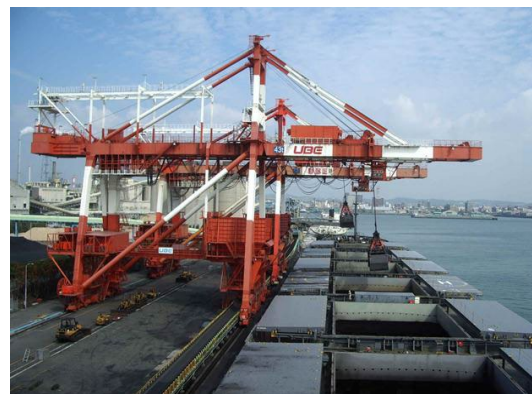


MUCC Coal Terminal - at a Glance



MUCC Coal Terminal - Key Facts

Official name:	"Ube Coal Center"
Location:	Ube city, Yamaguchi prefecture
Operations Commenced:	October 1980
Storage capacity:	nominal 2.8 million tonnes
Annual throughput:	nominal 7.3 million tonnes (FY2025 actual 4.0 million)
Max. vessel size:	95,000 Deadweight Class
Principal equipment:	2 Unloaders, 2 Stackers, 2 Reclaimers, 1 Stacker-reclaimer, 2 Ship loaders



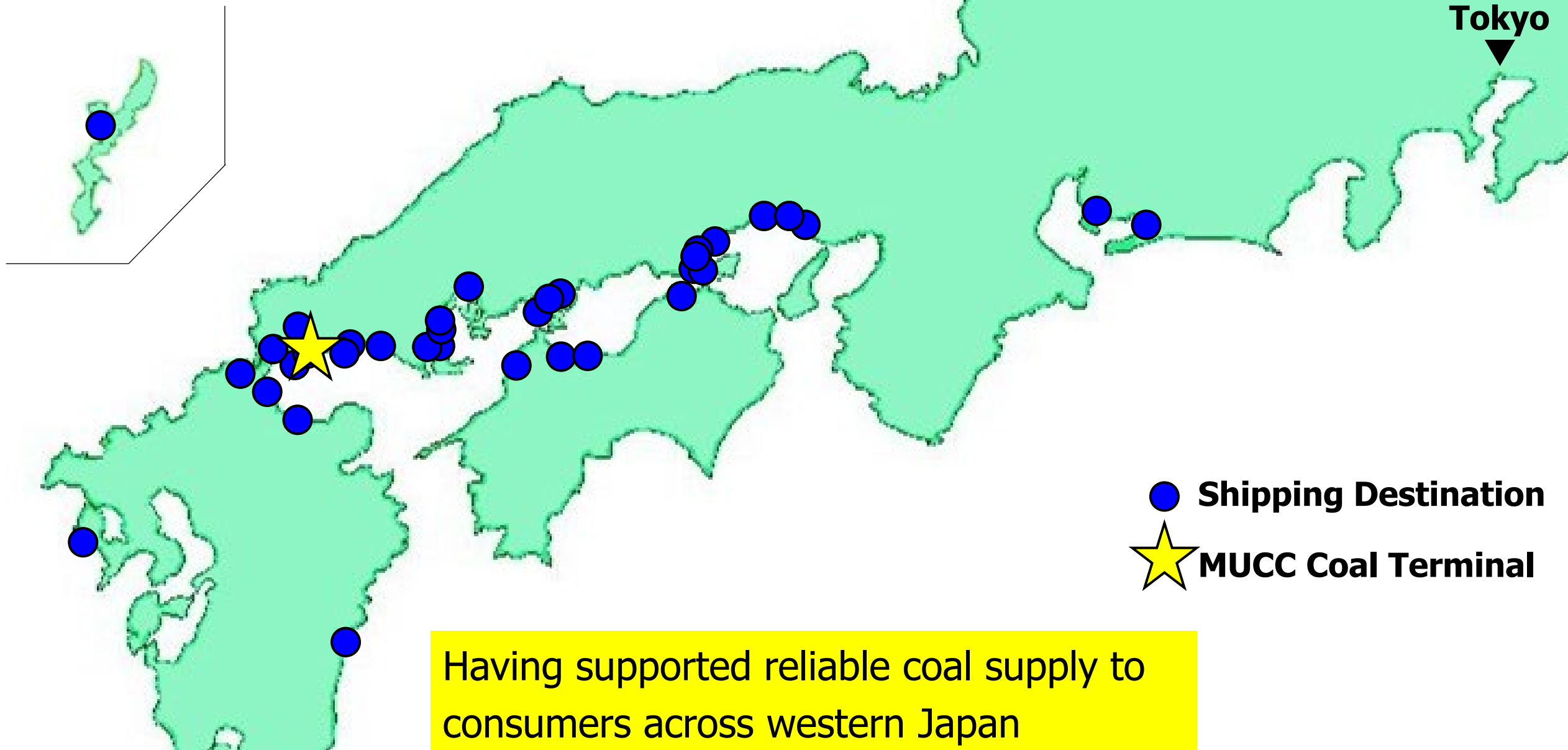
MUCC Coal Terminal - Advantages

- The **largest thermal coal terminal** in Japan.
- Location offering **quick access to customers across western Japan.**
- Storing **over 30 brands of coal** from Indonesian subbituminous to Vietnamese anthracite and shipping them to **over 30 consumers.**
- Reliable and highly-skilled coal handling expertise built on **46 years of operating experiences and more than 200 million tonnes handled.**
- Rigorous quality testing and monitoring by the skilled staff of our **in-house coal laboratory.**
- 8 years and 1.3 million tonnes of **biomass handling**, continuously advancing our biomass handling expertise.

SEE NEXT PAGE



MUCC Coal Terminal - Shipping Destinations



What's happening in Japan's coal supply chain

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- Gradual decline in coal demand, divestment from coal related businesses.
- Coal terminals will remain essential for remaining coal demand for a certain period.

VALUE-1

For your sustainable operation, we propose using our patented biomass product “**MUCC Torrefied Pellet®**”.

VALUE-2

For your energy security, we propose using MUCC Coal Terminal as **YOUR EMERGENCY COAL STORAGE SITE**.

White Pellet



No Water Resistance -> Indoor Storage

Poor Grindability ->
Lower blending ratio to coal in PC boilers

roasting
**Torrefaction
250-300°C**

MUCC Torrefied Pellet®
Black Pellet



Water Resistance -> Outdoor Storage

Improved Grindability ->
Higher blending ratio to coal in PC boilers

Black Pellet is blended with thermal coal and co-fired in MUCC coal-fired power plant.

							
			Black Pellet		Australian Premium Thermal Coal		(13:87)
Total Moisture		As Received; %	16.1		10.8		11.5
Proximate	Inherent Moisture	Air Dried; %	9.9		3.5		4.3
	Ash Content	Air Dried; %	2.5		10.5		9.5
	Volatile Matter	Air Dried; %	69.3	+	33.3	→	38.0
	Fixed Carbon	Air Dried; %	18.3		52.7		48.2
Calorific Value		Air Dried; kcal/kg	4,590		7,040		6,738
Total Sulfur		Dried; %	0.01		0.50		0.44



White Pellet
from overseas



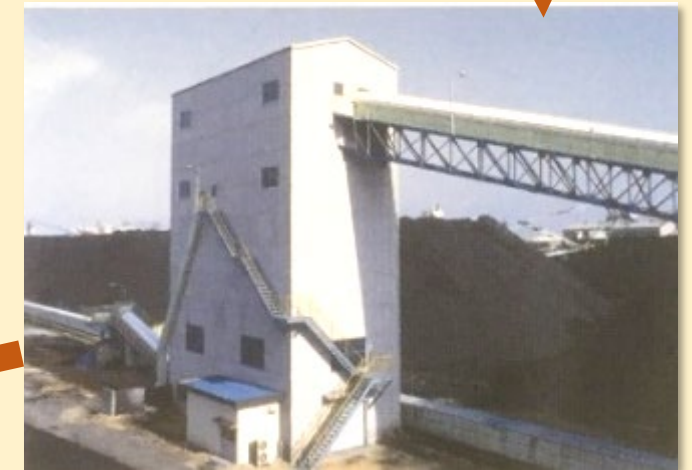
Torrefaction Plant
60,000 tpa



MUCC Coal Terminal



Outdoor Storage



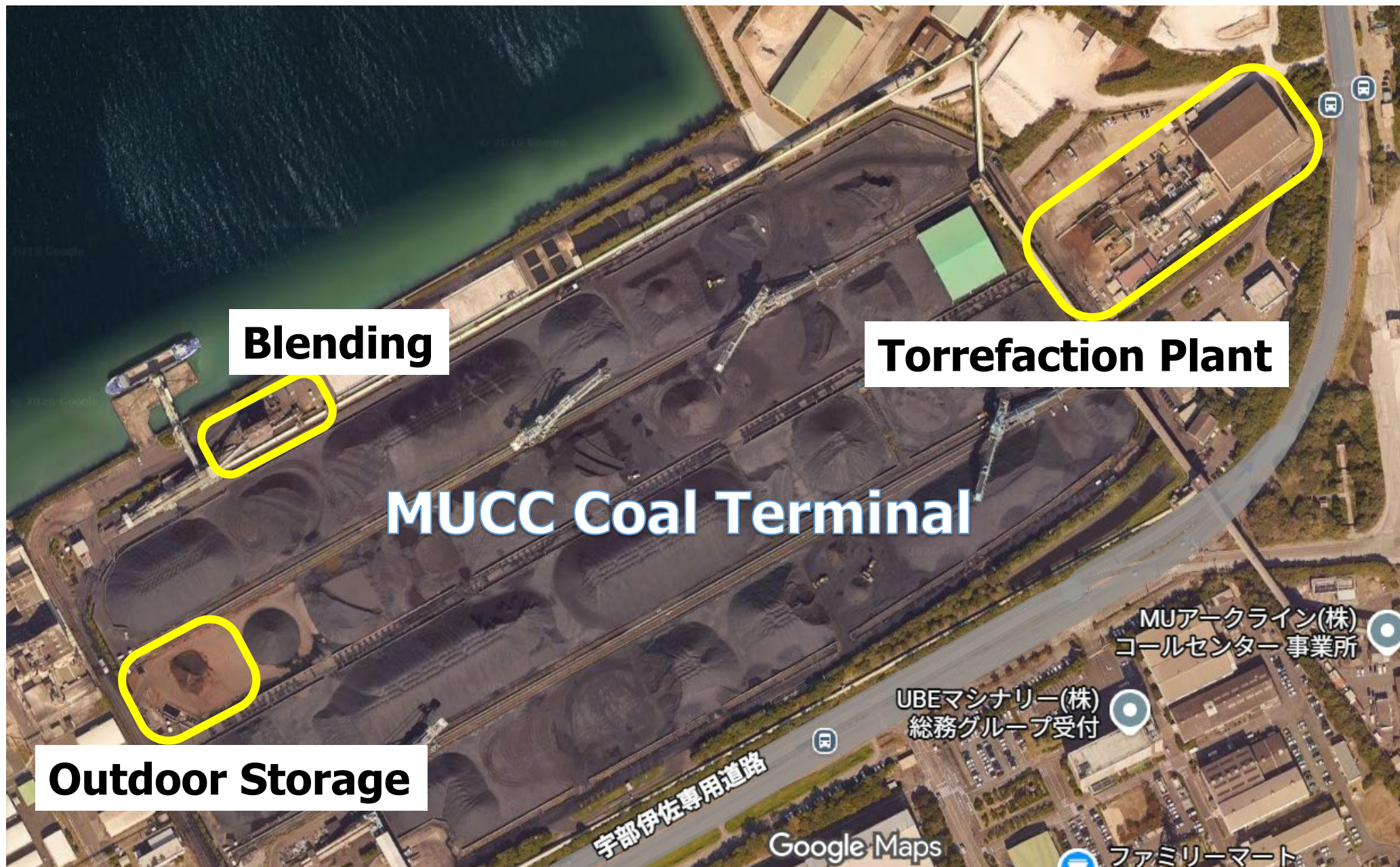
Blending:
Black Pellet + Coal



MUCC Power Plant
(100% coal-fired)



Co-firing:
Black Pellet + Coal



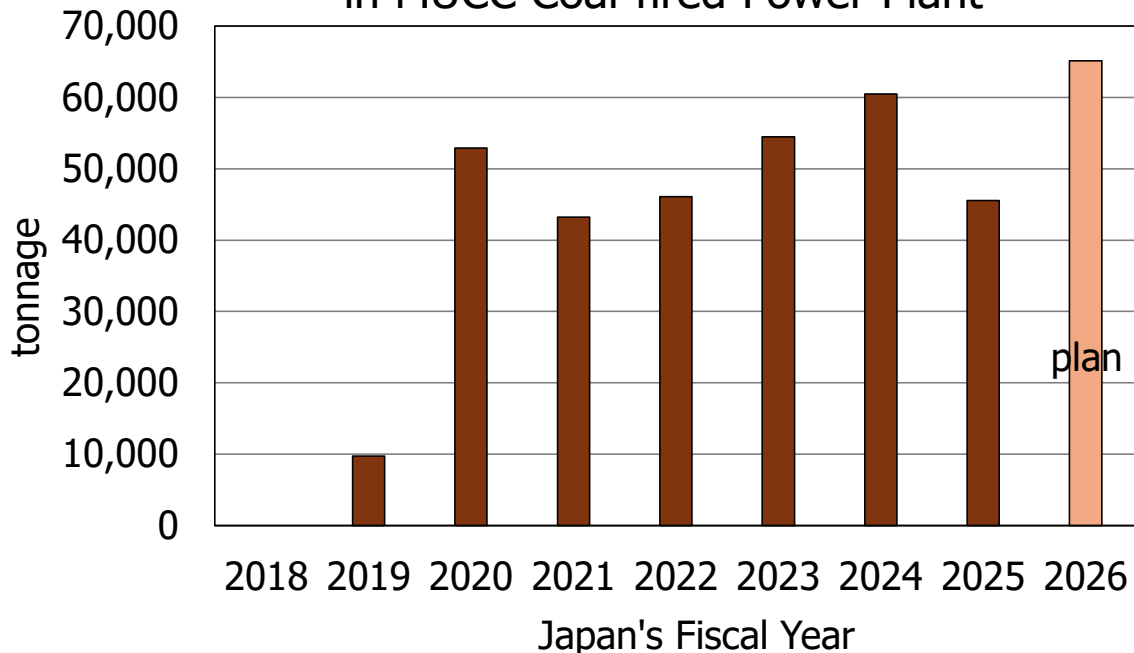
VALUE-1 7 Years of Commercial Experience

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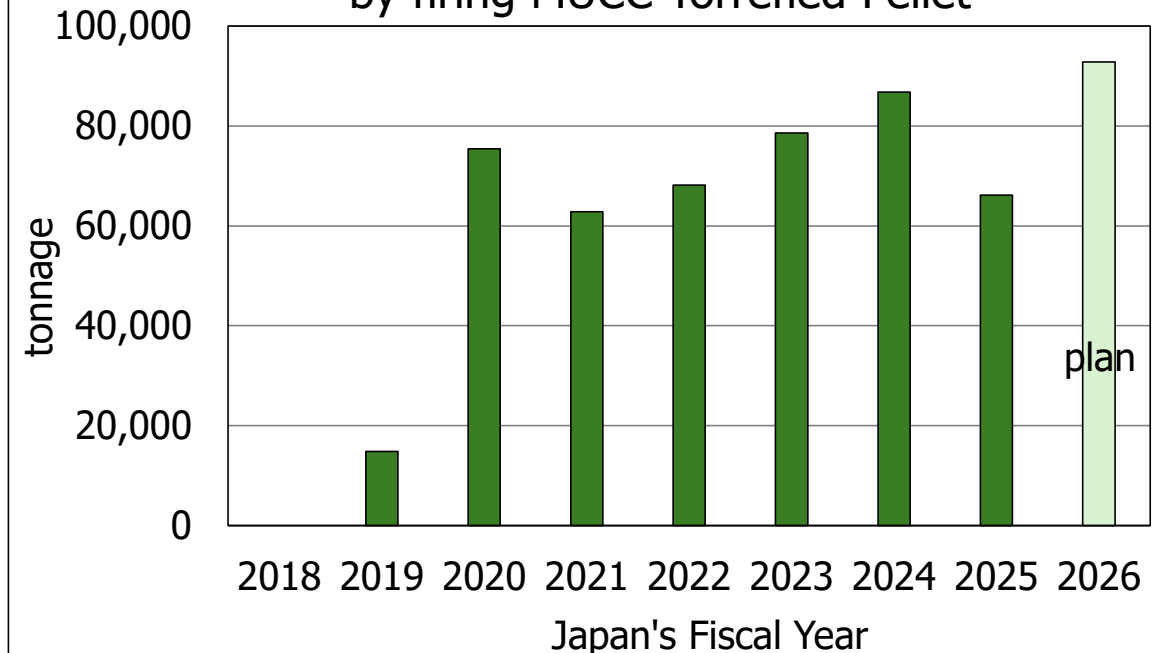
We have been producing Black Pellet since **December 2019** and co-firing them with coal in MUCC power plant.

- **325,756 tonnes** of Black Pellet produced,
- **526 GWh** of CO₂ free electricity generated,
- **471,699 tonnes** of CO₂ emissions saved.

MUCC Torrefied Pellet Consumed
in MUCC Coal-fired Power Plant



CO₂ Emission Reduction
by firing MUCC Torrefied Pellet



If you need to reduce CO2 emissions **TOMORROW**, we can ship MUCC Torrefied Pellet[®] from MUCC Coal Terminal **TODAY**.

No dedicated silo needed, no separate biomass mill required.

VALUE-2 MUCC Coal Terminal as EMERGENCY COAL STORAGE SITE

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- Under the pressure of decarbonization, global supply capacity for premium thermal coal used by Japanese consumers is expected to shrink gradually.
- As a result, the risk of supply-demand imbalance in the Japan's coal market may increase near future.



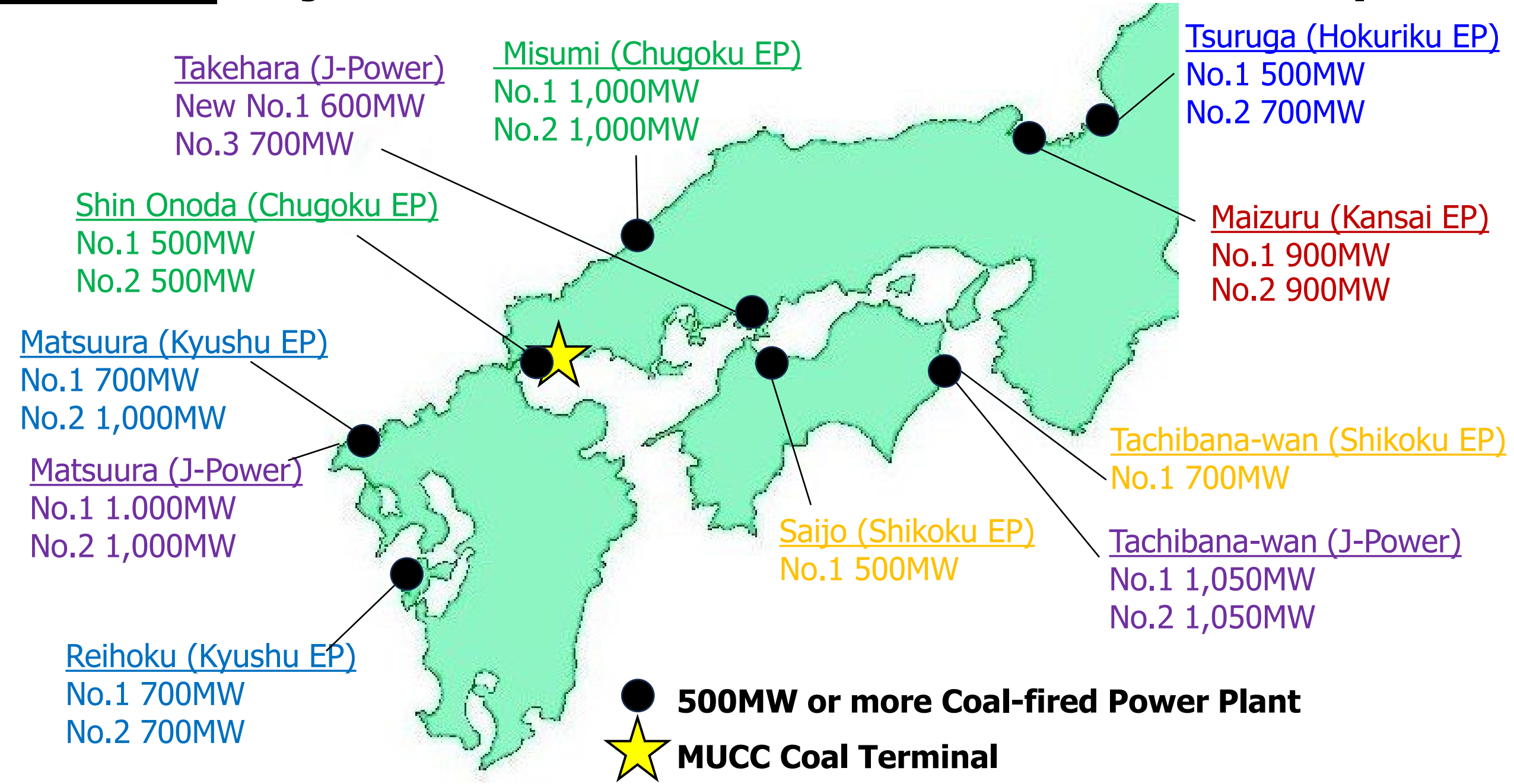
We therefore propose MUCC Coal Terminal serve as
YOUR EMERGENCY COAL STORAGE SITE.

VALUE-2 Six Reasons Why MUCC Coal Terminal should be ¹⁸ **YOUR EMERGENCY COAL STORAGE SITE**

MUCC Coal Terminal;

1. Is **centrally located among major coal-consuming areas** in western Japan, enabling prompt delivery.
2. Is situated in a region with **lower risk of severe natural disasters** (earthquakes, tsunamis, volcanic eruptions).
3. Features an **extensive storage area**, allowing flexible inventory management (e.g. joint inventory management for multiple consumers).
4. Possesses **proven techniques to minimize quality degradation** during long-term coal storage.
5. Conducts rigorous quality testing and monitoring through the skilled staff of our **in-house coal laboratory**.
6. Can **blend Black Pellet** with your coal on request.

VALUE-2 Major Coal-fired Power Plants in Western Japan ¹⁹





VALUE-2 Minimizing Quality Loss during Long-term Storage

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Compaction of stockpiles by skilled operators.



Chemical coating of stockpile surfaces.

Date	
Total Moisture	
Proximate	Inherent Moisture
	Ash Content
	Volatile Matter
	Fixed Carbon
Calorific Value	
O/C	

Case 1		
Australian Premium Thermal Coal A		
February, 2022		March, 2024
9.5		11.6
3.4		3.8
11.7		11.9
34.2		33.1
50.7		51.2
7,010		6,850
0.151		0.175

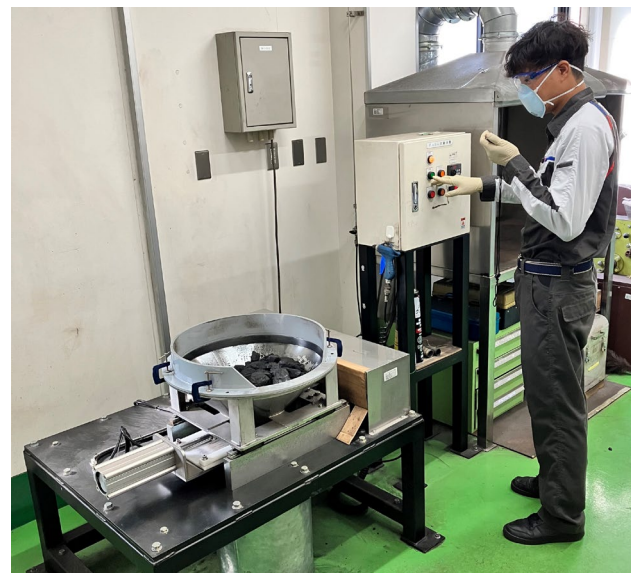
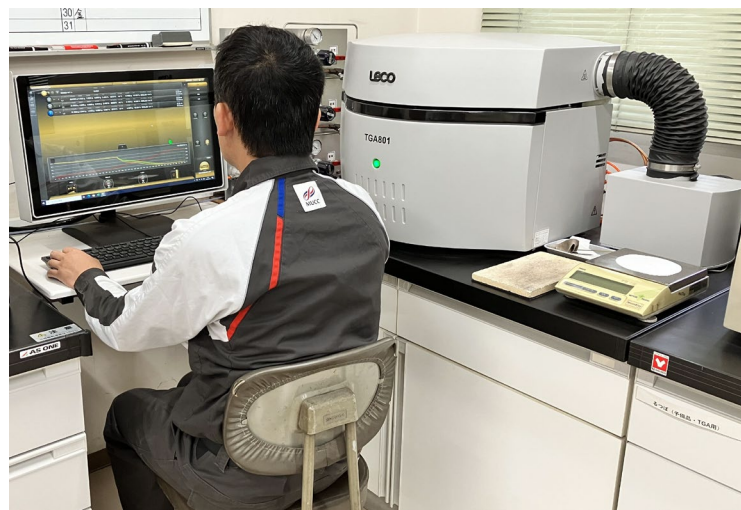
Duration: 2.1 years

Case 2		
Australian Premium Thermal Coal B		
August, 2020		March, 2024
9.1		11.6
3.1		3.6
12.5		13.3
34		32.9
50.4		50.2
6,980		6,770
0.146		0.169

Duration: 3.5 years

We stored some coals for **more than 2 years** with minimal quality loss and successfully consumed them in MUCC power plant.





MUCC 依頼No. : RQ20260722008-1 (1/2)

試験報告書

環境エネルギー事業部 石炭部 営業室 御中

山口県宇部市大字小串字 津の井 1990
 UBE三菱セメント株式会社 石炭部
 環境エネルギー事業部 石炭技術センター
 電話 (0836) 31-1003 (ダイヤル)

先にご依頼のありました分析の結果を、下記の通りご報告致します。

銘柄 UBEアイシンダーク
 入荷年月日 2026年7月27日
 船荷名 MEDI CAJETA
 入荷量 (t) 21,632
 詳細:

Total Moisture	全水分	10.0 %	(到着ベース)
PROXIMATE ANALYSIS	工業分析		
Moisture	水分	3.2 %	(気乾ベース)
Ash	灰分	10.7 %	(気乾ベース)
Volatile Matter	揮発分	34.7 %	(気乾ベース)
Fixed Carbon	固定炭素	51.4 %	(気乾ベース)
Gross Calorific Value	総発熱量	29,800 kJ/kg	(気乾ベース)
Gross Calorific Value	総発熱量	7,120 kcal/kg	(気乾ベース)
Total Sulfur	全硫黄	0.60 %	(無水ベース)
Hardgrove Grindability Index	ハードグローブ指数	50	
CSN	ボタン指数	2	
Size	ふるい通過分		
	5.0 mm	99.4 %	
	3.0 mm	97.1 %	
	1.5 mm	84.1 %	
	1.0 mm	75.3 %	
	0.5 mm	58.3 %	
	0.2 mm	33.4 %	
	0.1 mm	22.7 %	
	0.075 mm	11.8 %	
	0.045 mm	1.6 %	

本業務の結果を使用することにより生じたいかなる損害については、環境エネルギー事業部は一切の責任を負いません。

Quality testing and monitoring by the skilled staff of our in-house Coal Laboratory

Coal Testing Report

For your energy security, you can put your **EMERGENCY COAL** in MUCC Coal Terminal for years.

- Your stockpile will be shaped and maintained carefully.
- Your coal quality degradation will be minimized.
- Your coal quality will be monitored periodically.
- Your coal will be delivered promptly to your site.



MUCC Coal Terminal offers two **VALUES**

to contribute to maintaining the resilience of Japan's coal supply chain.

VALUE-1

We can supply **MUCC Torrefied Pellet®** for your immediate CO2 emission reduction.

VALUE-2

You can use MUCC Coal Terminal as **YOUR EMERGENCY COAL STORAGE SITE.**

Decarbonization today. Energy security tomorrow.