



# Consent Decree Compliance

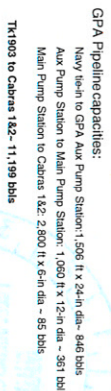
## Work Plan and Projected Financial Impact

Presentation To:  
Public Utilities Commission  
October 28, 2021



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### RFO Tanks and Pipeline Schematic Diagram





# Transition to Clean Fuel Challenge:

## Currently burn three types of fuel:

1. HSRFO (2.0% S) Cabras 1&2, Piti 8&9
2. LSRFO (1.19%S) Cabras 1&2, Piti 8&9
3. ULSD (0.0015%S) All Other Plants

## Five types of fuel between July 2022 - Dec 2022:

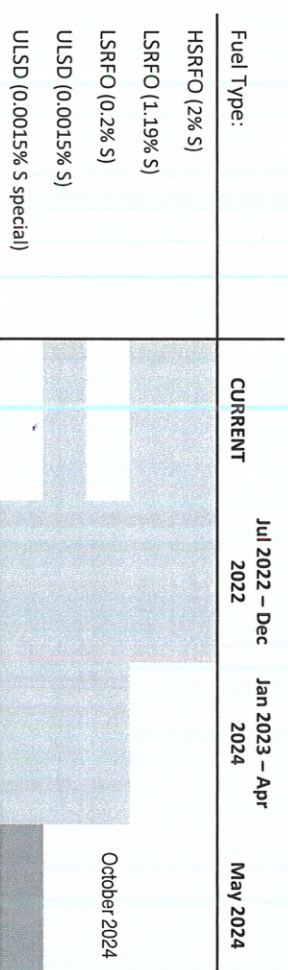
- HSRFO (2.0% S) Cabras 1&2
- LSRFO (1.19%S) Cabras 1&2
- LSRFO (0.2%S) Cabras 1&2
- ULSD (0.0015%S) Piti 8&9
- ULSD (0.0015% S special) Ukudu, Piti 8&9

## Three types of fuel between Jan 2023 - October 2024:

- LSRFO (0.2%S) - Cabras 1&2
- ULSD (0.0015%) - Piti 8&9
- ULSD (0.0015% S special)-Ukudu Plant & Piti 8&9

## Single Fuel Source beginning October 2024:

- ULSD (0.0015% S special) - All Plants





# Fuel Plan: Roadmap to Clean Fuel & Consent Decree Compliance

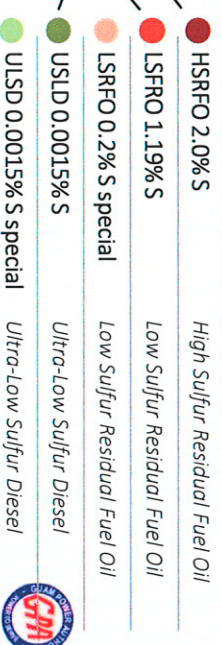
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TANK	2022												2023												2024																																														
Capacity	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D																																			
1934 (GPA) 268,000 bbl	Cabras 1&2; Piti 8&9						CLEANING & REHABILITATION						ULSD 0.00015% S SPECIAL																																																										
1935 (GPA) 268,000 bbl	Cabras 1&2						LS RFO						FMPY						BEGIN						CLEAN & REHAB																																														
1903 (Tristar) 400,000 bbl	Cabras 1&2, Piti 8&9																								Cabras 1&2						END																																								
1906 (Tristar) 196,000 bbl	-						Piti 8&9, Tenjo						ULSD 0.00015% S																																																										
1907 (Tristar) 196,000 bbl							Piti 8&9, Tenjo, Ukudu (beginning Jan 2023)																		ULSD 0.00015% S SPECIAL																																														
START																																				END																																			

## Dec 2024 Projection

Plant Monthly Storage	RFO (Bbls)	ULSD (Bbls)
Cabras 1 & 2	95,000	
Piti 8 & 9	71,000	80,000
Ukudu CC (2024)		120,000

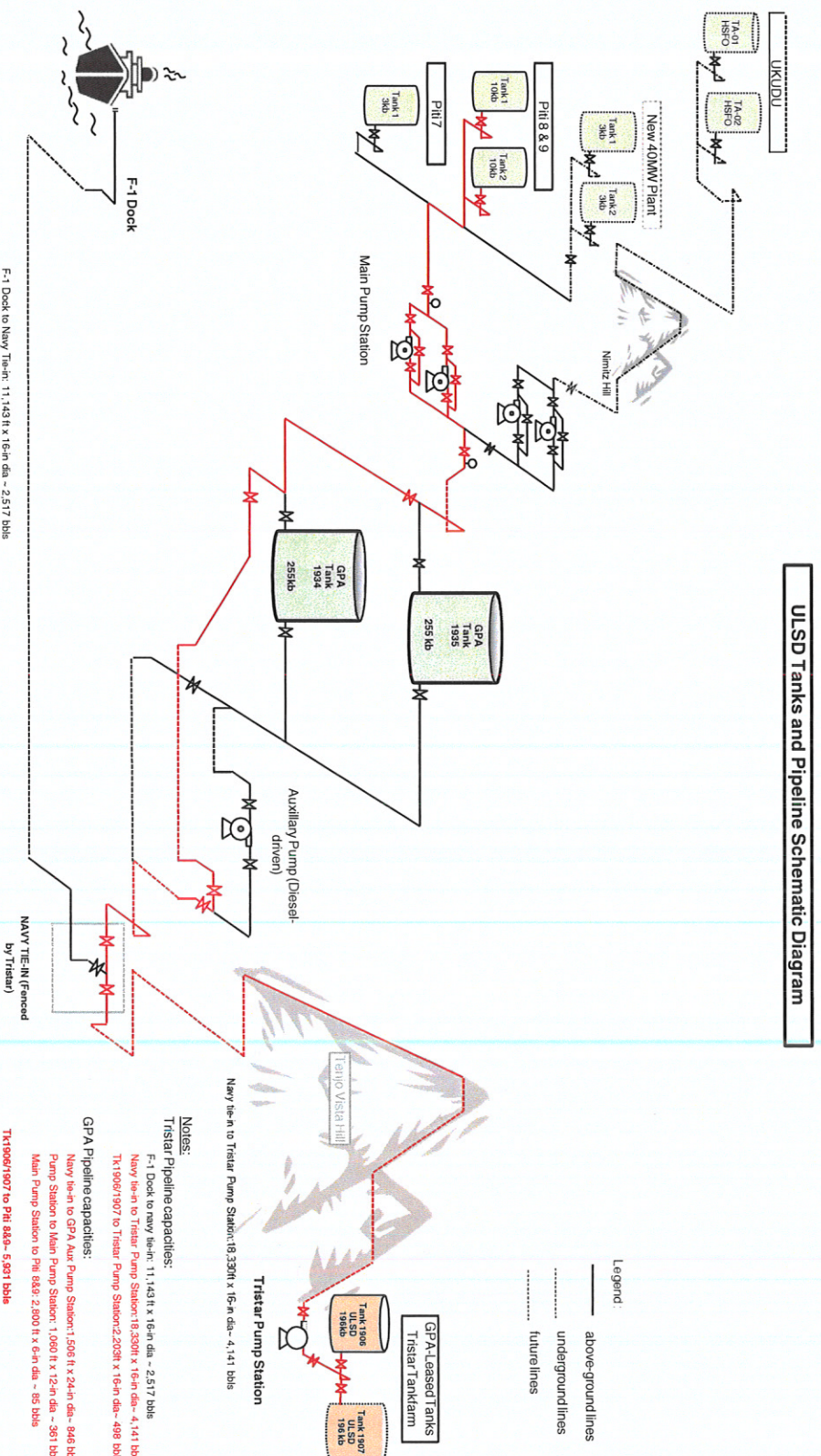
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# ULSD Tanks & Pipelines

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# Projected Annual Energy Fuel-Related Costs CY 2023 - CY 2026

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LSRFO \$/BBL	\$100	\$100	\$100	\$100
ULSD \$/BBL	\$100	\$100	\$100	\$100
LNG (\$/BBL Equivalent)			\$60	\$75

Fuel Type	2023			2024			2025			2026		
	Net Production	% Production	Annual Cost	Net Production	Annual Cost	Net Production	Annual Cost	Net Production	Annual Cost	Net Production	Annual Cost	Annual Cost
<b>GPA Conventional</b>												
Ukudu New 180 MW	644,466,000	35.8%	\$109,603,061	602,900,134	\$71,773,825	1,206,789,331	\$150,093,968	1,297,863,518	\$115,880,671			
Cabras 1&2 0.2% LSRFO	625,632,000	34.8%	\$96,103,226	312,816,000	\$48,051,613	20,000,000	\$3,072,197	20,000,000	\$3,072,197			
Piti 8&9 ULSD												
<b>Total Baseload 1,270,098,000</b>			<b>\$205,706,287</b>	<b>1,228,532,134</b>	<b>\$157,065,438</b>	<b>1,280,789,331</b>	<b>\$153,166,165</b>	<b>1,317,863,518</b>	<b>\$118,952,868</b>			
<b>Total Non-Baseload Units 333,463,600</b>		<b>18.5%</b>	<b>\$72,178,268</b>	<b>166,731,800</b>	<b>\$36,089,134</b>	<b>10,000,000</b>	<b>\$1,984,127</b>	<b>30,000,000</b>	<b>\$1,984,127</b>			
<b>GPA Renewables</b>												
GlidePath PV \$0.215/kWh	54,000,000		\$11,610,000	54,000,000	\$11,610,000	54,000,000	\$11,610,000	54,000,000	\$11,610,000			
Hanwha PV \$0.079/kWh				141,912,000	\$11,211,048	141,912,000	\$11,423,916	141,912,000	\$11,423,916			
KEPCO PV \$0.085/kWh	141,912,000		\$12,062,520	141,912,000	\$12,183,145	141,912,000	\$12,303,770	141,912,000	\$12,303,770			
Engie PV \$0.11/kWh				84,096,000	\$9,250,560	84,096,000	\$9,435,571	84,096,000	\$9,435,571			
Ph IV-A 60 MW \$0.11/kWh												
Ph IV-B 60 MW \$0.12/kWh												
Ph IV-C 120 MW \$0.12/kWh												
<b>Total GPA Renewables 195,912,000</b>		<b>10.9%</b>	<b>\$23,672,520</b>	<b>421,920,000</b>	<b>\$44,254,753</b>	<b>562,920,000</b>	<b>\$60,283,258</b>	<b>562,920,000</b>	<b>\$60,283,258</b>			
<b>Total Conventional 1,603,561,600</b>			<b>\$277,884,555</b>	<b>1,395,263,934</b>	<b>\$193,154,573</b>	<b>1,290,789,331</b>	<b>\$155,150,292</b>	<b>1,327,863,518</b>	<b>\$120,936,995</b>			
<b>System Production Cost</b>			<b>\$301,557,075</b>		<b>\$237,409,326</b>		<b>\$215,433,549</b>		<b>\$181,220,252</b>			
<b>System \$/kWh</b>			<b>\$0.1676</b>		<b>\$0.1306</b>		<b>\$0.1162</b>		<b>\$0.0958</b>			
<b>Total Net kWh 1,799,473,600</b>				<b>1,817,183,934</b>		<b>1,853,709,331</b>		<b>1,890,783,518</b>				
ULSD @ \$85/BBL							\$0.104					
LNG @ \$65/BBL												\$0.088

25% Energy from Renewable Sources by 2024; 38% by 2026



Prepared for the GPRC | October 28, 2021





# Sustainable Path to Achieve Reliable Power, Clean Environment & Low Energy Costs

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Prepared for the GPUC | October 28, 2021



CALENDAR YEAR		2019	2022	2023	2024	2025	
GPA Conventional Units		kWh Production	Bbls Fuel	Bbls Fuel	Bbls Fuel	Bbls Fuel	
Cabrás 1&2 – 2% HSRFO		644,466,000	1,136,624	1,136,624			As of Jan 2023
Cabrás 1&2 – 0.2% LSRFO							
Piti 8&9 – RFO		625,632,000	836,854	418,427			
Piti 8&9 – ULSD				480,516			
Total Baseload		1,270,098,000	1,973,478	2,035,567	480,516	30,722	As of Jul 2022
Total Non-Baseload (ULSD)		333,463,600	756,153	543,001	1,032,220		
Total System Conventional		1,603,561,600	2,729,632	2,578,568	1,148,917		11,338 Production Offset by Renewables
GPA Solar PV		kWh Production					
GlidePath PV 25MW		54,000,000		54,000,000	54,000,000	54,000,000	
KEPCO Mangilao PV 60MW				94,000,000	141,000,000	141,000,000	
Hanwha PV 60MW					141,000,000	141,000,000	
Engie PV w/ESS 40MW						84,096,000	
Total Solar PV		54,000,000		148,000,000	336,000,000	420,096,000	
Total kWh Production		1,657,561,600					
% Renewables		3.3%		8.9%	11.8%	25.3%	
Total Fuel Consumption (Bbls)		2,729,632	2,578,568	2,534,082	1,866,656	1,552,523	
Annual SO2 Emissions (tons)		13,016	10,259	756	370	7	
Emission Multifold Improvement			0.3	17	35	1,859	
Projected Fuel at \$100/bbl. (\$/kWh)				\$0.1676	\$0.1306	\$0.1162	
Projected Fuel at \$85/bbl. (\$/kWh)						\$0.1040	
CY2025 Projection							
Renewable Energy Generation		25.30%					
Annual Fuel Consumption (Bbls)		- 1,177,108					
Emissions Multifold Improvement		1,859 x					
Reduced, Affordable Fuel Cost		\$0.1162					



