



# GPM

## GRÃO-PARÃ MARANHÃO

### TPA & EF-317

Sustainable multimodal logistics solution for the competitiveness of the Northern Corridor.



# Agenda

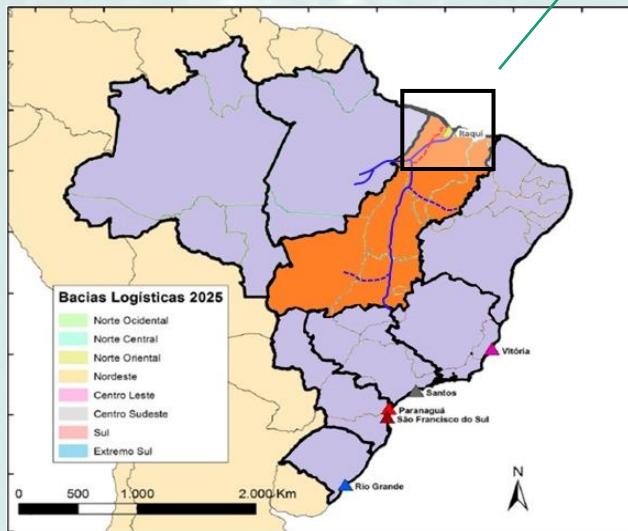
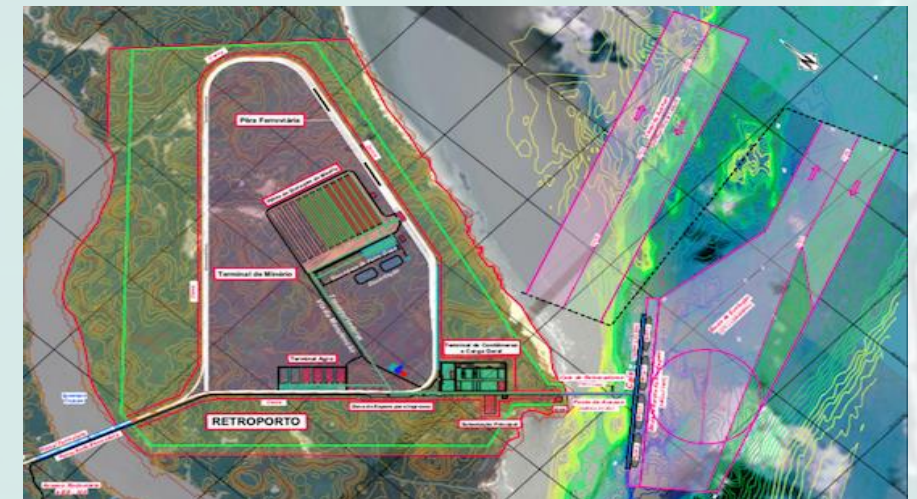
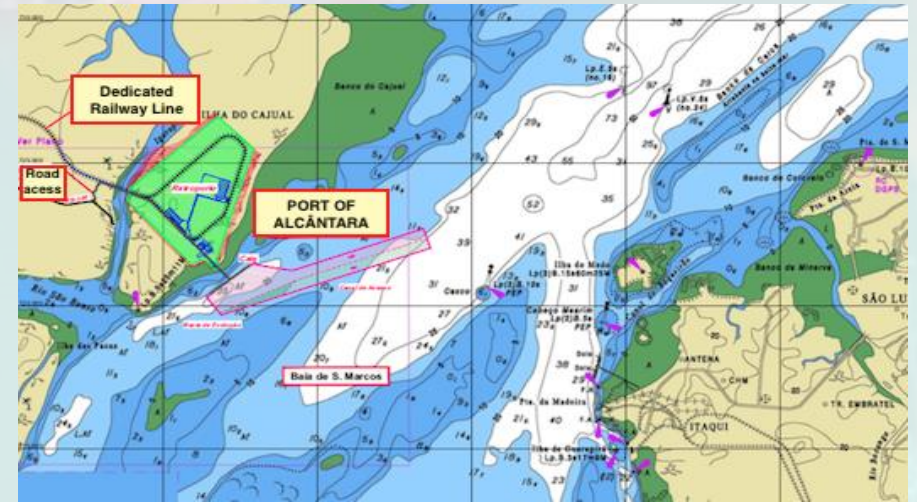
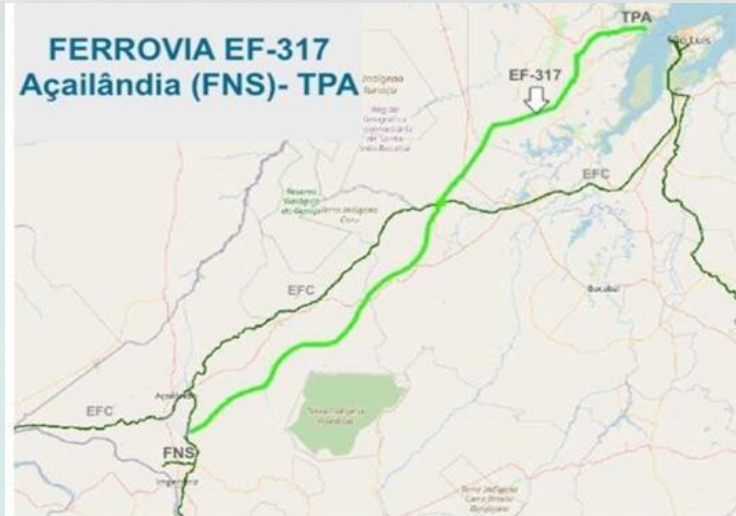
- 1 - Bottlenecked demand
- 2 – Proposed Integrated Solution
- 3 – Green Hydrogen Hub
- 4 – Results of the economic study





# EF-317 & TPA Location

Port and railroad in a strategic region for the outflow



Railroad integrated to the brazilian logistics backbone

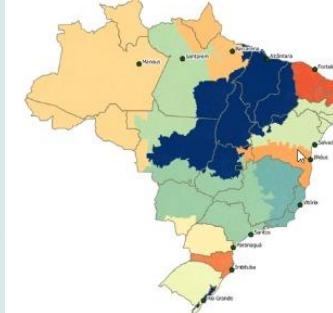
# Demand bottlenecked by lack of rail and port infrastructure

## Direct impact on Brazilian annual exports of about US\$ 39 Bi

Products	Installed export capacity in São Marcos Bay Mton in 2020	Exports Forecast Mton in 2030	Gap Mton	Export capacity TPA + EF-317 Mton in 2030 with 50% of total installed capacity	Annual value of unbound exports in 2030 US\$ Bi
Grains	15	100	-85	40	US\$ 24
Ore	200	435	-235	100	US\$ 15

### RESULTADOS

#### Corredor São Luís/Alcântara



ORE DEMAND						
Grup - Project	Mesoregion - County	Reserves (mil tons)	Exploration Potential (mil tons)			
			2021	2025	2030	2035
Vale - Sistema Norte	Sudeste Paraense - Parauapebas	16.118.000	188.835	240.000	290.000	290.000
Grupo Leolar/ Outros - Vertical	Sudeste Paraense - Cunupópolis	350.000	0	1.000	3.000	3.000
MSP - Rio Minas	Sudeste Paraense - Parauapebas/Curionópolis	340.000	0	5.000	10.000	10.000
MSP - Rio Claro	Sudeste Paraense - Parauapebas/Curionópolis	500.000	0	10.000	10.000	10.000
MSP - Inajá Leste	Sudeste Paraense - Santana do Araguaia/Santa Maria das Barreiras	2.400.000	0	30.000	30.000	30.000
Talon Ferrous - Trairão	Sudeste Paraense - Bannach	1.500.000	0	9.000	9.000	9.000
Mineração Floresta do Araguaia BigMac	Sudeste Paraense - Floresta do Araguaia	ND	0	2.000	2.000	2.000
HM do Brasil Mineração - Lontra	Sudeste Paraense - São Felix do Xingu	ND	0	ND	ND	ND
Codelco - Tancredo	Sudeste Paraense - São Felix do Xingu	1.200.000	0	18.000	18.000	18.000
MBAGEO - Bacabal	Sudeste Paraense - São Felix do Xingu	100.000	0	ND	ND	ND
Anglo American	Sudeste Paraense - São Felix do Xingu	2.000.000	0	30.000	30.000	30.000
Bemisa - Planalto Piauí	Sudeste Piauí - Paulistana	1.000.000	0	15.000	15.000	15.000
CBA	Rondon do Pará	5.000.000	0	4.500	9.000	18.000
<b>TOTAL</b>			<b>188.835</b>	<b>364.500</b>	<b>426.000</b>	<b>435.000</b>



# Proposed Integrated Solution to solve bottlenecks

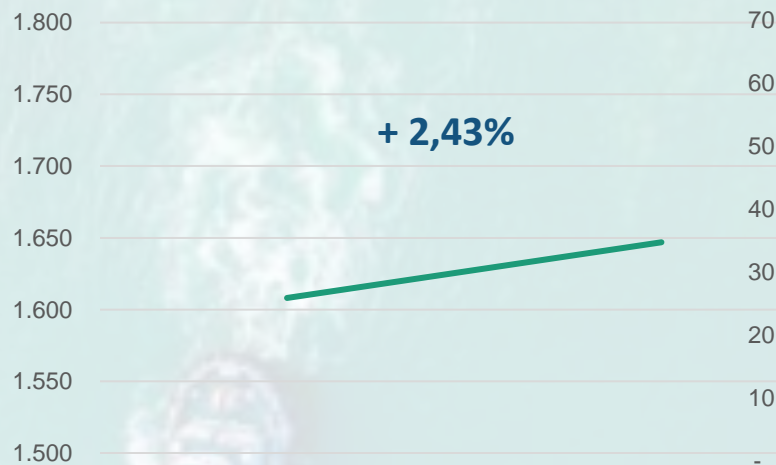
## Alcântara Port Terminal (TPA) and Maranhão Railroad (EF-317) wholly owned by GPM

Problem	Solution
Huge demand with no rail access and no deep port	TPA has 12 million m2, up to 8 piers with a depth of 25 meters (allows the greatest economies of scale with the largest ships). EF-317 is open-access, 520 km long and connects to the "backbone" of Brazil's railroad (FNS) allowing access at lower prices to much of the agribusiness and mining heartland
Competitiveness of national and international transport price in order to increase profitability of production	The 25 meters depth of TPA allows \$15 freight savings by using Capesizes instead of Panamax (grains) TPA + EF-317 allow existing iron mines without rail and port to become viable
Primacy of own concession cargo over third party cargo	GPM's business model is based on maximizing service to the market. In the railroad, the regime is of free access and in the port of general condominium allowing agri, ore and energy. GPM will make the infrastructures and the operators will manage their businesses alone or in consortiums

# Demand bottlenecked by lack of rail and port infrastructure

Direct impact on Brazilian annual exports of about US\$ 39 Bi with half of total installed capacity

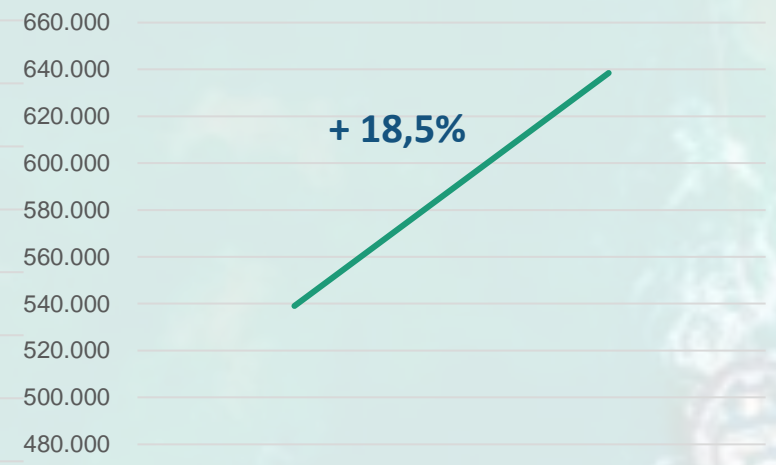
GDP BRAZIL (US\$ Bi)



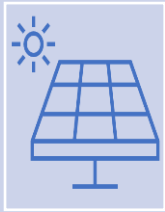
GDP MARANHÃO (US\$ Bi)



JOBS IN MARANHÃO



# Green Hydrogen Hub



20,000 ha area for  
Renewable Energy Plants  
(Photovoltaic + Wind)



Area to Install Electrolyzers  
(Green H<sub>2</sub> Production)  
+ Installation of Green Ammonia  
Plant



Initial production estimates:

**100 MW self-consumption from TPA**  
**600 MW for H<sub>2</sub> Green Plant**  
**50 MW for Distributed Generation in Maranhão**  
**58 metric tons of Green H<sub>2</sub> / Day**  
**21,000 metric tons of Green H<sub>2</sub> / Year**

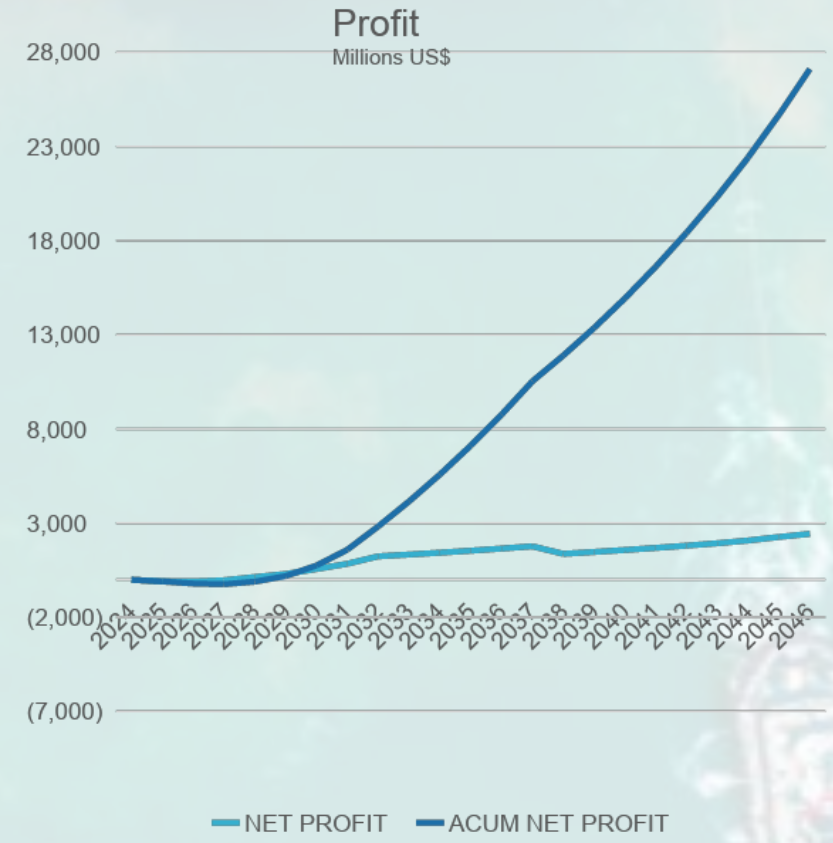
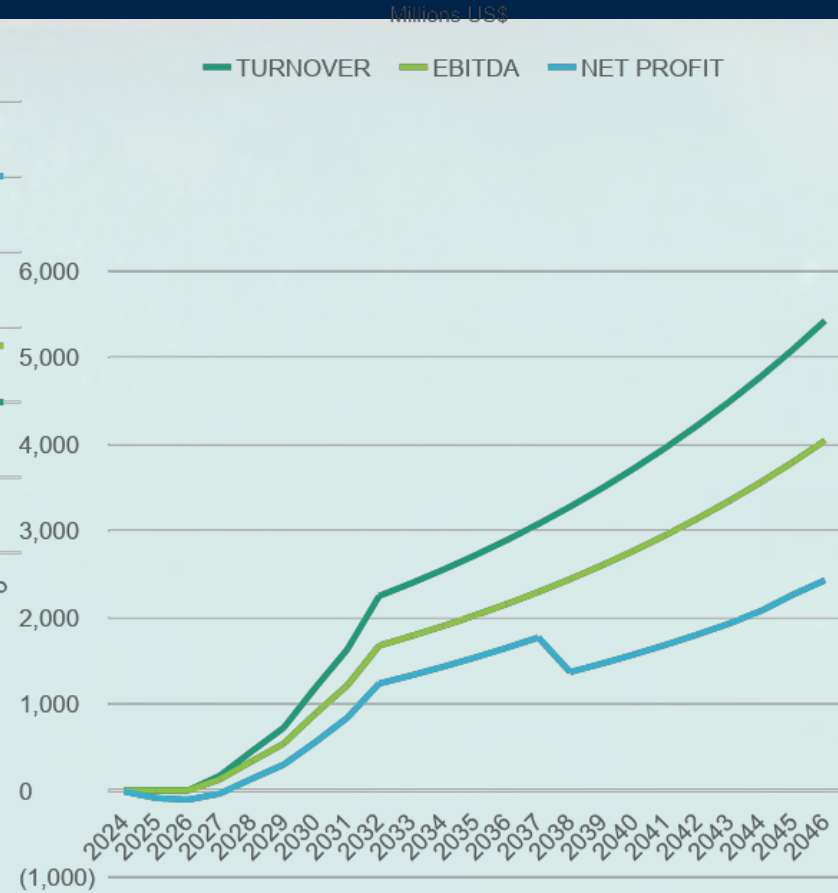
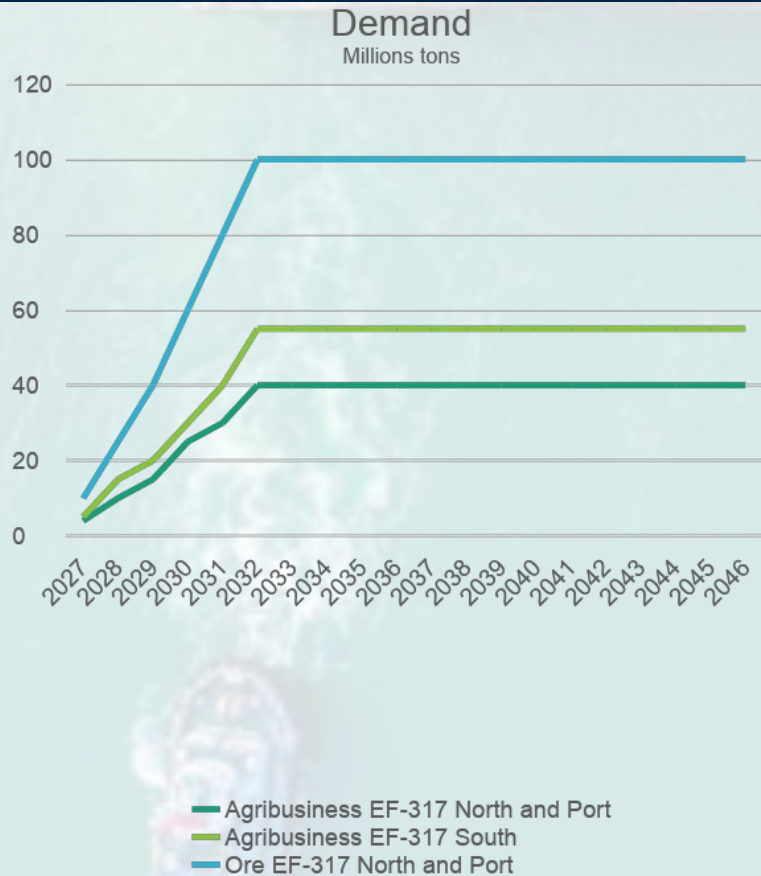


# Results of the economic study (using half of the capacity)

**IRR 47,8%**

**NPV US\$ 15,2 Bi**

**Pay-Back 4 years after start-up**



**Study includes distribution of 6% of profits to quilombola communities**



# Supported by



# Final remarks

Integrated Logistics TPA and EF-317 is the win-win solution already validated by several agencies

Brazil tends to play a central role in energy, food and commodities security

**Do you want to be part of this transformation?**