

VALUE PROPOSITION FOR METHANOL FUEL BLENDING IN TRINIDAD AND TOBAGO



Trinidad and Tobago Methanol Fuel
Blending Forum
January 22, 2019



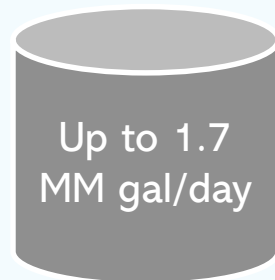
Outline

- Value Proposition
- Logistics
- Potential Benefits to Region
- Issues to be Considered to Support the Opportunity
- Trinidad's Potential for a Methanol Economy
- Path towards Methanol Fuel blending in Trinidad

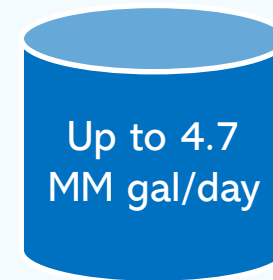
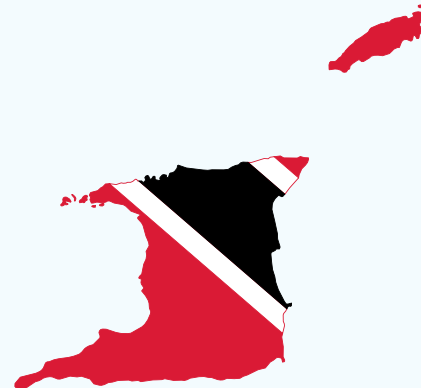
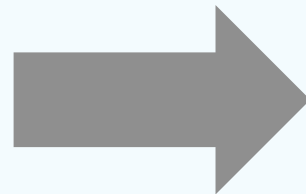


Value Proposition :Methanol can help reduce the cost of imported gasoline

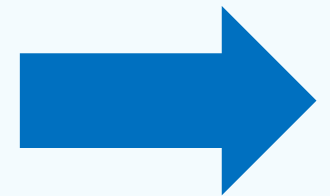
Trinidad, a leading methanol exporting country, currently exports over 1.7 billion gallons of methanol annually!



Imported and
re-exported
Gasoline

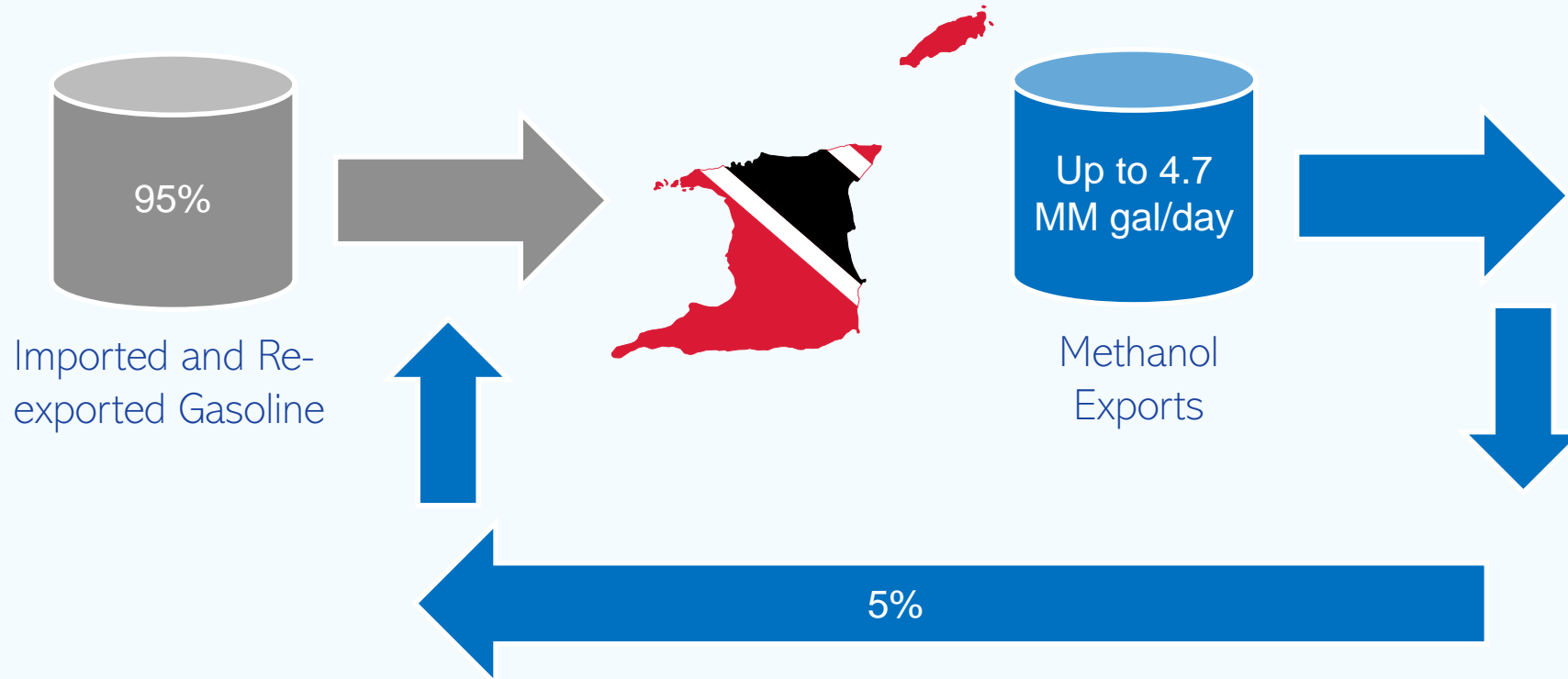


Methanol Exports



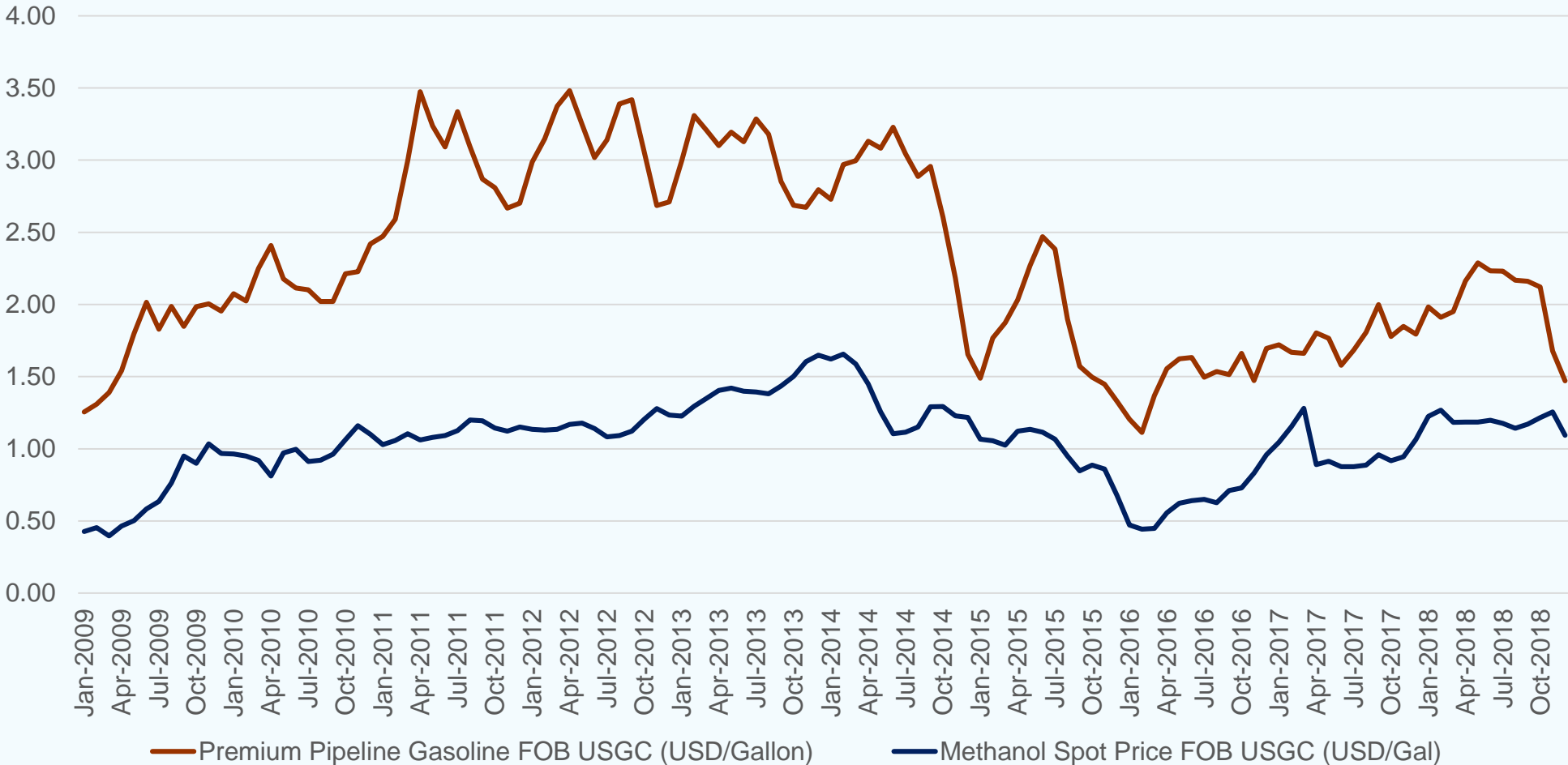
Value Proposition :Methanol can help reduce the cost of imported gasoline

Trinidad, a leading methanol exporting country, exports over 1.7 billion gallons of methanol annually!



As all of the gasoline will now be imported, domestic methanol plants can provide a clean, lower cost, replacement fuel for a portion of the imported gasoline.

Methanol Gasoline Price Comparison



On a volume basis, methanol prices trend lower than gasoline leading to potential costs savings if used as a blending stock.

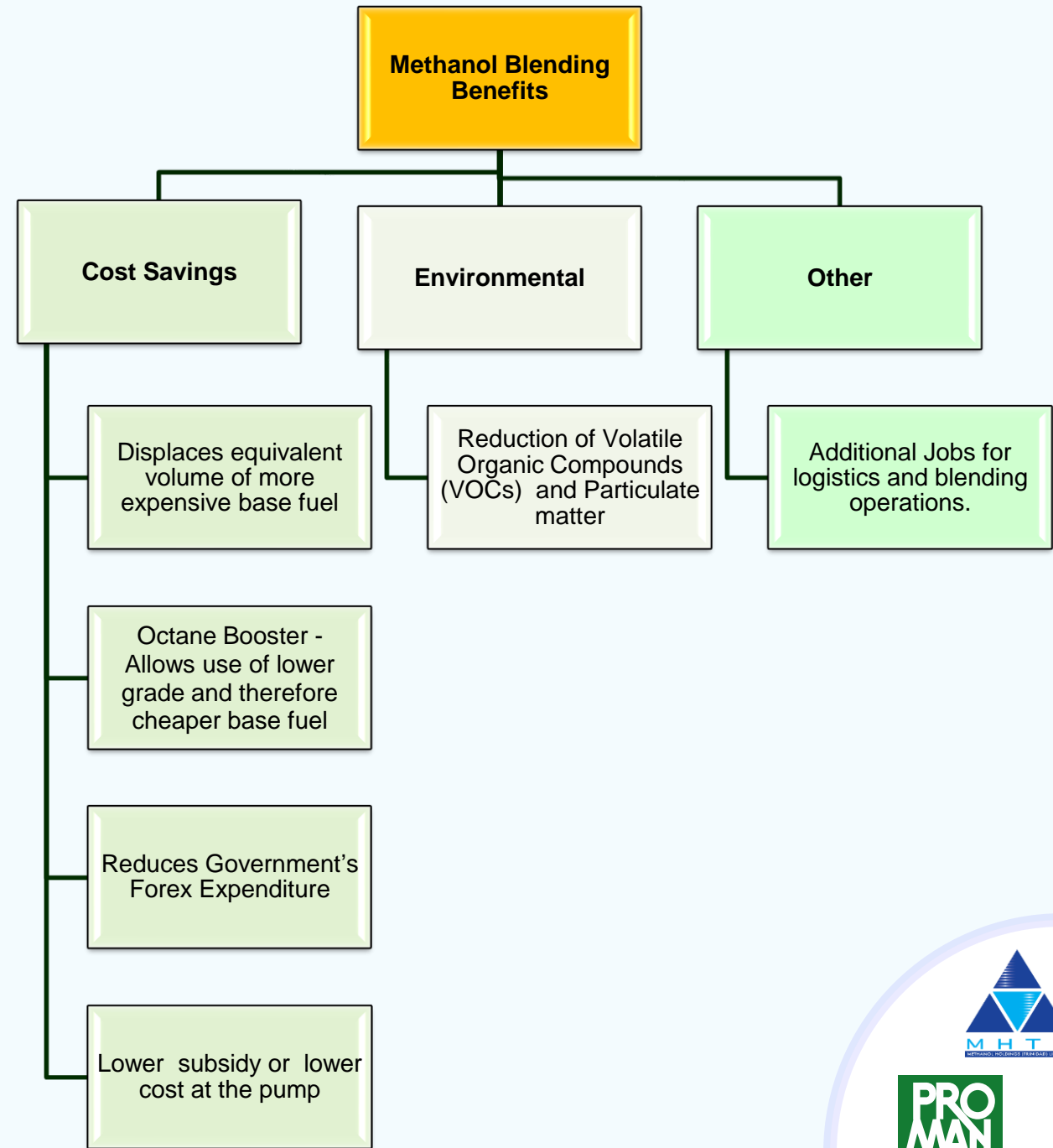


Methanol is high-performance fuel

- ✓ Higher Octane Value than Gasoline
 - RON Methanol is 109
 - RON Premium Gasoline is 95
 - RON Super Gasoline is 92
- ✓ Increased Engine Efficiency Compared to Gasoline
- ✓ Higher Flame Speed than Gasoline (Tighter Combustion Control and More Precise Torque Management)

Value Proposition

Overall Benefits



Value Proposition - Potential Financial Benefits of Blending 5% Methanol into Gasoline Pool

- ✓ Reduction of 30 million gallons per year of gasoline imports (~2,000 bbl per day)
- ✓ Potential to save in upwards of **TT\$240 million** per year
- ✓ Expected reduction in overall gasoline fuel costs will also reduce ultimate cost of fuels

Fuel Mix	Units	5% Methanol / 95% Gasoline	0% Methanol / 100% Gasoline
WTI Crude Price	USD / BBL	60	60
Unsubsidized Super Gasoline Price ¹	TT\$ / Gallon	14.90	14.90
Motor Gasoline Imports ²	MM Gallons / Year	600	630
Methanol Domestic Price	TT\$ / Gallon	7.25	N/A
Methanol Motor Fuel Demand	MM Gallons / Year	30	N/A
Total Fuel Cost	TT\$Bn / Year	9.1	9.4

- 1) Calculated based on Finance Ministry's estimated unsubsidized super gasoline price of TT\$5.47/Litre at West Texas Intermediate ("WTI") crude oil price of US\$73/BBL as per the "Budget Statement 2019 Turnaround". Price shown assumes a deduction of the cost of the current 12.5% VAT on the gasoline imported.
- 2) Based on the average of Petrotrin Pointe-à-Pierre refinery's motor gasoline sales (domestic and exported) from 2015-2017 as per Ministry of Energy and Energy Industries' Consolidated Monthly Bulletin.



Logistics

Blending can be done at the main import and storage locations, the gasoline distribution terminals or in road tank wagons themselves.

Trinidad has the available infrastructure to accommodate these options with some modifications.



Logistics – Methanol Production



7 commissioned methanol plants and 1 methanol plant in construction with existing on-island storage capacity



Logistics



7 commissioned methanol plants and 1 methanol plant in construction with existing on-island storage capacity



Existing storage and distribution facility at Caroni.



Existing fuel import, blending facility and storage infrastructure at former Petrotrin Pointe-à-Pierre refinery, and National Petroleum Marketing Company Limited ("NP") storage facilities at Sea Lots, remain utilized



Logistics

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➡ Transport by tank wagon.



Logistics

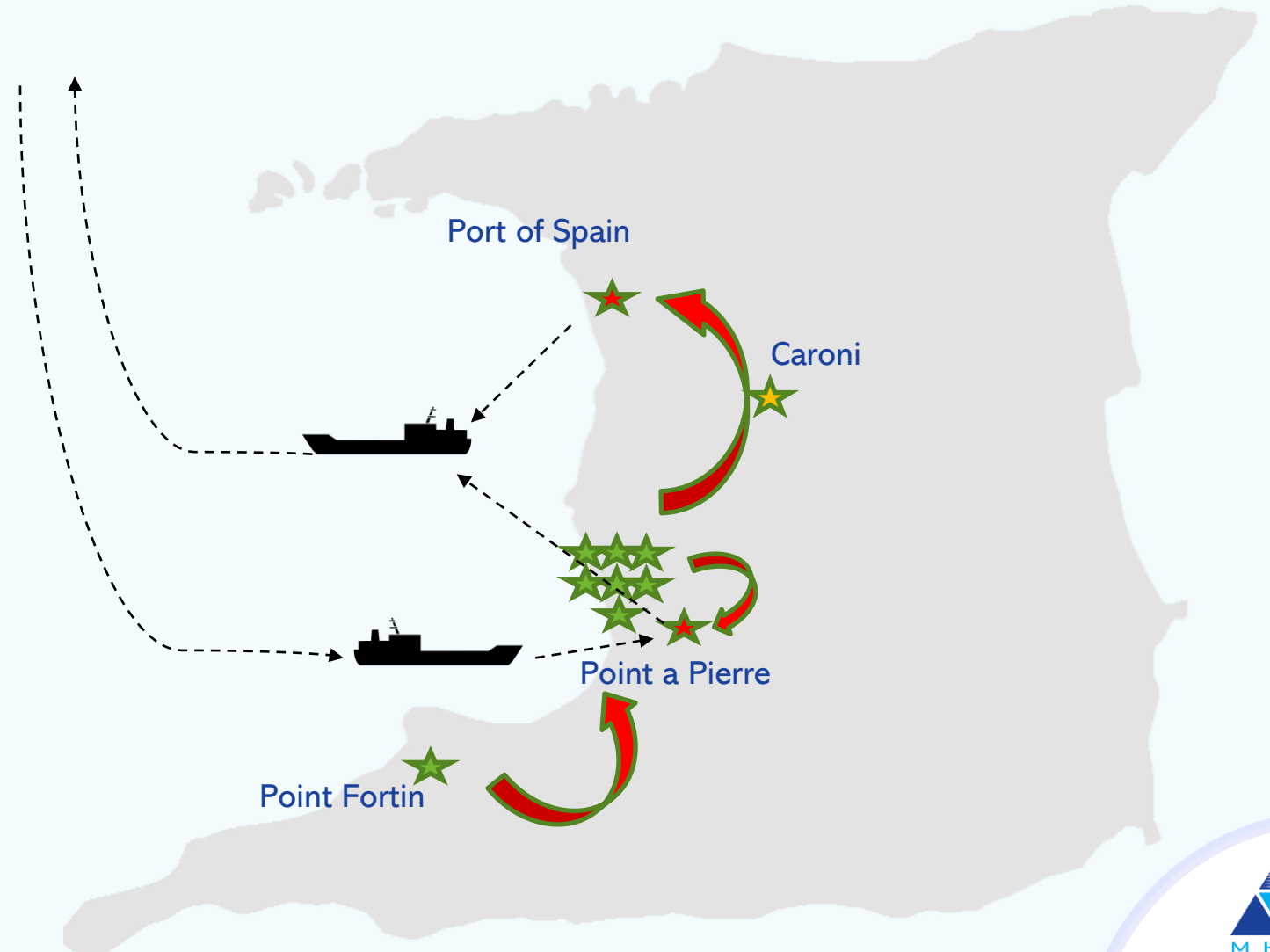
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🚢 Existing gasoline import carrier delivery to Pointe-à-Pierre refinery; blended methanol / gasoline carrier delivery to other customer nations



Potential Benefits to the Region

- This is an exciting opportunity to position the Petroleum Industry in Trinidad, as a regional common good.
- Opportunity to provide lower cost fuel for the Caribbean
- Can be a part of the strategy for the Region to meet SDG 13 ('particularly on emissions) and to make their economies more resilient.
- This Opportunity should be championed throughout the Region to secure 'buy-in'.
- Additional benefits may be negotiated with Countries, in order to make the Opportunity even more attractive.



Issues to be Considered to Support the Opportunity

- Funding for modifications/additions to infrastructure can be supported through existing incentives
- Domestic VAT exemptions for inputs into exports and exports.
- Possible negotiated Tax exemptions on Capital Equipment and concessions on intermediate inputs can be negotiated.
- Possible negotiated Corporation Tax negotiations to benefit the investment
- Possible opportunities through the Green Climate Fund (GCF).
- Trade with Caricom Nations
- Current Common External Tariff (CET) protection for Gasoline Products stands at 30%.
- The Regime has other features which makes it attractive for an Investment of this nature (Such as the Ineligibles Regime)- Regional Demand Study would support this Status
- Regional Round of Country by Country Discussions/Negotiations could add value to Opportunity



Trinidad's Potential For a Methanol Economy

Expansive low-cost methanol production resources position Trinidad to develop a “methanol economy” that can further reduce imported fuel volumes long-term

Higher Gasoline Fuel Blends

Blends in engines up to 15% in any vehicle engine; higher levels in flexible fuel engines possible, and upwards of 100% methanol fuel for fleet vehicles)

Power Generation

Clean fuel substitute for diesel, ideal for small generators without access to natural gas, or as back up power

Cooking Fuel

Clean cost efficient and safer replacement for LPG and kerosene-fired stoves commercialized in Caribbean, South American, African and Asian nations



Path Towards Methanol Fuel Blending in Trinidad

- Task force to perform a technoeconomic feasibility study
- Consultation with stakeholders including, but not limited to, Paria Trading, Trinidad and Tobago National Petroleum Marketing Company (NP), Ministry of Energy and Energy Industries, methanol producers, Trinidad and Tobago Bureau of Standards, automobile dealerships and associations and logistics contractors
- Develop a pilot program
- Create a regulatory framework that facilitates the adoption of methanol (first within Trinidad and for countries that import gasoline from Trinidad)
- Adopt new fuel standard
- Modifications/additions to existing infrastructure to facilitate blending



THANK YOU

