

GAS & ENERGY SOLUTIONS FOR THE CARIBBEAN

**Small LNG Import Terminals.
Are they feasible?**

Who are we

- GasEner is an EPC contractor specialized in small LNG storage & regasification terminals and Liquid-to-Compress Natural Gas (LCNG) for vehicle stations
- We design and build terminals from 30 to 20,000 cbm
- We have build 13 small terminals in the Dominican Republic since 2009
- We are Agents to Chart, Inc. leader in the cryogenic field (www.chart-ind.com)



Some exam



The import terminal size

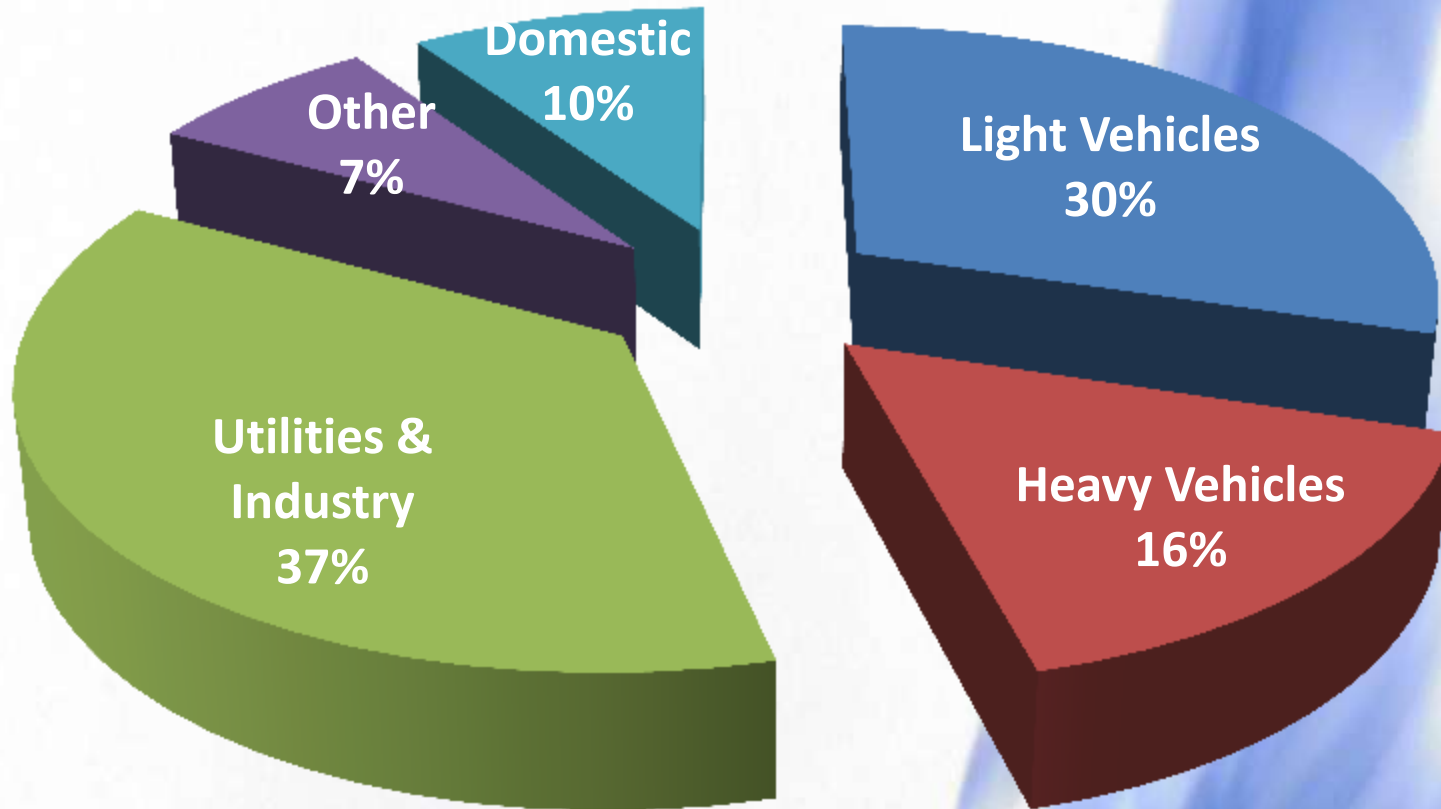
- The import terminal size is driven by:
 - LNG demand
 - Future projections
 - Supply point location and loading facilities
 - Ship size

LNG Demand

A typical Caribbean utility	2009 Annual Report
Installed Capacity	76 MW
Production	315,082,000 kWh
Heat Rate	9,267 BTU x kW
Fuel Used (US Gallons)	21,925,429
MMBTU x Year	2,919,709
MMBTU x Month	273,501
In cbm of LNG x Month	10,738.02

Future Demand

Fuel Used by Destination (2006)

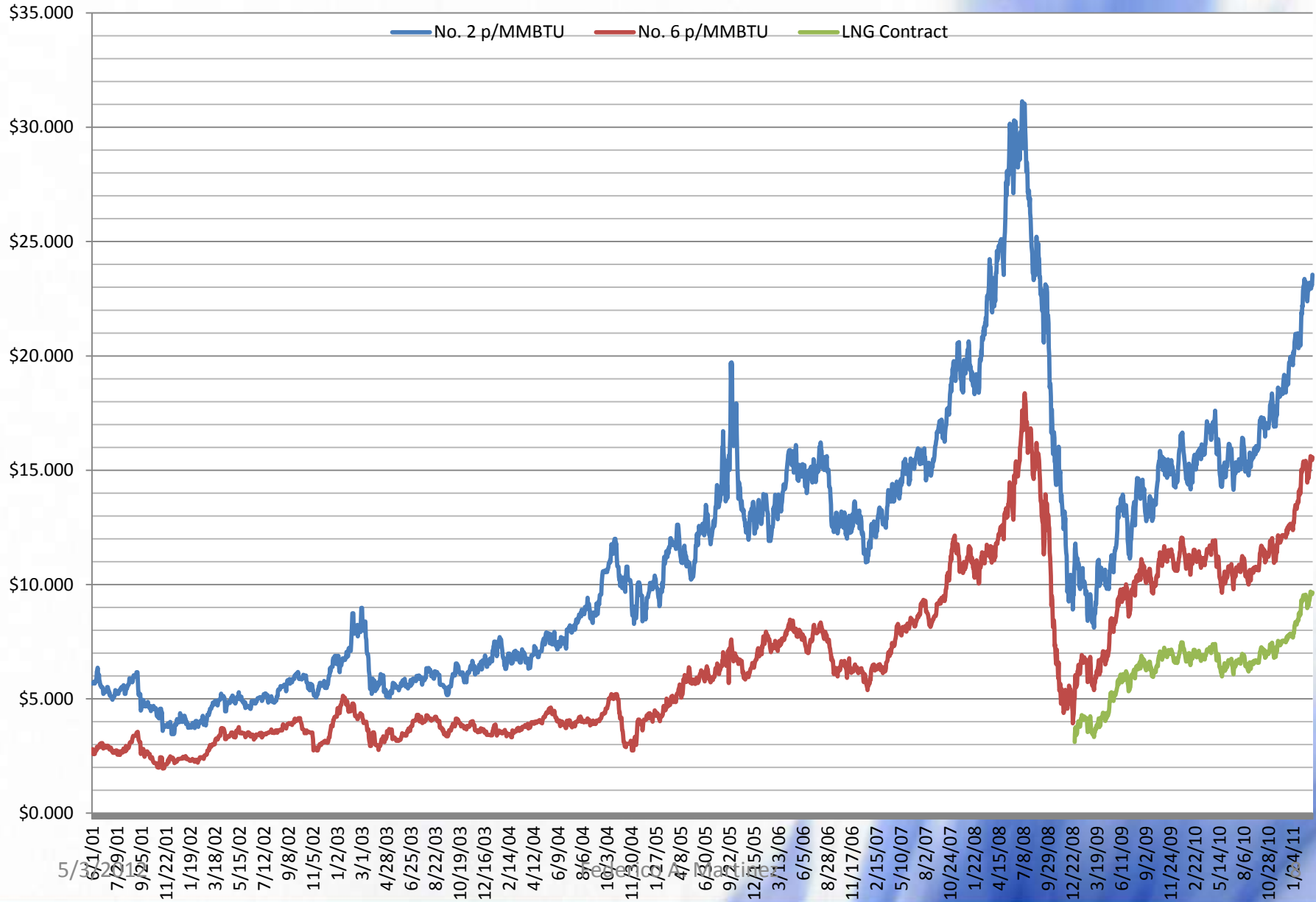


Does it makes sense?

Fuel Used in MMBTU	2,919,709
Fuel Expense in US\$	\$62,692,419
Fuel Expense x MMBTU	\$21.47

Each dollar saved per MMBTU = \$2.9 million per year

Fuel prices in MMBTU 2001-2011. Source: Platts

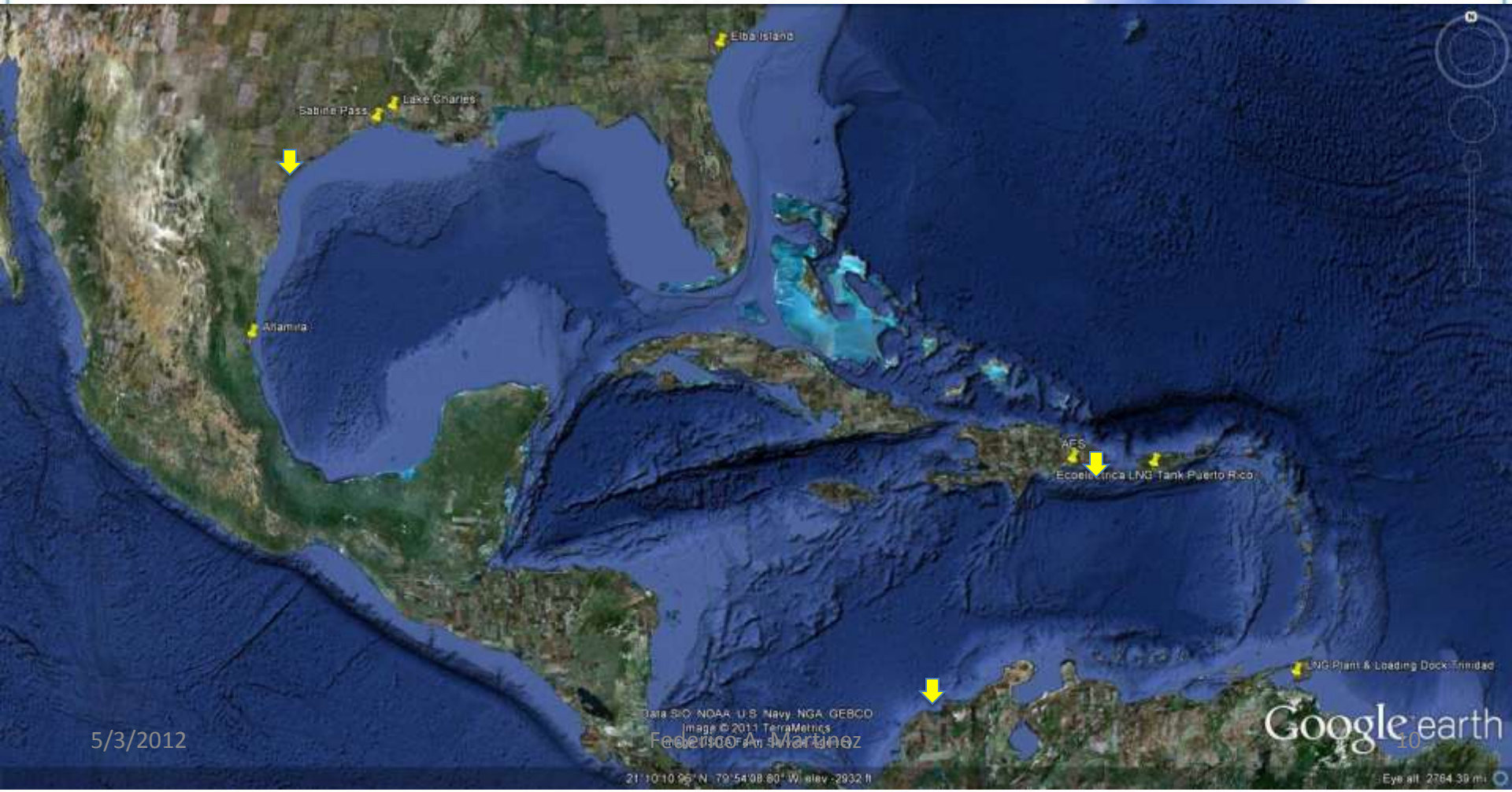


A case for the environment

A Case for the Environment

Green House Gas (GHG) Emission Reduction	MW	Base case (Diesel) GHG Emission	LNG Case GHG Emission	Reduction
Tons of CO2 x MW (Norm Euro I, 2005)		4.0 kg x MWh	1.8 kg x MWh	
Power Projects (400 MW-All Projects)	3,153,600 MWh	12,614 MT CO2	5,645 MT CO2	-55.25%
Carbon Financial Instruments	\$7.00			\$39,515

The point of supply



Small LNG ships is not a theory



Multigas Project

4 x 10,000 m³ LNG/LEG/LPG Carriers

2 x 12,000 m³ LNG/LEG/LPG Carriers

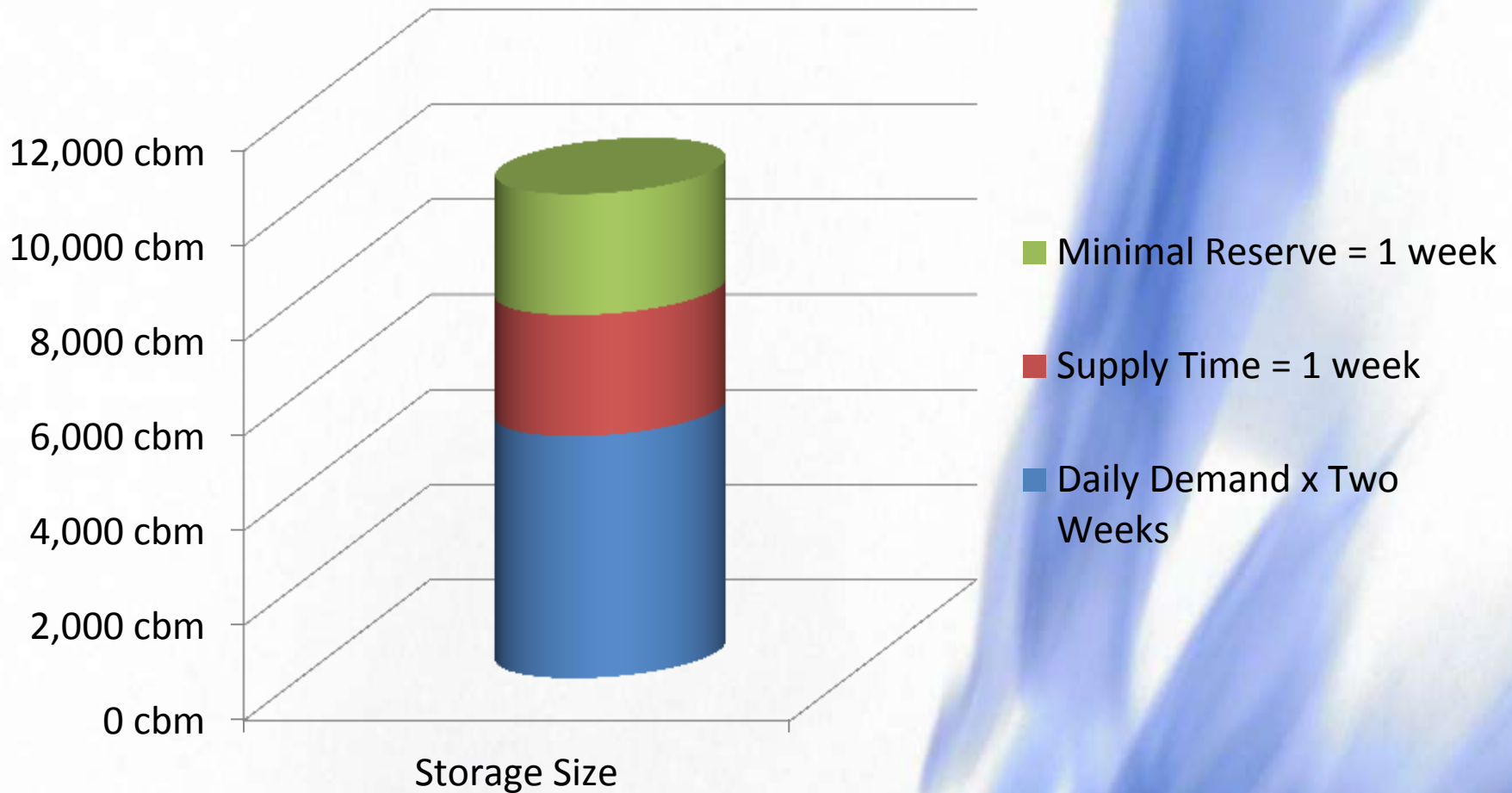


1,000 m³



7,500 m³

Terminal size relates to demand, supply cycle and reserve



The import terminal technology

Type of Terminal	BOG x day	Size	Approx. Cost x cbm	Sunken cost
Single wall	0.5%	>40,000 cbm	\$600 - \$800	100%
Double wall (full containment)	0.25 a 0.5%	>40,000 cbm	\$1,000 a \$1,500	100%
Cryogenic vacuum insulated vessels	0% (until reaching relieve ball setting) 0.05% after reaching RB setting	<20,000 cbm	\$2,000 a \$3,000	<20%
Cost of Jetty				100%

160,000 cbm, single wall, earth embankment

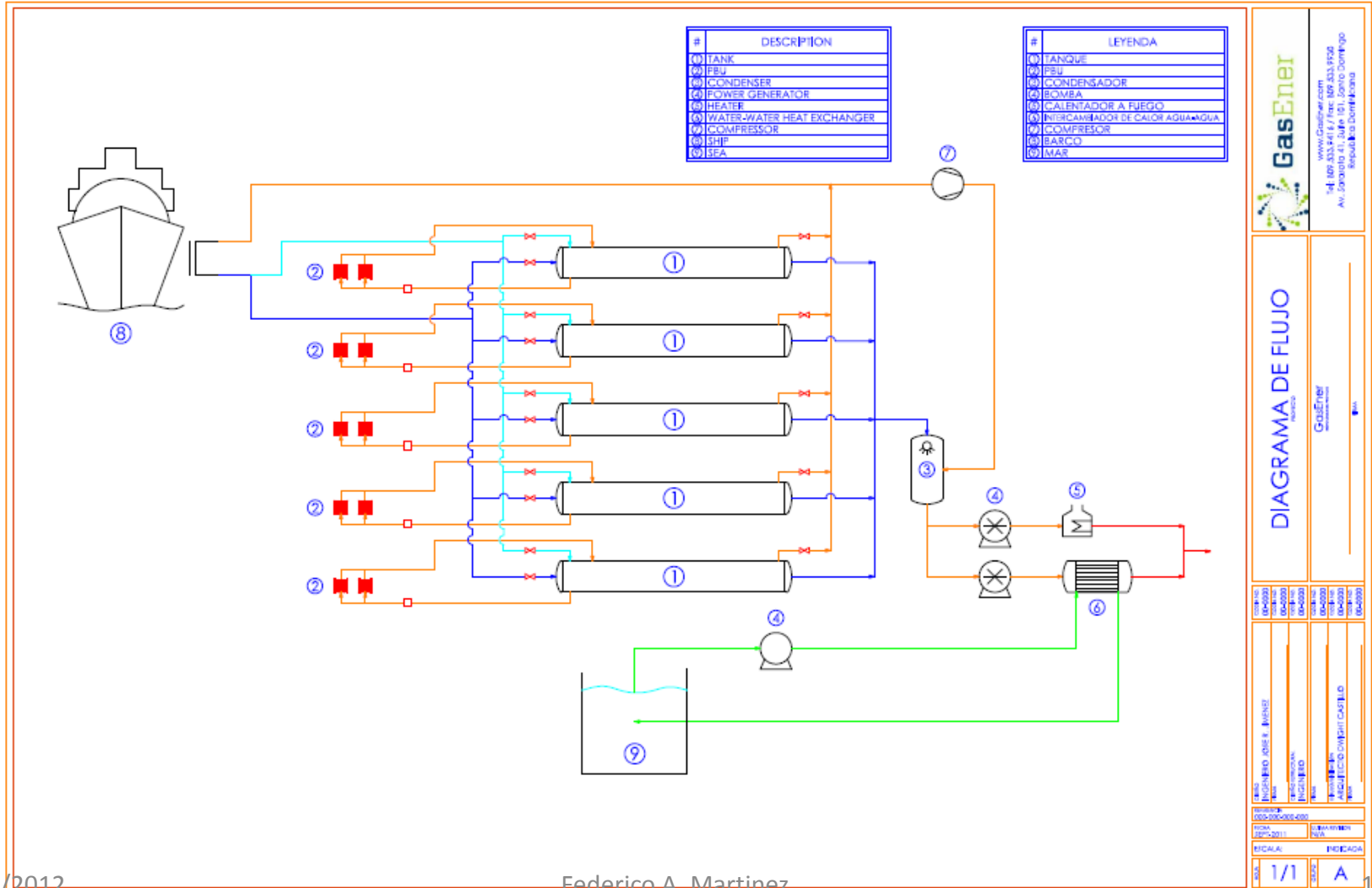


160,000 cbm, double containment



Double Containment Tank
Puerto Rico
160,000 m³, 42 mm gal

Design



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DIAGRAMA DE FLUJO
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 República Dominicana

FECHA: 04-03-12	PROYECTO: 100-000000-000
ELABORADO POR: INGENIERO JOSE R. BUSTE	REVISADO POR: INGENIERO JOSE R. BUSTE
APROBADO POR: INGENIERO JOSE R. BUSTE	REVISADO POR: INGENIERO JOSE R. BUSTE
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Procurement & Transportation



Construction



ORA Terminal, built by Chart in Norway. 9,000 cbm terminal using cryogenic vacuum insulated vessels



Some Figures

Terminal	\$24,100,000
Property	\$2,000,000
Jetty	\$11,000,000
Permit, Legal, Financial	<u>\$2,600,000</u>
Project Cost	\$39,700,000
Sendout in MMBTU x month	367,070 MMBTU
Five year Sendout	22,024,210 MMBTU
Investment x MMBTU Sentout	\$1.80
Would they repay the project?	

For more information

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