



**WorleyParsons**

resources & energy

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# The World Economy and its Impact on International Port Business: Trends & Perspectives





## Corporate Goal **ZERO HARM**

### ► Locations

- Chile
- Brazil
- Colombia
- Peru
- Ecuador

1,770 people 12 offices 5 countries



### ► Resource development focus

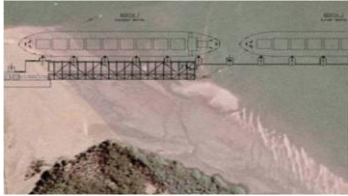
- Minerals, Metals & Chemicals
- Hydrocarbons
- Infrastructure



WorleyParsons was ranked **No. 1** in ENR's Top 200 Engineering Design Firms in 2013

- **No. 8** in Ports & Marine Terminals Design
- **No. 1** in the Middle East

# Achieving for our Dry Bulk customers



## 1. La Guajira Thermal Coal CCX Colombia

Program management for greenfield port development and rail bankable feasibility for major coal mine

## 2. Tonkolili Iron Ore

African Minerals

Concept Study, D

Study; EIS; FEED

- 45mtpa mag

- operation

- 200km heavy haul railway

- Port Facility

## 3. Nimba Iron Ore

Societe des Mines de Fer de Guinea

Conceptual Design Study

## 4. Mbalam Iron Ore

Sundance Resources

Scoping study; Definitive feasibility study

- 35mtpa iron ore mine site

- 517km heavy haul railway

- Port facility for 250,000 DWT bulk carriers

## Banker's Engineer (itau)

### Puerto Bahia

Greenfield multipurpose port  
Cartagena, Colombia

Conceptual Engineering/Pre-FEED  
FEED - Front-end Engineering Design,  
PMC, Construction Supervision

## 6. Oakajee Port and Rail – Iron Ore Mitsubishi

Definitive Feasibility Study; Project  
Management Contractor

- 45mtpa rail and port facilities

- 530km heavy haul railway

- Port facility for 210,000 DWT bulk Carriers

- Port landside and stockyard facilities

## Pit to Port CCX Colombia

Program management for greenfield port development and rail bankable feasibility for 3 major coal mines

## 7. Roy Hill – Iron Ore

Roy Hill

Pre-FEED

Man

- Health

- Mat

- conve

- Port

- All supporting infrastructure

## Raz Az Zawr Minerals Industrial City Phosphate

Ma'aden Phosphate Company

Conceptual Engineering/Pre-FEED

FEED - Front-end Engineering Design,

PMC, Construction Supervision

## 8. Pilbara Iron Ore and Infrastructure Project Fortescue Metals Group

Concept Study; Definitive Feasibility  
Study; FEED; EPCM

- 45 mtpa mining operation

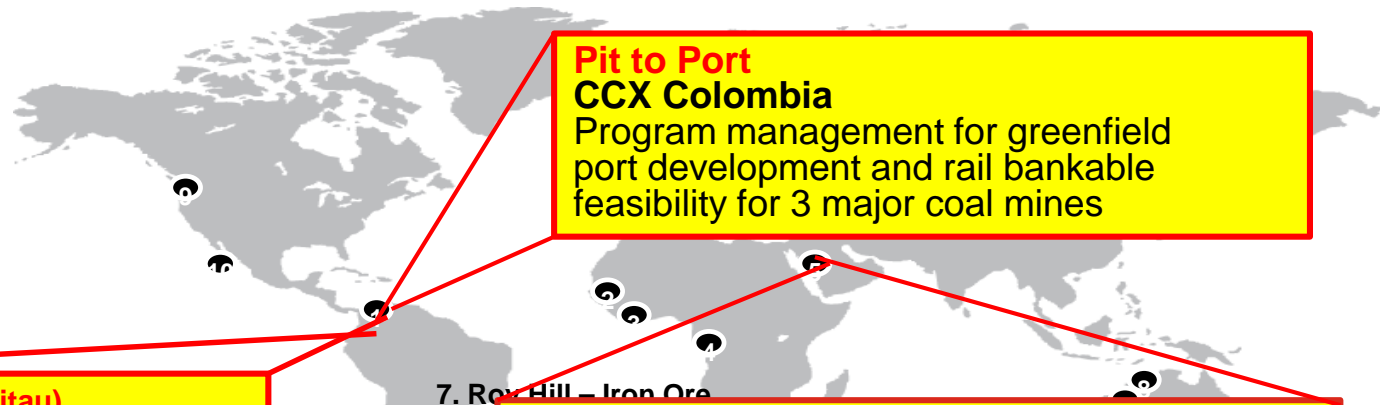
- 256km heavy haul railway

- Port Facility for 270,000 DWT bulk Carriers

- Replaced Conveyors and Hoppers
- Refurbished Two Slewing Stackers

## 10. El Boleo Marine Terminal Baja Mining Corporation

\$40 million liquids and dry bulk marine terminal to support a greenfield copper mine



# Achieving for our Liquid Bulk customers



**Preferred Consultant of Choice, Global**  
**Shell Oil**  
Structural engineering, hydrocarbon and liquids handling engineering, condition assessments and rehabilitation projects

## Choice, Global

### Shell

Structural engineering, hydrocarbon and liquids handling engineering, condition assessments and rehabilitation projects

## 2. Marine Structures Asset Management and Inspection Services, Global

### Chevron

Condition inspection, development, detailed design

## LNG Habor SONATRACH

Handle largest LNG ships, dredging over 7 million M3, breakwater for 32-foot waves, loading pier

## 3. Kitimat KM LNG

Owner's Engineering and program management for major LNG export terminal with 5 mtpa capacity

## 4. Farsi Block Master Development Plan, Iran

### ONGC Videsh

Feasibility study and preliminary design for a sulphur, LPG, and condensate export berth

## 6. Puerto Rico Liquid Bulk Terminal

### Buckeye

Technical and environmental phasing for implementation of a maintenance dredging solution for the liquid bulk import terminal

## 7. Sarnia LNG, Canada

### Shell

Feasibility Study for the retrofitting and upgrading of an existing petroleum and chemical products terminal for bunkering of ships, barges, trucks and rail cars; process design, structural engineering

## 9. LNG Plant EIA, Damietta Port Egypt

### Union Fenosa

Environmental and oceanography studies for LNG

## 2nd Bulk Liquids Berth- Port Botany Sydney Ports Corporation

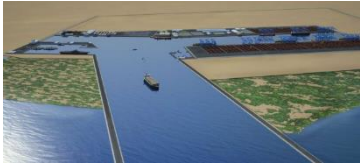
Concept Design, Detailed Design, Technical advisory during construction

FSRU to discharge vaporized LNG into a subsea/overland pipeline to the Moss gas GTLR & Power station

Studies, Conceptual Engineering, Design



# Achieving for our Container customers



## 1. New Doha Port

**New Doha Port Steering Committee**  
Project Managing Contractor;  
Feasibility Studies for port and marine infrastructure

## 2. Robert Banks Terminal 2

**Port Metro Vancouver**  
Program management and  
maximizing  
mill

3. I  
4. AP  
5. Ma  
6. IST  
7. Opt  
8. Investment

Program Management Consultant and  
Foreign Advisor for new container  
terminal 78 hectare container terminal

## Greenville Yard - Cross Harbor Freight Program

**Port Authority New York New Jersey**  
Greenfield development - 2 post Panamax berths  
30 Ha Container Yard  
Intermodal and yard facilities

**Harbor Freight Program**  
**Port Authority New York New Jersey**

Greenfield development  
2 post Panamax berths (Phase 1)  
30 Ha Container Yard  
Intermodal and yard facilities

## New Doha Port

**New Doha Port Steering Committee**  
Project Managing Contractor;  
Feasibility Studies for port and marine infrastructure

## 7 Containerized Cargo Transportation Study

**Carbon Holdings**  
Transportation and logistics options for  
the transport of containerized  
polyethylene from a new  
petro

8. C  
Feas  
Pan  
Feas  
trans

## Manaus Terminal

**APM Terminals**  
Inland river container terminal  
Optimization of design and phasing of  
capital commitments

- Specialist tools for market demand
- Financial analysis
- Preliminary due diligence
- Socio-economic and environmental studies

## 9. Fairview Container Terminal

**Prince Rupert Port Authority**  
Masterplanning and EPCM for  
conversion of break bulk port to

Planning study to maximize container  
throughput in alignment with the  
PortMiami 2035 Master Plan

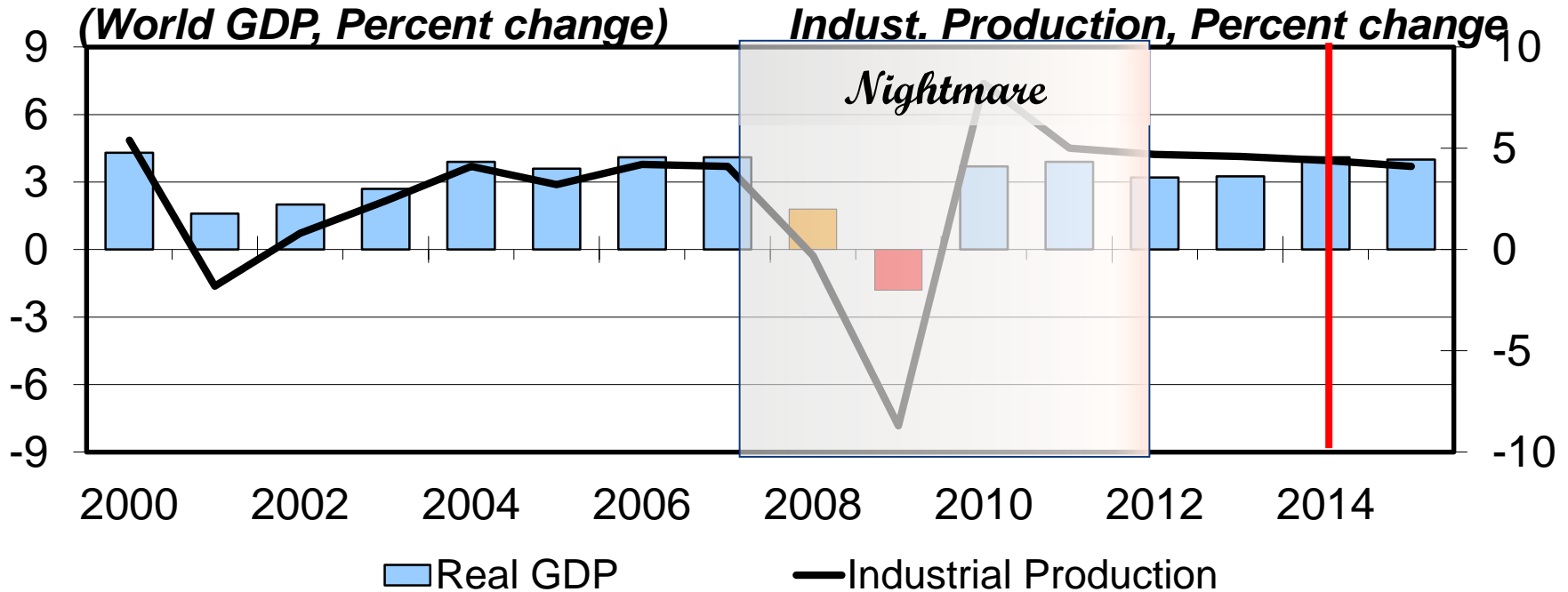


- ▶ Global economic and sea trade outlook in general
- ▶ The major factors causing change now in Latin America
- ▶ Special Alert!!!!
- ▶ Conclusions – how to proceed?



# The world economy is still recovering from the nightmare of 2008-2012.

Cargo trade demand reflects more volatile industrial production

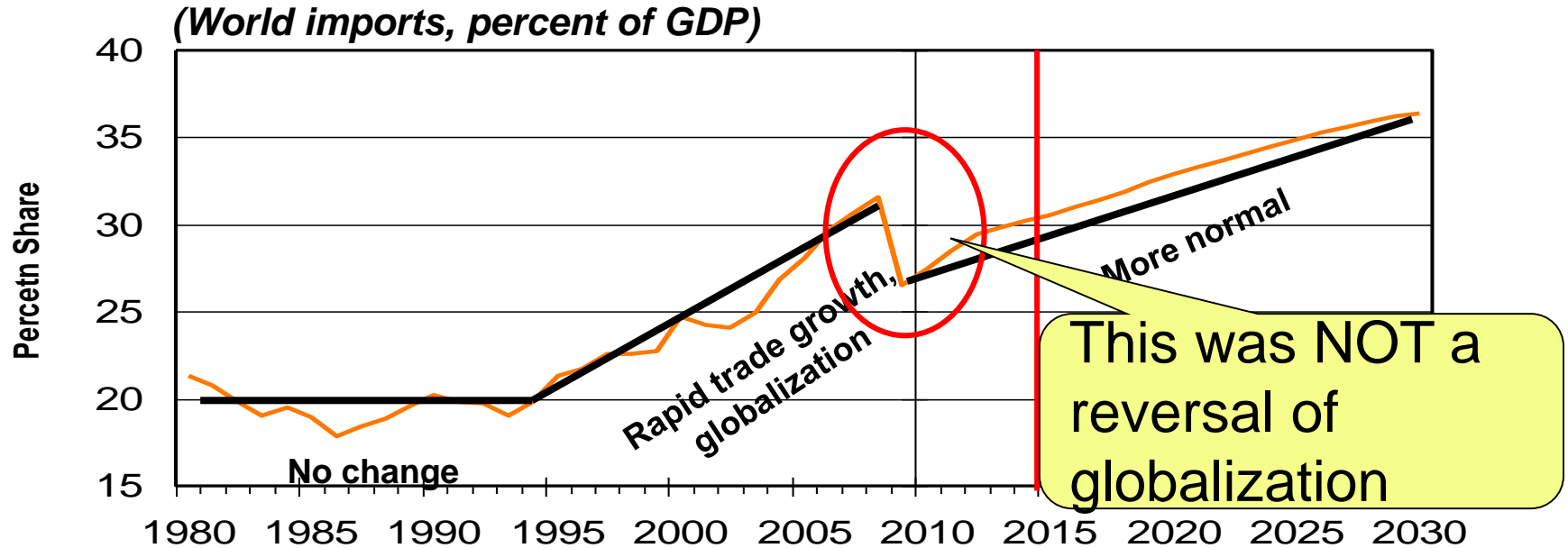






# Trade's share of the economy is still climbing.

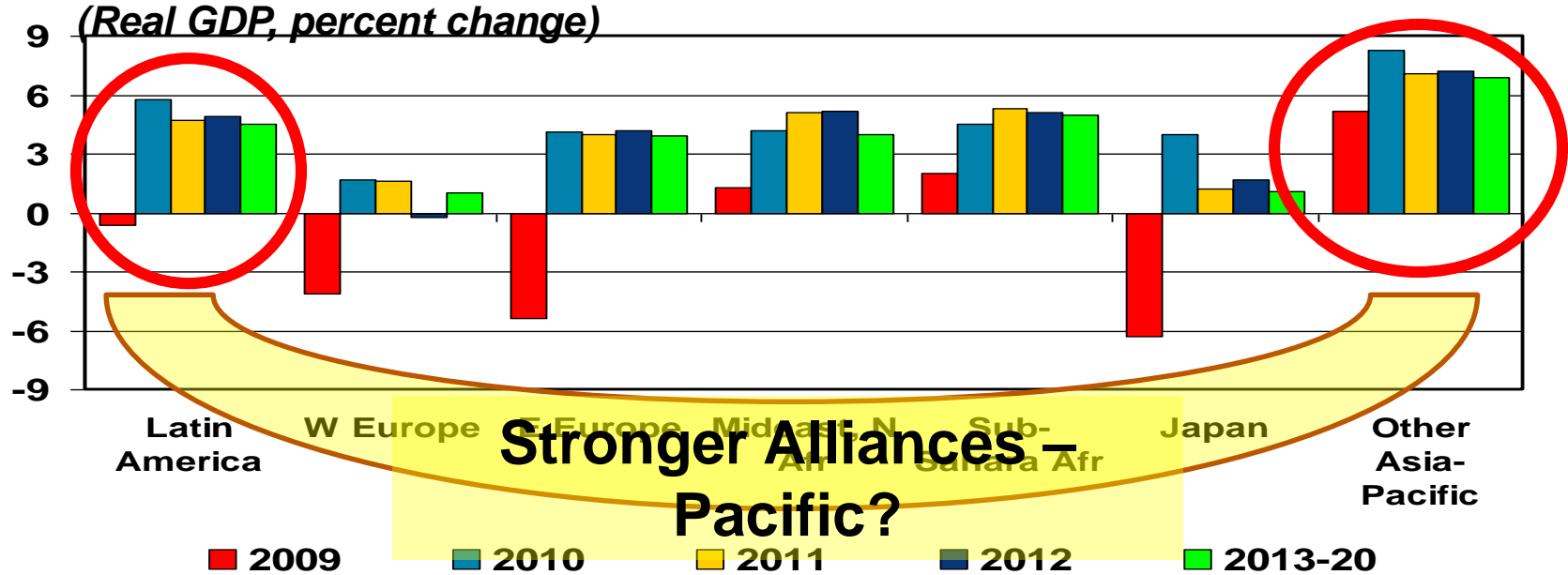
Globalization trend is *long-term* and has not reversed or stopped







# GDP growth rate differences affect the pace of trade growth and volumes by trade route

Geography of production / consumption is changing as emerging markets grow 5.5% on average over the next decade vs. 2.3% for advanced countries.





# Near term, the economic outlook for Latin America is mixed

			2015
 <b>Strong</b>	Colombia	4.6%	4.0%
	Chile	4.6%	5.0%
	Mexico	2.9%	3.5%
	Panama	7.0%	6.5%
	Peru	5.5%	4.9%
<b>2014</b>	<hr/>		
 <b>Weak</b>	Argentina	-0.7%	1.0%
	Brazil	1.3%	1.6%
	Venezuela	-0.5%	-1.0%



# The Pacific Alliance – building a stronger way to collaborate



## Knocking on the door outside Latin America (22)

- |           |                |
|-----------|----------------|
| Australia | Morocco        |
| Belgium   | Netherlands    |
| Canada    | New Zealand    |
| China     | Portugal       |
| Finland   | Singapore      |
| France    | South Korea    |
| Germany   | Spain          |
| India     | Switzerland    |
| Israel    | Turkey         |
| Italy     | United Kingdom |
| Japan     | United States  |

Built on basic business principles



- ▶ Global economic and sea trade outlook in general



- ▶ The major factors causing change now in Latin America

- ▶ Special Alert!!!!!!

- ▶ Conclusions – how to proceed?



# The world we live in now – DRIVERS of expansion

Economic Growth



Trade Growth



Maritime Trade



Bigger Ships



Bigger & Better Equipment

5.5%/yr in emerging economies

8-10%/yr in value terms (\$\$\$)

5-7 %/yr in volume terms (TEUs)

18,400 TEUs. Lower costs

Faster, more TEU/hour



**More Investment needed**





# INHIBITORS – Slow to react

- ▶ In the Caribbean, some ports waited to expand even though the Panama Canal project is well underway



*Kingston*

- ▶ Fear of taking chances





# INHIBITORS – Government

Government involvement: **GOOD** and **BAD**

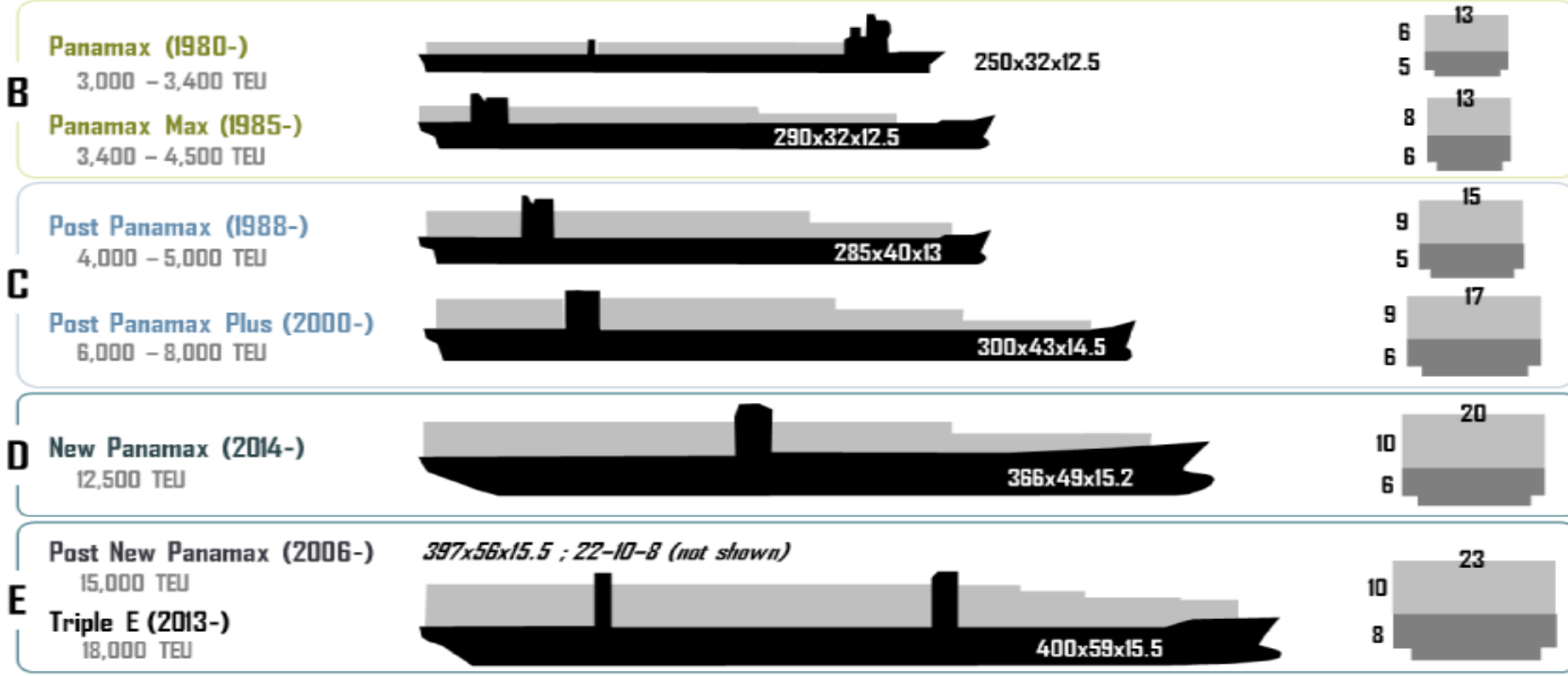


**GOOD**

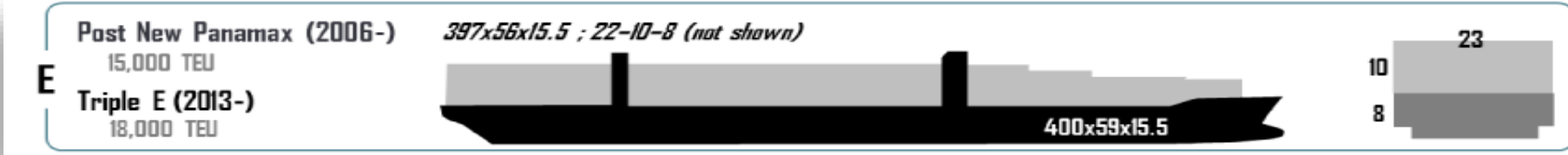


**BAD**

# Larger Vessels

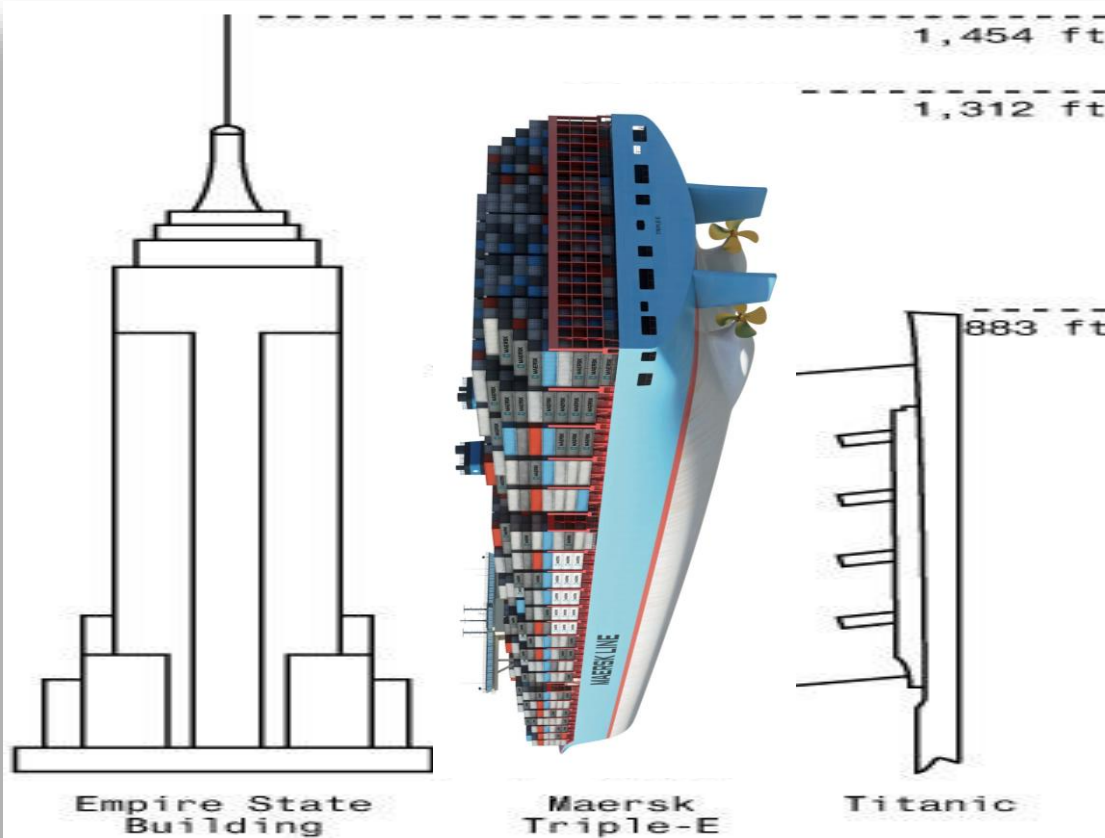


# Larger Vessels: Maersk Triple E



Already too big for the expanded Canal, which is not even ready yet.

# Larger Vessels: Maersk Triple E



New shoes for:

- Guatemala
- El Salvador
- Honduras
- Nicaragua
- Costa Rica
- Panama
- Colombia
- ½ Venezuela



• Asia – North Europe	69%	} <b>88%</b>
• Asia – Mediterranean	19%	
• Transpacific (Asia – USWC)	7%	} <b>12%</b>
• Asia – Mid East	5%	

**T&T as a new transshipment hub – USEC & EU?**






# Another triangle is forming - Pacific





- ▶ Global economic and sea trade outlook in general
- ▶ The major factors causing change now in Latin America
- ▶ **Special Alert!!!!!!**
- ▶ Conclusions – how to proceed?



# Getting across Central America

- 5 Ideas -

## DRY CANALS

Mexico - Tehuantepec

Guatemala - ODEPAL

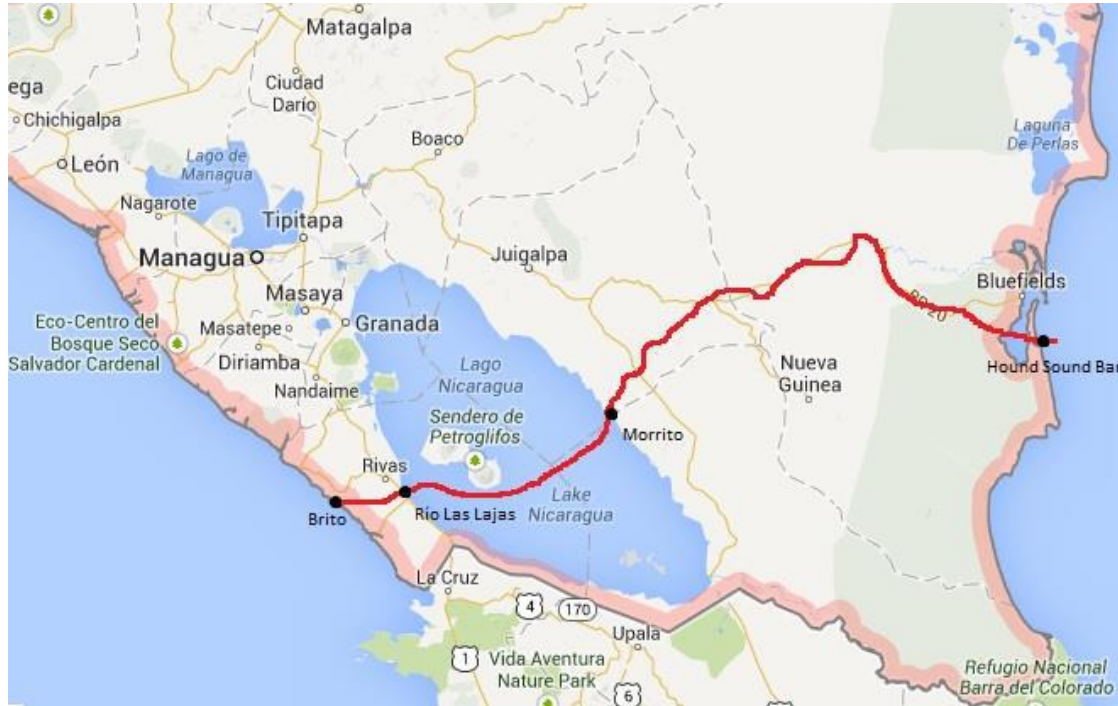
Honduras - El Salvador

Costa Rica - AMEGA





# El Gran Canal



- 263 km
- \$110 million already spent
- More than a canal – a corridor
- Technically possible – just very ex\$ensive
- If built, the best option for everyone, including Nicaragua

The most ambitious and exciting option!!!





# A new lake will be needed



Who will win? Who will lose?



<http://www.elnuevodiario.com.ni/nacionales/243830-canal-viable>

## Canal es viable

<http://www.laprensa.com.ni/2014/08/10/ambito/207038-panama-confia-que-canal>

## Panamá confía en que canal interoceánico en Nicaragua no es viable



中国铁建

**中铁第四勘察设计院集团有限公司**

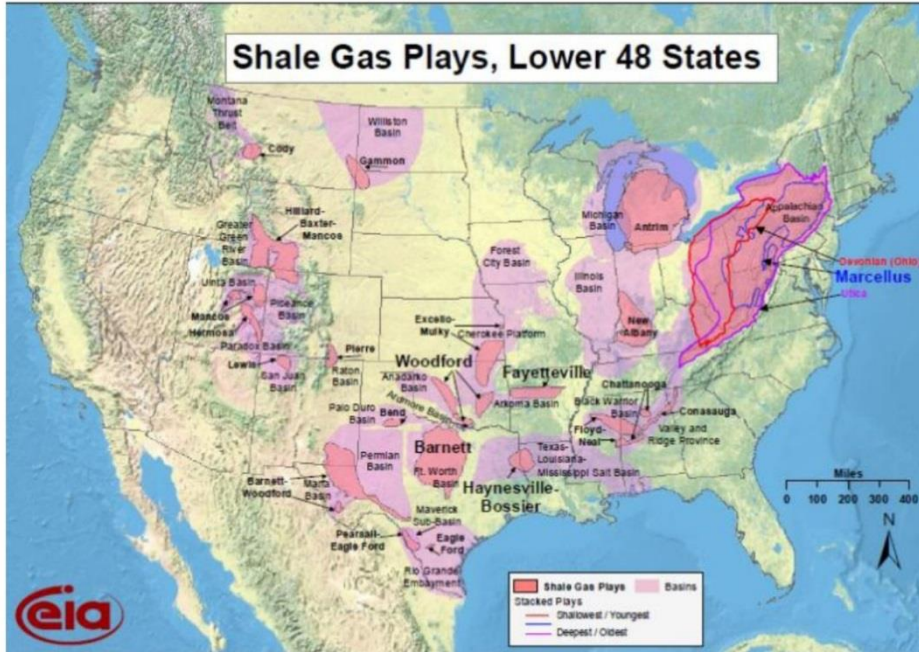
CHINA RAILWAY SIYUAN SURVEY AND DESIGN GROUP CO., LTD.





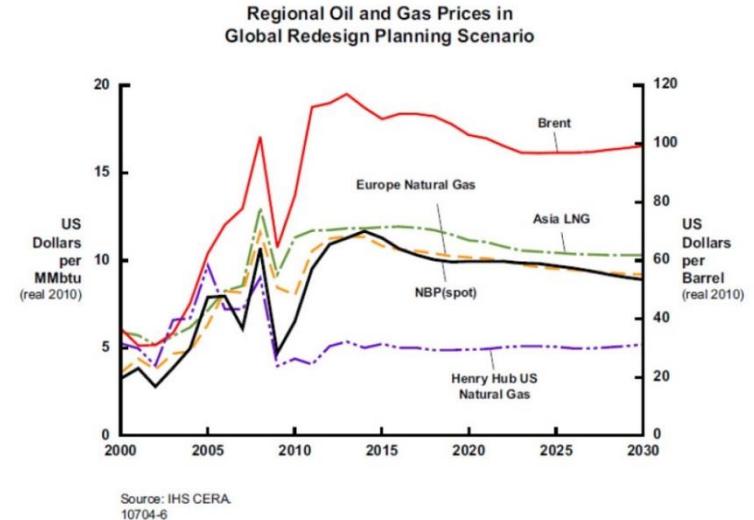
# We are at the start of an ENERGY REVOLUTION

US is Saudi Arabia of shale gas... swims in centuries of supply



Source: Energy Information Administration based on data from various published studies. Updated: March 10, 2010

Natural Gas bargain price

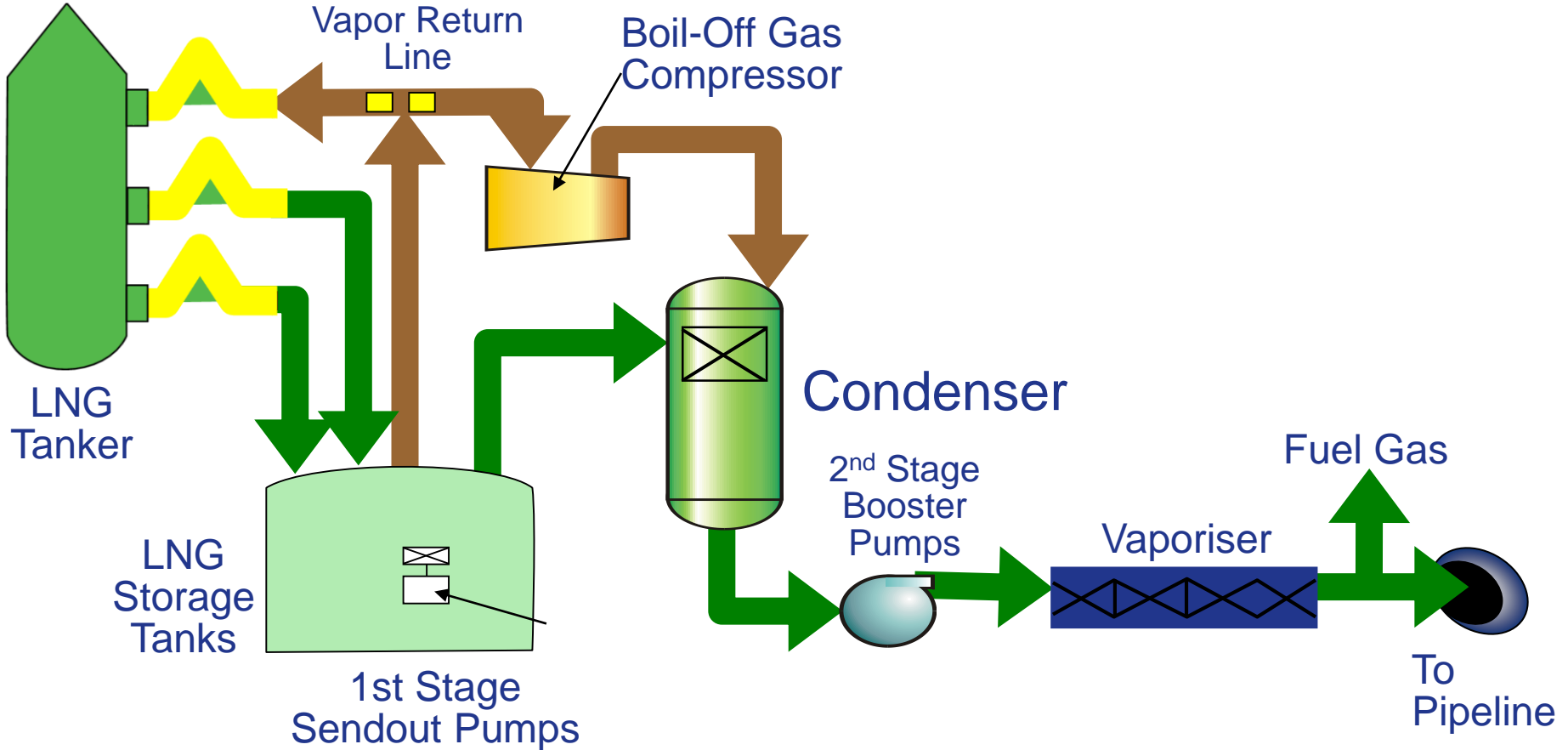


Source: IHS CERA 10704-6



# LNG Receiving Terminals in more detail

## LNG Terminal Flow Diagram



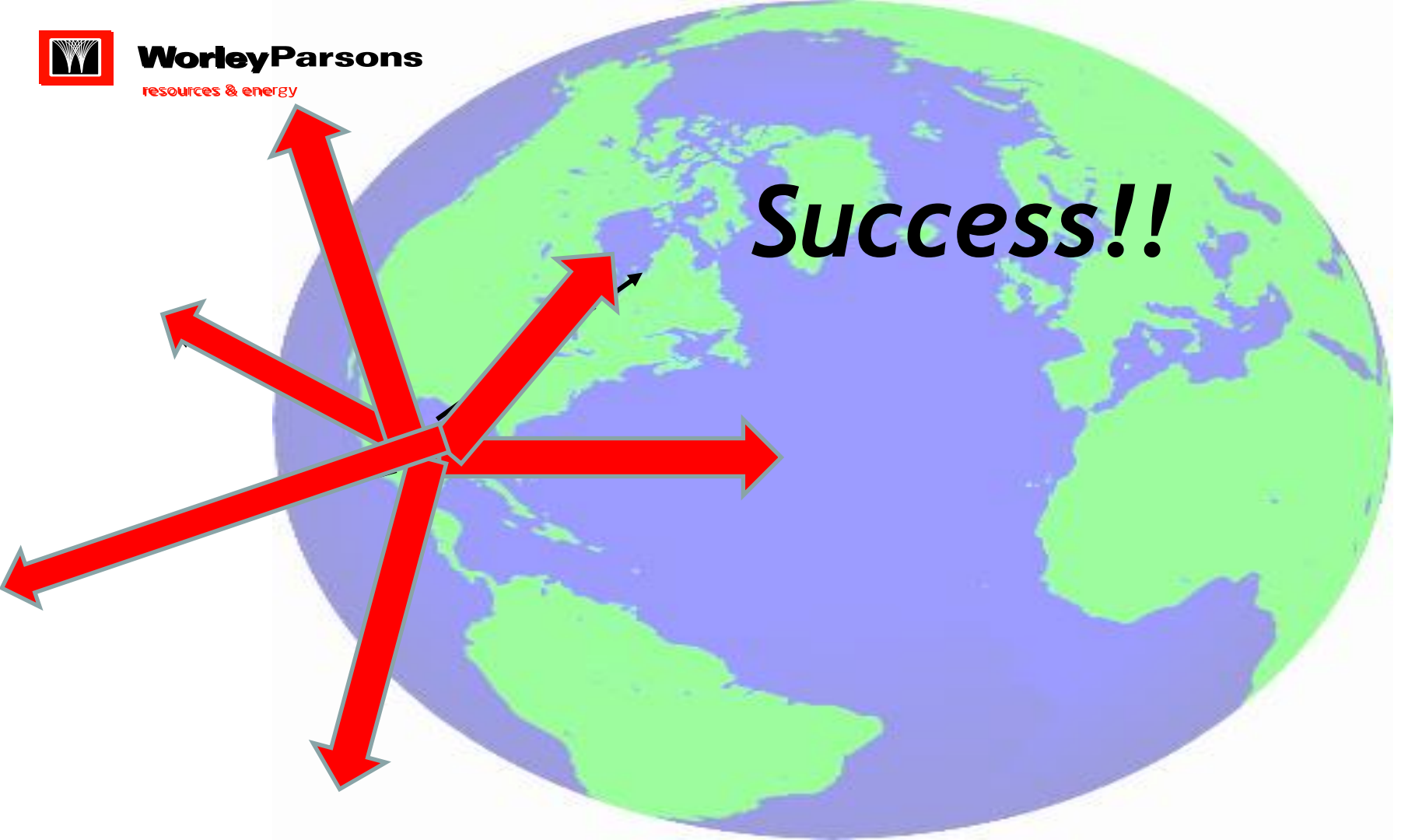


# Conclusions – How to Proceed?

- ▶ More growth in transshipment as ship sizes increase
- ▶ Be prepared for the shift to natural gas – import terminals needed
- ▶ Double port capacity in the next 10 years to meet trade growth
- ▶ **Be sure to use a good engineering firm**



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***Success!!***

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