

A CLEANER PORT.  
A BRIGHTER  
**FUTURE.**



# Partnering with Pacific Rim Ports on Clean Air Strategies

Ralph G. Appy, Ph.D.  
Environmental Management Division  
Port of Los Angeles

---

American Association of Port Authorities  
Harbors, Navigation and Environment Seminar  
Vancouver, B.C. Canada

June 7, 2006



AIR

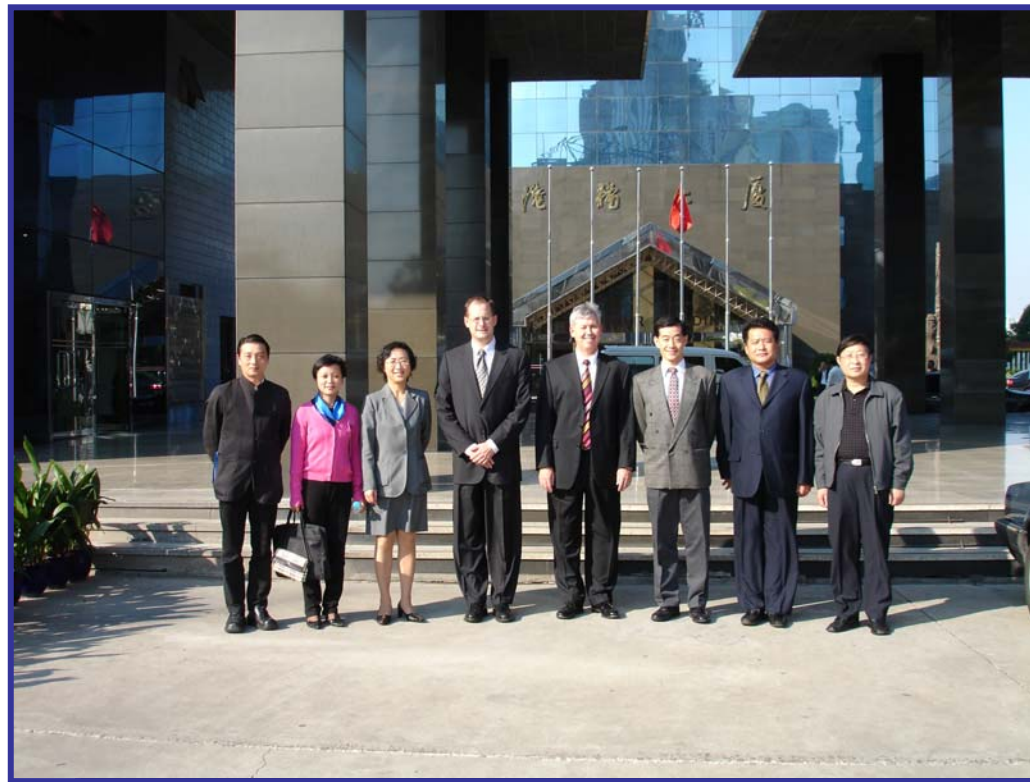
A CLEANER PORT.  
A BRIGHTER  
FUTURE.



# Partnering w/Pacific Rim Ports

## Overview

- The Realization – You Can't Do It Alone
- Working Towards Solutions – Collaboration Initiatives
- Into The Breach – Next Steps



AIR



# The Realization

## You Can't Do It Alone

- City of Los Angeles' NNI Process
  - ❑ One Year Intensive Unconstrained Evaluation
    - ✓ Multi-Participant (Everyone & the Kitchen Sink)
    - ✓ 1,000s of Hours
    - ✓ Based on Unconstrained Cargo Growth
    - ✓ 68 Measures Covering 5 Source Categories
    - ✓ ~16 Billion Dollars Over 20 Years
    - ✓ ~10 Billion Dollars for Ocean-Going Vessels Alone
  
- Realization
  - ❑ Conclusion: It Takes a Village with a LOT of Money
  - ❑ OGVs Represent ~36% NO<sub>x</sub>, ~56% PM (2001 EI)
  - ❑ The Port of Los Angeles Can Not Do It Alone



# Working Toward Solutions

## Local Action

- Proposing a Joint San Pedro Bay Ports Clean Air Action Plan
  - ❑ **Elimination of Public Health Risk Is Top Priority**
    - ✓ Moving Away From Mass Emissions Focus
  - ❑ **New Clean Air Policy**
    - ✓ Elimination of Public Health Risk
    - ✓ Reduction of DPM and Criteria Pollutants – Targeting Reduction In Health Risk
    - ✓ Partnering w/SCAQMD, ARB, EPA
    - ✓ Continue Coordination w/Port of Long Beach
  - ❑ **New Goals to Meet New Policy**
    - ✓ Have Programs In Place to Eliminate Health Risk
    - ✓ Facilitate Growth While Reducing Emissions (**Grow Green**)
    - ✓ Monitor, Document, & Report Performance
    - ✓ Source Specific Goals



# 2004 Top Container Ports

In TEUs, or Twenty-Foot Equivalent Units -2004  
(000s)

## Top North American Ports

1. Los Angeles, CA	7,320
2. Long Beach, CA	5,780
3. New York/ New Jersey	4,470
4. Oakland, CA	2,044
5. Charleston, NC	1,860
6. Virginia Port Authority	1,800
7. Tacoma, WA	1,797
8. Savannah, GA	1,695
9. Vancouver, BC	1,664
10. Seattle, WA	1,466

## Top World Ports

1. Hong Kong	21,930
2. Singapore	21,330
3. Shanghai	14,550
4. Shenzhen	13,660
Los Angeles/Long Beach	13,100
5. Busan	11,430
6. Kaohsiung	9,710
7. Rotterdam	8,220
8. Los Angeles	7,320
9. Hamburg	7,000
10. Dubai	6,420
11. Antwerp	6,060
12. Long Beach	5,780

In 2004, the Port of Los Angeles & Long Beach handled:

- **43%** of all total U.S. IMPORT containerized trade
- **22.8%** of all total U.S. EXPORT containerized trade



# Working Toward Solutions

## Global Collaboration Initiatives

- Port's Collaboration Strategy
  - Ports
  - Terminal Operators
  - Fuel Providers
  - Engine and Vessel Manufacturers
- Initial Focus On Pacific Rim Ports
  - Find Out What Other Trading Partners Are Doing
  - Determine Willingness to Collaborate on Air/Environmental Issues
  - Learn from Each Other's Programs
  - Work Jointly to Develop/Evaluate Potential Port Policies & Measures (Initially Focusing on OGVs)
  - Avoid Boutique Strategies Between Ports
  - Better Understand Fuel Availability & Limitations
  - Formation of a Pacific Ports Air Quality Collaborative



**It may look like an ocean.  
But it's really a highway.**





# Working Toward Solutions

## Collaboration Initiatives – Pacific Rim Ports

### ➤ Port Initiatives

#### ❑ Shanghai Initiatives

- ✓ Received MARAD Grant w/Technical Support from EPA
- ✓ Signed Letter of Intent
- ✓ First Successful Delegation Completed November 2005
- ✓ Addn Meetings in February & April 2006
- ✓ Staff Exchanges – July 2006
- ✓ Mayor's Initiative – Fall 2006



#### ❑ Teaming with Marketing Department

- ✓ Leverage Synergies Between Env. Marketing/International Staff
- ✓ Utilize Established Agents & Contacts
- ✓ Poll Other Pacific Ports to Determine Interest



# Working Toward Solutions

## Collaboration Initiatives – Pacific Rim Ports

- Port Initiatives (cont'd)
  - ❑ Other Pacific Rim Ports
    - ✓ Tokyo
    - ✓ Nagoya
    - ✓ Busan
    - ✓ Hong Kong
  - ❑ Pacific Ports Air Quality Collaborative
    - ✓ Port Centric Focus
    - ✓ EPA Region IX Grant Through West Coast Diesel Collaborative
    - ✓ Encourage Communications & Collaboration on Air Quality Issues Between Ports Around the Pacific Rim
    - ✓ Provide the Opportunity for Port Staff Exchanges
    - ✓ Where Possible, Provide a Common Voice on Recommendations from the Group on Air Quality Issues, Suggested Control Strategies, & Technical Methods

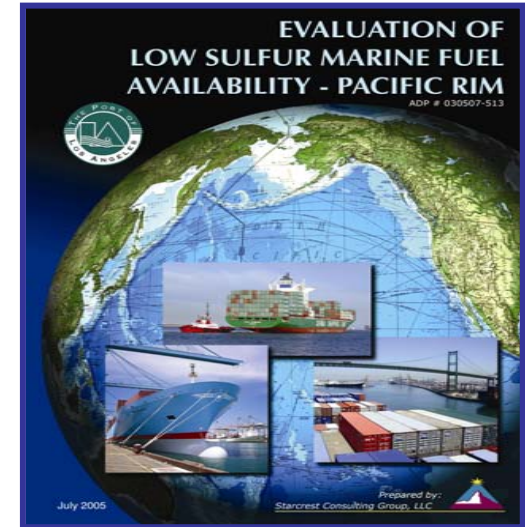




# Working Toward Solutions

## Collaboration Initiatives – Fuels/Manufacturers

- Focus on Fuel Providers
  - ❑ Pacific Fuels Availability & Distribution
  - ❑ Barriers to Market
- Focus on Engine Manufacturers
  - ❑ Meetings with MAN & Wartsila
  - ❑ “Green Engines”
  - ❑ Main & Auxiliary Engine Operations
  - ❑ Fuels & Lube Oils
  - ❑ Current & Future Engine Technologies
  - ❑ Verification
  - ❑ Collaboration Opportunities





# Working Toward Solutions

## Collaboration Initiatives – Fuels/Manufacturers (cont.)

- Focus on Vessel Manufacturers
  - ❑ Met with Hyundai Heavy Industries
  - ❑ Accommodations for AMP
  - ❑ Accommodations for Main Engine after-treatment devices
  - ❑ Accommodations for Additional Tankage flexibility
  - ❑ Current & Future Engine Technologies
- IAPH Resolution
  - ❑ MARPOL Annex VI not good enough
    - ✓ Treaty Should be Modified
  - ❑ International Standard for Shore-side Power to Ships
    - ✓ ISO/IMO Meetings?

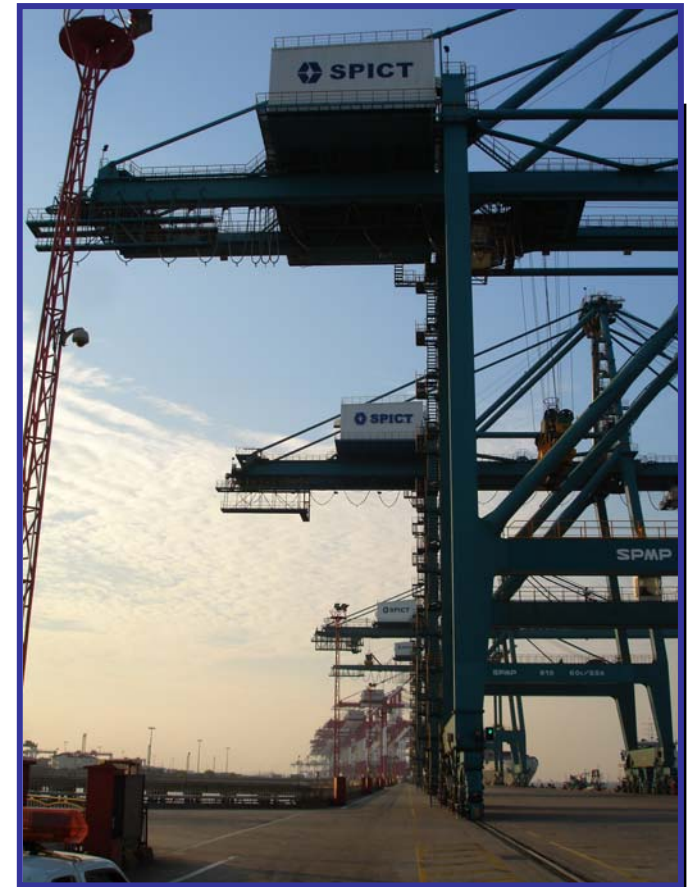
A CLEANER PORT.  
A BRIGHTER  
FUTURE.



# Into the Breach

## Next Steps

- Complete POLA Clean Air Plan
- Form Pacific Ports Air Quality Collaborative
- Planning for First Meeting of Pacific Ports Air Quality Collaborative
- Meetings w/Additional Ports
- Meetings w/Additional Manufacturers
- Meetings w/International Standards Bodies



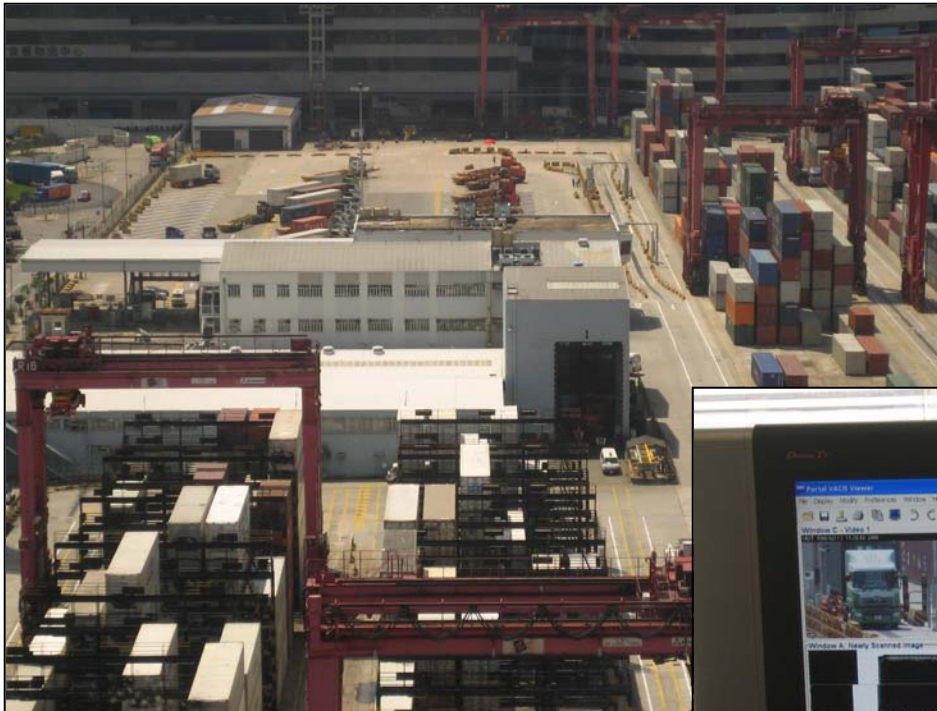
AIR

A CLEANER PORT.  
A BRIGHTER  
FUTURE.



# Security

**Modern Terminals**  
**Hong Kong**



AIR



A CLEANER PORT.  
A BRIGHTER  
FUTURE.



AIR

# China



A CLEANER PORT.  
A BRIGHTER  
FUTURE.



# Netherlands



AIR



A CLEANER PORT.  
A BRIGHTER  
FUTURE.



# Korea



AIR

A CLEANER PORT.  
A BRIGHTER  
FUTURE.

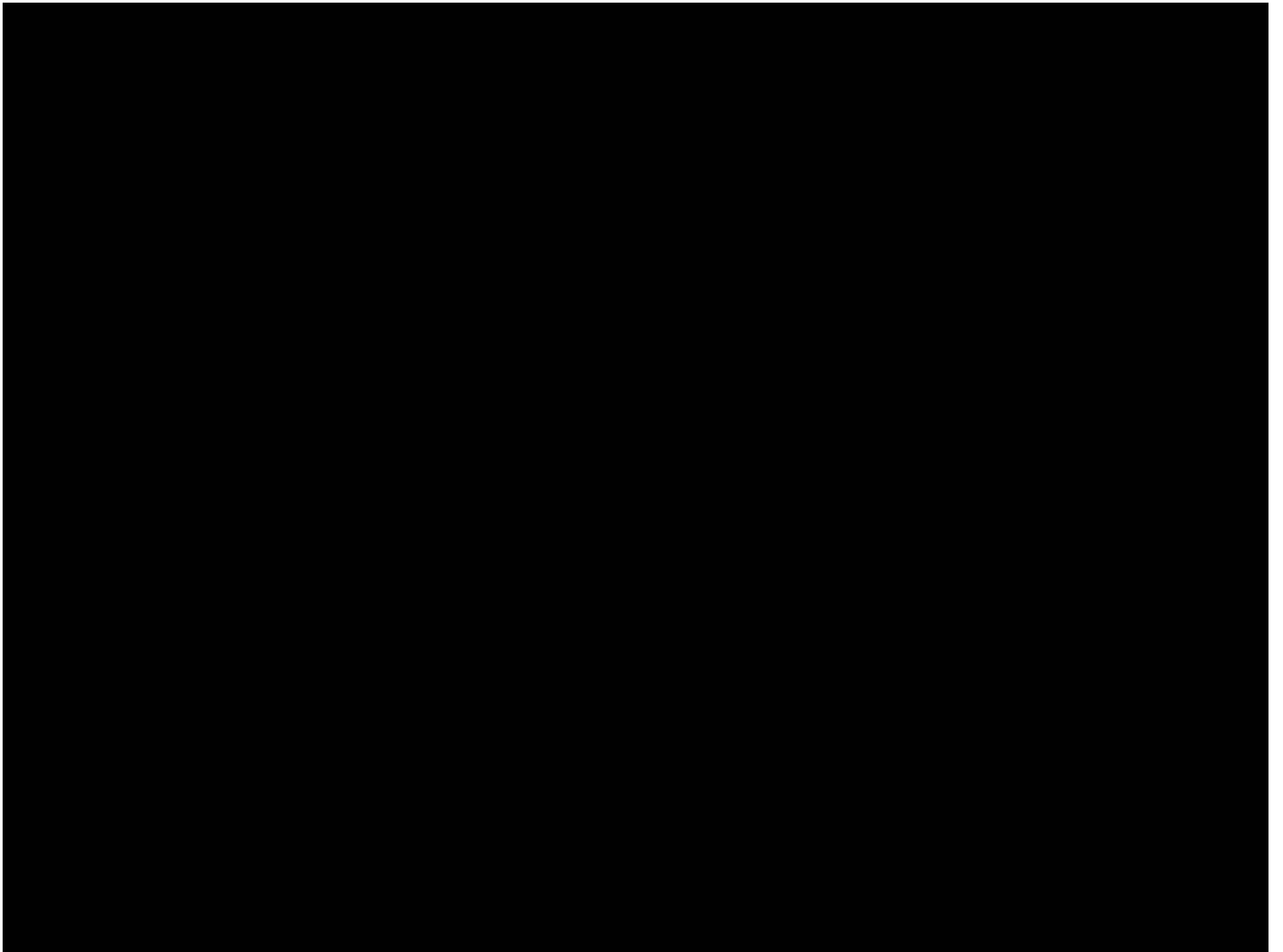


# Super Size It

Shanghai, China



AIR





# Working Toward Solutions

## Local Action

- Proposing a Joint San Pedro Bay Ports Clean Air Action Plan (cont.)
  - ❑ **Control Measures**
    - ✓ Shifting Primary Implementation Strategy to Lease Requirements
    - ✓ Focusing Port Incentive Funding To Trucks, OGVs (Targeted), Research & Development/Demonstrations
      - Limited Funding
      - Participation Rate Requirements
      - Gift of Public Funds
    - ✓ New Regulations (ARB – CHE, OGV, HDV?) Since NNI
    - ✓ Partnering w/SCAQMD, ARB, EPA for Funding & Expertise
    - ✓ Revamping Control Measures to Reflect Above Changes
      - Lease Requirements Changes Control Measure Implementation Timelines & Reductions
      - Need Resolution of 24 nm Boundary vs Current Over Water Boundary





# Perspectives

## Issues for Adoption of Clean Air Measures

- Regulatory Authority Over OGVs
  - ❑ What is the limit of authority over international flags?
  - ❑ Within a country, who regulates OGV?
    - ✓ Wharf face or out to sea?
- Costs
  - ❑ What can be borne by local jurisdiction?
  - ❑ What can be passed to terminal operator?
- Competitiveness
  - ❑ Will it cost me business?
- Standards and Local Conditions
  - ❑ Does the standard recognize international variability?
- Political Realities
  - ❑ Local vs National Port Authorities
  - ❑ Local Issue Drivers