

***WORLD PORTS  
CLIMATE INITIATIVE  
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**“Projects In Progress - Hybrid Yard Hostlers”**

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**THE PORT AUTHORITY  
OF NEW YORK & NEW JERSEY**

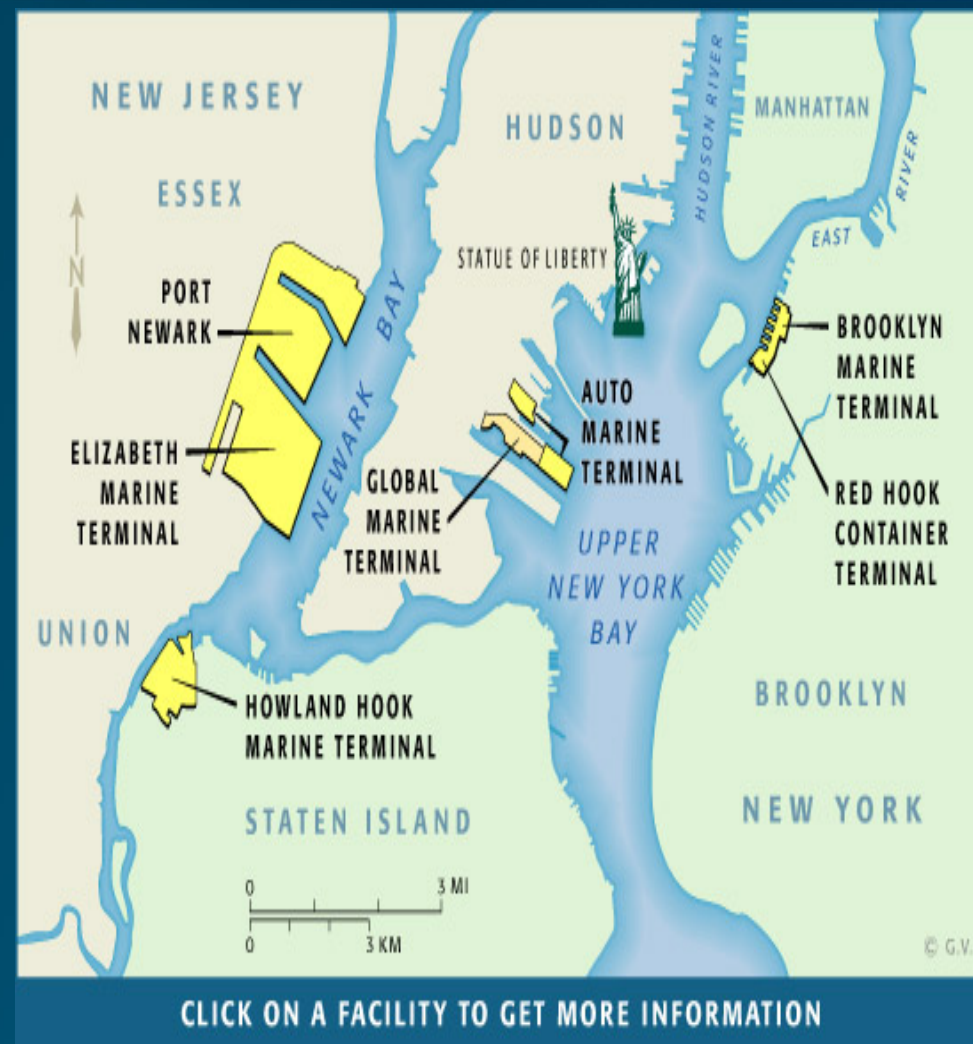
# Port Authority Marine Terminals

## New York :

- Brooklyn PA Marine Terminal
- Red Hook Container Terminal
- Howland Hook Marine Terminal

## New Jersey:

- Port Newark
- Elizabeth PA Marine Terminal
- PA Auto Marine Terminal



# *Yard Hostlers and Hybrid Technology*



# Two Demonstration Projects

- **New York Container Terminal Project**

- **Electric Hybrid Drive System**

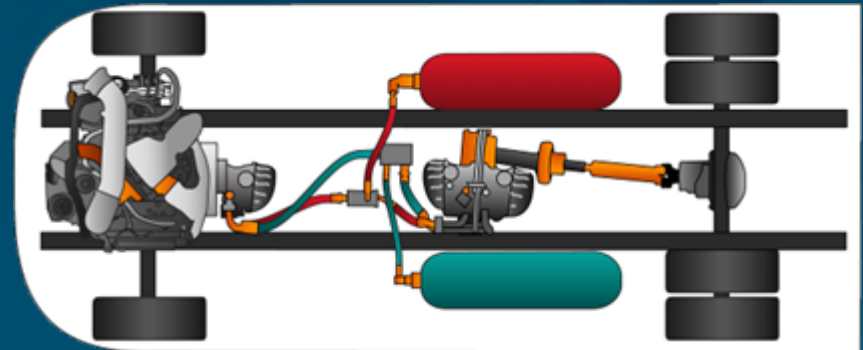
- Store energy in batteries and/or ultra-capacitors
- Use electric generator-motors



- **APM Terminal Project**

- **Hydraulic Hybrid Drive System – EPA technology**

- Store energy in hydraulic accumulators
- Use hydraulic pump-motors



# Benefits

- **Benefits of Hybrid Technology**
  - Reduce GHG and Pollutant emissions
    - Over 90% PM reduction
  - Improve fuel economy 30%
    - Estimate \$33,600 fuel savings (1<sup>st</sup> owner, 7 years)
- **Benefits of These Projects**
  - Significantly reduce CAP, GHG emissions, energy use
  - World wide applicability





# *The End*



Questions?