PLACE HOLDER TITLE

Port & Profit:
"Securing Ports Through Sustainable Power"

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PORT OF THE FUTURE CONFERENCE
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National & State Strategic Objectives

DHS Objective 2.2 - Expedite Lawful Trade and Travel:
Sustainable port infrastructure enhances supply-chain resilience and throughput by lowering disruption risk, reducing vessel idling through shore power, electrifying cargo handling, and improving berth utilization, ship-yard coordination, and chokepoint reduction for greater predictability, flexibility, and long-term economic velocity.

DHS Objective 4.2 & Texas Objective 2.1.2 Strengthen the Security and Resilience of Critical Infrastructure:
Distributed renewable energy systems strengthen critical-infrastructure resilience by decentralizing power supply, enabling outage islanding during disasters, reducing maintenance and cascading-grid failure risks, and lowering cyber and geopolitical exposure tied to external energy networks and supply chains.

Presidential Policy Directive 8 & Texas Objectives 2.1.5/6 National Preparedness and Grid Resilience:
Reducing diesel emissions and vessel idling improves air quality, lowers hazardous-pollutant exposure across workers, communities, and coastal ecosystems, and strengthens workforce reliability, emergency logistics, supply-chain throughput, and overall port resilience by mitigating environmental degradation, disaster impacts, and energy instability.

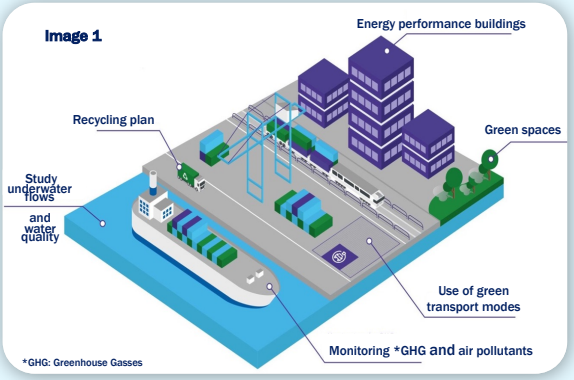
CONVERGENCE: FEDERAL STRATEGY & STATE TACTICS

"Together We Rise" – Synchronizing DHS Mission 2 & 4 (Borders & Cyber) with Texas Goal 1 & 2 (Prevention & Protection).

SOLUTION

"Aim for Smarter and Greener Resilience"

Key Strategy: Port Electrification



- **On-Shore Power Supply (OPS):**
  Adapt OPS for vessels with new sustainable technology to plug into the local grid eliminating engine emissions
- **Electric Cargo Handling Equipment (e-CHE):**
  Replace diesel-powered cranes, forklifts, and tractors with zero-emission electric versions
- **Energy Hubs (EH):**
  Evolve ports into Energy Hubs that leverage renewable energy systems and battery storage technologies

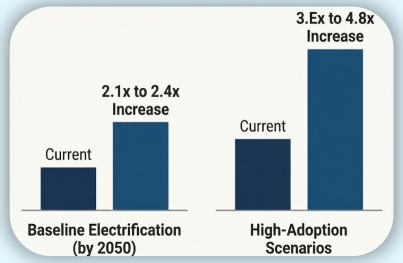
BENEFITS

Port Infrastructure Development Program
$450M USD
Annually available to develop U.S. Port's Strategic Support Infrastructure

Benefit 1 - Lower berth-side and regional economic friction through shore power
MARAD port-electrification case studies indicate that shore-power investment produces positive regional economic multipliers, county-level output by 2.1–2.4× and 3.5–4.8× in high-trend scenarios from 2020 to 2050.

Benefit 2 - Utility savings and stronger continuity of operations from Energy Hubs
NREL's Port Arthur case study found that PV-plus-storage delivered ~10% utility savings. Resilience-optimized deployment achieved 20% utility savings and 40% total savings versus business as usual, validating Energy Hubs as a protector of port revenue and critical to terminal operations during emergencies.

Economic Impact of Shore Power Electrification



Source: Prediction by MARAD's 2020 to 2050 Review of Port Electrification

SOURCES

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