



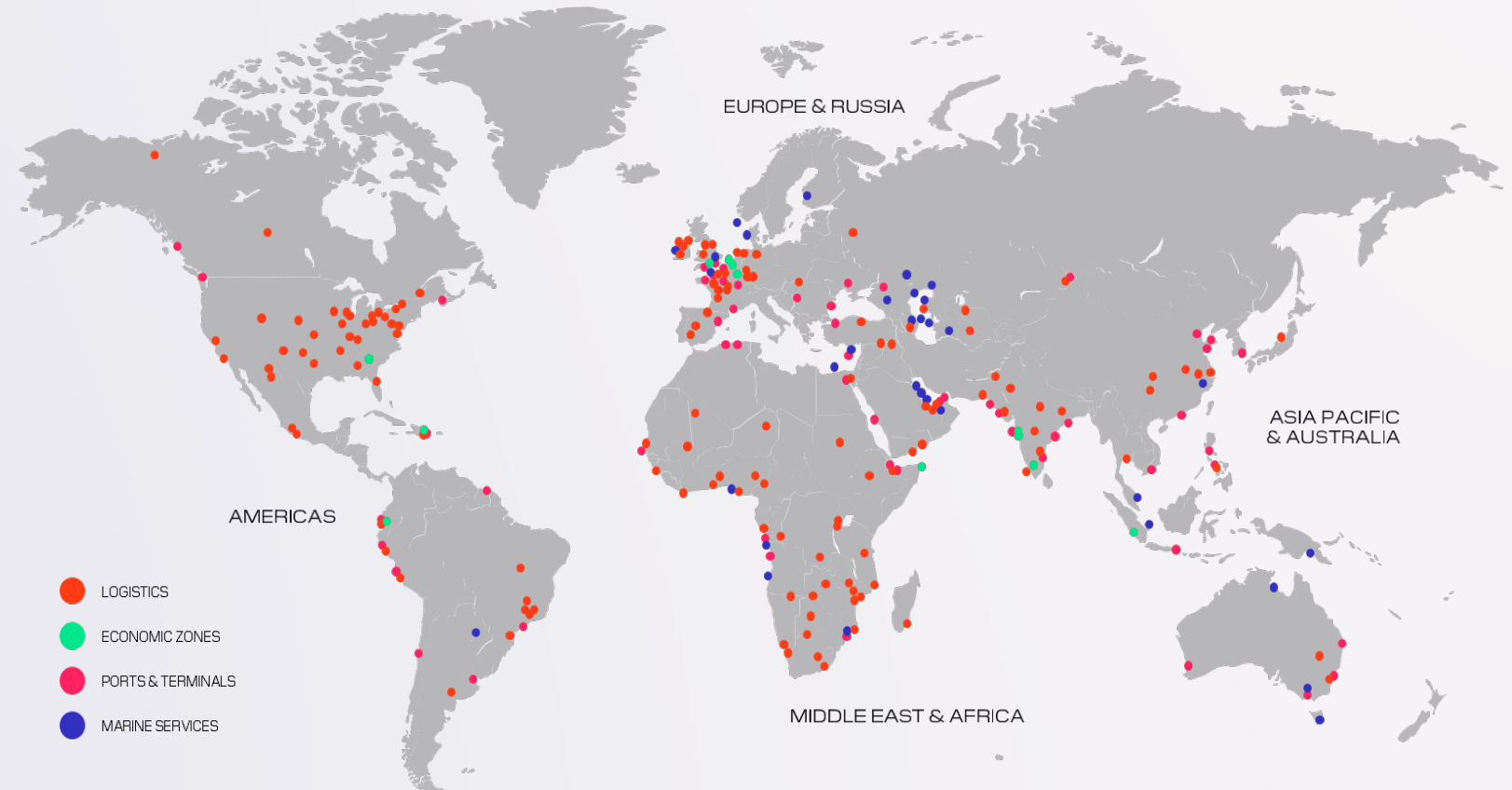
TOWARDS ZERO-EMISSIONS PORTS: A CALL FOR TECHNOLOGICAL TRANSFORMATION

Navigating Regulations, Leveraging Technology, and Activating Collaboration

PREAMBLE: CHALLENGING REGULATORY LANDSCAPE

DP World Driven by “Our World Our Future”

- At DP World, we handle 10% of world trade and **are committed to net-zero by 2050 via SBTi Verification.**
- As an end-to-end logistics provider, we need net-zero solutions for our Ports, Logistics, Maritime, and Economic Zone businesses.
- Regulations are abundant
 - 2024 CSRD disclosure
 - 2026 EU CBAM import tariffs
 - 2030 IMO 20% reduction
 - 2030 EU ETS 20-30% reduction



TECHNOLOGY TO ENABLE THE ENERGY TRANSITION

Energy Management Needs to be Best Practice

- Automation and electrification are well known, but it is **energy management that will help to reduce the burden**
- We view **electrification as a transitional bridge to net-zero**, with alternative fuels like hydrogen supplementing our efforts in the future; energy management will drive the delta
- We will focus on **reducing energy consumption through optimization** (i.e., Boxbay 30% more energy efficient @ 2.1kWh/move VS 3kWh/move for conventional)

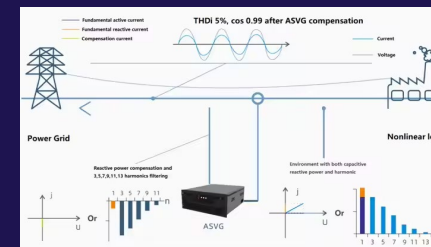
Smart / Micro Grids

- Seamless integration of shore power and renewable energy into port operations
- Real-time data to enable changing demands / self-healing of grids to minimize downtime
- Battery integration and reduction of reliance on grid



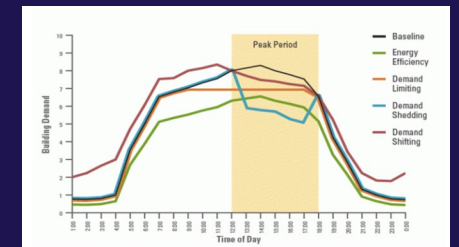
Power Quality

- Port equipment impacts power quality ~5-15% inefficiencies
- Harmonic filters can “clean” the waveform, minimizing energy losses
- VAR reactive power injection maintains voltage stability in the grid, minimizing equipment wear



Demand Response

- Shifting demand away from peak times as fossil fuels power grid at the margin
- Crane management to ensure lifting does not occur simultaneously
- Energy efficient HVAC / LED including setbacks to reduce energy



Reduction in Energy Consumption and Emissions

ACTIVE COLLABORATIONS TO DRIVE REGULATION

Partnerships & Industry Alliances Will Accelerate the Transition

- Achieving net-zero requires a collaborative effort; **DP World cannot do it alone.**
- Stakeholders across the value chain must work together to meet sector-wide net-zero ambitions.
- DP World also has various other industry partnerships and alliances that will collectively accelerate our net-zero goals.
- Partnerships will keep us abreast on **incentive mechanisms that are required for the energy transition.**

ZEPA

- Collective action across 4 workstreams to accelerate the adoption of battery electric handling equipment
- Projected Demand, Voluntary Design Standards, Power Infrastructure & Adoption Incentives



MMMCZCS

- Decarbonization through collaboration, applied research and regulatory reform
- Safe space for collaboration that unites players across the maritime value chain behind a shared mission.
- Seeks to influence global, regional and national decarbonization strategies and push for policies and regulations.



Partnerships

- PIL Green Corridors with Jebel Ali
- Maersk partnership to reduce bunkering fuel consumption and reduce emissions through faster gate turnaround times
- Masdar Renewable MOU





PARTING THOUGHTS

Pathways to Net-Zero Through Technology

- Regulation is abundant and **we need to lobby for incentive mechanisms** paired with regulation for adoption of clean technology
- **Utilize energy management concepts** to reduce energy consumption through optimization
- **Collaboration is required to tackle our emissions** as well to ensure that we connect with service providers in difficult regions that we operate

THANK YOU



Andy Tam
Global Vice President
Energy Management & Decarbonization
DP World