



WORLD CRANE SERVICES

YOUR PREFERRED SOLUTIONS PARTNER

◆ TRUSTED ◆ INDEPENDENT ◆ EXPERIENCED ◆

GREEN HORIZONS – PIONEERING SUSTAINABILITY TRANSFORMATIONS

SHOWCASING OUR EXPERTISE IN PROVIDING TURNKEY SOLUTIONS FOR PORT ELECTRIFICATION & DECARBONIZATION

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WCS D-ITV TO E-ITV CONVERSIONS

PRESENTED BY TOMASZ ZIOLEK

DIRECTOR THIRD PARTY INSPECTIONS





AN INTRO TO OUR SERVICES & PRODUCTS

YOUR PREFERRED PARTNER FOR COMPLETE TURNKEY SOLUTIONS – ONE STOP, EVERY SOLUTION



EQUIPMENT PROJECTS

UPGRADES, REPAIR, REFURB, RECOVERY & BROKERAGE



THIRD PARTY INSPECTIONS

3RD PARTY INSPECTIONS, AUDITS & DESIGN REVIEWS



MANUFACTURED PRODUCTS

PORT EQUIPMENT & BESPOKE DESIGN FABRICATION



OPS & QHSSE CONSULTANCY

OPERATIONS & QHSE BASED CONSULTANCY SERVICES



SALES & SPARE PARTS

AGENCY, PROCUREMENT, SPARE PARTS & LOGISTICS



TRAINING & COMMISSIONING

RELIABILITY & ENGINEERING TRAINING & SUPPORT



WORLD CRANE SERVICES - DECARBANISATION INITIATIVES



PORT ELECTRIFICATION INITIATIVES
ELECTRIFY WHATEVER POSSIBLE



SMART ENERGY MANAGEMENT SYSTEMS
REMOVE ENERGY WASTE



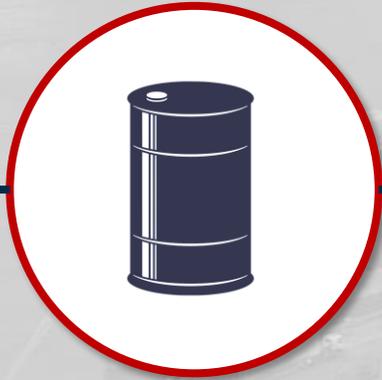
PURSUING GREENER ENERGY SOLUTIONS
WHAT IS THE FUTURE?



PORT AUTOMATION
EQUIPMENT, INFRASTRUCTURE & ASSET
MANAGEMENT



SCENAIRIOS & TAILOR-MADE SOLUTIONS



PREDOMINANTLY DIESEL-DRIVEN EQUIPMENT DUE TO LIMITED GRID CAPACITY, UNSTABLE GRIDS, OR CHEAP FUEL

HYBRID CHE: BATTERY + ANY FUEL TYPE

BASIC ENERGY MANAGEMENT & MONITORING

EFFICIENCY UPGRADES FOR DIESEL EQUIPMENT



TRANSITIONING TOWARDS DECARBONIZATION BY A MIX OF ELECTRIFIED & DIESEL-DRIVEN EQUIPMENT

ASSET CONVERSIONS & RETROFITS - HYBRID & ELECTRIC

SHORE POWER SOLUTIONS FOR VESSELS

PORT-WIDE MICROGRID & GREEN HYDROGEN TRIALS

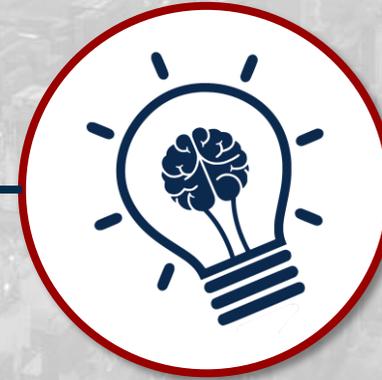


FULLY ELECTRIC TERMINALS, SUSTAINABLE, EMISSION-FREE, FUTURE-READY FOR OPERATIONS

ADVANCED ENERGY STORAGE & MANAGEMENT SYSTEMS

CLOSED-LOOP WASTE SYSTEMS

RENEWABLE ENERGY INTEGRATION



FUTURE TERMINALS: SMART, SUSTAINABLE, AUTOMATED, EFFICIENT, CONNECTED, CARBON-NEUTRAL, RENEWABLE, RESILIENT

ENERGY NET POSITIVE, ZERO EMISSIONS & FULLY AUTOMATED

CARBON CAPTURE & UTILIZATION WITH SMART GRID MONITORING - COMMUNITY & ECOSYSTEM INTEGRATION



CONVERSION OF RTGS TO E-RTGS

TRANSITIONING DIESEL-POWERED RTGS TO ELECTRIC TO REDUCE EMISSIONS & OPERATING COSTS.



HYBRID RTGS & CHE

IMPLEMENTING HYBRID TECHNOLOGIES FOR IMPROVED ENERGY EFFICIENCY & REDUCED FUEL DEPENDENCY.



DIESEL TERMINAL TRACTORS CONVERSION

RETROFIT & UPGRADE OF EXISTING TT FLEET TO FULL ELECTRIC FOR CLEANER PORT OPERATIONS



HYDROGEN APPLICATIONS

EXPLORING HYDROGEN FUEL CELLS FOR POWERING HEAVY EQUIPMENT & A ZERO-EMISSION ECOSYSTEM



ENERGY OPTIMIZATION

SMART ENERGY MANAGEMENT SYSTEMS TO MONITOR & MINIMIZE ENERGY WASTE.



EFFICIENCY UPGRADES

RETROFITTING EXISTING DIESEL EQUIPMENT TO IMPROVE ENERGY EFFICIENCY & LOWER EMISSIONS

TURNKEY SOLUTIONS & THE PATHWAY TO SUSTAINABLE PORTS

WCS IS UNIQUELY POSITIONED TO TACKLE THE CHALLENGES OF MODERNIZING PORTS FOR A GREENER FUTURE.

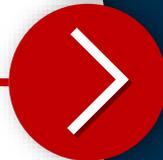
OUR EXPERTISE SPANS ELECTRIFICATION INITIATIVES, ENERGY EFFICIENCY UPGRADES, & ALTERNATIVE ENERGY INTEGRATION, OFFERING COMPREHENSIVE SUPPORT FROM FEASIBILITY STUDIES TO FULL IMPLEMENTATION & TURNKEY SOLUTIONS

DECARBONIZATION IN ACTION

GREEN PORT OPERATIONS FACE BARRIERS TO IMPLEMENTATION.

OVERCOMING THESE BARRIERS REQUIRES COLLABORATION AMONG AUTHORITIES, MANUFACTURERS, & POLICYMAKERS.

WITH INNOVATIVE SOLUTIONS, STRATEGIC INVESTMENT, & PRACTICAL, SUPPORTIVE REGULATIONS, THE INDUSTRY CAN ACHIEVE SUSTAINABLE, ECO-FRIENDLY PROGRESS



FINANCIAL (ROI/BUDGET) – 32.4%

INFRASTRUCTURE REQUIREMENTS – 19.1%

GREEN ELECTRICITY ACCESS – 14.7%

REGULATORY & GOVERNMENT POLICIES – 8.8%

CHANGE MANAGEMENT – 5.9%

OEM AVAILABILITY – 5.9%

PROCESS & APPROVAL RELATED – 4.4%

CONCESSION LENGTHS – 4.4%

IMPACT TO EXISTING EQUIPMENT & OPERATIONS – 2.9%

OTHERS – 1.5%

FEASIBILITY CASE STUDIES

JUSTIFYING INVESTMENT & UNLOCKING FUNDING BY OPTIMIZING ENERGY EFFICIENCY, REMOVING PEAK POWER DEMANDS, & ENSURING COMPLIANCE

WCS COLLABORATES WITH PORT OPERATORS, EPCS, & GOVERNMENTS TO ALIGN GOALS. WHETHER UPGRADING EXISTING PORTS OR DEVELOPING NEW ONES, WCS CONSISTENTLY SETS BENCHMARKS FOR SUSTAINABILITY & OPERATIONAL EXCELLENCE.

WCS, IN COLLABORATION WITH GOVERNMENT AGENCIES & UTILITY PROVIDERS, IS PERFORMING FEASIBILITY STUDIES FOR CANADIAN BASED TERMINALS.

THE GOAL IS TO SECURE FUNDING, ENABLING REDUCED GREENHOUSE GAS EMISSIONS, & REPLACE DIESEL SYSTEMS WITH CLEAN ELECTRICITY FOR TAILORED, SUSTAINABLE OPERATIONS

Information Classification: General



A COMPREHENSIVE FEASIBILITY STUDY FOR A TERMINAL IN ROMANIA, SUCCESSFULLY SECURED FUNDING & DEMONSTRATED WCS'S EXPERTISE IN SUSTAINABLE INFRASTRUCTURE PLANNING.

BUILDING ON THIS SUCCESS, WCS HAS INITIATED EARLY-STAGE DISCUSSIONS WITH MULTIPLE BALTIC STATE PORTS TO REPLICATE THESE ACHIEVEMENTS.

WCS D-ITV TO E-ITV CONVERSIONS

ESCLUSIVE PROVIDER FOR DP WORLD, WITH GLOBAL EXPANSIONS UNDER WAY

- 01** FIRST & ONLY DIESEL – TO - ELECTRIC TERMINAL TRACTOR CONVERSIONS IN THE REGION
- 02** PROVEN SUCCESS WITH 10 UNITS CONVERTED AT JEBEL ALI PORT IN 2022/23, & 40 ADDITIONAL UNITS IN 2023/24
- 03** REDUCES CARBON EMISSIONS BY 42.5 TONS PER UNIT ANNUALLY
- 04** OPERATIONAL SAVINGS INCLUDE 77% LOWER ENERGY COSTS & 50% LOWER MAINTENANCE COSTS
- 05** ROI ACHIEVED WITHIN 2 YEARS, SAVING ~\$62K USD PER UNIT IN THE FIRST YEAR
- 06** KEY SYSTEM COMPONENTS INCLUDE MOTOR CONTROL UNIT, POWER DISTRIBUTION UNIT, & THERMAL MANAGEMENT SYSTEM

THE CONVERSION APPROACH IS ADAPTABLE FOR VARIOUS TERMINAL TRACTOR MODELS, ENABLING PORTS GLOBALLY TO TRANSITION TO ELECTRIC FLEETS EFFICIENTLY & SUSTAINABLY

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QUESTIONS & ANSWERS

The logo for World Crane Services (WCS) features the letters 'WCS' in a bold, white, sans-serif font. The 'W' and 'S' have a red triangular shape at their top-right corners. The logo is centered over a background of a port at dusk with cranes and a city skyline.

WORLD CRANE SERVICES

THANK YOU