



Operational Improvements from Energy Efficiency & Emissions Reduction

The Challenge

Port Operators today face challenges from fluctuating energy costs and the need to maintain a competitive edge in a rapidly changing economic environment. The port sector is subject to substantial domestic and international legislation, with growing pressure to reduce pollutant emissions and improve air quality.

Our Solutions

Various solutions respond to these challenges and continue to evolve and develop...

- **Shore Power/Cold Ironing** Connecting berthed vessels to a shore-side electricity supply allows auxiliary generators to be switched off. Benefits include energy savings; improved air quality through reduced pollutant emissions; reduction in noise and vibration (improving living conditions for employees and local residents); reduced maintenance costs and extended plant lifetimes.
www.royalhaskoningdhv.com/en-gb/projects/providing-shore-power-for-seaport-ijmuiden/7269
- **Renewable Energy Generation** Low cost, low carbon electricity can be generated on or close to port facilities via solar PV, wind turbine generators and wave and tidal technologies. It allows port operators to diversify away from grid electricity, reduce energy costs and potentially create additional revenue from Feed in Tariffs or energy sales to shore power customers or port tenants.
www.royalhaskoningdhv.com/en-gb/services/renewables/793
- **Energy Storage** Investing in energy storage systems provides multiple benefits. It allows surplus energy from co-located energy generation systems to be stored for use at more appropriate times. Alternatively it can assist in avoiding high 'peak period' tariff charges or maintaining connection during interruptions to supply. Energy costs can be reduced by storing cheap grid electricity for use or resale at peak times. Energy Storage can also contribute towards emissions reduction strategies.



■ **Hybridisation and Electrification of Port Equipment**

Hybridisation of port equipment such as RTGs can dramatically improve fuel consumption and pollutant emissions (by up to 50%). It is achieved by harvesting recuperative energy for storage and reuse or optimising primary generation capacity (i.e. downsizing diesel generators). Conversion to full electrical operation can make equipment such as RTGs completely emission-free and reduce operational costs even more. Further financial savings are achieved through extended lifespan and reduced maintenance. Emissions reduction can also mitigate carbon taxes.

www.royalhaskoningdhv.com/en-gb/projects/smart-ports-c-improving-port-efficiency-with-the-innovative-susports-tool/7846

Royal HaskoningDHV has developed a comprehensive range of tools and services to assist port operators in achieving fuel savings and emissions reduction, leading to improved financial performance. Our collaborative approach supports clients to make energy efficiency project investment decisions, based on robust, well-informed business cases.

Other energy efficiency and emissions reduction measures which are available include:

- LED Lighting scheme design including smart lighting technology
- Pump efficiency surveys

■ Reduction of environmental concerns associated with

- Pollutant Emissions
- Dust
- Water quality
- Traffic
- Noise
- Vibration

■ Energy and Carbon Management focusing upon

- Energy Efficiency studies and audits
- Energy Management support (ISO 16001)
- Optimization of heat integration in processes
- Exchanging energy & waste streams between industrial parties (smart grids)
- Carbon Initiatives review
- Emission trading / Support in allocation
- Carbon Neutrality strategies / Carbon Foot printing
- ETS Monitoring and reporting
- Validation of Clean Development Mechanism projects

To find out how we can assist with achieving fuel savings and emissions reduction, leading to improved financial performance for your port contact us today or visit



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