



**OMC'S
GREEN
PORT
IS AN**

**ECO
-FRIENDLY
OPERATION.**



DUKC® green ports go deeper on screen

OMC's DUKC® navigation technology is a cost-effective 'green' solution for bringing bigger ships with larger loads safely into port while also reducing the impact on the marine ecosystem.

Where installed, DUKC® software can increase port capacity with less capital dredging because it can create the channel depth profile which matches the depths required for the ships transiting. This maximises the value of every centimetre dredged while minimising harm to the marine ecosystem.

DUKC® also enhances safety which reduces the risk of ship groundings and consequent environmental disasters.

By allowing ships to go deeper with larger loads, DUKC® can further reduce damage to the ecosystem as fewer ships are needed to carry the same amount of tonnage. The larger bulk ships, for example, are the most ecologically friendly on the dry bulk market, allowing about a 35% reduction in carbon emissions.

When ports need to deepen an existing channel to increase their port capacity (as was the case with Port Hedland's inner harbour), DUKC® can be used to tailor the channel profile for less cost, less dredging quantities and less impact on the marine environment.

DUKC® is therefore a greener approach. A related initiative is the identification of Under Keel Clearance (UKC) critical areas in the channel suitable for targeted high spot dredging to relieve bottlenecks caused by UKC critical peaks.

Every tonne of dredged material reduced provides an average saving of about \$50 to \$100.

DUKC®'s green benefits:

- Reduces the risk of ship groundings
- Allows ships to sail deeper at a fraction of the cost and environmental effects of dredging
- Reduces carbon emissions by fewer sailings overall for the same tonnage.
- Enables dredging minimisation
- **Casestudy:** At Port Hedland, web-based DUKC® Series 5 contributes to a "greener" solution. Coupled with revised tidal window models and minimal targeted dredging, it potentially yields an extra average draft of 71cm over and above that from DUKC® Series 4.

"Maximising the amount of cargo carried can bring huge economic benefits, as we minimise the number of ships we need to employ and minimise the dead freight."

Hayden Latchford,
Marine Assurance
Superintendent,
BP Australia,
2009.



DUKC® methodology has been used to minimise channel dredging amounts, including high spot dredging, thus reducing environmental effects at a number of DUKC® ports.



Port Taranaki (NZ)

The numerical models in a DUKC® system can be used to design a channel depth profile that matches the UKC requirements along a channel in an optimal manner. In the Port of Taranaki, New Zealand, OMC reduced the port's planned dredging costs by approximately 50% through the introduction of DUKC®.



"...if we were to achieve the aims we had set we had a clear choice; spend \$15m on dredging or adopt DUKC® plus minimal dredging and spend under \$1.5m"

Captain Ray Barlow,
Operations Manager/Harbour
Master, Port Taranaki, 2004