

## PORT OF PRINCE RUPERT GREEN WAVE PROGRAM

The Green Wave program, introduced in 2013, offers reduced harbour dues to vessels that have implemented emission reduction measures and/or other environmental practices to improve their environmental performance. The program focuses on environmental certification, technological implementation and management practices. The aim of Green Wave is to incentivize shipping companies to increase their environmental awareness and continue to improve the performance of their vessels.

Vessels can qualify for one of three tiers; each offering a different level of discount from the base harbour dues rate. These tiers are based on the level of commitment toward aspects of environmental performance, including reduced air emissions and pollutants, reduced underwater noise, adoption of energy efficient technology, and participation in the marine sustainability organizations and initiatives that are being rapidly adopted worldwide. The mechanisms to qualify for discounted harbour dues through the Green Wave program include:

### EMISSION REDUCTION TECHNOLOGIES

- **Shore power** (at Fairview Terminal)
- **NO<sub>x</sub> Tier III engine**
- **Clean Fuels**
- **Emissions Reduction Technology**

### ENVIRONMENTAL PROGRAMS

- **Green Marine**  
([www.green-marine.org](http://www.green-marine.org))
- **RightShip**  
([www.rightship.com](http://www.rightship.com))
- **Environmental Ship Index**  
([www.environmentalshipindex.org](http://www.environmentalshipindex.org))
- **Clean Cargo Working Group**  
([www.clean-cargo.org](http://www.clean-cargo.org))
- **Energy Efficiency Design Index**  
([www.imo.org](http://www.imo.org))
- **Clean Shipping Index**  
([www.cleanshippingindex.com](http://www.cleanshippingindex.com))
- **Green Award**  
([www.greenaward.org](http://www.greenaward.org))

### UNDERWATER NOISE – CLASSIFICATION SOCIETIES

- **American Bureau of Shipping (ABS) UWN notation**  
([ww2.eagle.org](http://ww2.eagle.org))
- **Bureau Veritas (BV) URN notation**  
([group.bureauveritas.com](http://group.bureauveritas.com))
- **Det Norske Veritas – Germanischer Lloyd (DNV-GL) SILENT (E) notation**  
([www.dnvgl.com](http://www.dnvgl.com))
- **Korean Register (KR) URN notation**  
([www.krs.co.kr](http://www.krs.co.kr))
- **Lloyd's Register (LR) UWN-L notation**  
([www.lr.org](http://www.lr.org))
- **Registro Italiano Navale (RINA) DOLPHIN notation**  
([www.rina.org](http://www.rina.org))
- **Chinese Ship Classification (Underwater Noise N)**  
([www.ccs.org.cn](http://www.ccs.org.cn))

### UNDERWATER NOISE – TECHNOLOGY

- **Becker Mewis Duct**  
([www.becker-marine-systems.com](http://www.becker-marine-systems.com))
- **ECO-Cap (Nakashima)**  
([www.nakashima.co.jp](http://www.nakashima.co.jp))
- **EnergoproFin (Wartsila)**  
([www.wartsila.com](http://www.wartsila.com))
- **MMG Energy Saving Cap**  
([www.efficiency-by-mm-g.de](http://www.efficiency-by-mm-g.de))
- **Pre-Swirl Duct (Hyundai)**  
([www.hyundai-gs.com](http://www.hyundai-gs.com))
- **Propeller Boss Cap Fins (Mitsui OSK)**  
([www.pbcf.jp](http://www.pbcf.jp))
- **Schneekluth Wake Equalizing Duct**  
([www.schneekluth.com](http://www.schneekluth.com))
- **Ultimate Rudder (Nakashima)**  
([www.nakashima.co.jp](http://www.nakashima.co.jp))
- **Kamome Propeller Gate Rudder**  
([www.kamome-propeller.co.jp](http://www.kamome-propeller.co.jp))

**Table A. Emission Reduction Technologies & Environmental Programs**

		TIER 1 (-10%)	TIER 2 (-20%)	TIER 3 (-50%)
<b>EMISSION REDUCTION TECHNOLOGIES</b>	Shore Power			Equipment installed on vessel and shore power utilized for majority of time at berth
	NO <sub>x</sub> Tier III Engine			Engine installed
	Clean Fuels			LNG or Hydrogen fuel use
	Emission Reducing Technology			Wind and/or Battery Assist
<b>ENVIRONMENTAL PROGRAMS</b>	Green Marine	Level 3 GHG and minimum Level 2 in all other indicators	Level 4 GHG and minimum Level 2 in all other indicators OR Level 5 Underwater Noise and minimum Level 2 in all other indicators	Level 5 GHG and minimum Level 2 in all other indicators
	RightShip	Verified GHG B	Verified GHG B+	Verified GHG A
	Environmental Ship Index	Score 30 - 40	Score >40 - 55	Score >55
	Clean Cargo Working Group	CO <sub>2</sub> dry score <46 - 36	CO <sub>2</sub> dry score <36	
	Clean Shipping Index	CSI 3	CSI 4	CSI 5
	Energy Efficiency Design Index	Attained EEDI 20% better than required	Attained EEDI 25% better than required	Attained EEDI 30% better than required
	Green Award	Award certificate		

\*Vessels need only satisfy one criterion to achieve the corresponding tier discount. For more information contact us at [greenwave@rupertport.com](mailto:greenwave@rupertport.com)

**Table B. Underwater Noise Reduction**

		TIER 1 (-10%)	TIER 2 (-20%)	TIER 3 (-50%)
<b>UNDERWATER NOISE - CLASSIFICATION SOCIETIES</b>	American Bureau of Shipping (ABS)			UWN notation
	Bureau Veritas (BV)			URN notation
	Det Norske Veritas – Germanischer Lloyd (DNV-GL)			SILENT (E) notation or Certificate of Compliance
	Korean Register (KR)			URN notation
	Lloyd's Register (LR)			UWN-L notation
	Registro Italiano Navale (RINA)			DOLPHIN notation
	Chinese Classification Society			Underwater Noise N notation
<b>UNDERWATER NOISE - TECHNOLOGY</b>	Becker Mewis Duct	Technology installed		
	ECO-Cap (Nakashima)	Technology installed		
	Energoprofin (Wartsila)	Technology installed		
	MMG Energy Saving Cap	Technology installed		
	Pre-Swirl Duct (Hyundai)	Technology installed		
	Propeller Boss Cap Fins (Mitsui OSK)	Technology installed		
	Schneekluth Wake Equalizing Duct	Technology installed		
	Ultimate Rudder (Nakashima)	Technology installed		
	Kamome Propeller Gate Rudder	Technology installed		

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