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Excellent verified results of CSNOx by ABS on 11MW main engine, a world's first

- 99%, 77%, 66% efficiency in removing sulphur dioxide, carbon dioxide and nitrogen oxide respectively
- Ultimate solution for ship owners and operators to meet current and future IMO restrictions on emissions from ships

SINGAPORE – 25 February 2010 – Ecospec Global Technology Pte Ltd ("Ecospec" or the "Company"), a Singapore-based technological company and inventor of the world's first effective 3-in-1 emission abatement system is pleased to report that ABS, one of the world's leading classification societies, has issued a statement on 8 February 2010 verifying the results of sulphur dioxide (SO₂), carbon dioxide (CO₂), nitrogen oxide (NO_x) removal from the emissions of a trading 100,000-tonne Aframax tanker installed with the CSNOx gas abatement system.

In the first load point verifications, part of the ongoing IMO Type Approval certification process, conducted during the last week of January 2010 onboard this 100,000-tonne oil tanker, at 50% gas load (equivalent to approximately 5 MW engine output), ABS issued a Statement of Fact on the performance of CSNOx system with the following results:

Fuel:	Туре 380 сSt		Temperature	Sulphur Content	
			50°C	3.64%	
Removal	SO ₂		CO ₂	NO _x	
efficiencies:	98.6% - 98.9%		76.5% - 77.1%	64.5% - 66.2%	
Exhaust gas:	Inlet 212.3°C		Outlet		
			33.5°C		
Wash water	pН	PAH	Nitrates	Temperature	Turbidity
quality:	6.7	<1 ppb	<0.066mg/l (ppm)	32°C	Δ8.7 NTU

This 100,000-tonne Singapore-registered oil tanker, which is owned and managed by leading shipping company Tanker Pacific, set sail from Singapore, travelling to the Middle East via Sri Lanka. Significantly, the removal efficiencies of the CSNOx system allows vessels installed with CSNOx to continue using normal heavy fuel and yet meet the 0.1% sulphur content as required by the EU Directive effective from 1 January 2010. In other words, there is no need for vessel owners to convert to distillate fuel or modifying the fuel system for switching to distillate.

The removal efficiency for NOx is the absolute reduction percentage. After translating this removal efficiency into the NOx emission requirement as per the Tier 1, 2 or 3 requirements, the CSNOx system is able to remove NOx to such levels that vessels installed with it are able to meet even the strictest Tier 3 requirement.

Apart from meeting the SO_2 and NOx requirements, there is no other cost effective system currently available to remove CO_2 at the rate the CSNOx system is capable of. CSNOx truly is a cost-effective and efficient solution for solving the emission issues faced by the ship owners.

In addition, the results also affirm CSNOx scalability and suitability for a normal ship's operations.

Said Mr Chew Hwee Hong, Founder and Managing Director of Ecospec, "The shipping community is thrilled with the results. CSNOx is extremely efficient in removing CO_2 , SO_2 and NO_x . Of significance is also the wash water quality, which met all IMO requirements with most parameters surpassing the strict criteria by a large margin. ABS verifications also underscore the fact that CSNOx is the world's first proven commercially viable solution that can effectively reduce the hotly debated GHG and pollutants all in one system."

In October 2008, the Marine Environment Protection Committee (MEPC) of the International Maritime Organisation (IMO) unanimously adopted the amendments to revised Annex VI of MARPOL 73/78 (International Convention for the Prevention of Pollution from Ships), which places restrictions on nitrogen and sulphur oxides emissions from ship traffic. The revised Annex enters into force on 1 July 2010.

One way in which the Annex seeks to reduce emissions of particulate matter from shipping vessels is by lowering the sulphur content in fuels. The sulphur content of fuel will fall in the special areas (SECA or Sulphur Emission Control Area), which are the Baltic Sea, the North Sea and the English Channel, from 1.5% to 1% from 1 July 2010, and to 0.1% from 1 January 2015. Globally, the highest permitted sulphur content of fuel will fall, as from 1 January 2012, from 4.5% to 3.5%, and to 0.5% from 1 January 2020.

"The verified results by ABS are critically relevant to ship owners and operators as it means that vessels installed with the CSNOx system will have no difficulty in meeting the IMO's regulations, EU's directives, and EPA's emissions requirements from ships even when using fuel with high sulphur content. It translates into significant cost savings in fuel for them," added Mr Chew.

Mr Chew concluded, "With our breakthrough patented technology, we believe that we will be able to make a difference in the fight against global climate change and to create a cleaner and fresher environment for the world."

About Ecospec Global Technology

Ecospec is a Singapore technology company that researches and develops cost-effective solutions for environmental issues. Founded in 2001, Ecospec has since established itself as a pioneer and global market leader in advanced environmental and emission control technology with a worldwide presence and numerous technology patents filed or granted to date.

In early 2009, Ecospec introduced CSNOx, the world's first commercially viable solution capable of reducing carbon dioxide (CO_2), sulphur dioxide (SO_2) and nitrogen oxide (NOx) emitted by large tankers all in one process and in a single system. In addition, the emission abatement is achieved at a net carbon reduction, without acidifying the ocean, and with no other secondary pollutants or harmful substances discharged into the sea.

In addition, CSNOx is applicable for large land-based emission treatment such as incinerators, power plants and refineries.

CSNOx uses Ecospec's proprietary Ultra-Low Frequency waves electrolysis treatment technology to treat seawater/freshwater. No chemicals are introduced in the CSNOx treatment process. The treated water becomes highly reactive in removing CO_2 , SO_2 , and NOx. The resultant wash or scrubbed water meets and surpasses international standards for discharge water.

Photo:



Caption: CSNOx onboard 100,000-tonne Aframax tanker for first load point verifications