Environmental Sustainability Bulletin 02/19 April 2019

These bulletins summarise key ideas and solutions to environmental and sustainability matters, allowing wider dissemination of lessons learnt from them. The information below has been provided in good faith by IMCA members and should be reviewed individually by recipients, who will determine its relevance to their own operations.

The effectiveness of these bulletins depends on receiving reports from members in order to pass on information and continue to present innovative solutions. Please consider adding the IMCA secretariat (sustainability@imca-int.com) to your internal distribution list for similar internal reports and/or manually submitting information on specific solutions that you consider may be relevant. All information can be anonymised or sanitised, as appropriate.

A number of other organisations issue environmental sustainability updates and similar documents which may be of interest to IMCA members. Where these are particularly relevant, these may be summarised or highlighted here. Links to known relevant websites are provided at www.imca-int.com/links. Additional links should be submitted to sustainability@imca-int.com.

Any actions, lessons learnt, recommendations and suggestions in IMCA environmental sustainability bulletins are generated by the submitting organisation. IMCA environmental sustainability bulletins provide, in good faith, information for the benefit of members and do not necessarily constitute IMCA guidance, nor represent the official view of the Association or its members.

Biofuels

This is the second IMCA Environmental Sustainability bulletin, and like the first, it is drawn from the inaugural IMCA Environmental Sustainability Awards made at the IMCA Annual Seminar in The Hague, Netherlands, in November 2018. It relates to an initiative from IMCA contractor member Boskalis, involving the successful deployment of vessels powered by biofuels.

Reducing CO_2 emissions is one of Boskalis' long-term objectives. Using biofuel is one aspect of the 'Boskalis on Bio' program, for which Boskalis signed a long-term partnership with a biofuel supplier. The program is aimed at achieving a 35% reduction in the CO_2 emitted by the Boskalis fleet and equipment in the Netherlands over the next five years. Various sea trials conducted by Boskalis have shown that sustainable biofuels lead to an impressive reduction in CO_2 emissions of up to 90% compared to fossil fuels and are also much more effective than alternatives such as liquefied natural gas (LNG). Various Boskalis projects have used biofuels in which case they have contributed in achieving the company ambition to reduce CO_2 by 35%.

What was done?

Together with its key suppliers, Boskalis conducts constant research into the technical feasibility of using cleaner and more efficient fuels on its equipment. Boskalis makes targeted investments in this research and shares experiences with its strategic suppliers and clients to broaden the economic applicability.

Where environmentally friendly fuels are more costly than fossil fuels, economic feasibility also comes into play. Once client appreciation of better environmental performance translates into acceptance of these costs, the application becomes economically viable as well, which is why Boskalis is keen to share the knowledge it gains from its tests with clients.

How did the improvement come about?

It all started in 2013 when Boskalis launched a pilot study on Bio diesels in close cooperation with KLM Royal Dutch Airlines and SkyNRG. SkyNRG provides biofuels in the aviation industry and has a clear mission to offer everyone the opportunity to fly sustainably. KLM only used a small part of the available volume, which was why SkyNRG was looking to broaden the market to enable biofuels to compete with traditional fuels. Boskalis employees accumulate many flight hours traveling to offices and projects worldwide. KLM is Boskalis' preferred carrier and so the link to this chain initiative was swiftly made.

Boskalis was keen to not only offset Boskalis environmental impact, but also wanted to engage in a structural solution. Boskalis agreed to conduct a pilot with a number of trucks for civil infrastructure related projects and the

purchasing of 250,000 litres of biofuel was a fact. With this pilot study Boskalis contributed to the further development of the technical performance and know-how of sustainable diesel fuels.

What were the challenges?

For Boskalis, an important part of the partnership with the biofuel supplier was that its biofuels were made out of pure sustainable residual flows that did not compete with the food chain or result in the deforestation of rainforests. This all took place under the supervision of an independent sustainability board consisting of leading NGOs and academics.

What was the final result?

Various trials conducted by Boskalis Nederland have shown that sustainable biofuels performed excellently while reducing CO_2 emissions by an impressive 90% compared to fossil fuels. During the construction of the Marker Wadden project in 2016, the Boskalis cutter suction dredger Edax dredged for six months using a B50 biofuel blend (50% of which consisted of residual products from the paper industry), and therefore resulted in a huge CO_2 reduction. Boskalis Nederland now uses this fuel not only for its vessels but also for its dry earthmoving equipment and trucks.

Boskalis has recently announced its intention to use a biofuel blend on the project to install the export cable to the Borssele offshore wind farm resulting in a more sustainable realization of this renewable energy project. The Borssele Alpha project is being executed on behalf of TenneT and is aimed at connecting the Borssele offshore grid with the Dutch high-voltage grid. During this project, Boskalis will run its vessels on a biofuel blend of up to 30 per cent. As of last week, the large trailing suction hopper dredger Prins der Nederlanden is powered by a biofuel blend resulting in a substantial CO_2 reduction.

Prins der Nederlanden *powered by biofuel*