



# DEME

Dredging, Environmental  
& Marine Engineering

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### Important new investments strengthen DEME's position on the world market

*Zwijndrecht – 17 June 2010. Even though the current investment programme 2008-2011, which amounts to EUR 1 billion, is still being implemented, the DEME Group is already commencing a new series of investments which will see 3 new units on the market by mid-2012. An amount of EUR 260 million has been allocated for these new investments. Including these new investments, a total of nine new, large units will be added to the DEME fleet by mid-2012.*

The construction contract for these three vessels has now been signed with the IHC Merwede shipyard. It encompasses the construction of a new trailing suction hopper dredger (TSHD) with a hopper capacity of 11,650 m<sup>3</sup>, an extremely powerful, self-propelled rock cutter dredger with a total installed output of 28,000 kW and a patented high-tech, flexible fall-pipe system that will enable accurate stone dumping at depths of up to 2,000 m. This is absolutely unparalleled!

#### **Trailing suction hopper dredger (TSHD) “Breughel”**

The new trailing suction hopper dredger (TSHD) will be named “Breughel”. This new ship, with a hopper capacity of 11,650 m<sup>3</sup> and a carrying capacity of over 18,000 tons, fits perfectly into DEME’s trailing suction hopper dredger segment which incorporates the “Brabo” and “Breydel”, added to the fleet in 2007 and 2008 respectively. The ship will have a port side 1,200 mm suction pipe and will be able to dredge at depths of up to 43 m.

The “Breughel” was designed for dredging in both deep and shallow waters, enabling the ship to offer extensive flexibility. Even with a maximum load, it will only have a draught of 8.15 m on dredging mark. This also enables DEME to reconfirm that its fleet of dredging

vessels offers the best carrying capacity/draught ratio in the dredging industry. This is an absolute trump card in terms of multi-use applications, from deployment for maintenance work in deltas to land reclamation projects with long distance transport.

The ship combines all of the latest developments in dredging technology and will be equipped with a pump-ashore installation for directly shore delivery (rainbowing). During the design of this trailing suction hopper dredger, a great deal of attention was paid to minimising CO2 emissions and this will allow the ship to be labelled as having the best CO2 emissions per m3 in its class and, subsequently, to it being awarded a Green Certificate.

The “Breughel” is scheduled to be commissioned in the second half of 2011.

### **Self-propelled sea-going rock cutter dredger “Ambiorix”**

The “Ambiorix” will have a total installed power of 28,000 kW and will be equipped with the in-house developed superjetting system D.R.A.C.U.L.A. With these assets the “Ambiorix” will position itself as one of the most powerful cutter dredgers in the dredging industry. The ship is self-propelled and will, consequently, be able to travel around the world autonomously for DEME. The “Ambiorix” will also become the new flagship for the DEME cutter fleet and will follow the positive tracks of the rock cutter dredger “D’Artagnan” which was commissioned to DEME in 2005. The new ship will carry the very latest technology and will constitute a further evolution of the successful “D’Artagnan”.

The “Ambiorix” will be fitted with a barge loading system. The flexible spud system will allow operations in larger swell, allowing higher productivity and working in the most challenging conditions. The ship will be equipped with a so-called ‘moonpool’ which enables surveying to take place during dredging and which, therefore, will increase the efficiency of the dredging process. The “Ambiorix” will have the in-house developed D.I.O.R.I.T.E. system installed. Sophisticated artificial intelligence controls the dredging process via this system, optimising efficiency and productivity. This extremely powerful cutter suction dredger will have a huge range in terms of dredging depth, from shallow dredging at a depth of 6 m to a maximum of 35 m, and will be able to efficiently tackle all types of soil, including soft rock.

The “Ambiorix” is planned to be commissioned mid 2012.

### **Fall-pipe system for stone dumping at very large depths**

DEME has also ordered a completely new and patented in-house designed fall-pipe system from IHC for their DP fall pipe vessel “Flintstone”, which is currently under construction. Feedback from its twenty years of experience in stone dumping has been incorporated into the design. The specific concept and the completely new technology ensure substantially higher productions for this fall-pipe system. It will be the largest fall-pipe system ever built in the market and will be able to deliver efficient, controllable stone dumping operations to a unique depth 2000 m.

The greatest depth ever achieved with a fall pipe vessel until now is 987 m. This was achieved by the DEME subsidiary Tideway with head offices in Breda, last year, with its fall pipe vessel “Rollingstone” during accurate stone dumping on the Balearic Pipeline Project for Enagas in Spain.

The challenges faced when working at depths of up to 2,000 m are huge. Genuine space technology has, therefore, been incorporated into this new system. The tube will be manufactured out of special aluminium alloys equipped with newly developed coatings which have been created by combining American and Russian top technology with European high-tech developments.

The use of this light material has allowed us to develop a so-called self-bearing system for this fall pipe. It is this self-bearing structure that enables this system to work at extreme depths as the pipe system is not subject to the resonance that can be encountered with a cable system as a result of the upward and downward movement of the fall pipe vessel.

The system will be equipped with a flexible, closed fall pipe. This flexibility – which is absolutely vital in order to avoid breakage due to underwater movements – is achieved by using a totally new, bullet-shaped double bayonet connection which is used to connect all of the pipe sections (each of which is 12 m long) to one another.

The ‘closed’ fall pipe system ensures that the stone dumping can be controlled perfectly and precisely, as the mixture of stone/water is continuously adjustable, since the inflow of uncontrolled extra water is avoided at all times.

This integral fall pipe system (bullet shaped and double bayonet coupling, closure mechanism, construction system) has been patented by DEME.

This fall pipe is intended for the fall pipe vessel “Flintstone” (19,000 tonnes carrying capacity), the entire design of which (both the fall pipe system and the R.O.V. or Remote Operated Vehicle) is created to allow the vessel to work efficiently at extreme depths of 2,000 m.

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