

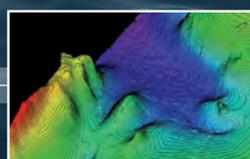
In Depth

Working with energy for the future - page 4

Making low-visibility searches faster and safer - page 2

MacArtney UK expands - page 6

Latest group news - page 7



Making low visibility searches faster and safer



Looking forward

While some business sectors are experiencing the effects of a tentative market, the MacArtney Underwater Technology Group is faring the ebb and flow of the global economy well.

Our plans for the near future and the long term remain unchanged; we will continue to improve products and services for the oil & gas and ocean science markets, and develop still more in the sector of the future – renewable energy.

We understand that the cornerstones of a good business partner are quality, reliability, smarter solutions, service and delivery times. Our strengthened engineering departments, new workshops and office premises at EurOceanique in France and at MacArtney UK have increased our local capacity and global competences. Customers are already benefitting from faster delivery times and increased workshop capacity.

The renewable energy sector is an ideal new area for the MacArtney Group. Our products and services are well matched to this new market and we have been working actively in providing advice, engineering and products to renewable energy customers since 2000. We are supplying and developing high voltage technology (33kV) products and systems, and will continue to develop and adapt new products to suit our customers' needs.

From our good, stable base, 30 years of continuing success and steady investment we look forward to providing the underwater industry with first class systems and solutions in 2009 and beyond.

Niels Erik Hedeager, CEO

Monitoring, surveillance and searches in low or zero visibility waters is a time consuming and potentially risky operation. Finding the right equipment can save time, money and reduce the risk in diver searches.

When cameras alone aren't enough

Knowing what's going on under the water is important for a wealth of reasons: security checks, structure inspection, search and rescue or recovery, obstacle detection and fisheries management.

In clear waters, video or camera monitoring or divers are excellent methods of being sure of what is happening below the waterline, but in turbid or near zero visibility, camera images are unclear. Searching for crime evidence, inspecting ship hulls or obstacle avoidance is task enough, but in murky or turbid waters it can be time consuming, arduous or even dangerous.

Real-time vision in zero visibility

DIDSON systems are designed to make monitoring faster, safer and easier. Mounted on submersible vehicles, they make underwater observations possible even in zero visibility and reduce the need for tactile searching by divers.

Definition is high enough to follow small pipelines across the sea floor or locate small objects attached to structures,

moving in the water or on the seabed. The system is also ideal for navigating the submersible around obstacles.

The unique high definition sonar systems use acoustic lenses to make near video quality real-time images and can be used at depths of up to 100 metres. With a resolution of up to 21 frames per second with a 29° field of view, they are ideal for monitoring both fixed and moving objects and can also be mounted onto fixed structure for continual monitoring.

For safer, time-efficient diving

In the lightweight diver-held version, the sonar system feeds images directly into the visor, making it easier to locate objects and avoid obstacles for safer and more efficient diving.

The diver can use the sonar to navigate around obstacles and can change settings using system information shown on the head mask display.

Versatile system for many applications

DIDSON, Dual frequency Identification SONar systems, are ideal for marine security, hull and berth sweeps, underwater surveillance, obstacle detection and avoidance, fisheries management, underwater structure inspection, search and rescue operations, bottom typing and environmental analysis and crime evidence recovery.



The DIDSON system is ideal for mounting onto submersibles, and the rapid refresh rate gives near video images

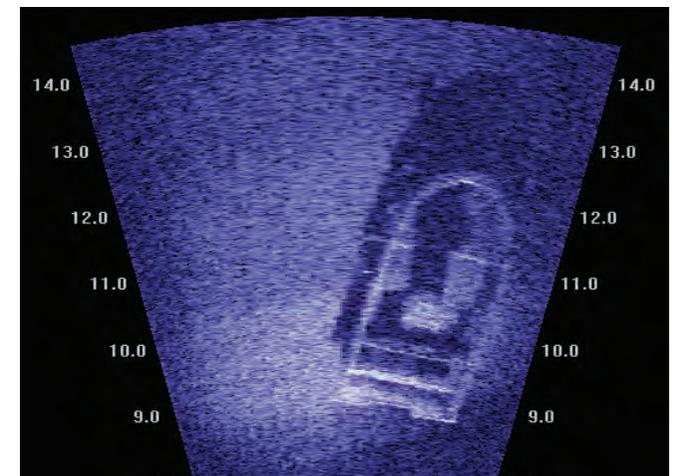
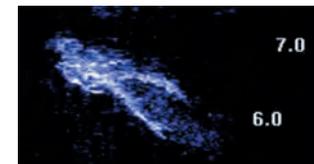


The handheld DIDSON sonar makes diver searches faster and safer by feeding real time, near video quality images into the visor display.

For divers especially, searching in low or zero visibility waters can be more than just time-consuming. It can be hazardous. Navigation can be a tricky business and avoiding obstacles a real challenge. Having near-video vision of what is around you cuts out search time and makes sorties safer.



There can be many reasons for needing to see in turbid waters; monitoring, surveillance, security searches, missing persons or objects.





With a European deadline of 2020 by which 20% of power must be from renewable sources, the race is on to find the best ways of transferring energy from nature to man.

Behind the highly sophisticated designs lies a wealth of equally technologically advanced infrastructure designed to transfer the gathered energy offshore to the power grid onshore. And whilst some of the technology is very new, a great deal of the infrastructure technology is based on tried and tested systems and decades of experience.

For underwater experts, the MacArtney Underwater Technology Group, the renewable energy sector is a natural progression. The group has been actively working with renewable energy projects since 2000. Much of the existing product range can be directly transferred to the offshore renewable energy market, others have been further developed, whilst some are completely new designs, tailor made for a particular purpose, project or customer.

From moving systems to static cables
Designs for channelling wave, tidal or offshore wind movement vary greatly from producer to producer. Each has their different challenges to solve. One thing they do share is the fundamental challenge of reliably transferring the collected power to the mainland.

Gathering energy is just part of the equation. The range and variation in designs for harnessing the natural power of water and offshore wind movement is enormous, and devices work in vastly different ways from underwater turbines to floating anchored windmills to large sausage like devices gathering wave energy. Common to them all, however, is that they need to transfer dynamic energy into energy that can be transferred onshore. This connection must also be able to withstand enormous loads in the harsh underwater environment.

MacArtney has developed a number of underwater connector systems designed to link the moving system with the static power cable. At one end, the connector bears the movement associated with the system, and at the other it connects to the large, less flexible high power cable linking it to the mainland power grid. The systems are also designed for split-phase installation, where cable is laid out ready on site and the system installed at a later date.

Working with energy for the future



Image courtesy of OpenHydro



Image courtesy of SWAY

Transferring energy and essential data
Renewable energy projects often involve more than one piece of equipment installed offshore. Each collecting a certain amount of water movement power, the energy that is transferred into electricity needs to be gathered in

offshore junction boxes to ensure that power is sufficiently high to prevent power loss during transfer. These junction boxes need to be able to gather very high voltages, yet be sturdy and watertight enough to survive in the offshore environment.

MacArtney has already supplied a number of tailor made junction boxes designed to just that. From more simple junction boxes to vastly complex junction box systems, they are designed to be impervious to water. We have also designed cable arrays that connect a host of systems to power collecting points for transfer to the large onshore cables.

The range of SubConn® connectors, medium and low power cables, terminations and penetrators are

ideal for transferring power and data for renewable energy systems, and have already proven to be reliable in thirty years of offshore use. Specially developed, sophisticated high power connectors and penetrators have also been developed; some at the design stage include connectors rated for up to 11kV and new deep water penetrators that have a unique water block feature that can function for several months even if water has ingressed.

Keeping an eye below the water
Essential operational and surveillance data need to be continually sent from renewable energy systems on or under the water to onshore data systems. MacArtney cables, connectors – including the new Ethernet connector range - and multiplexers are already showing their

worth, gathering and sending data vital in this development stage. They also connect control systems to valves, relays, navigational systems and a whole host of systems. The company has also supplied sonars and underwater cameras that check how equipment is faring in the harsh environment.

New areas for some, tried and tested territory for others
For companies like the MacArtney Underwater Technology Group, transferring offshore power onshore is nothing new. The technology used here and being further developed is based on decades of experience in servicing the offshore oil industry and providing deep water infrastructure. The technology may be slightly different, but the challenges posed by the

underwater environment remain the same.

“Our range of products and wealth of experience is ideally suited to this new branch, and we are of course focussing our energy on remaining at the cutting edge of this new use for underwater technology.”

Getting the right advice can be crucial
“We have been working with renewable energy for several years and customer are increasingly turning to us for advice as well as supply,” explains Niels Erik Hedeager, CEO for MacArtney A/S “When all else is experimental, it can pay to rely on trusted technology.”

MacArtney A/S 30 years of experience in underwater technology solutions have specialist knowledge that is essential for providing reliable advice and tested technologies and products. Tailor made solutions can be made based on existing products, reducing lead time and ensuring optimal pricing.

Secrecy is paramount
Renewable energy is still in its comparative infancy and it has yet to be seen which designs will prove to be profitable and viable. Designs are still being tried and tested, and at this crucial stage confidentiality and secrecy are paramount. While many MacArtney designs are standard and have been around for decades, many other designs are technologically ground-breaking and made in close cooperation – often tailor made for a particular customer. Each project is treated with the utmost confidentiality.

MacArtney supply
MacArtney has already supplied or quoted the following products and systems, and offers expert advice and project management for all offshore renewable energy projects: Interconnectivity systems including special cable terminations and IL connectors, bend limiting and restrictor devices, SubConn® harnesses, “Optolink” fibre optic connectors, wet mate connectors, cables, LV and MV penetrators, special junction boxes, sensor systems including navigation, cameras and f/o structural strain measurement, rotary products for turbine axis and vertical power swivel, multiplexers, “Didsom” – Dual Frequency Identification Sonar systems, environmental systems, and control systems.



MacArtney UK expands



Customers to benefit from the change
"Our larger facility and extended services reflect our increasing activity and the MacArtney Group long term commitment to the UK market," explained *Managing Director of MacArtney UK, David Buchan.*

"We now have more room to carry more stock, which will have a positive effect on delivery times, and space to expand all areas of our business and services. The introduction of our new 600 Bar pressure test facility is eagerly awaited by a number of our customers."

MacArtney UK Ltd, part of the global MacArtney Underwater Technology Group, has just completed a move into new, purpose-built premises in Aberdeen. The 3000m² building combines office and workshop space with a large warehouse and yard, providing MacArtney UK Ltd with room to expand and introduce new products and services.

Three times more space
Rapidly increasing activity and new areas of business have prompted the UK operation of the MacArtney Underwater Technology Group to move into new, purpose-built premises in Aberdeen.

Winnie MacArtney, co-founder and owner of MacArtney A/S, on Friday the 3rd of April at an open house event with customers, suppliers and employees.

10 successful years in Aberdeen
MacArtney has had a presence in the UK since 1992 and opened as MacArtney UK Ltd in Aberdeen in 1999.

In the 10 years that MacArtney have been located in Aberdeen turnover has increased from £1.5 million to over £16 million and staff numbers have increased from 6 to 36.

The new facility is approximately three times the size of the previous building, and at 3000m² will house all business activities, including workshops, test facilities, an extensive warehouse and spacious administration areas.

The building was officially opened by

Products and services offered

- Cable moulding and encapsulation workshop
- Slip ring service and repair workshop
- CNC machining workshop
- Electrical and optical connectors
- Cables and terminations
- Winches and handling systems
- Electrical, optical and fluid slip rings
- Underwater cameras and lights
- Multiplexer and control systems
- Engineering and services
- Pressure testing
- ROV and ROTV systems

MacArtney Group news



MacArtney UK
David Buchan
Managing Director
United Kingdom

We are already feeling the benefit of our new premises and one of the most important new additions to our UK base is our new pressure tank facility.

Able to pressure test to 600 bar, the 600mm diameter, 1.5m deep tank is fully computer controlled and supplies real time electrical and optical information. Equipment inside can also be monitored via camera.



EurOceanique
David Mazzochi
Managing Director
France

The end of 2008 and start of 2009 have seen big changes in EurOceanique. At the end of last year we moved into our new, larger and improved premises and opened our own workshop. We are also planning a new fibre optics workshop.

We have appointed a new Sales Manager for bathymetric equipment, who comes with an excellent pedigree from the French Navy's hydrographic and oceanographic service.

We are also pleased to be appointed new reps for Kongsberg Maritime subsea department and for DIDSON sonars.



MacArtney Norway
Anders Andersen
Managing Director
Norway

First quarter of 2009 was the best in MacArtney Norge history.

We delivered 7 A-frame handling systems for subsea pumps and 2 of the biggest electrical swivels for FPSO production vessels ever built. We are working on several very interesting projects despite the tentative market.

We have now caught up with our success rate on Subconn® underwater electrical and fibre optic connectors, and can offer our customers better prices and improved delivery times.



MacArtney Benelux
Ron Voerman
Managing Director
The Netherlands

MacArtney Benelux started 10 years ago and moved in the summer of 2006 to its premises in the Mandenmakerstraat in Rotterdam. We are already looking for further expansion of our premises to expand our services and sales activities in the Netherlands and Belgium.

Later this year our 100 bar, 1300mm x 820mm pressure tank will be installed. This pressure tank will be used for testing cameras, lights and repaired equipment. It will also be available for third parties.



MacArtney Offshore
Chris Howerter
Managing Director
United States

The ocean renewable energy sector is experiencing a large increase in interest and we are working with a number of customers on new projects.

We expect this sector to continue to grow and are currently working on a partnership with an ocean renewable energy centre that is establishing a test site for their own technologies as well as open for the entire industry.



MBT GmbH
Torsten Turla
Managing Director
Germany

Over the past three years MBT has implemented a very successful service department. Apart from overhaul and repair of oceanographic, geophysical and hydrographical equipment, the emphasis was on calibration of CTD and SVP probes and on maintenance of MVP systems.

Another MBT goal was to become a recognized supplier of solutions. A recent success is our contract to supply a complete oceanographic ship package for Vietnam. Delivery will take place mid 2010 and includes the latest state-of-the-art hardware and software plus full training at our premises and on-site.



Latest news in brief

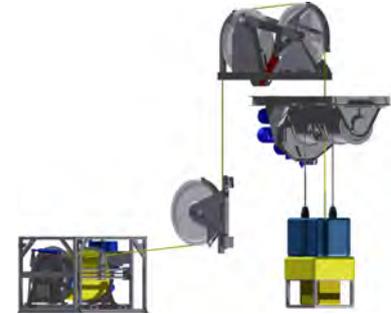
EurOceanique workshop for faster service in Southern Europe



EurOceanique, part of the MacArtney Underwater Technology Group, has opened a large workshop in Rousset near Aix en Provence in Southern France.

This modern and fully equipped workshop offers faster and more convenient mouldings, terminations, spares and repairs for customers in France, Italy, Portugal and Spain.

MacArtney Active Heave Compensation winches combine maximum stability and minimum power



AHC winches are highly advanced ROV winches that filter out the effect of vessel movement caused by waves. They allow ROVs and other vehicles to continue to operate safely in heavier seas and reduce weather-related down

time. But getting the right system for a vessel requires precise calculations and engineering. Choosing the right partner is essential for ensuring the right end product.

Read the full story on www.macartney.com under the “news” section



Connecting to nature



Courtesy of Pelemis



Courtesy of SWAY



Courtesy of OPT



Courtesy of OpenHydre

www.macartney.com