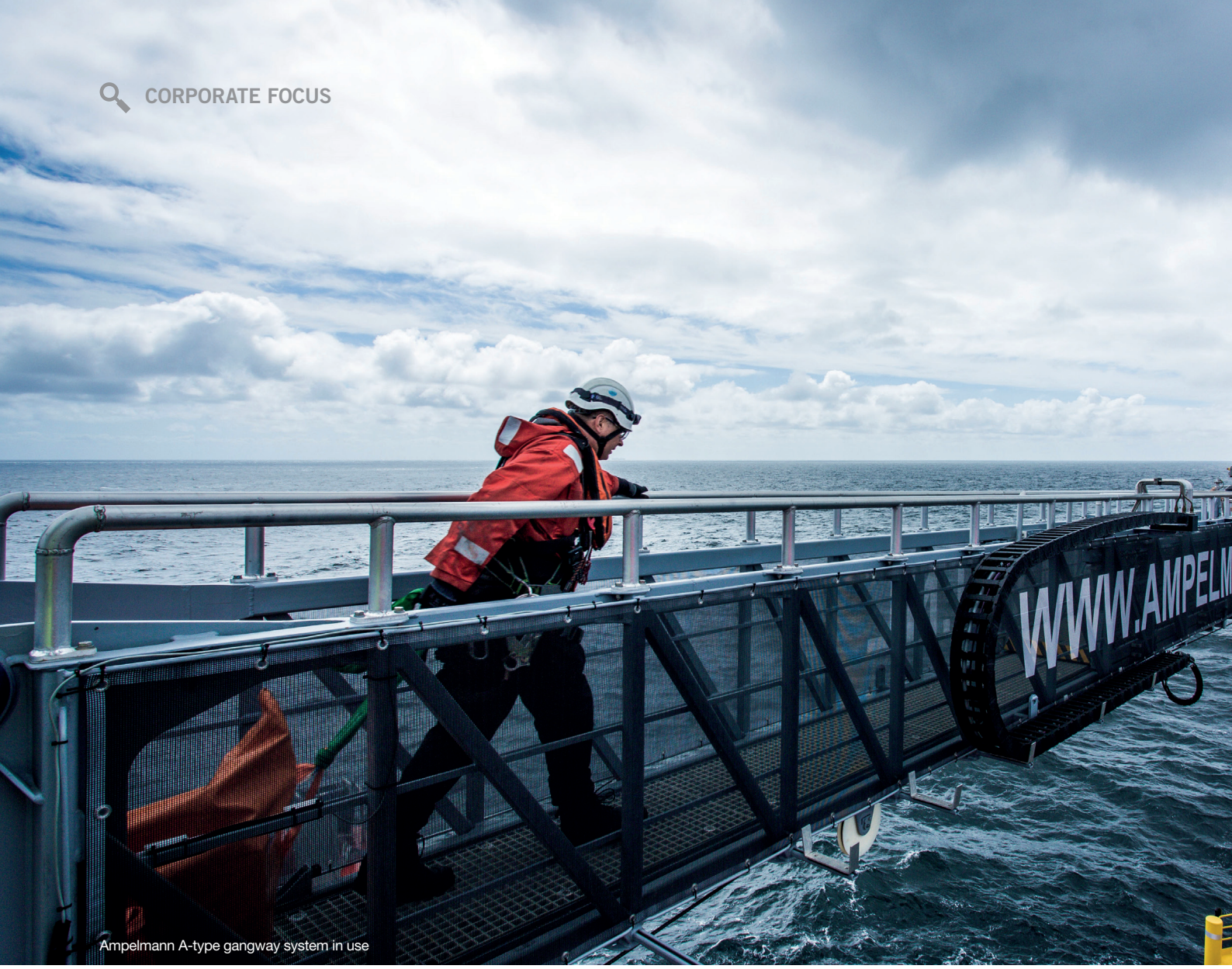


Ampelmann A-type gangway system in use

Walk to Work solutions take flight for the offshore wind market

The offshore wind market is set to grow six-fold by 2030. A recent report states that the UK, Germany, The Netherlands, and China will drive forward the development of new fields over the next decade, while Taiwan and the US will become more prominent gigawatt markets.

The latest wind farm to be developed in Europe is now under construction off Aberdeen's coastline. The European Offshore Wind Deployment Centre (EOWDC) is Scotland's largest offshore wind test and demonstration facility and is being developed by Vattenfall-owned Aberdeen Offshore Wind Farm Limited. It will comprise of eleven turbines and is expected to be operational in summer 2018.

Such innovative developments, as well as the upkeep and maintenance of existing offshore wind farms, require the safe transfer of personnel and cargo between turbines or offshore substations and vessels.

Ampelmann has been a pioneer of Walk to Work (W2W) gangway systems for more than a decade. The company is enhancing its motion-compensated gangway systems to create even greater operational efficiencies for offshore wind projects.

Innovation in action

Using technology inspired by the flight simulator industry, The Netherlands headquartered company boasts a wide range of gangway systems to compensate

all six degrees of freedom of a vessel. This enables the transfer of people and essential cargo to be safer and more efficient than alternative offshore access methods such as swing ropes, baskets, helicopters and crew transfer vessels (CTVs).

The company currently operates a fleet of 55 systems in Europe, Africa, Asia Pacific, the Americas and the Middle East. It has so far carried out more than four million safe people transfers and over seven million kilograms of cargo transfers across 200 energy projects worldwide.

In conjunction with leading operators, the company redesigned its A400 gangway system last year to include greater capacity for equipment transportation between vessels and wind turbines. At 1.2 metres in width, the new 'no movement' A400 has full motion compensation and can operate in sea states of up to three metres. The widened gangway also supports the use of trolleys that can carry up to 400kg of cargo on Euro-sized industry standard pallets.

A single operator is required to use the gangway system and all cargo and personnel can be transferred using an elevator to support 'stepless' policies and increase efficiency in the logistical flow from warehouse to turbine.

Friso Talsma, Ampelmann's Manager Sales & Business Development Offshore Wind, said: 'By working closely with our customers, we have been able to develop a system that meets their needs and allows them to work safely and more effectively. Providing a full system that includes a gangway and an elevator capable of transporting a pallet, and that can be mobilised on any vessel within 48 hours, is something we believe will be of great benefit to the offshore wind sector.'

The capacity for transferring pallets via the gangway system also drastically reduces the need for TP cranes, allowing for a faster and more effective operation.

Manufactured at the company's Rotterdam facility in The Netherlands, the system started its first project in April 2018 on Vroon's Subsea Support and Walk to Work vessel VOS Stone to the Arkona offshore wind farm, located in the German Baltic Sea.

Claudia Beumer, Ampelmann Business Development Manager Offshore Wind, commented: 'Following the process of transferring market demands to a concept design and a construction period of almost six months, it's exciting to see the A400 finally set sail to the Arkona wind farm. The gangway system enables personnel to have a safe commute from the vessel to the workplace, and cargo can be transferred with ease and efficiency.'

The A400 is not the only system to be upgraded to suit the specific needs of the offshore wind market, with enhancements also made to the E1000 last year.

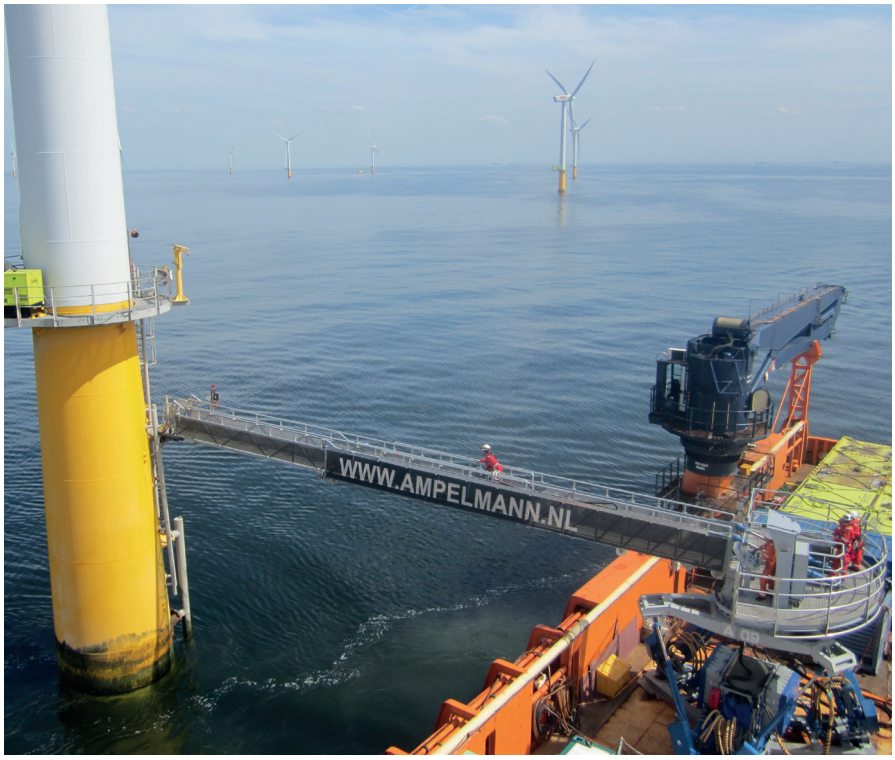
One click, one minute

The E1000 gangway system, originally launched in 2016, is an adaptable access system which has the ability to transform from a gangway into a crane boom to provide full logistics requirements. The system, which is most commonly used in the offshore wind sector, traditionally used pins to manually switch from personnel to cargo mode. This conversion process initially took about ten minutes to perform.

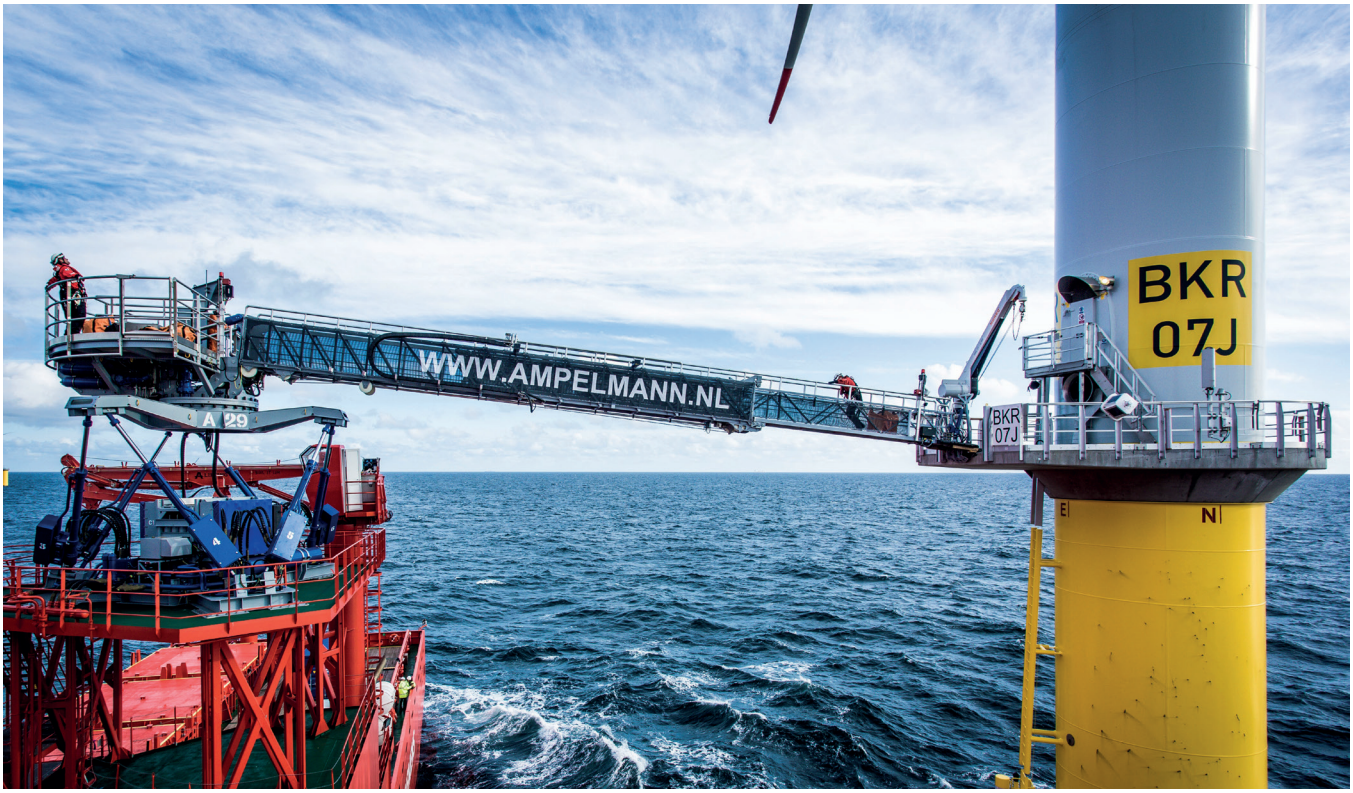
In 2017, the company enhanced the design and construction of the gangway system to enable improved time savings. Following further innovation, an adaptable E1000 gangway was developed with an automated system which employs remote-controlled hydraulic pin pushers to fixate the gangway booms in less than one minute with a single button.

The system can safely transfer people and up to 1,000 kilogrammes of cargo in rough sea waters. It was deployed to Germany's first commercial offshore wind farm by SIEM Offshore Contractors last year, where it delivered significant operational efficiencies.

The E1000, which has a 30-metre gangway, was installed on the Siem Marlin and Siddis Mariner vessels to transfer people and cargo to the turbines to carry out maintenance work. With its ability to compensate for vessel movements caused by wind, waves or currents, the gangway



Ampelmann A-type in operation



Ampelmann A-type gangway system

system enables the safe passage of people from the vessel to the wind turbine, in even the harshest of conditions, dramatically increasing operational man hours.

By inserting four manual pins, the telescopic gangway of the E1000 can be transformed into a fixed crane boom for fully motion-compensated cargo transfers. To switch from cargo to personnel transfer mode, the crane hoisting cable is placed in a freewheel mode to allow the booms to telescope, significantly increasing available working time.

Diederick Nierstrasz, Team Lead Offshore Wind Product Development at Ampelmann, explained: 'During this project, we came up with a solution to further increase operational efficiencies. The manual pins were replaced by hydraulic pin pushers which reduced the change-over time from people to cargo mode from ten minutes to just one.'

To date, the system has transferred more than six million kilogrammes of cargo between vessels and offshore platforms.

Growing network

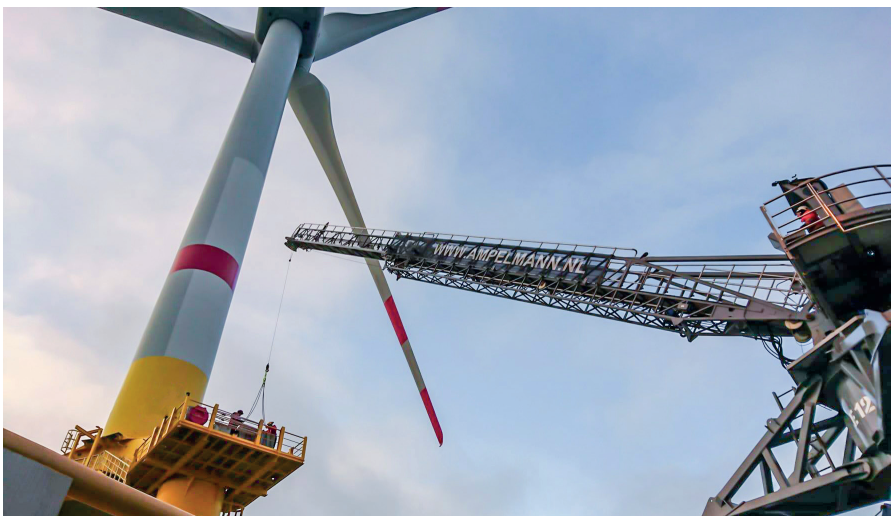
In response to growing demand for its gangway systems in the offshore wind sector, Ampelmann recently opened its first office in Germany in April 2018.

The new base, located in Hamburg, is led by Tim Börner, who was appointed as the company's Business Development Manager Offshore Wind Germany. Mr Börner previously worked as a shipbroker for five years, specialised in offshore accommodation and transfer of personnel in the offshore wind industry.

'I am excited to be joining Ampelmann at such a pivotal moment, as Walk to Work operations become increasingly vital in the offshore renewable industry, particularly off the German coast,' Mr Börner said.

'As the offshore wind market continues to strengthen, Hamburg is a key hub for this sector and it makes perfect sense for Ampelmann to have a presence in the city where we can continue to build on the relationships already in place.'

www.ampelmann.nl



Ampelmann E1000 gangway system