

From offshore wind farms to drilling platforms – motion plastics for the oil & gas and renewables industries

igus supplies many branches of industry with its high-performance motion plastics for moving applications: from machine tools and automotive engineering to material handling, agricultural equipment and medical technology. But the absence of a need for lubrication or maintenance, as well as the avoidance of corrosion, are arguments that are especially called for in the oil & gas and renewables sectors. A fragmented global market, which igus is increasingly opening up.

In the oil & gas industry in particular, the high-performance polymers from igus display numerous benefits: they do not have to be lubricated, are corrosion-free and media-resistant but are simultaneously very light and also extremely durable. In the course of decades-long materials research and development for iglidur plastic plain bearings, igus has not only developed all-round materials but also specialist plastics that can be used not only in splash-water environments but also in permanent underwater applications such as underwater robots.

“Materials development is not only aimed at aspects such as low moisture absorption and resistance to salt water and so on but also at the tribological side of things, namely the resistance of the materials to wear during use underwater,” says Matthew Aldridge, managing director, igus UK.

igus products are important components in ‘heavy-duty’ applications on vessels, such as an on-board lift which can lower small tenders into the water and lift back on board. iglidur X plain bearings are used in this type of lift mechanism. This material is regarded as a high-tech problem solver; it can even be used at temperatures of up to 250°C. “In this application example, however, it is used because of its pressure resistance and low moisture absorption,” explains Aldridge.

But there are also applications on a larger scale: In terminals, a large number of indoor and outdoor cranes have been equipped with igus cable management systems, called e-chains. As opposed to the traditional metal chains used within the industry, these plastic e-chains are corrosion-free and, because they have a modular design, are easy to install and modify. igus e-chains are also in use on vessels and offshore platforms. The reason for this is that, in the last few years, the demand for e-chains has grown in response to the rapid increase in the degree of automation within the industry.

A recent addition to the igus product range is the new ‘e-spool power’, a large e-chain drum that can be used for vertical extension lengths of 50 metres or more. “The e-spool power can be used in the offshore area for installation and removal work as well as during maintenance,” explains Aldridge. “An alternative to the traditional cable reel, it features a drive and automatic control system and, because it doesn’t have a slip ring, it can supply various cables and hoses at the same time.” The robust plastic components of the e-spool are also corrosion-free and are able to withstand the rough conditions at sea. For such uses, igus also supplies the right chainflex cables, thanks to the

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necessary DNV-GL offshore certification for 362 different cable types. As for all chainflex cables that are specially designed for movement in energy chains, igus gives a guarantee of 36 months for cables used in this sector.

Matthew Aldridge firmly believes that the oil & gas and renewables sectors will continue to be important branches of industry for igus: “Cost-saving, absence of a need for maintenance, freedom from corrosion and salt water resistance will continue to be the arguments for these products.”

Images with suggested captions



Image 1: igus motion plastics are used in a wide variety of applications. Why? They are corrosion-free and lubrication-free.



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Image 2 chainflex cables from igus are the first and only cables to be certified by DNV-GL for dynamic, moving applications in energy chains on vessels and in offshore applications.



Image 2 igus e-chain systems are in crane installations all around the world.



Image 3 e-spool power with drive and automatic control can be extended vertically by up to 50 metres and more.