

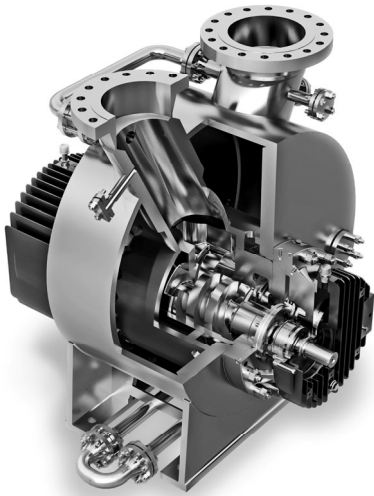
## Multiphase-Technology for Oil Production in the US

### „The Time Has Come“

**Eco-friendly, efficient, and economical: ITT Bornemann presents its innovative multiphase technology and its application in the oil and gas industry at the OTC in Houston. This technology has been patented for more than 25 years and over 600 multiphase pumps are installed throughout the world. However, the upstream processes in the US are still dominated by conventional oil production. In an interview with Managing Director Markus Schwarte and Vice-President Gordon Heather, both explain the compelling advantages of the multiphase technology.**

### **Can you describe the status quo of the oil and gas industry and the role that multiphase pumps play in this industry?**

Markus Schwarte: We see the greatest potential for growth in onshore oil production. Onshore oil production still utilizes mainly conventional technologies that require separation of oil and gas products. For this type of process, a compressor, a liquid pump, and a separator need to be installed. In contrast, using a multiphase pump system reduces the required equipment as the fluids can be pumped directly to the central processing facility. For this specific application, we developed custom design skids.



*Bornemann Patent – ITT Bornemann Multiphase Pump Technology is proved in over 600 applications worldwide.*

### **Are there any other benefits besides the evident simplification of the process?**

Markus Schwarte: Oftentimes, the conventional technologies simply flare the produced gas. We feel this is not only pollution, but also a waste of energy. Multiphase technology allows pumping of untreated fluids directly to the central processing facility for further processing.

**600 applications throughout the world, but only few in the US. How do you explain the low market presence despite the evident benefits?**

Markus Schwarte: The oil industry is very conservative and strongly relies on tried-and-tested solutions that have been established over years and decades. We need to teach awareness, and inform and convince future clients that we develop custom designs for these sites and its specific applications.

Gordon Heather: Our greatest opportunity is the current change in ownership of the oil fields. In the past, numerous oil producers owned small oil fields. The occurrence of larger players in this sector is important as the oil industry was dominated by small producers and therefore, is relatively undeveloped. Larger oil producers will be able to develop the oil fields more economically using our technologies.

**Are the environmental benefits of the multiphase pump systems applicable to the US market as well?**

Markus Schwarte: Company policies of large oil producers typically stipulate sustainability and flaring of produced gas will have to diminish over the next years. However, from a legal point of view, flaring is still permitted in several areas of the US.

Gordon Heather: In the Permian Basin, producers are only allowed to flare at certain occasions and only a few short days; e.g. when a well is started. Apart from that, producers are obligated to forego flaring – whether required by law or not. Utilizing our multiphase equipment supports the diminishing use of flaring and also allows refraining from use of emergency flares.

**Which projects are you currently working on for the US market, and are there any special challenges?**

Gordon Heather: We are currently working on a few very interesting applications. One example is an installation of two multiphase pumps in the polar circle, in the Beaufort Sea. For this particular application, the multiphase pumps are used to pump the multiphase fluid from the off-shore drill to the main land. Our pumps needed to be integrated in the existing infrastructure. We successfully designed our skids to accommodate the multiphase pumps in the existing pump building – rather than building a separation plant on a smaller island in the middle of the Arctic Sea.

Markus Schwarte: In this application we leveraged the space requirements of multiphase pump systems, which are much more compact than conventional processes.

**Do you already have existing customers in the developing market of the Permian Basin?**

Gordon Heather: Yes, indeed. A large oil producer ordered a pilot skid last year, and is currently exploring developing the area on a commercial scale using our multiphase pump skids.

Markus Schwarte: The Permian Basin requires custom designs. Our designs are highly efficient and, are at the same time, cost economical. Simplicity and reliability are paramount. We are able to deliver a turnkey system within four months, even if it needs to be custom designed. Based on our longtime experience, we have developed a catalogue design, and merge individual components to a custom design as required.

**Do you expect that this will be the future for oil production?**

Markus Schwarte: For the upstream oil and gas industry: yes. Our technology is environmentally friendly. We see an increasing number of mature oil fields; where the well pressure drops, and our technology can help extending the life cycle of the wells, in a much simpler way than conventional technologies, and with less equipment. The system can also adapt. If the production well conditions are changing, a multiphase pump system adjusts much easier than a conventional system.

Gordon Heather: Not to mention the required permits for tanks and flares, which are not required for any of our systems. An additional important advantage of our technology is the reliability, which is imperative in the oil production industry.

### **How will ITT Bornemann meet the future challenges?**

Gordon Heather: Of course we are not perfect, but perfectly prepared to overcome any challenges.

Markus Schwarte: The multiphase technology was patented back in the 90s. Since then we continued diligently to further develop the pumps. Now, it is no longer just a pump, but a complete system including controls, auxiliaries, and more. We are prepared for future challenges, but will continue to improve the systems with every new installation.

Gordon Heather: The time has come for multiphase technology. Upcoming mergers in the American oil market result in a continuous 75 square miles production area in the Permian Basin. This will lower the production and transport costs for oil producers – and our product is perfectly suited. After all, the greater part of the American oil is produced in the Basin!

### **This will be the first time that you present your products at the OTC in Houston. What will be your main focus at the congress?**

Markus Schwarte: We would like to overcome the common lack of knowledge of the economic and ecological benefits of multiphase technology. We feel that the North American market is one of the most rapidly growing markets in the oil and gas sector over the last few years. The time has come for this market to profit from our worldwide well-established technology.

„Our technology suits the needs for economic and ecological production perfectly.“

**Markus Schwarte**, ITT Bornemann



*Markus Schwarte, Managing Director at ITT Bornemann, operates and controls the establishment of the innovative Multiphase-Technology on the American market from its headquarters in Germany.*