



## **P-Cable: New High-Resolution 3D Seismic Acquisition Technology**

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We have developed a new cost-efficient technology for acquisition of high-resolution 3D seismic data: the P-Cable system. This technology is very well suited for deep water exploration, site surveys, and studies of shallow gas and fluid migration associated with gas hydrates or leaking reservoirs. It delivers unparalleled 3D seismic images of subsurface sediment architectures. The P-Cable system consists of a seismic cable towed perpendicular to a vessel's steaming direction. This configuration allows us to image an up to 150 m wide swath of the subsurface for each sail line. Conventional 3D seismic technology relies on several very long streamers (up to 10 km long streamers are common), large sources, and costly operations. In contrast, the P-Cable system is lightweight and fast to deploy from small vessels. Only a small source is required as the system is made for relatively shallow imaging, typically above the first water-bottom multiple. The P-Cable system is particularly useful for acquisition of small 3D cubes, 10-50 km<sup>2</sup>, in focus areas, rather than extensive mapping of large regions. The rapid deployment and recovery of the system makes it possible to acquire several small cubes (10 to 30 km<sup>2</sup>) with high-resolution (50-250 Hz) seismic data in during one cruise. The first development of the P-Cable system was a cooperative project achieved by Volcanic Basin Petroleum Research (VBPR), University of Tromsø, National Oceanography Centre, Southampton, and industry partners. Field trials using a 12-streamer system were conducted on sites with active fluid-leakage systems on the Norwegian-Barents-Svalbard margin, the Gulf of Cadiz, and the Mediterranean. The second phase of the development introduced digital streamers. The new P-Cable2 system also includes integrated tow and cross cables for power and data transmission and improved doors to spread the larger cross cable. This digital system has been successfully used during six cruises by the University of Tromsø, VBPR, P-Cable 3D Seismic AS (P3S), and IFM-GEOMAR. Presently, a Norwegian national infrastructure consortium (Univ. of Tromsø, P3S, Univ. of Bergen, NGU) assembles a mobile P-Cable2 high-resolution 3D seismic system for fully operational use of the technology for scientific purposes.