

Repsol taps new frontiers

By [Upstream staff](#)

Spain's Repsol YPF and the Barcelona Supercomputing Centre announced research results on a joint project using IBM supercomputers to reach record speeds and deeper depths in finding energy reserves.

The preliminary findings show IBM BladeCenter QS22 supercomputers powered by the IBM PowerXCell 8i processor, enable searching for oilfields at greater depths and at up to six times faster than conventional technology currently deployed by the oil and gas industry, Repsol said in a statement.

The IBM PowerXCell 8i is a critical component to the development of a new class of seismic technology enabling Repsol to locate oil reserves buried about 30,000 feet (9144 metres), 10,000 feet of water and then 20,000 more feet of seabed, below the Gulf of Mexico's surface.

Repsol and the Barcelona Supercomputing Centre are using a process known as reverse time migration (RTM).

It has proven essential for imaging areas of complex subsurface geological structure, such as the rich hydrocarbon provinces of the deep waters of the Gulf of Mexico, and off Brazil and West Africa.

The new technology will accelerate and streamline oil and gas exploration in these promising regions by several orders of magnitude compared to current industry methods.

RTM is one of the key efforts driven by the work of the Kaleidoscope Project a collaboration between Repsol; the Barcelona Supercomputing Centre; 3DGeo, a Houston-based imaging company formed by Stanford University professor and seismic imaging pioneer Biondo Biondi; and Stanford University's Stanford Exploration Project, a leading industry-funded academic consortium, whose purpose is to improve the theory and practice of constructing 3D and 4D images of the earth from seismic echo soundings.

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