

# ENERGY MATTERS

## Enormous Oil Reserves Stored In North America

(NAPSA)—Oil from sand. Sounds incredible, but it's true. Oil reserves of some 24 billion tons are stored in the oil sands of the Canadian province of Alberta. Beneath a surface of 140,000 square kilometers, there is theoretically as much oil as in Saudi Arabia.

Until recently, the extraction of the raw material (huge amounts of oil are held in oil sandstone) was too labor intensive and costly and therefore uneconomical. Thanks to modern production technologies and the development of the oil price in the world market, this has fundamentally changed.

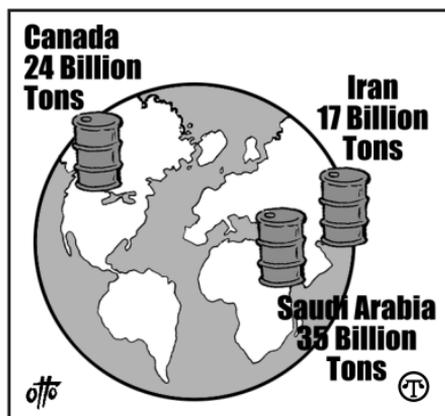
The work in the largest oil sand fields goes on around the clock, seven days a week. Similar to coal mining, bucket-wheel and cable excavators remove the oil sandstone, a sticky mixture of bitumen, sand, water and clay. The tough bitumen then has to be separated from the sand; at the refinery, the black tar is eventually processed into oil distillates.

### It's Far From Easy

Extracting oil sand is far from an easy job. The workers of Fort McMurray are on-site be it summer or winter. This means that they have to endure temperature differences of up to 70 degrees Celsius within one year. In summer, they often have 30 degrees Celsius and in winter up to minus 40 degrees.

In order to enable production without downtimes, the excavation and construction vehicles, as well as the handling and refinery plants, have to be fitted with robust, long-lasting and, above all, reliable components.

For this reason and also because of the required availability, Voith Turbo drives are used in Alberta. Voith Turbo contributes



**Canada, Saudi Arabia and Iran dispose of the largest oil reserves in the world, partly stored in sand.**

to the processing of oil sand in crushers and conveyor belts with outputs of up to 1,500 HP. In double-roll crushers, the tar sand carried by the dumpers is crushed and then transported on conveyor belts for further processing.

### Huge Crushers and Voith Variable-Speed Couplings

The crushers are as high as an eight-story apartment house and need drives that allow them to start smoothly and accelerate to the required speed, even when fully loaded. This task is carried out by constant-fill Voith turbo couplings that also dampen torsional vibrations and protect components mechanically by limiting the transmittable maximum outputs.

After the initial crushing of the tar sand, the material is transported for several kilometers on belt conveyors operating with Voith coupling technology. In further processing stages, the bitumen is dissolved from the sand in hot steam and then transferred to the refinery via a pipeline. Visit [www.voithturbo.com](http://www.voithturbo.com) for more information.