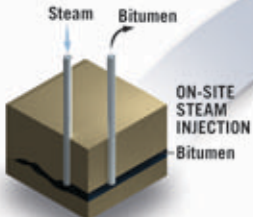


Bitumen
OPEN-PIT
MINING

OIL SANDS

Crude oil is made from bitumen, a thick, sticky substance mined or pumped out of the ground.



Steam Bitumen

ON-SITE
STEAM
INJECTION

Bitumen

COAL TO LIQUIDS

Coal molecules are broken down to create synthetic fuels, including diesel.



Coal is gasified into carbon monoxide and hydrogen...



...which are converted into a paraffin wax through Fischer-Tropsch synthesis.



Then the molecules are further refined to yield...

Synthetic diesel fuel

Cost to produce: \$40-\$45 per barrel

OIL SHALE

Trapped in shale is the compound kerogen, which is processed to yield liquid fuels.



The shale is heated to release the kerogen.



Kerogen

The kerogen is then converted into a vapor...



...and finally distilled into...

Liquid fuels

Cost to produce: \$55-\$70 per barrel

WRINGING OUT THE OIL

Skyrocketing fuel prices have made it feasible to extract oil from solids like shale and coal, in processes that were previously deemed too costly. So-called unconventional oil is expected to make up 35 percent of the world's supply by 2015.

THE RISING PRICE OF CRUDE

