



## **Quantities and Costs of Future Petroleum**

Donald L. Gautier

Despite the current economic downturn, fundamentals point to decades of rising global demand for new energy supplies. Oil and gas are expected to remain dominant fuel sources, but the supply of liquids is crucial. Almost 1,100 billion barrels (BBO) of the world's least expensive conventional oil has already been consumed; another 1,200 BBO lies in proved reserves waiting to be produced. Most likely, 400 BBO or more will be added to reserves in fields already on production and another 600 BBO of conventional oil awaits discovery. Heavy oil and bitumen, exotic recovery technologies, and remote sedimentary basins, such as those in the Arctic, may contribute another two trillion barrels, but at ever greater cost. If demand for liquids persists beyond these resources, it will need to be met by oil shales, coal-to-liquid, and gas-to-liquid technologies, in direct competition with other needs for gas and coal.