International Energy Outlook 2021 Fact Sheet:

Oil and Gas Tool

We introduced the new Oil and Gas Tool in the *International Energy Outlook 2021* (IEO2021). As part of our larger World Energy Projection System (WEPS), the Oil and Gas Tool is written in Python and is directly called from the WEPS integrating module. The tool adjusts initial supply projections of liquid fuels and natural gas to meet total global consumption. It also provides WEPS with projections of the following:

- Energy used in oil and natural gas exploration
- Refining consumption
- Energy use related to natural gas transmission
- End-use sector prices by WEPS region and commodity
- Spot prices for crude oil and natural gas in select markets

Production: For IEO2021, we based initial projections for crude oil production, other liquid fuels supply, and natural gas production on published projections from IEO2019 and updated these initial projections to reflect historical data updates and current market analysis. We used analyst-defined regional growth rates to adjust the projections for global production of liquid fuels and natural gas to meet consumption levels. In IEO2021, the Oil and Gas Tool benchmarks international petroleum liquids production against our April 2021 *Short-Term Energy Outlook* and incorporates U.S. production estimates from the *Annual Energy Outlook 2021* (AEO2021).

Consumption: The Oil and Gas Tool calculates natural gas consumed in lease and plant operations, in the liquefaction and regasification of natural gas, and in pipeline operations as historical percentages of natural gas production or natural gas consumption, or both, in a given region. Assuming all crude oil is refined, the tool projects refinery consumption of other petroleum (still gas), petroleum coke, coal, natural gas, and electricity based on historical trends and regional consumption of total liquid fuels.

Prices: The Oil and Gas Tool calculates spot prices for West Texas Intermediate and Brent crude oil (based on initial world oil price projections from AEO2021) and natural gas prices for Europe and Asia. It determines the delivered commodity prices by sector, year, and region (adjusted within the tool to reflect the impact of changes in consumption on prices).