World Fossil-Fuel Supplies

Dave Rutledge
Chair, Division of Engineering and Applied Science
Caltech

Adam Schiff’s Town Hall meeting
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Hubbert’s Peak, The Coal Question, and Climate Change
Watson Lecture: 8pm, October 17, Beckman Auditorium
From the International Energy Agency

*Resources to Reserves* (2005)

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The chart illustrates the available oil in billion barrels for different categories as of 2004. The economic price is shown in USD.

- **Already produced**: Limited availability indicated by a blue bar.
- **OPEC ME**: Moderate availability represented by a yellow bar.
- **Other conv. oil**: Significant availability shown in red.
- **EOR**: Enhanced Oil Recovery, with a purple bar indicating a specific category.
- **Arctic**: A red bar representing the Arctic region.
- **Deep water**: A blue/green bar indicating deep water reserves.
- **Heavy oil Bitumen**: A yellow bar highlighting heavy oil and bitumen.
- **Super deep**: A dark blue bar for super deep oil.

The chart also includes a note to include CO₂ mitigation costs to make CO₂ neutral compared to conventional sources.
US Oil Production

• Gb = billions of barrels
Cumulative US Oil Production

Cumulative Production, Gb

225Gb

1900 1950 2000 2050
"Present estimates of coal reserves are based upon methods that have not been reviewed or revised since their inception in 1974, and much of the input data were compiled in the early 1970s. Recent programs to assess reserves in limited areas using updated methods indicate that only a small fraction of previously estimated reserves are actually minable reserves."
World Fossil-Fuels Production

Cumulative Production, Tboe

- 1.6Tboe coal remaining
- 4.7Tboe fossil fuels remaining

90% in 2076
• 0.1°C of the rise is associated with future US coal production, and this could be reduced by carbon-dioxide capture and burial
Results

• The projection for remaining world coal production is only half of the reserves
• Less minable coal is good news for climate change
• We need to keep up the present high growth rate for alternative sources
• Stretching out production does not reduce the temperature peak in the next century — to reduce the temperature peak, it is critical to reduce ultimate production, not just slow it down
• One possible approach would be to stop issuing new mining and drilling leases on federal lands, which account for 1/3 of US fossil-fuel production

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