

Summary of Presentation by Charles Dunbar and suggested readings

**Fossil Fuels and Energy:
Known Knowns, Known Unknowns, and Unknown Unknowns**

Two points about fossil fuels are widely known to be known. First, the environmental imperative and an eventual decrease in the availability of fossil fuels will in time lead to a decline in the percentage of the world's energy supplied by those fuels, and this decline will likely accelerate.

Beyond these carefully hedged assertions, the many known unknowns in the energy business means that little is certain about the future of fossil fuels. A few hard-to-answer questions are:

Has the world reached “peak oil,” the point at which the amount of oil produced begins to decline? A few unknowns that make it hard to answer this question are: a) whether Saudi Arabia, the former “swing producer” that was able to stabilize oil markets will be able, as it asserts, be able eventually to produce 15 million, or even 20 million barrels of oil a day; b) whether the next oil price spike lasts long enough to force heavy investment in new oil exploration and exploitation of presently uneconomical extraction of oil from shale and tar sands; c) whether the world is beginning a sustained depression or merely a shorter-term recession; and d) whether dramatic political change in, say, Saudi Arabia will bring to power there a regime that is prepared to use the oil weapon. There are many more such questions.

Will carbon capture and sequestration technologies be developed soon? The U.S. and China have large coal reserves? Absent effective carbon capture and sequestration, environmental considerations will cloud the prospects for exploiting these reserves.

It may be that the entire international community is beginning to take seriously the increasingly dire predictions that global warming will soon produce global catastrophe unless the production of greenhouse gases is quickly and sharply curtailed. If so, will governments have the resources and the will needed to put draconian policies into place that would slow the burning of fossil fuels.

And then, there are the unknown unknowns....

A couple of interesting books are: David Goodstein's [Out of Gas](#) and Matthew Simmons' [Twilight in the Desert](#). It is also worth visiting the Cambridge Energy Research Associates website (www.cera.com).