Introductory remarks by Richard Gilbert on

ENERGY SUPPLY CHALLENGES AND SOLUTIONS

for the session entitled
Tackling the challenges:
looking for a common understanding
on the sense of urgency and the role
of the transport sector

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World discovery of and demand for oil and natural gas, 1900-2000, and projected potential demand until 2020

Billions of Oil-Equivalent Barrels

We haven’t been finding the fuel we need to sustain what we depend on. In this decade, we are using more natural gas than we are discovering, and very much more oil.

Source: Exxon Mobile Corporation
World production of regular oil by region, non-conventional oil, and natural gas liquids, actual and estimated, billions of barrels per year, 1930-2050

Production of crude oil and equivalents—which provide >95% of transport fuels worldwide—may peak in 2012, which will mean very high prices unless demand falls first.
PFC Energy’s base-case demand-growth scenario for petroleum liquids (1.8%/y)

“Production will likely not be able to meet global demand in the latter part of the next decade” (IEA’s 2002 projection is for 1.6%/y growth in oil demand until 2030; current rate is ~2.5%/y.)

Source: PFC Energy (September 2004)
Global Peak Oil Gathering
Gathering And Think-Tank

Are we actually running out of oil (and gas) or not? And if so when?
Will the reserves collapse or will new finds take care of the future?
Will production keep up with demand? And if not, what then?

Should we be here today?
Or here on November 10?
Strategizing for sustainable transport (1)

1. Identify date of oil production peak; ensure that oil consumption is falling by then.

2. If proposed rate of decline in consumption is not sufficient to help meet greenhouse gas targets or local air quality requirements, steepen it.

3. Convert transport to electric drive-trains from drive-trains based on internal combustion engines; use hybrids as a bridge.

4. Provide widely available infrastructure for tethered vehicles (wires or rails); allow for limited battery use.
Strategizing for sustainable transport (2)

5. Provide electricity generation from renewable sources (wind, sun, tide, geothermal, perhaps some biomass, etc.).

6. Don’t think about (i) natural gas as a bridge fuel (production will also soon outstrip supply); and (ii) hydrogen as an energy carrier (too inefficient; how made? why not drive by electricity directly?).

7. The goal (for 2021?) should an EU transport system—for moving people and freight—that uses only renewable fuels, has less than one tenth of current energy requirements, and yet provides today’s or better comfort, convenience, and utility.
Goals for this session

1. Figure out how much progress, if any, has been made towards sustainable transport (what is it?) and whether there is shared commitment and a sense of urgency about doing more.

2. Note, as we proceed, transport’s contribution to fundamental issues of energy supply (demand exceeding production) and climate change (accumulation of greenhouse gases).

3. Agree as to the necessary next steps, particularly with respect to reducing fossil fuel use for transport.