API Energy IQ Survey

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Most of you folks know that I recently wrote an Oil Quiz. The American Petroleum Institute (API) now has a quiz also, called the Energy IQ.

API's concern is that Americans have a low level of knowledge about energy issues, and this low level of knowledge may affect energy policy. To document the current level of knowledge, API hired Harris Interactive to perform an internet survey of 1,333 adults, then had a conference call with bloggers (Brian Faughnan - Weekly Standard; Ed Morrissey - Captain's Quarters, Heading Right; Geoffrey Styles - Energy Outlook; Stephen Spruiell - National Review; John Kingston - Platts, and Gail Tverberg - TOD) to discuss the results.

In this article, we will look at the quiz itself and then talk a little about the interpretation. As you read the quiz, you will note that the questions seem to be selected to emphasize points that API would like to make. API's discussion of the quiz can be found here, the quiz with answers and references can be found here, and the blogger conference call recording and transcript can be found here.

> ENERGY IQ QUIZ
>
> 1. What percentage of the world's 10 biggest oil and natural gas companies are owned and operated by foreign governments?

Answer under the fold

> a. 25%
> b. 50%
> c. 75% - Most frequent answer (41%)
> d. 100% - Correct answer (2%)
> e. Not Sure
>
> 2. Where does ExxonMobil, the largest U.S. oil and natural gas company, rank in size among the world's largest holders of oil reserves?
>
> a. Among the top 3 oil reserve holders - Most frequent (36%)
> b. Among 4th to 6th oil reserve holders
> c. Among 7th to 10th oil reserve holders

d. Not among the top 10 largest oil reserve holders - Correct (8%)
e. Not sure

3. What percentage of the world's proven oil reserves do U.S. oil companies control?

a. to less than 10% - Correct (14%)
b. 10% to less than 20%
c. 20% to less than 30%
d. 30% to less than 40%
e. Not sure - Most frequent (27%)

4. According to 2006 projections, what percentage of global energy demand in 2030 will be met by fossil fuels, such as oil, natural gas and coal?

a. 21%
b. 41%
c. 61%
d. 81% - Correct (14%)
e. Not sure - Most frequent (35%)

5. What percentage of U.S. domestic energy needs are currently met by imports?

a. 10% to less than 25%
b. 25% to less than 40% - Correct (11%)
c. 40% to less than 60%
d. 60% to less than 80% - Most frequent (32%)
e. Not sure

6. In 2006, how many cents did the U.S. oil and natural gas industry earn in profit on every dollar of gasoline sales?

a. 1 to 5 cents
b. 6 to 10 cents - Correct (14%)
c. 11 to 15 cents
d. 16 to 20 cents - Most frequent (42%)
e. Not sure

7. What percentage of U.S. oil companies' stocks is owned by pension plans and retirement accounts?

a. 0% to 15%
b. 16% to 30%
c. 31% to 45% - Correct (16%)
d. 46% to 60%
e. Not sure - Most frequent (46%)

8. On average in 2006, what percentage of your gasoline dollar went to the following factors?

9. Current government policy restricts access to what percentage of potential offshore U.S. oil and natural gas development sites off the coasts of the lower 48 states?

a. 25%
b. 45%
c. 65%
d. 85% - Correct (11%)
e. Not sure -Most frequent (41%)

10. From 2000 through 2005, U.S. oil and natural gas companies invested how many billions of dollars in emerging energy technologies in North America (such as biomass, wind, solar, alternative fuel vehicles, gas-to-liquids and oil shale)?

a. $1 to less than $25 billion
b. $25 to less than $50 billion
c. $50 to less than 75 billion
d. $75 to 100 billion - Correct (7%)
e. Not sure - Most frequent (35%)

11. According to Oil and Gas Journal, at 2006 production rates, how many years will the global "known reserves" of oil last?

a. 20 years
b. 40 years
c. 50 years - Correct (16%)
d. 60 years
e. Not sure - Most frequent (37%)

12. According to 2007 data, what percentage of U.S. energy use is currently supplied by renewable sources?

a. 0% to less than 10% - Correct and most frequent (34%)
b. 10% to less than 20%
c. 20% to less than 30%
d. 30% or more
e. Not sure

13. According to 2007 projections, what percentage of U.S. energy will be supplied by renewable sources by 2030?

a. 0% to less than 10% - Correct (5%)

b. 10% to less than 20%
c. 20% to less than 30%
d. 30% or more
e. Not sure - Most frequent (34%)

14. What percentage of gasoline used in the U.S. would be replaced by ethanol, using current corn-based production technology, if every acre of corn was used for ethanol production exclusively?

a. 0 to 10%
b. 11% to 25% - Correct (24%)
c. 26% to 40%
d. 41% to 55%
e. Not sure - Most frequent (33%)

15. What percentage of cars on the road today are designed to operate using the fuel E-85 (a fuel mixture that is 15% gasoline and 85% ethanol)?

a. 0% to 5% - Correct and most frequent (46%)
b. 6% to 10%
c. 11% to 15%
d. 16% to 20%
e. Not sure

16. In 2030, what percentage of the U.S. light-duty car fleet will be made up of flexible fuel
vehicles able to run on E-85 (a fuel mixture that is 15% gasoline and 85% ethanol)?

a. 0% to 6% - Correct (4%)
b. 7% to 10%
c. 11% to 15%
d. 16% to 20%
e. Not sure - Most frequent (34%)

17. In the history of the world, the energy industry has produced about a trillion barrels of oil and developed about another trillion into proved reserves for future production. How much recoverable conventional oil does the U.S. Geological Survey (USGS) estimate remains to be discovered in the future?

a. About half of the oil that has already been produced
b. Between 1 and 2 times the amount of oil that has already been produced - Correct (16%)
c. Between 3 and 4 times the amount of oil that has already been produced
d. Between 5 and 6 times the amount of oil that has already been produced
e. Not sure - Most frequent (40%)

18. In 2006, which of the following countries was the largest U.S. supplier of oil?

a. Saudi Arabia - Most frequent (59%)
b. Venezuela
c. Canada - Correct (9%)
d. China

e. Not sure

19. In 2006, what percentage of oil the U.S. consumes came from the Persian Gulf countries?

a. Less than 15% - Correct (8%)
b. 16 to 30%
c. 31 to 45%
d. 46 to 60% - Most frequent (27%)
e. Not sure

20. In 2006, the U.S. imported what percentage of its oil?

a. 20%
b. 40%
c. 60% - Correct and most frequent (33%)
d. 80%
e. Not sure

This is a very difficult test and American's level of knowledge is not high. No question was answered correctly by as many as 50% of those taking the test. In 7 out of 20 questions, fewer than 10% got the correct answer; in 16 out of 20, fewer than 20% got the correct answer.

What ideas is API trying to emphasize?

This is my interpretation, based on the quiz questions and the telephone discussion:

1. American oil companies are relatively small compared to companies operated by foreign governments (Q 1, 2, 3).

2. Renewable resources are not expected to scale up very well. Therefore oil and other fossil fuels will be needed for a long time. (Q 4, 12, 13, 14, 15, 16)

3. Oil companies are doing their part in developing alternative fuel sources. (Q 10)

4. Oil companies are not making unreasonable profits, and what profits they are making are benefiting organizations like pension plans and retirement accounts. (Q 6, 7, 8)

5. Imports are not as serious an issue as people think they are. (Q 5, 18, 19, 20)

6. There is lots of oil out there, if US oil companies could just get to it. (Q 3, 9, 11, 17)

7. An additional point Red Cavaney of API made during the phone call was that legislation that is based on a lack of understanding of the situation has the potential to put oil companies in a very difficult situation. For example, some of the proposed legislation talks about increasing ethanol usage to 35 billion gallons a year, from the current 5 billion gallons. Such a change would require a huge investment in infrastructure by oil companies (particularly pipelines or additional transportation resources), and this would require a very long lead time. At this point, it is not even clear that the technology will be available for cellulosic ethanol (or other alternative) to produce the 35 billion gallons in the required time frame, so this could be a wasted investment.

Of the points above, the only ones I find problematic are points 5 (import problems are not

serious) and 6 (lots of oil is still out there). Point 5 was discussed in the conference call and I objected then; point 6 was not discussed during the call, but I will talk about it here.

Let's take point 6 first, the idea that there is still a lot of oil available. Items supporting this are

(Q3) Foreign oil companies report large reserve amounts.
(Q9) Access is restricted to 85% of potential oil and gas development sites off the US coast.
(Q11) Oil and Gas Journal says global reserves will last 50 years at 2006 production rates.
(Q17) USGS undiscovered reserves are 1 to 2 trillion barrels.

There are really two problems here. First, we have virtually no solid information to confirm that the supposed reserves exist, in any of the above. In Q3 and Q11, we are dealing with the unaudited reserves for OPEC companies, and there is increasing evidence that these reserves are seriously overstated. Both Q9 and Q17 are dealing with various "undiscovered" resources. If they are undiscovered, we don't know whether they are there or not - and the fact that we have been discovering relatively little in recent years casts increasing doubt on huge undiscovered reserve amounts.

Second, even if the reserves are accurate, we don't know that they will be recoverable in any reasonable time frame. If they represent very heavy oil like the Canadian oil sands, or if they are in very difficult locations, like near the North Pole or in very deep water, it could take an extremely long time to actually recover the oil and gas. Thus, the statement about lasting 50 years at current production rates may be very optimistic - we perhaps should be talking about lasting 500 years at 1/10 of current production rates.

The other point I find problematic is (5) above, the idea that our imports are not as serious an issue as most believe. Red Cavaney also stated a related idea during the call, namely that energy independence is not possible for decades and decades to come. He did not seem to feel that this was a problem.

When we talked about imports, Red Cavaney talked about the fact that half of our crude oil comes from Canada, Mexico, or the United States, and how oil sands production is set to triple by 2020. The quiz further points out (Q 19) that imports from the Middle East comprise less that 15% of total US imports and (Q5) that when total energy is considered, imports amount to 25% to 40% of domestic energy needs.

In the discussion, John Kingston of Platts and I objected to the import interpretation. John pointed out that it didn't make any difference if we didn't import much oil from Saudi Arabia directly - if the total amount was down, we would have trouble. I pointed out that Canadian oil sands produce only 1 million barrels per day, and even if this tripled, it would not be large in relationship to the amount of oil the US uses - also that Canada imports oil from Saudi Arabia.

While we did not talk about it on the phone, the idea the imports can continue for decades and decades into the future seems unrealistic to me. if peak oil is here soon, it seems likely that oil imports will disappear in 10 years, or 20 years at the outside, whether we are prepared or not. If we have monetary problems, imports of all kinds may decline even more quickly than that.

Based on my calculations, US energy imports total roughly 40% of US energy use - 35% from fossil fuels, plus a fairly large share of nuclear (8% of US energy use). Thus, energy imports are right at the top of the 25% to 40% range indicated by the answer to API's Question 5. Going back to living within our own resources is likely to be a big step.