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EDITORIAL

Impenetrable truth about fuel subsidies

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All fuels are subsidized in all countries, for various reasons. Anyone willing to write or talk about it, from the very learned to the lay person dependent on press reports, should be able to offer a fair comparison of the amounts of these subsidies. But the truth is hard to find. The topic is inseparable from opinions colored by positions taken on climate change.

Nobody denies that climate change is real. It has been happening for millennia and will continue as long as we have life and a climate. What used to be called global warming is now called global climate change. At the heart of the debate is the role of global warming gases, principally carbon dioxide that is emitted by power plants and from myriads of natural sources, all living carbonaceous creatures including humans and animals. Methane is a junior partner in this act, emitted from marshes, rotting landfills, and of course the flatulent cattle. The principal issue is not whether the Earth is warming but to what extent human activities, such as the use of fossil fuels, is responsible for the observed global average temperature increase. On this question, there are two scientific opinions—one definitely yes, the other, maybe not—each apparently backed by observed facts. For the average non-expert it is impossible to know the truth because both sides of the debate use facts that do not coincide. The issue has been extremely politicized at the highest level everywhere. Those in favor of human influence are called alarmists, and those who doubt it are called deniers. The alarmists hold the upper hand, since they control all the research funds to support their position. The fossil energy companies often support the research by deniers but the researchers then are promptly dismissed as being advocates of the those companies. A case in point is the revelation by internet hackers, dubbed climategate by the British Press, a sample report of which is:

Climate skeptics claim leaked emails are evidence of collusion among scientists Hundreds of private emails and documents allegedly exchanged between some of the world's leading climate scientists during the past 13 years have been stolen by hackers and leaked online, it emerged today. The computer files were apparently accessed earlier this week from servers at the University of East Anglia's Climate Research Unit, a world-renowned centre focused on the study of natural and anthropogenic climate change.

Then there was the realization that global average temperature has not increased for the last 17–18 years, called a pause. Last year the alarmists adjusted the data and showed that the climate models are indeed supported by the adjusted data. The deniers promptly dubbed it as further chicanery. This year in the U.S., two significant things happened. An Arizona Congressman, joined by several Senators, wrote to the U.S. authorities to compel the denier scientists and organizations to reveal confidential information. Also this year a group of professors asked the Government to prosecute the deniers under the statute RICO (Racketeer Influenced Corrupt Organizations Act). This law was enacted to prosecute the mafia for organized crime. In none of the cases, the protagonists have any climate science credentials. The politicization is complete.

In this backdrop, I was interested in finding the truth about Government subsidies for fuels, both fossil and supposedly carbon neutral, such as biofuels, nuclear, solar, and wind. Here also, the numbers depend on who is talking. The environmental groups and the press are generally inclined to show that fossil fuels are heavily subsidized and

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argue for elimination or drastically reducing it. But they advocate subsidies for carbon–neutral fuels based on the argument that these babies need to be nurtured until they become self-sufficient. What I found is total confusion and a great absence of transparency on what is claimed as a subsidy. I am quoting here from a report mentioned in Wikipedia for the United States:

"On March 13, 2013, Terry M. Dinan, senior advisor at the Congressional Budget Office, testified before the Subcommittee on Energy of the Committee on Science, Space, and Technology in the U.S. House of Representatives that federal energy tax subsidies would cost $16.4 billion that fiscal year, broken down as follows:

1. Renewable energy: $7.3 billion (45 %).
2. Energy efficiency: $4.8 billion (29 %).
3. Fossil fuels: $3.2 billion (20 %).
4. Nuclear energy: $1.1 billion (7 %).

In addition, Dinan testified that the U.S. Department of Energy would spend an additional $3.4 billion on financial Support for energy technologies and energy efficiency, broken down as follows:

1. Energy efficiency and renewable energy: $1.7 billion (51 %).
2. Nuclear energy: $0.7 billion (22 %).
3. Fossil energy research & development: $0.5 billion (15 %).
4. Advanced Research Projects Agency—Energy: $0.3 billion (8 %).
5. Electricity delivery and energy reliability: $0.1 billion (4 %)".

Take a look at the numbers. If you do not know the exact nature of these subsidies, you would not be able to make up your mind on the issue. Another quote from the same source provides the same result:

"A 2011 study by the consulting firm Management Information Services, Inc. (MISI) estimated the total historical federal subsidies for various energy sources over the years 1950–2010. The study found that oil, natural gas, and coal received $369 billion, $121 billion, and $104 billion (2010 dollars), respectively, or 70 % of total energy subsidies over that period. Oil, natural gas, and coal benefited most from percentage depletion allowances and other tax-based subsidies, but oil also benefited heavily from regulatory subsidies such as exemptions from price controls and higher-than-average rates of return allowed on oil pipelines. The MISI report found that non-hydro renewable energy (primarily wind and solar) benefited from $74 billion in federal subsidies, or 9 % of the total, largely in the form of tax policy and direct federal expenditures on research and development (R&D). Nuclear power benefited from $73 billion in federal subsidies, 9 % of the total, largely in the form of R&D, while hydro power received $90 billion in federal subsidies, 12 % of the total." A third example:

"A 2009 study by the Environmental Law Institute assessed the size and structure of U.S. energy subsidies in 2002–2008. The study estimated that subsidies to fossil fuel-based sources totaled about $72 billion over this period and subsidies to renewable fuel sources totaled $29 billion. The study did not assess subsidies supporting nuclear energy.

The three largest fossil fuel subsidies were:

1. Foreign tax credit ($15.3 billion).
2. Credit for production of non-conventional fuels ($14.1 billion).
3. Oil and gas exploration and development expensing ($7.1 billion).

The three largest renewable fuel subsidies were:

1. Alcohol credit for fuel excise tax ($11.6 billion).
2. Renewable electricity production credit ($5.2 billion).
3. Corn-based ethanol ($5.0 billion)".

Missing from all these identified subsidies is a uniform definition of subsidy, why they are called subsidies, if they available by law to all manufacturing or just the energy producing firms, and an understanding of why the subsidies are not being eliminated.

Generally in the United States, oil depletion allowance is considered a subsidy by the alarmists, but the point is that the same depletion allowance is available for minerals generally. Without it would there be an investment in the first place? Maybe, maybe not. A non-expert would not know. In the developing countries, the subsidies are used to cheapen the price of fuels primarily for the common man, but is available to all. Will these countries be able to function without that subsidy? Again maybe, maybe not. Recently Egypt has eliminated subsidy from imported diesel as a result of which the price of diesel has shot up by more than 60 %. The same is happening in other countries. It is possible that a new normal will be reached and people will get used to it and modify their behavior as a result.

In the case of non-fossil energy, subsidies are given directly to the producers, while for fossil fuels, especially in the developing countries lacking indigenous sufficiency, it is given to the customers. Taxpayers in the U.S. have been getting ripped off by renewables for decades. Over the last few decades, subsidies for wind and solar alone have cost taxpayers $13.77 per million British thermal units of energy produced, compared to just 39 cents for oil, 34 cents for nuclear, 12 cents for natural gas and 10 cents for coal. According to the US Energy Information Agency, the recent subsidies to the various fuels per million watt-h of generated electricity, the subsidies are for wind: $52.48, for

nuclear: $3.10, for hydro: $0.84, for coal: $0.64, and for natural gas: $0.63. There was no information on solar, and the numbers are again bereft of a definition of what subsidy is. The confusion continues. We like to use this forum to invite perspective papers for this journal from experts to clear the confusion.

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