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# IWF Policy Brief

February 12, 2009

## **Advancing Green Technologies and the Massive Economic Stimulus Plan**

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*Brief #16*

### **Executive Summary**

The current economic climate in the United States appears dire for many industries. In response to the drastic economic downturn, Congress has passed a massive \$789 billion economic “stimulus” package. In addition to the much talked about banking and automobile industries, another major recipient of these funds will be the renewable energies industry.

While the main focus of debate surrounding the legislation was about the high cost, wasteful spending, and effectiveness, there should also be a dialogue to consider if it is appropriate for government to be in the business of subsidizing specific technologies over others, and if such government intervention is superior to the free market in encouraging innovation.

During President Obama’s campaign, he stressed his commitment to renewable solar and wind energy production, and the economic stimulus legislation has given him an opportunity to make good on these promises. Unfortunately, it is unlikely that this policy path will meaningfully improve our energy future. Past experience with such subsidies show that government often ends up supporting dubious technologies, and decisions on who receives subsidies are more likely to be driven by politics than by a serious assessment of the most promising producers.

### **Talking Points:**

- Policymakers are providing billions of dollars of subsidies to those pursuing “green” energy technologies, but the history of similar subsidies suggests that they are unlikely to yield positive results.
- Government need not get involved in this arena for there to be greater development in alternative energy. Private investors have already dedicated billions to alternative energy research and the profit-motive will ensure that that money reaches those producers with the most promising technologies.
- Ultimately, reducing government intrusion and ensuring a level playing field is the best way to encourage the development of a robust energy sector in the United States.

## **Introduction**

The U.S. economy faces significant challenges: the Dow Jones Industrial Average has dropped almost 40 percent in the last 15 months, the average unemployment rates have risen to around 8 percent, and many economists expect that the worst is still to come. In an attempt to mitigate the economic downturn, Congress has passed a \$789 billion economic “stimulus” package. Promoting “green” technologies and energy enhancing infrastructure improvement has been promoted as a major goal of the legislation.

Renewable energy research and development was a big winner in the stimulus legislation: more than \$40 billion was appropriated for renewable energy research and development and subsidies.<sup>i</sup> This investment comes, in spite of the enormous government benefits, primarily in the form of generous tax credits and subsidies, which have been provided in the past, but have yet to produce an efficient and reliable product.

Policymakers should also take this opportunity to consider if it is appropriate for government to be in the business of subsidizing specific technology over others, and if such government intervention is superior to the free market in encouraging innovation in these areas.

This paper examines the problems and unintended consequences of government subsidies both historically and going forward. It looks at emissions-free energy programs in other countries to see which are the most successful and worthy of the incredible investment promised by Congress.

## **Problems with Subsidies**

In general, government subsidies make bad economic and industrial policy. They allow the government to select the winners and losers in an industry rather than allow market forces to identify the most efficient, successful innovations. Unlike in the private sector where the market generally determines which innovations flourish and which perish, government subsidies allow underperforming companies and industries to compete in a marketplace where they could never succeed on their own. Thus less efficient technologies continue to consume resources that would be put to better use elsewhere. Often government resource allocation comes down to which industry has hired the most persuasive and politically connected lobbyist, rather than the viability of the technology being funded.

Consider the government’s history of intervention and subsidies in favor of ethanol. Since 1995, the federal government has pumped more than \$60 billion into corn subsidies in an attempt to bring us closer to the elusive “energy independence” we hear so much about.<sup>ii</sup> Yet ethanol remains of dubious value to our energy infrastructure. By the ethanol industry’s own estimations, a mere 25 percent more energy is produced than is used in the production of corn ethanol.<sup>iii</sup> Today ethanol production consumes 25 percent of the corn being grown in the United States. As a result, the price of corn has skyrocketed: in one six-month period of 2007, the price of corn spiked by 70 percent.<sup>iv</sup>

Proponents of ethanol will quickly point out that ethanol-blended gasoline contributes less greenhouse gases to the atmosphere than traditional gasoline. Yet this is only one piece of a much larger puzzle. By using a food source (in this case corn) to produce ethanol, farmers are encouraged to dedicate more of their land to corn production. Corn becomes more valuable as a crop, so farmers put more land into production and reallocate existing land toward corn production. As a result, thousands of acres of carbon-absorbing forests and grasslands are being cleared to make way for farmers to plant food crops. If the goal of biofuel proponents is to reduce greenhouse gasses in our environment, encouraging the production of corn for ethanol may be counterproductive. Unfortunately, the majority of studies addressing the reduced emissions produced by automobiles running on ethanol-blended gasoline fail to take this vital piece of information into consideration.<sup>v</sup>

Government subsidies not only put politicians in the position of choosing winners and losers among technology sectors (wind vs. sun) but also among producers and projects. Politics is inevitable. Not only does this mean that some of the wrong sectors and producers will be subsidized—wasting taxpayer money—but it will also make it more difficult for others to compete. Someone developing an alternative energy breakthrough right now will have to compete against those who are receiving massive help from the government. This is an impediment to real innovation that could meaningfully improve our energy outlook.

### **Lessons from Europe**

The experience of Europe provides helpful lessons about what works, and doesn't work, in terms of government efforts to address energy policy. Last year, the Vatican received almost \$2 million worth of solar technology that has been installed on the roof of the Nervi Hall in Vatican City. This investment, however, is providing them with a mere 300 megawatt hours of energy per year, which covers only a small percentage of their electricity needs. The Vatican has announced that it intends ultimately to cover over 700 acres of land with solar panels and to produce so much electricity they will be able to transfer some of it back to the Italian national grid. Yet even if this ambitious plan is undertaken, the Vatican estimates that by 2020 it can only hope to be able to receive a mere 20 percent of their power from solar panels.<sup>vi</sup> This is just one example of an expensive investment into solar power, with limited returns.

Spain is one of the leading countries in the production of and investment in wind energy. Yet even there wind provides only 10 percent on average of their daily electricity needs. Spain's highest producing region for wind energy, Castile la Mancha, has close to 3,000 wind turbines, but even this only has the *potential* to produce 20 percent of the regions electricity needs.<sup>vii</sup>

Environmentalists frequently cite an incredibly windy day in 2008 when the wind turbines produced approximately 30 percent of Spain's energy needs. Yet this outlier hardly indicates wind energy has the potential to be a reliable and consistent source of electricity for Spain. Furthermore, a thorough evaluation of the environmental impact of wind turbines must also include the negative ecological impact this source of energy has on wildlife. Birds, bats, and fish are all known victims of windmills.

Germany is, in fact, leading the world in producing energy for their electric grid using wind power. What does it mean to be the world leader? Their almost 20,000 wind turbines produce a mere six percent of the countries needed electricity.<sup>viii</sup>

Not only are ecological and efficiency issues a problem with these two technologies, there is also the problem of land. Although the thought of environmentally friendly sources of electricity appeals to many Americans, most do not want acres and acres of green space consumed by solar panels or wind turbines. For years Robert Kennedy Jr., a man so committed to the environment his name was floated as a potential candidate to head up the Environmental Protection Agency under President Obama, has been an outspoken opponent of a proposed wind farm off the coast of his beloved Martha's Vineyard.

Spain and Italy's neighbor, France, provides an example of affordable and successful emissions-free energy production. France is the world leader in nuclear energy, and produces at least 75 percent of its electricity from its many nuclear power plants. Not only does France have some of the lowest energy prices in Europe, it also exports almost 20 percent of its production to neighboring countries.<sup>ix</sup> In fact, one of the beneficiaries of France's abundance of energy is neighboring Germany. Yet this emissions-free source of electricity remains unpopular with politicians despite its relative safety.

### **The Market Will Better Allocate Resources for Energy Development**

The market is the best place to test the success of new energy sources, and private investors' profit motivation is the best strategy for ensuring that resources are used efficiently. As demonstrated by examples of single private investors like T. Boone Pickens, who has invested \$2 billion in wind power and other renewable sources of electricity, new technologies certainly can attract significant funds.

American scientists, backed by private companies, are also already hard at work creating mini nuclear power plants that will be on the market in five years and are able to power up to 20,000 homes for up to 10 years before requiring refueling.

There are many promising potential technologies on the horizon. Those individuals and entities that are able to find efficient ways to generate environmentally-friendly energy will be handsomely rewarded by the marketplace. This dynamic, not government, is the key to long-term energy production.

## Conclusion

Throughout President Obama's campaign, he vowed to pour money into renewable technology like solar and wind energy production; however, before making good on this campaign pledge, he should consider the disappointing history of such attempts at government investment in technology. Government often ends up subsidizing dubious technologies, and decisions on who receives subsidies are more likely to be driven by politics than by a serious assessment of the most promising producers.

The good news is that the government need not get involved in this arena for there to be greater development in alternative energy. Private investors have already dedicated billions of dollars to alternative energy research, and the profit motive will ensure that that money reaches those producers with the most promising technologies. Ultimately, reducing government intrusion and ensuring a level playing field is the best way to encourage the development of a robust energy sector in the United States.

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## Endnotes

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<sup>i</sup> Steve Hargreaves, "\$100 Billion Jolt of 'Green Stimulus,'" CNNMoney.com, February 4, 2009, [http://money.cnn.com/2009/02/04/news/economy/green\\_stimulus/index.htm](http://money.cnn.com/2009/02/04/news/economy/green_stimulus/index.htm).

<sup>ii</sup> "Corn Subsidies in United States," Environmental Working Group's Farm Subsidy Database, <http://farm.ewg.org/farm/progdetail.php?fips=00000&progcode=corn>.

<sup>iii</sup> Hosein Shapouri, James A. Duffield, and Michael S. Graboski, "Estimating the Net Energy Balance of Corn Ethanol," U.S. Department of Agriculture, July 1995, [http://www.ethanol-gec.org/corn\\_eth.htm#sum](http://www.ethanol-gec.org/corn_eth.htm#sum)

<sup>iv</sup> Brittany Sauser, "Ethanol Demand Threatens Food Prices," *Technology Review*, February 13, 2007, <http://www.technologyreview.com/energy/18173/>.

<sup>v</sup> Stephen Leahy, "Climate Change: Biofuels Worse Than Fossil Fuels, Studies Find," February 8, 2008, Inter Press Service News Agency, <http://www.ipsnews.net/news.asp?idnews=41119>

<sup>vi</sup> Philip Pulella, "Vatican Unveils Ambitious Solar Energy Plan," Reuters, November 26, 2008, <http://www.reuters.com/article/environmentNews/idUSTRE4AP50M20081126?feedType=RSS&feedName=environmentNews&rpc=22&sp=true>.

<sup>vii</sup> Asociación Empresarial Eólica, January 1, 2008, [http://www.aeeolica.es/castilla\\_la\\_mancha.php](http://www.aeeolica.es/castilla_la_mancha.php)

<sup>viii</sup> "Wind Energy Barometer," EurObserv'ER, February 2007, [http://www.energies-renouvelables.org/observ-er/stat\\_baro/observ/baro177.pdf](http://www.energies-renouvelables.org/observ-er/stat_baro/observ/baro177.pdf).

<sup>ix</sup> "Nuclear Power in France," World Nuclear Association, February 2009, <http://www.world-nuclear.org/info/inf40.htm>.