

GOVERNMENT ENERGY POLICY IN A GLOBAL CONTEXT

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Summary

Government intervention in the world's energy markets is not a new phenomenon. Governments have been employing policies to influence the behavior of their country's populations for many years. These policies may be imposed directly on the consumers, such as a tax on energy use or a subsidy on a particular form of energy, or imposed on industrial concerns, such as regulations aimed at electric power plants that necessitate installation of devices meant to clean the environment. Governments may also try to implement policies that will impact the energy markets of other countries. The clearest example of this is the use of economic sanctions aimed at an energy-exporting country to attempt to persuade that country to change a behavior or risk, harming the energy industry that provides essential economic benefit to the country.

1. Introduction

This section reviews the various forms of government energy policy that exist and how these policies have been used to elicit change. Government energy policies are employed for a variety of reasons, not the least being to ensure a level of economic expansion. They may be implemented for purposes of national energy security, or to influence energy markets, or to mitigate the environmental impacts that often result from producing and consuming energy. Energy policy is often used to influence the behavior of a country's consumers. In the developing world, this might mean offering consumers subsidies in an effort to wean energy users off non-commercial fuels (for example, wood burning for home heating or cooking) in favour of diesel-generated energy. In the industrialized world, this might mean increasing taxes on motor gasoline

to encourage consumers to drive less often and lower the population's dependence on, say, imported oil, or to mitigate the impact of air pollutants emitted by motor vehicles.

Policies may also be used in the form of taxation or other regulatory legislation aimed at eliciting a desired behavioral outcome. Government energy policies may be applied directly to corporations and industry, such as enacting a law to exact a behavior that will help clean up the environment—like forcing coal-fired electricity generators to add scrubbers to their power plants to reduce sulfur dioxide, to eliminate acid rain that destroys forests. Although the costs of these policies will more than likely eventually be passed on to the consumers in some form, the policies themselves require changes to be made at the corporate level rather than directly by the consumers. An example would be the Corporate Average Fuel Economy standards enacted by the United States government after the oil price hikes in the mid-1970s threatened economic growth and exposed the level of dependence on foreign oil supplies that the United States had reached. These policies, at least in part, forced automotive manufacturers to make more fuel-efficient motor vehicles, which helped to reduce the amount of fuel consumed by cars.

Governments may also employ devices aimed at getting another country to change their policies or behavior. A government (or collection of governments through an organization such as the United Nations) may impose sanctions on a country to protest at terrorist activities or human rights violations, for example. These sanctions are usually aimed at penalizing a country's economy and at energy-exporting countries whose economies depend heavily on the energy sector; this often means aiming sanctions at the energy industry. Theoretically, by jeopardizing the economic growth of the offending country, the sanction-imposing country hopes to change behaviors that are not morally acceptable.

2. How Effective are Government Energy Policies?

The effectiveness of the various government efforts to influence energy markets through policy varies. Subsidies do indeed encourage consumers to use more of the subsidized energy form. That said, once subsidies are in place, they are difficult to remove (people get used to paying low prices for their energy and find it difficult to manage large increases in their energy bills over short time periods). If subsidies are not removed, on the other hand, they tend to become an overwhelming burden for the government, eventually retarding economic growth and making it difficult for governments to support other important social programs instead of energy use.

Regulatory legislation in the industrialized countries has been an effective way for countries to address environmental concerns. Efforts at limiting or reducing greenhouse gas emissions and other pollutants from automobiles by directing the manufacturers to meet specific emission standards has been very successful in the United States and Canada, and most recently in the countries of the European Union. However, regulatory legislation discouraging the construction of new electricity power plants in California played a role in the shortages experienced in the state in the summer of 2000. Further, many oil-refining companies have announced that they feel they will be unable to meet

new emissions laws passed in the United States under the schedule the government has allocated to the process.

Taxes are particularly useful devices for governments to use to discourage the consumption of energy. High energy taxes in Europe have encouraged consumers to drive less and to demand more efficient automobiles than their counterparts in the United States. However, high tax burdens on motor gasoline in the European Union have also encouraged drivers to switch to diesel-fuelled vehicles and also to drive to neighbouring countries, where the tax burdens are lower than in their countries of residence, to purchase cheaper fuel.

Many governments sponsor large energy public works projects to diversify a country's fuel mix or to exploit a domestically-produced energy source to secure a nation's energy supply. These projects are often large in scale and might not be able to attract private investors without the support of government backing. Such mammoth projects as the 12 600 Megawatt Itaipu dam required a bi-national agreement between the governments of Brazil and Paraguay. Whereas a private enterprise might have found the project—which took over sixteen years to construct and become fully operational—economically unfeasible, the two governments determined the project would in the long term be beneficial to both countries. Itaipu produces around 80 percent of the electricity consumed in Paraguay and 25 percent of the electricity consumed in Brazil.

A final policy device used by governments to manipulate energy markets is the imposition of sanctions on other countries. Sanctions are often used to dissuade a nation from behavior that is seen to be universally unacceptable—such as human rights violations or supporting terrorism. They are often leveled at major sectors of a country's economy in the hopes that, by threatening harm to these sectors, a nation will be persuaded to alter its behavior. In the case of the energy sector, sanctions have been implemented to stop foreign investment in the energy sectors of countries where energy exports form a key part of the economy. The most effective use of sanctions occurs when multi-national agreements are put into place, such as in the early years of the United Nations sanctions on the Iraqi oil industry after the Persian Gulf War. The danger in sanctions is that they lose their effectiveness after countries begin to lose their resolve. After a decade of the Iraqi sanctions, with little progress in getting the country to conform to the wishes of the United Nations in terms of weapons inspections, many countries have begun to re-establish normal trading relations with Iraq.

3. Government Energy Policies

As stated above, there are many ways in which governments can shape a country's energy markets through policy. In this section, the various policy methods employed by a government are presented, with examples of how they have been implemented worldwide.

3.1 Energy Subsidies

Government subsidies on energy represent an important way in which policy influences energy consumption. These subsidies—or financial support given to a specific energy

form—encourage consumers to use the government-financed energy form and are used by governments to achieve policy objectives they feel are important.

In the industrialized world, energy subsidies are often granted to support renewable energy development or to help a domestic energy producer survive. In recent years, the drive to reduce carbon emissions and other pollutants resulting from the combustion of fossil fuels, has led nations to encourage the production of such renewable energy sources as wind and solar with subsidies. The United States, for example, approved a federal wind production tax credit for wind producers. Under the provision, wind power producers are allowed to claim a tax credit of 1.7 cents per kilowatt-hour of electricity produced for a period of ten years. Germany, Spain, and Greece, are among the many Western European countries that offer subsidies to wind, solar, and other renewable energy sources, to encourage their development by fixing the price of renewable energy sources and requiring utilities to provide a minimum amount of renewable-generated electricity to the national grid within a certain time frame.

The subsidies for renewables have met with varying success. When the wind production tax credit in the United States was facing expiration at the end of 1999 (the expiration date was subsequently extended until the end of 2001) (Iraq U.N Sanctions [oil-for-food program] were renewed again at the end of 2001 – for a period of 6 months, with assurance that UN Security Council will review the policy, and come up with a plan that would increase trade for humanitarian goods, but limit Iraq’s ability to obtain ‘dual-use’ technology for its weapons program), the wind industry experienced a surge of wind installations—some 1073 megawatts of new or re-powered wind capacity was installed between June 1998 and June 1999. Some 732 megawatts of new wind capacity was added in the United States during this time period, about twice as much as in the last record year, 1985, when some 442 megawatts of new capacity were added. Germany’s wind energy subsidies helped to keep the country in the top five worldwide for new wind installations during the late 1990s.

In the case of renewable energy, the subsidies are supposed to end as the renewable energy sources become competitive with conventional forms of energy. While the cost of generating electricity from wind power has decreased steadily over the past two decades, fossil fuel prices have also stayed relatively low and this has frustrated efforts to make wind power economically competitive with fossil fuel generation. This is particularly the case for natural gas—where combined cycle gas turbine technology has made gas-fired generation a particularly efficient and reliable form of electric power without the considerable polluting effects of the other fossil fuels, oil and coal.

There are also subsidies that nations use to support domestic industries that would otherwise fail under competition from abroad. For instance, the Western European countries, Germany and Spain, continue to use subsidies to support their domestic coal industries. In 1998, the European Commission authorized coal industry subsidies of US\$5357 million in Germany and US\$1297 million in Spain. These subsidies are aimed at helping the domestic coal industries survive. In both Germany and Spain, the cost of domestically-produced coal is prohibitively high compared to imported coal, and the average subsidy per ton of coal produced exceeds the average value of imported coal. In Germany, the coal subsidy in 1998 was about US\$118 per short ton and in Spain,

US\$72 per ton, whereas the average price of a ton of imported coal in both countries was about US\$36. Germany and Spain have taken steps to reduce subsidy payments, acknowledging that some losses in domestic coal production are inevitable.

In the developing countries, energy subsidies are often used to promote, at least in the short-term, an improvement in the lives of the population by stimulating growth in regional development, increasing and maintaining employment, and by giving consumers access to at least a minimum amount of energy.

Gaining access to electricity is especially seen as important in improving the lives of people in developing nations where access to electric power supplies means installation of lighting, cooking, and telecommunications equipment, thereby giving benefits for hygiene, healthier lifestyles, and education.

One of the major drawbacks to using subsidies in developing and transitional economies is that once they are in place, it is often very difficult to remove them and this, in the long run, may have grave ramifications for the sustained economic growth of a country.

In October 2000, when crude oil prices had climbed to US\$35 and then US\$37 per barrel, the government of Indonesia (a country that itself is an important oil exporter) attempted to raise fuel prices by 12 percent—in a country that, despite the increase, still enjoys some of the lowest fuel prices worldwide.

According to the International Energy Agency, subsidies for automotive diesel in Indonesia cost the country an estimated 2918.7 billion Rupiahs (about US\$300 million) each year. Even the relatively small increase in fuel prices, however, met with widespread protest throughout the country.

The cut in oil subsidies was part of a three-year, US\$5 billion financial bailout package negotiated with the International Monetary Fund after the fall of the Suharto government and the economic recession of 1997–1998. The Indonesian government held fast to the increases, but in a country that has experienced much in the way of political and social discord in recent times, the government may yet pay a steep political cost for its attempts to remove subsidies.

The Indonesian government has weakened its position on removing fuel oil subsidies. Subsidy cuts were delayed until October at the beginning of 2001, with the government citing political uncertainty and fear of social unrest, and delayed again until January 2002. In December 2001, the government announced another postponement of the fuel oil price increase.

In January 2002, the government stated it would increase fuel oil prices, but less than the 30 percent to which it previously committed. There are discussions underway for compensating poor families (Source: World Markets Energy Online, “Indonesia: Government Sets Fuel Rise Range,” January 2, 2002 and World Energy Online, “Indonesia: Oil Price Rise Suspended,” December 27, 2001)

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Bibliography

Energy Information Administration (1995). *Measuring Energy Efficiency in the United States' Economy: A Beginning*, Washington, DC: US Department of Energy, (web site www.eia.doe.gov/emeu/efficiency/ee_report_html.htm). [Document addressing the complicated task of measuring energy efficiency improvements.]

Energy Information Administration (2001). *International Energy Outlook 2001*, Washington, DC: US Department of Energy. [An annual publication containing projections of world energy supply and demand.]

Energy Information Administration (2000). *Country Analysis Briefs: World Energy Sanctions*, Washington, DC: US Department of Energy. (web site: www.eia.doe.gov). [Comprehensive details of energy sanctions.]

International Energy Agency (IEA). (1999). *World Energy Outlook 1999: Looking at Energy Subsidies: Getting the Prices Right*, Paris: OECD. [Projections of world energy requirements in the context of the removal of energy subsidies.]

National Renewable Energy Laboratory and the International Energy Agency (1999). *Wind Energy Annual Report 1998*, Golden, Colorado: USA. [Annual publication giving current and future development patterns for wind power.]

Biographical Sketch

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