

THE GLOBAL SUBSIDIES INITIATIVE

# UNTOLD BILLIONS:

FOSSIL-FUEL SUBSIDIES, THEIR IMPACTS  
AND THE PATH TO REFORM

1

## The Politics of Fossil-Fuel Subsidies

---



**GSI** Global  
Subsidies  
Initiative

[www.globalsubsidies.org](http://www.globalsubsidies.org)

**iisd**

International  
Institute for  
Sustainable  
Development

Institut  
international du  
développement  
durable

---

The Politics of Fossil-Fuel Subsidies

# The Politics of Fossil-Fuel Subsidies

---

**OCTOBER 2009**

**PREPARED BY:**  
**Dr. David Victor**

laboratory on  
INTERNATIONAL LAW AND REGULATION  
UC San Diego

For the Global Subsidies Initiative (GSI) of the International Institute for Sustainable Development (IISD)  
Geneva, Switzerland.

*“Untold billions: fossil-fuel subsidies, their impacts and the path to reform”* a series of papers  
produced by the Global Subsidies Initiatives (GSI) with the valuable support of the Royal Norwegian Ministry  
of Foreign Affairs.

Support for the paper “Gaining traction: the importance of transparency in accelerating the reform of fossil-  
fuel subsidies” was also generously provided by the United Nations Environment Program (UNEP).

**The Politics of Fossil-Fuel Subsidies**

© 2009, International Institute for Sustainable Development

IISD contributes to sustainable development by advancing policy recommendations on international trade and investment, economic policy, climate change and energy, measurement and assessment, and natural resources management, and the enabling role of communication technologies in these areas. We report on international negotiations and disseminate knowledge gained through collaborative projects, resulting in more rigorous research, capacity building in developing countries, better networks spanning the North and the South, and better global connections between researchers, practitioners, citizens and policy-makers.

IISD's vision is better living for all-sustainably; its mission is to champion innovation, enabling societies to live sustainably. IISD is registered as a charitable organization in Canada and has 501(c)(3) status in the United States. IISD receives core operating support from the Government of Canada, provided through the Canadian International Development Agency (CIDA), the International Development Research Centre (IDRC) and Environment Canada; and from the Province of Manitoba. The Institute receives project funding from numerous governments inside and outside Canada, United Nations agencies, foundations and the private sector.

**International Institute for Sustainable Development**

Head Office  
161 Portage Avenue East, 6th Floor  
Winnipeg, Manitoba  
Canada R3B 0Y4  
Tel: +1 (204) 958-7700  
Fax: +1 (204) 958-7710  
Web site: [www.iisd.org](http://www.iisd.org)

**International Institute for Sustainable Development  
Global Subsidies Initiative**

International Environment House 2  
9 chemin de Balexert  
1219 Châtelaine  
Geneva, Switzerland  
Tel: +41 22 917-8920  
Fax: +41 22 917-8054  
Web site: [www.globalsubsidies.org](http://www.globalsubsidies.org)

The Politics of Fossil-Fuel Subsidies

October 2009

By Author: Dr. David Victor

ISBN: 978-1-894784-32-0

## ACKNOWLEDGEMENTS

The author wishes to thank Chris Charles, Tara Laan, Bertille Presta and Peter Wooders at IISD for the invitation to write this paper.

The paper benefited from the helpful comments of a number of peer reviewers:

Kym Anderson;

Masami Kojima;

Doug Koplou;

Nigel Lucas; and

Ron Steenblik.

The author would also like to thank Aranzazu Lascurain and Varun Rai for their very helpful research assistance.

Finally, this effort and the other work of the GSI could not have been undertaken without the generous support for the GSI provided by the governments of Denmark, the Netherlands, New Zealand, Sweden, the United Kingdom and the William and Flora Hewlett Foundation.

The views expressed in this study do not necessarily reflect those of the GSI's funders, nor should they be attributed to them.

The Politics of Fossil-Fuel Subsidies

## TABLE OF CONTENTS

Executive Summary . . . . .	7
Introduction . . . . .	9
I. Some Fundamentals and Puzzles: The prevalence of subsidies, goals of governments and the political structure of the fossil-fuel industry. . . . .	11
1. The Prevalence of Fossil-Fuel Subsidies . . . . .	11
2. Government Goals . . . . .	14
3. Types of Fossil-Fuels . . . . .	15
II. The Demand for Subsidies . . . . .	17
III. The Supply of Subsidies . . . . .	20
IV. Conclusions for Reformers . . . . .	26
References . . . . .	29
About the Author . . . . .	33

The Politics of Fossil-Fuel Subsidies

## EXECUTIVE SUMMARY

The latest global assessment puts the known energy subsidy at far more than \$300 billion annually—a total that probably under-counts the full expense since it includes only consumer subsidies in the 20 non-OECD countries that subsidize the most. Reforming—ideally eliminating—such subsidies is a widely discussed “no-lose” (or “win-win”) policy that could improve energy security, protect the environment and also promote economic growth. Such policies have gained particular attention as an initial strategy for developing countries that are under pressure to help address problems such as global climate change, but are reluctant to spend their own resources on policies that do not align with their own national goals (e.g., Schmidt et al., 2008; Victor, 2009).

While win-win policies are ideal in theory, in practice well-organized groups usually benefit from existing policies, such as subsidies, and thus are poised to block reform. Moreover, policy reforms that generate positive net benefits may not be viable politically unless they also reflect a wide array of social goals about the allocation of benefits and costs. Thus the actual experience with subsidy reform is mixed at best. Some governments have reduced subsidies, while in many other countries the cost of subsidies has actually risen sharply in recent years as many governments have struggled to insulate consumers from the full rise in the cost of fossil fuels (World Bank, 2009, chapter 4).

This paper argues that the failure to reform subsidies fully lies in the failure to appreciate the political economy of subsidy policies. While subsidies are abhorrent to economic analysts and can be a particularly pernicious form of public policy, in most cases subsidies exist because they are rooted in a political logic that is often difficult to alter. The interest groups that demand subsidies are usually well organized, and the provision of a subsidy usually makes those groups even more aware of their interest in sustaining the subsidy policy. Further, the entities that supply subsidies often find political advantage in providing this costly service. These political facts make it particularly difficult for policy-makers to separate the purely interest-based political purposes of subsidy and the many “legitimate” purposes of this form of government policy. Government might use a subsidy to help provide energy services to low-income communities as part of a worthy effort to redistribute income or help alleviate poverty; at times, there is a case to be made for nurturing infant industries; and some subsidies are also geared to help address externalities such as environmental degradation.

Political economy analysis often begins with the standard assumption that government leaders’ act with the goal of staying in power. Policies that provide subsidies often help leaders achieve that goal by channelling resources to interest groups that could affect government survival, such as by voting or by donating to their political campaigns. This paper uses that logic of survival to identify some attributes of interest groups that affect their ability to organize politically and demand subsidies from policy-makers. We look at broad, “populist” subsidies—which are often prevalent in democracies whose leaders are accountable to a broad electorate—and also narrower subsidies levied on particular interest groups.

Once a subsidy is created, regardless of its original purpose, interest groups and investments solidify around the existence of the policy and make change difficult.

We suggest that it is important to examine both the demand for and supply of subsidies. Relatively straightforward mobilization of interest groups can explain much of the demand for subsidy. But that perspective is unable to explain why the supply of subsidy takes such different forms. Here we suggest that the central problems actually lie with supply—a subsidy is a readily available mechanism for governments (or their agents, such as state oil companies) and requires very little administrative capability. Subsidies are pervasive not so much because demand for them is so large but because the subsidy supply mechanisms exist and it is politically difficult for many governments to resist using them. For many governments, there are no other readily available mechanisms for satisfying important interest groups.

### The Politics of Fossil-Fuel Subsidies

We also explore the “populist paradox”: the cheapest fuels are often provided by governments that do not face popular referenda. One reason for this paradox is that while these governments do not face elections they do confront other existential tests. In particular, they fear instability. And they believe that one way to reduce those dangers is to provide highly visible services at low cost. Once they begin this process it is difficult to stop. And since many of these governments are oil-rich petrostates, subsidy is a readily available means of supplying visible goods and services to unrest-prone populations.

We also explore why subsidies seem to concentrate on consumers rather than producers, although the exact evidence for that claim is hard to pin down. The main reason why politically well-organized interest groups do not seek overt subsidies is that they have access to a wide array of other mechanisms that are even more effective and politically less visible than overt subsidies. Most of the time when a government creates an overt subsidy, it is not because it is ignorant about the cost of such policies. Rather, it might demonstrate that a government has few other instruments in its arsenal.

One of the most important reforms that governments “in business” have adopted is to put the business functions at arm’s length so that government is less inclined to meddle. Moreover, government is not monolithic. The arm of government that sets subsidy policy may have little control over the arms of government that would actually implement a social policy that might use resources more effectively than through a subsidy. Each of these arms of government is subject to its own political forces.

This paper suggests four lessons for reformers—both those inside countries and external parties, such as multilateral lending institutions that want to help countries adopt durable subsidy reforms. First, any reform strategy must begin with the political logic that led governments to create the subsidy. Fixing the subsidy problem requires a political strategy that compensates powerful interests that consent to a change in policy—or finds a way to inoculate policy reforms against their opposition.

Second, an effective political strategy usually benefits from transparency in the cost and purpose of the subsidy. Many subsidies—especially the indirect, covert subsidies that appear to be particularly large and pernicious—survive because the parties that carry the burden are unaware of the cost they are paying and because opacity makes it difficult to pursue an informed debate over the legitimate purposes of the subsidy.

Third, where subsidies are unavoidable—either because they are rooted in an unwavering political calculus or because they serve legitimate public purposes—then better subsidy design can usually help reduce any pernicious effects of the subsidies and also ease the task of reforming them in the future.

Fourth, and finally, subsidy reformers can have more success when governments have better administrative tools in their arsenal. Broad-spectrum subsidies are blunt instruments that are nonetheless popular because governments often have few choices. And the path dependence that is evident in their use makes it additionally difficult for a government to find an incentive to build alternative administrative tools.



The Politics of Fossil-Fuel Subsidies

## INTRODUCTION

Governments spend staggering sums of money subsidizing energy—especially fossil fuels. Increasingly, though, subsidies are also being made available to other forms of energy, such as renewable power. The latest assessment puts the total global energy subsidy at more than \$300 billion U.S. annually—a total that probably under-counts the full expense since it includes primarily easy-to-measure direct transfers, but captures more complex subsidy mechanisms in tax, credit, insurance and regulatory interventions much more inconsistently (IEA, 2008).

Analysts are widely critical of these policies. Subsidies conflict with sound energy policies in two ways: first, they are expensive, diverting needed public and private funds from other priorities; and second, the subsidized activities often directly harm environmental quality. Indeed, in many of the poorest countries the government spends many times more on fuel subsidies than on health and other important public welfare expenditures (World Bank, 2009, Table 4.1). Such subsidies lead to excessive consumption of energy services, which multiplies the harmful impacts of pollution and energy insecurity that come from most energy systems.<sup>1</sup> And usually such subsidies offer much greater benefit to populations that already consume large quantities of energy-intensive goods and services. And while improving life for the poor is often cited as a motivation for subsidizing energy, the people typically receive very little benefit. A central recommendation in many studies of energy policy is that governments should use subsidies only where essential, such as research support for new technologies, and dismantle the rest (e.g., IEA, 2008). Indeed, the growing attention to the twin dangers of global climate change and rising energy insecurity has led a wide array of policy experts to advocate such subsidy reform as an essential first step toward serious energy policy. Subsidy reforms are widely seen as inexpensive policy options; in most cases, such reforms would provide huge benefits at negative total cost (e.g., World Bank, 2009). Pearce (2003) shows reductions in CO<sub>2</sub> emissions that would far exceed what the Kyoto Protocol would deliver just through removal of subsidies on fossil energy. Subsidy reform is part of a growing interest in “no lose” (or “win-win”) types of policies that could be adopted—especially in the developing countries that are reluctant to spend their own resources to address the distant and global dangers of climate change (e.g., Schmidt et al., 2008; Victor, 2009). Rai and Victor (2009), for example, show that better regulation of distribution companies in India would reduce the large and poorly-targeted subsidies that many users enjoy by paying below-cost power tariffs and, in some cases, paying no tariff at all. These reforms would improve the financial health of India’s power sector while also reducing consumption of coal and lowering emissions of CO<sub>2</sub> and most other air pollutants. While win-win policies are interesting in theory, in practice well-organized groups usually benefit from existing policies and thus are poised to block reform. Moreover, policy reforms that generate positive net benefits may not be viable politically unless they also reflect a wide array of social goals about the allocation of benefits and costs.

---

<sup>1</sup> There is an extensive literature outlining the harms of natural resource subsidies, including those that apply to fossil fuels. Broadly on environmentally harmful subsidies of all types see IMV (2005). Specifically on the perverse nature of energy subsidies, with nearly all studies arriving at similar conclusions that subsidies lead to over-consumption, misplaced priorities and environmental harm, see World Bank (2009); IEA (1999); IEA (2008); Bacon and Kojima (2006); Guiyang (2007); Rai and Victor (in press), looking at implicit subsidy and environmental emissions due to poor administration of the power sector in India; and OECD (2003, especially the chapter by Pearce). This present paper focuses on the political economy of those energy subsidies—in particular, subsidies related to fossil fuels. As such, this paper is part of several broader literatures that span not only the effect of energy pricing on the behaviour of energy markets and their environmental harm, but also the political economy of natural resources, which has examined topics such as how the security of property rights and the quality of government affect the allocation of rents surrounding natural resources (e.g., Collier, 2007, pp. 38–52; Karl, 1997; Deacon & Mueller, 2004; Ross, 2001; and Sachs & Warner, 2001).

### The Politics of Fossil-Fuel Subsidies

The opportunity to improve policy through subsidy reform is hardly a new idea. Subsidy reform has always been high on the list of policy changes that experts advocate; yet, in many cases, the patients are not following the doctor's orders. While some governments have reduced subsidies, in many other countries the cost of subsidies has actually risen sharply in recent years as many governments have struggled to insulate consumers from the full rise in the cost of fossil fuels (World Bank, 2009, Chapter 4). And the problem of subsidies seems prone to spiral in some countries. Energy consumption is rising particularly rapidly in oil- and gas-producing countries because higher prices for their export products allow many of them to lavish ever larger subsidies on domestic consumption (IEA, 2008). A careful study of how several dozen governments have responded to higher oil prices shows that oil exporters are particularly unlikely to allow higher world prices to be reflected in oil products within their home markets. On average, in those countries, only about one-third of the run-up in oil prices in 2004–2006 was reflected in final prices for gasoline and diesel (Bacon & Kojima, 2006, Table 1). And in 2007–2008, as world energy prices rose even higher (until the economic crash of late 2008 saw energy commodities tumble), a wider array of countries that had been making progress with subsidy reform reversed and postponed their reforms (Kojima, personal communication). Developing countries, especially of the oil-exporting variety, were less likely to pass through the full rise in world fuel prices in comparison with industrialized countries (Kojima, 2009).

This paper argues that the failures to reform subsidies fully lie in the political economy of subsidies. While subsidies are abhorrent to economic analysts and can be a particularly pernicious form of public policy, they mainly exist because they are rooted in a political logic that is often difficult to alter. The interest groups that demand subsidies are usually well organized and the provision of a subsidy usually makes those groups even more aware of their interest in sustaining the subsidy policy. Further, the governments that supply subsidies often find political advantage in providing this costly service. Tackling the subsidy problem requires policy reforms that take these interests seriously—finding ways to isolate them and inoculate the policy process from their influence or to reward them for consenting to policy reforms. A central finding of this paper is that the growing awareness of pernicious energy subsidies has not been matched by the needed attention to politically viable strategies for policy reform.<sup>2</sup>

This paper examines the question of subsidies from three broad perspectives. First, it examines the demand for subsidies and finds that demand varies enormously. The interest groups that favour subsidies are organized in different ways and also vary in their ability to influence policy.

Second, it suggests that the willingness and ability of a government to supply a subsidy may be even more important than actual demand for the subsidy. In particular, a government's choice of subsidy policies hinges, in part, on the array of other policy instruments it has available. In many of the most highly subsidized countries, that array is very narrow—subsidy is a blunt, broad-spectrum instrument that is chosen in part because few other alternatives are available. Better instruments of governance would make it possible to reduce the use of subsidy.

Third, the paper suggests some practical measures that can help with subsidy reform, but is not optimistic that reform can be achieved quickly and easily. Reform hinges on shifting demand for subsidies and altering their supply—the former requires careful political engineering and the latter requires administrative reforms that are feasible, but require diligent investment and attention.

---

<sup>2</sup> Among other studies that take a political economy approach to understanding fossil-fuel subsidies see Anderson (1995); Gupta et al. (2000); Koplow (2007); and, notably, Zahariadis (2008).

## I. SOME FUNDAMENTALS AND PUZZLES: THE PREVALENCE OF SUBSIDIES, GOALS OF GOVERNMENTS AND THE POLITICAL STRUCTURE OF THE FOSSIL FUEL INDUSTRY

Before turning to theories that can explain the prevalence of fossil-fuel subsidies, in this section we explore three fundamentals. First is that the prevalence of fossil-fuel subsidies varies enormously, which suggests that the forces that give rise to subsidies also vary markedly. One aim of the present study is to suggest some reasons for that variation. Second is that the goals of government also vary, and those goals probably also help explain the prevalence of fossil-fuel subsidies. Third, the level and type of subsidy may also vary by fuel because fuels differ in how they affect consumers, organized labour and other interest groups.

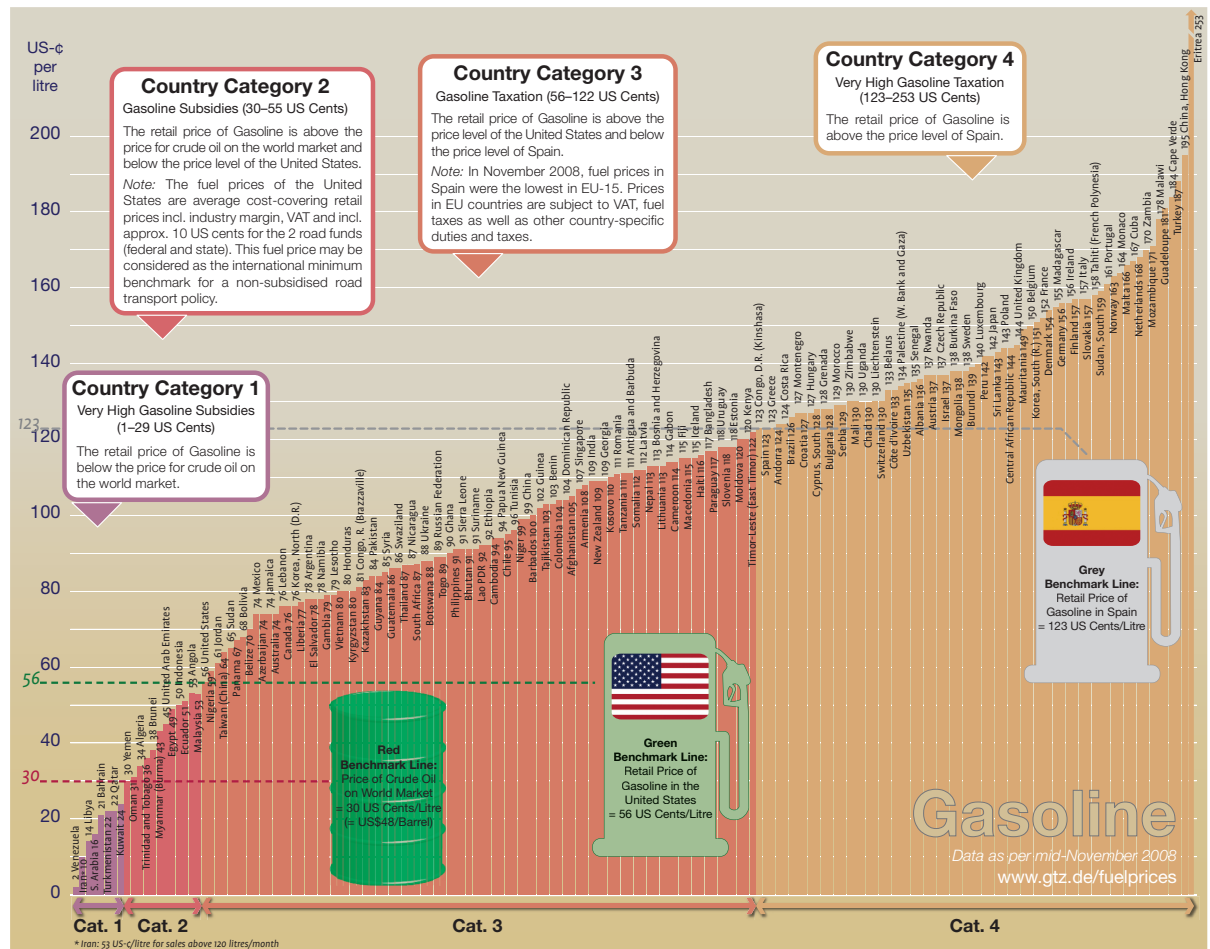
### 1. The Prevalence of Fossil-Fuel Subsidies

It is difficult to make general statements about the prevalence of subsidies and their trends because the underlying political and administrative forces that explain the size and organization of subsidies vary so markedly within and across countries and fuels. To illustrate the wide range, we examine a recent, careful review of subsidies and taxation for gasoline (petrol), summarized in Figure 1. The variation across countries appears to be dramatically larger than the variation in oil prices across the entire history of the oil industry (Wagner, 2008). The countries fall broadly into three categories, reflecting the level of subsidy, although calculating in the full array of subsidies is difficult because there isn't full agreement on what should be classified as a subsidy and because subsidies come in many forms. Only those revealed in the final retail price of the product are shown in Figure 1, which presents the difference in prevailing and world prices. And Figure 1 reports only petrol prices; there are also interesting variations in diesel pricing and also important differences within countries between diesel and petrol pricing arrangements—which usually reflect different political organization and administration around the different fuels. (Diesel, for example, is generally applied to a wider array of purposes than transportation, which makes it harder to focus subsidy on use. In many countries, diesel users are often particularly well-organized freight haulers.)

At the far left side of the chart are countries where essentially all fuel supplies are subsidized—often to extreme levels that make fuel nearly free. Turkmenistan has the lowest fuel prices on Earth, although Iran (where prices are nearly as low) is actually the world's largest subsidizer of fuel because the Iranian population is so large and its consumption of fuel so prodigious. Iran's fuel subsidy totals about \$55 billion U.S. a year, or roughly one-seventh the total of all world energy subsidies (see Figure 2).

The Politics of Fossil-Fuel Subsidies

FIGURE 1: RETAIL GASOLINE PRICES WORLDWIDE.



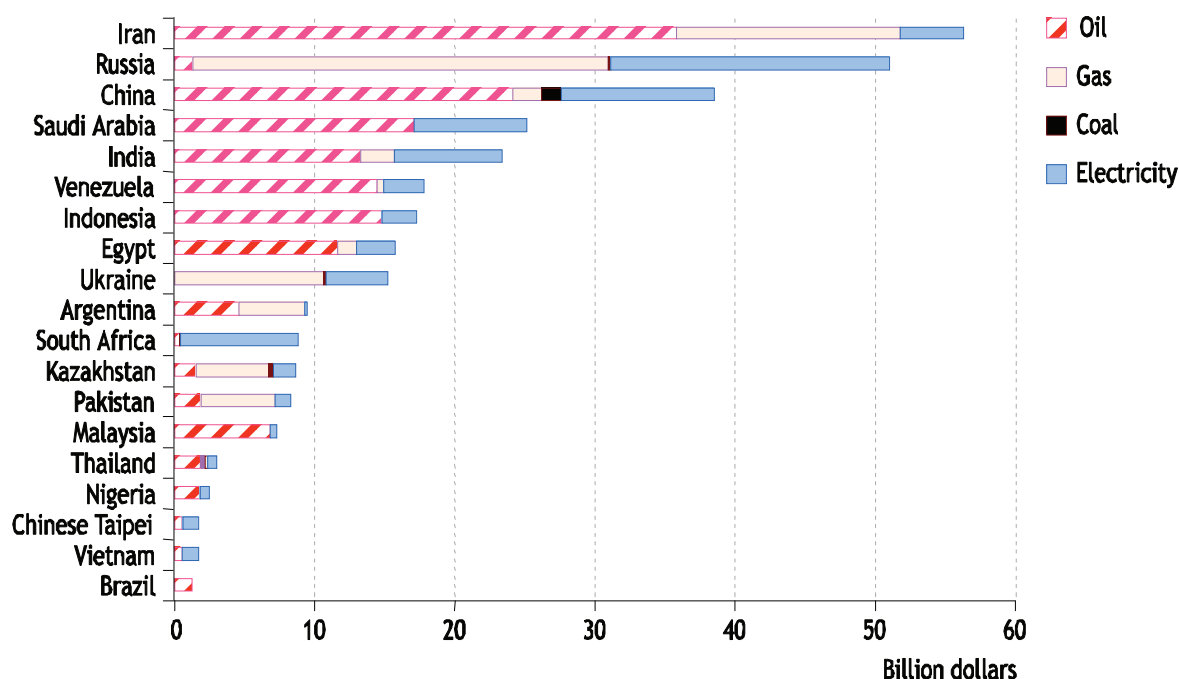
Source: Wagner & GTZ (2008).

At the far right side of the chart are the opposite extremes—countries that apply massive taxes to energy products. Turkey has the world’s most costly fuel, and the group of high-taxation countries is dominated by western European nations. These countries are often praised for their diligent efforts to tame the harmful environmental and security “externalities” of dependence on fossil fuels. In reality, however, these high taxes usually exist because fuel taxation is a convenient way to raise funds for a wide array of government purposes. Indeed, high fuel taxation in these countries often pre-dates concerns about externalities from the energy system. When the EU devised its Emission Trading Scheme, which is truly targeted at emission externalities, it added the Scheme to its existing tax structure rather than using it to replace taxes. And the Scheme does not apply to transport fuels, which are one of the largest energy-related sources of tax revenue.

**The Politics of Fossil-Fuel Subsidies**

In the middle of Figure 1 are countries that often have a mix of both patterns. They tax some fuels while subsidizing others. India, for example, is a famously large subsidizer of fuels with the goal of making energy services more affordable to the country’s extreme poor population. (Many of those subsidies do not actually benefit poor households; we will consider that problem later.) The total cost of India’s fuel subsidy is about \$15 billion U.S. per year, although it is hard to measure total subsidy since the direct cost of subsidy (about \$7 billion U.S. per year) is multiplied by the many indirect ways that fuels and energy services are subsidized, such as by providing farmers with power and irrigation services at low regulated prices (Gulati & Narayanan, 2003).<sup>3</sup> But India also taxes some fuels heavily. Net earnings from fuel taxes are about double the cost of subsidy; thus India is not only one of the world’s largest subsidizers of fuels, it is also among the largest taxers. This reveals a difficult definitional problem: some studies of “subsidies” look only at policies that meet a strict definition of setting prices below the full cost of the energy service. In reality, since energy services are usually heavily taxed, the true “subsidy” in energy services is often much larger because it includes both the below-cost service and the avoided taxes. By this broader definition, actual “subsidy” is much larger; for most countries, efforts at subsidization arise through the tax code and often involve a cross-subsidy. One part of the economy is taxed more heavily to allow other parts to avoid such punitive taxes or even to enjoy below-cost services. This distinction matters because, as we will see, effective strategies for subsidy reform require an understanding of how governments use their taxation systems to deliver political benefits.

**FIGURE 2: ENERGY SUBSIDIES IN NON-OECD COUNTRIES IN 2007**



Source: IEA, 2008

<sup>3</sup> The \$7b U.S. figure is for fiscal 2008 (\$6b U.S. in fiscal 2009) and reflects the budgeted petroleum subsidy from the Indian federal government. See [http://indiabudget.nic.in/ub2009-10\(l\)/bag/bag3.htm](http://indiabudget.nic.in/ub2009-10(l)/bag/bag3.htm). The higher \$15b U.S. number (and the tax revenue numbers reported below) are based on calculations by Varun Rai (personal communication) from the Government of India’s Ministry of Petroleum and Natural Gas (PPAC division).

The Politics of Fossil-Fuel Subsidies

## 2. Government Goals

The standard assumption in political economy is that government leaders act with the goal of staying in power. Policies that provide subsidies could help leaders achieve that goal by channelling resources to interest groups that could affect government survival, such as by voting. In the analysis that follows we will focus mainly on this logic of political survival, suggesting some attributes of interest groups that affect their ability to organize politically and demand subsidies from policy-makers who are keen to survive. These factors are often called “populist” because most analysis focuses on the ways that broad-based subsidies affect electorates in democratic countries. However we prefer the simpler term “interest-based” because not all subsidies are aimed at popular voters.

In addition to interest-based factors, governments also often pursue many other goals when they conceive subsidy programs for fossil fuels. They might use a subsidy to help provide fossil fuel services to low-income communities as part of a worthy effort to redistribute income or help alleviate poverty. That goal may not simply be interest-based, especially in countries where the poor are not well organized politically. Subsidies might be part of a program to nurture infant industries, as the Persian Gulf states have done by offering hydrocarbon feedstocks at prices that are probably below opportunity cost in a successful (if costly) effort to attract petrochemical industry (IEA, 2008). Similarly, government may offer subsidies to promote exports. Finally, some fossil-fuel subsidies have been inspired, in part, by efforts to protect the environment. Subsidies for liquefied petroleum gas (LPG), electricity and improved cookstoves have been used across the developing world partly with the goal of encouraging a shift away from more polluting wood and charcoal (e.g., WEC/FAO, 1999; Howells et al., 2006; and Barnes, 2007). Some governments have justified subsidies for more energy-efficient equipment and practices on the logic that consumers, on their own, would not invest enough in saving energy resources. Moreover, the marginal cost of new capacity was rising and thus, in theory, all customers would benefit from less-expensive programs that deferred the need for new construction that rising demand for power would require.<sup>4</sup> That interest in saving resources is rooted, in part, in concerns about the environment. The European Union is partially funding a large upgrade of Ukraine’s natural gas pipeline network for a variety of purposes—including the reduction of environmentally harmful leaks and also improvement in energy supply systems that would benefit both Ukraine and the mainly European consumers who depend on gas that transits Ukraine (Associated Press, 2009).

The actual practice of subsidy is often a mix of purely interest-based political and “legitimate” purposes of government. With so many goals, there is rarely a shortage of inspiration for government to invent a subsidy to serve some purpose.

A proper understanding of the political economy of fossil-fuel subsidies requires not only an explanation of the goals and political forces that lead governments to create subsidies, but also of why some policies are transient while others persist often long past the original goal has been achieved. Once created, regardless of its original purpose, interest groups and investments solidify around the existence of the policy and make transition difficult. These problems are hardly unique to subsidies—they apply to most forms of public policy, such as tax regimes that are difficult to alter once in place (e.g., Ettliger, 2002). We will consider such transition “traps” in more detail below.

---

<sup>4</sup> Whether these programs work has long been a subject of heated debate, and those same debates are now unfolding as higher energy prices and environmental worries lead many governments to make more extensive use of such programs. On the controversy see, for example, Joskow & Marron (1992) and Lovins (1994). Where these programs have not worked as intended, fingers have pointed in many directions—including, in particular, electric power deregulation, which has often made it harder for societies to devise policies that encourage optimal social investment.



The Politics of Fossil-Fuel Subsidies

### 3. Types of Fossil Fuels

This paper is about subsidies for fossil fuels broadly, but fossil fuels differ in their physical and political attributes. It is plausible, therefore, that the types of subsidy also vary systematically across different fossil fuels. For example, there is a particularly wide variation in the final price for gasoline, as shown in Figure 1. However, looking at Figure 2, for example, it is also clear that other fossil fuels, notably coal, are not as widely subsidized as oil products. However, as with most data used to assess subsidies, it is hard to pin down exact subsidy levels. Coal, for example, receives relatively small direct subsidy as a final product, but coal prices in much of the world are probably lower than true full cost due to soft budgets that prevail in many state-owned coal mining and transport companies, as well as relaxed environmental standards for site remediation, and for air and water pollution.

Systematic variation across different types of fossil fuels is probably due to at least four different political forces at work. First, the consumers of different fossil fuels are organized differently. As economies mature, consumers generally become less exposed to most fossil fuel prices, except the price of petroleum products that they purchase directly. (Most other fossil fuels are embodied in other products and services, such as electricity.) This may help explain why subsidies, especially populist subsidies, are more prevalent for petroleum products than other fuels and why large petroleum subsidies are particularly evident in countries that hold contested elections, such as Iran and Venezuela.<sup>5</sup> Because opportunity costs are often not so visible in state budgets, many societies have a particularly difficult time treating such costs on equal footing as on-budget “real” costs. The largest oil subsidies usually reflect this phenomenon—in oil-producing nations it is easier to sell oil at a discount because it comes from domestic sources. Big oil importers, however, have a harder time mustering political support for similar subsidies because import bills are a visible and unavoidable part of the state budget.

Second, the industrial organization of the users of fossil fuels also varies by fuel. Gas and coal, in particular, are disproportionately used as a factor of production in heavy industry that makes final products such as cement, steel and electricity. These firms, especially if they are well organized and influential, have many different ways to gain economic advantage—overt subsidies are only one of many policies they might favour. Moreover, broad-based subsidies may not be particularly attractive for these firms because alternative policies may be better at concentrating rents in their hands. A standard assumption is that firms will favour policies that allow for lower factor costs, but often the most energy-intensive firms are state-owned corporations that can compensate for factor costs in many ways because they have the resources of the state at their disposal. State electric power companies, for example, may not be particularly organized to seek overt subsidies on the fossil fuels they burn because they can readily tap other instruments that are especially available to state enterprises, such as loans from state banks and other “soft” budgets (e.g., Victor & Heller, eds., 2007).

Third, the different fossil fuels have varied effects on politically important factors of production, such as labour. In general, oil and gas production is not very labour-intensive; coal, by contrast, uses many workers. And most oil is not produced in home markets whereas most big coal consumers produce nearly all of their coal at home. Thus the subsidy in oil tends to concentrate on the oil products themselves because the benefits of such subsidy are politically highly visible whereas the opportunity costs are relatively easy for domestic

---

<sup>5</sup> This may also help explain some of the anomalies in Figure 2. For example, Russia is striking in that most of its fossil energy subsidies are in gas rather than petroleum. That outcome reflects that gas prices (and heat) are more visible to average Russians and that the oil and gas industries are organized quite differently. Oil is mainly in private hands where there are strong incentives to fetch world prices for products. Gas, by contrast, is dominated by a state enterprise (Gazprom) that has mixed incentives—it earns more with higher retail prices, but fundamentally it thrives by preserving its monopoly position, which requires public support and a visible role in providing state services (see, generally, Victor, 2008).

### The Politics of Fossil-Fuel Subsidies

producers to hide and shift to less well-organized groups. With coal, by contrast, there are many subsidies that are much harder to measure because they accrue much earlier in the value chain. In Germany, for example, a thicket of coal procurement and pricing rules preserved jobs for German miners even though imported coal from Poland and points more distant would have been much cheaper (Anderson, 1995). In the United States, the coal lobby helped ensure that when the government allocated emission credits under its acid rain control program, existing coal-fired power plants were advantaged by getting those credits for free according to their historical emissions (Ellerman et al., 2000).

Fourth, countries vary enormously in the ability of government to deliver rents to well-organized interest groups. Put differently, the well-organized interest group must rely on government as its “agent” to supply subsidies and other advantages. Even when the agent has an interest to supply helpful policy, it may lack the ability to deliver. For example, consumers in China—especially well-connected users of large amounts of electricity—have an interest in keeping power prices low. The government used to do this, in part, by keeping coal costs low through price regulation; historically, the government has used the state planning apparatus for that purpose—it has planned the flows of coal and kept prices low enough that vital economic interests were not harmed. But reforms in coal markets have largely undercut the role of state planning in the Chinese coal market; efforts to cap coal prices are now largely ineffective and thus government has been forced to exert leverage by regulating the power companies (most of which it owns) and by forcing them to absorb higher coal prices (see generally IEA, 2007; IEA, 2009; and Houser & Rosen, 2007). This is an important point for reformers to keep in mind, for many subsidy reforms require new forms of administration (e.g., direct payments to producers or users) that governments may not be able to implement without more capable and differently organized government agencies. And for governments that are not capable of mustering the needed administrative apparatus, a special premium might be placed on mechanisms that don’t require much administrative involvement after legislation.

As a general proposition, governments probably concentrate their supply of subsidies in areas where they directly control the factors of production. Thus in highly regulated economies, government may deliver subsidies through the control over prices. In liberalized economies, the hunt for subsidy is different. For example, many western governments have provided subsidies to segments of the fossil fuel industry through their control over licences charged for mineral resources. Fear of a coal shortage at the end of the 19th century led the U.S. government to offer especially attractive mineral rights for coal. (Even when it became clear that the country was awash in coal resources, the generous mineral treatment nonetheless stayed in place.) In the 1990s when the U.S. government wanted to encourage production of indigenous oil and gas it offered leases of federally controlled territory in the Gulf of Mexico (among other places) at low rates as well as attractive tax terms. Many countries, notably the U.S., have different rules that apply to direct government expenditure and to tax treatment, with the latter easier to hide from scrutiny and requiring fewer politically costly actions by legislators. (On this issue generally, including some attention to tax treatment for fossil fuels, see Ettliger, 2002.)

The prevalence and organization of subsidies also probably varies between the “upstream” of the energy industry, such as in the production of primary fuels and in the conversion of fuels into useful products (e.g., electricity generated by burning coal), and in the “downstream” provision of final products. Most studies have concentrated on the downstream segment—that is, subsidies aimed at affecting the prices that consumers pay. But the politics of subsidies require that attention be paid to producers and consumers alike.



### The Politics of Fossil-Fuel Subsidies

In any particular application of a subsidy, the political forces at work are usually much more complex than the few key factors identified above. For example, Anderson (1995) has explored coal subsidies in Europe into the 1990s and found that subsidies are more likely when an industry is in decline and when workers are generally low-skilled and thus highly concentrated geographically. Moreover, his study suggests that in poor countries it is harder to sustain subsidies for coal because the fuel accounts for a much larger share of GDP and thus subsidies are more costly for industries that pay higher prices to cover the cost. In the early stages of development, a low coal cost is particularly important. In Europe, by contrast, a higher level of economic development means that coal has generally been less pivotal to the economy and thus it has been easier to sustain subsidies that are valuable to the concentrated coal miners and paid by a diffuse and less suspecting array of users. Anderson has also shown that the shrinking of the coal industry and other factors have finally made it possible for governments to roll back subsidy programs—a trend only barely evident when Anderson was writing and now much more fully realized.

## II. THE DEMAND FOR SUBSIDIES

We suggest that there are two important lenses through which subsidies can be examined. First, in this section, we examine the *demand* for subsidies both by consumers and producers. Second, in the next section, we examine the *supply* of subsidies. In so doing, we explore the various ways that governments actually deliver subsidies and how those compare with other instruments of public policy. The standard conclusion in studies on energy subsidies is that the best way to fix them is to find a way to reduce demand for subsidies. We will suggest here that the central problems actually lie in their supply—a subsidy is a readily available mechanism for governments (or their agents, such as state oil companies) and requires very little administrative capability. Subsidies are pervasive not so much because demand for them is so large, but because the subsidy supply mechanisms exist and it is politically difficult for many governments to constrain them.

A subsidy is one of many distributional mechanisms available to governments. How a government uses this instrument depends on what people seek—the demand for subsidies (and other policies), which is the subject of this section—and what the government is willing and able to supply.

How will political interests that want a subsidy organize themselves to get what they seek? There is a maxim in the study of politics: small, concentrated interest groups find it easier to organize themselves, while large and diffuse groups face much higher costs of organization (Olson, 1965; Stigler, 1971; and Peltzman, 1989). Much of the demand for upstream subsidies probably reflects this basic logic. A small number of well-organized firms can readily identify policies that would serve their interests. Because their numbers are small and their interests align, they find it relatively easy to bear the burden of organizing an effective political lobby.

The ascendant industries of every era probably follow this logic and demand subsidies wherever they think their efforts will be successful. In the 17th century, the British salt industry sought a government subsidy to raise a British national champion in salt supply that could continue to supply the nation in the event that France cut off vital supplies (Kurlansky, 2003). In the late 19th century the railroads settled the American west in part with massive grants of land and minerals. The western oil industry—notably the “seven sisters” that controlled most oil supplies until new entrants and nationalization shrunk their influence—obtained overseas supplies in part by relying on the huge political influence and security that their governments provided

### The Politics of Fossil-Fuel Subsidies

in the Middle East (Yergin, 1993). Today's ascendant industry, renewable energy, is doing the same.<sup>6</sup> Although it is a proposition still to be tested, it is probably the case that declining industries command more subsidy than the ascendant, for the former is usually already well organized while the latter is often too infant to form an effective lobby. In the U.S., subsidies for new energy industries tend to be narrow and concentrated on well-organized groups—biofuels standards deliver rents to well-organized farm groups; renewable power standards have delivered most benefits to the concentrated and well-organized wind lobby. At this writing, the solar lobby is getting organized and also gaining a share for itself.

Nearly all subsidies display elements of path dependence and lock in. The political costs of organizing a lobby to obtain a subsidy are often high; once a policy is in place it can be even more costly to organize for a change. And firms that see a credible policy in place begin to sink capital and expectations around the existence of the policy, which makes them increasingly willing and able to invest the resources needed to defend the policy. The biofuels industry is a good illustration of the phenomenon. In the U.S., a small and well-organized coalition of farming interests (led by large grain-handling companies that were well-versed in organizing political lobbies) created a production subsidy for ethanol made by fermenting and distilling maize (Koplow, 2006). In an era of low commodity prices, this lobby found ready interest in the agriculture states. (As in many countries, political representatives from agricultural areas are disproportionately influential in U.S. policy.) Once the policy was in place, the industry expanded and soon learned that a barrier to larger size was the absence of significant demand for ethanol—and thus the lobby organized to make it easier to build refuelling stations that supplied ethanol, it persuaded congress to mandate the use of ethanol blends across the country, and it obtained a special provision in U.S. fuel economy regulations that gave “flexible fuel” cars a generous credit against corporate average fuel-economy standards even though most of those cars never burned ethanol in practice.

An axiom of regulatory politics is that self-interested lobbies seek regulation that creates barriers to entry (Stigler, 1971). Lobbies are able to justify incurring the cost of organizing and pushing for policies only if they can appropriate the benefits largely for themselves. A policy that allows large numbers of new entrants might yield a transient benefit for its organizers, but those benefits would soon be stripped away. In the U.S. biofuels policy, the supporting lobby coupled a domestic subsidy to a tariff on imports, which would ensure that nearly all the benefits from forcing greater use of biofuels would accrue to the same interests that organized the policy. Thus biofuel producers that have very low costs and relatively low environmental impact—such as Brazil's sugar-based biofuels industry—have a strikingly small share of the U.S. biofuels market.<sup>7</sup>

---

<sup>6</sup> In Europe, renewable electric power suppliers have thrived under generous feed-in tariffs that are reliably available rewards for production. While some of those tariffs have been reduced over time, the industry is sufficiently organized politically to ensure that the tariff structure aligns with their own costs. In the U.S., a similarly well organized industry has selected different policy instruments—renewable portfolio standards as well as tax credits—to achieve similar outcomes. In both cases, the industry is well organized and its rivals are either unwilling or unable to counter the advantage conferred by these policies. Renewable portfolio standard (RPS) standards have been eroded through new entry of eligible “green” sources, and the choice of “green” reflects political power. In Pennsylvania, the RPS includes waste coal—a reflection of the well-organized coal-burning lobby. Both cases share the attribute, common across many policies that special interest groups seek, that the true cost of the policy is not highly visible to the people who pay it. And political support is maintained by wrapping the particular industrial interest in claims of broader public purpose: salt and oil claimed public benefits of security; railroads promised to open savage lands and provide the economy with access to cheaper resources; renewable power offers the prospect of averting climate change and securing energy supplies. The more visible the public cost of policies that serve private interests, the more important it is to marry private interests with claims of public purpose.

<sup>7</sup> That tariff barrier includes a small exception for some “upgrading” of fuels in politically well-connected countries of the Caribbean (Yacobucci, 2006). The U.S. biofuels industry tolerates that exception because it does not much affect the total size of the market and because it was designed to prevent easy access to the U.S. market by the country that would be a most formidable competitor: Brazil. (They also include safety valves that helps to keep them from becoming politically too inconvenient. Through the end of 2008, policies also had fairly generous tariff clawback provisions that reduced their practical impact on trade levels.)

### The Politics of Fossil-Fuel Subsidies

These two effects of self-interested policy—a tendency to “lock in” and high barriers to entry—help explain why subsidies are particularly pernicious. Even in the face of growing and overwhelming evidence that biofuels offer few (if any) environmental benefits and that a U.S.-focused production strategy was forcing U.S. consumers to bear particularly high and growing costs, the policies have been unwavering.<sup>8</sup> Moreover, as Tullock (1975) noted long ago, such policies can lead to “traps.” Intended as transitory, once the benefits of the policy are capitalized—for example, through the sale of land used to produce a favoured fuel or in the construction of energy-intensive equipment—then the political costs of transition rise substantially.

In sum, upstream subsidies usually share a similar set of attributes. They focus on industries that are concentrated and well organized. They have a tendency to follow a path and, where possible, to restrict entry to prevent competition. They are usually justified as serving a public purpose, and they survive so long as their costs are not transparent and the public purpose seems to be honoured. The salt industry found it harder to gain public favour once canning eliminated the need for salt as a preservative. So far, the energy industry is still finding strong public support for claims that their policies promote security and protect the environment—even when those policies, as in the case of conventional ethanol, do neither.

The other major kind of subsidy is downstream, at the level of retail users. Politically, downstream subsidies differ from their upstream counterparts because the interest groups that favour them are organized differently. Almost always, downstream subsidies benefit a much larger number of more dispersed interests. Thus the political organization for a downstream subsidy must vary—the users themselves are unlikely to organize spontaneously on their own. The glue in most downstream subsidies, therefore, usually comes not from the beneficiaries but from the government and the political process, at least initially. Downstream subsidies are a visible way to deliver benefits in exchange for political support. In India, about 90 per cent of the subsidy in the power sector goes to farmers (Tongia, 2007). (India, as is typical of poor countries, is dominated by agriculture—the nation’s top employer.) Farmers are organized and they vote in India’s hotly contested elections. Where political support must be broad—as is necessary when a democratic government seeks election—then a broad subsidy is the result (e.g., Zahariadis, 2008).

As with upstream subsidies, downstream subsidies also exhibit strong tendencies toward path dependence and lock-in. India’s nearly free electricity for farmers was first instituted in the early 1970s by Indira Gandhi—the populist prime minister and leader of India’s long-standing dominant political force, the Congress Party. She was beloved by the poor for her policies, such as cheap electric power, even when those policies were disastrous economically (and probably also environmentally) for the country as a whole. Poor farmers who had cheap power bought pumps to irrigate their crops. The water tables declined; water logging and salination followed. They planted thirsty crops that would not be economically sound if the real cost of water and power had been charged. (One of the original rationales for setting low power prices for farmers was to ensure that pumped water would be as cheap as irrigation—a policy that, it was thought, would equalize farming returns around the country. For more on the history of this policy see Tongia, 2007.) A whole practice and expectation of cheap power emerged that will be difficult to unwind. Even in the best-administered parts of the country, such as the state of Andhra Pradesh, politicians continue to support cheap or free power for farmers even though they know the policies are disastrous. Farmers have come to depend on the policy, and they use it as a litmus test to judge whether politicians will serve their interests. These are referred to in the present paper as “populist subsidies” because they are rooted in the desire of politicians to be popular.

---

<sup>8</sup> The evidence on the neutral or harmful effect of conventional biofuels on environmental quality is massive. For a key early paper, see Farrell et al. (1996). For a recent and less technical overview of the debate, see Rotman (2008).

### The Politics of Fossil-Fuel Subsidies

Thus, some of the observed behaviour in energy subsidies can be explained by the simple laws of political demand. However, some severe paradoxes remain. Among them is the odd fact that “populist subsidies” are highly prominent in countries where there are no regular elections and thus politicians should not be so sensitive to popular whims. Saudi Arabia and Turkmenistan, for example, are homes to some of the cheapest fuel on the planet (Figure 1). Andresen (2008) reports that the countries with the highest level of political freedoms also have fuel prices that are about four times the level in the most authoritarian countries.<sup>9</sup> This observation is a paradox because high levels of political freedom should lead consumers to organize themselves, which in turn would yield a higher prevalence of populist subsidies. Clearly, then, the whole story about the political economy of subsidies does not rest with the demand for subsidies. We must look beyond—to the factors that explain when and how government *supplies* a subsidy in response to a well-organized interest group.

### III. THE SUPPLY OF SUBSIDIES

The central argument in this section is that a subsidy is only one of the many policy instruments available to a government. Whether it chooses this instrument depends on three factors. First, it hinges on the *goals* that the government is pursuing beyond simply satisfying the various constituencies that are clamoring for influence. Second, it depends on the *fiscal organization* of the government. Third, the choice of subsidy also depends on *other instruments* that are available to government. All three of these dimensions—goals, finance and alternatives—help determine the choice of subsidy. Much of the discussion about policy reforms to reduce subsidies has not focused on *why* governments select subsidy policies. Serious reforms require not only reducing the demand for a subsidy, but also increasing the ability of the subsidizing government to supply alternative policies that would be more effective and less costly.

First, the goals of government vary widely and a general theory of government is not offered here. However, one explanation for the populist paradox—that the cheapest fuels are often provided by governments that do not face popular referenda—is that even though these governments do not face elections they do confront other existential tests. In particular, they fear instability. And they believe that one way to reduce those dangers is to provide highly visible services at low cost. Once they begin this process it is difficult to stop. Thus, Venezuela, Indonesia, Malaysia and Nigeria—among many other oil producers—began using the huge windfalls from large oil export earnings in the 1970s to subsidize domestic supplies of oil products. Over time, they found that it was easier to increase the subsidy even when it created enormous fiscal burdens. Malaysia has largely ended this policy because it had no other choice—its domestic oil supplies have run short and its state oil company, Petronas, sees its future as an international company that is exposed to international competition and must pay (and thus charge) international prices. As Indonesia’s own domestic supplies have become more scarce, the government has scaled back subsidies, resulting in popular protests that have confirmed government fears that instability could follow sharp increases in the price of visible goods. (This phenomenon is hardly unique to oil products. Mexico, for example, regulates tortilla prices on the same logic with fiscal and other harms that follow—tortilla quality is lower and consumption is higher than would occur if market pricing were Mexico’s norm. A black market of illicit tortillas also thrives.) Venezuela’s domestic fuel pricing, by contrast, has barely changed because the government has not yet had to face such fiscal constraint.

---

<sup>9</sup> See Figure 3.1 in Andresen (2008). His thoughtful paper offers an explanation for this trend not shared by this author—namely, he argues that protest is the only vehicle for dissent in countries marked by low political freedoms (he focuses on semi-authoritarian countries). Thus those governments are particularly prone to subsidize fuel to sate protesters. The argument here is that these governments are rightly concerned about their stability but they choose fuel subsidies because they tend to have large amounts of energy-related cash on hand and they have few other policy instruments available.

### The Politics of Fossil-Fuel Subsidies

For oil exporters, the cost of a domestic subsidy is very low when the government feels the pain of low oil prices; it soars when oil prices are high and the government is flush with cash. Thus, in most cases, oil exporters face very little pressure to reform costly domestic subsidies unless their own production tapers off or if they find a reason to impose discipline on their budget. For those who want to encourage subsidy reform, this set of choices poses extreme difficulty because the political forces in favour of reform are mobilized only when the subsidy is least relevant and visible as a policy.

The most effective reform strategies in this area appear to require government to credibly remove itself from the large flow of money that comes into the country from oil-export operations. Brazil offers a salient model. Under a confident military dictatorship, the government created an independent oil company that controlled its own finances and was less prone to political meddling. As Brazil shifted from military control to a democracy, the oil company kept its independence and the continued success of economic reforms allowed successive Brazilian governments to remain at arm's length. (Even in the creation of the country's storied biofuels industry, government was mobilized with subsidy to create an infant industry in the 1980s. Although the Brazilian federal and state governments continue to intervene heavily in the domestic market for ethanol, mainly through the requirement that all gasoline be blended with 20–25 per cent ethanol, they no longer provide direct subsidies for production and their support for investments in new or expanded capacity has largely come to an end. By contrast, the Brazilian government provides substantial support to its fledgling biodiesel industry, both through assistance to establish plantations in some of the least developed areas of the country and through its blending mandates and graduated tax exemptions.) The government kept some subsidy in place but was able to wean the population from subsidized fuel by increasingly removing the government from the operation of the country's oil sector. It sold most of the state-owned oil company, Petrobras, to private investors—a move that made it ever more difficult to appropriate funds from the company for subsidies.

A corollary to the Brazilian lesson is that it is easier to reform subsidies when governments are convinced that political unrest will not follow the removal of subsidies. Almost every government that actually reduces subsidies does it in stages, which makes it easier to gauge political reaction and abandon the policy reforms if needed. It is hard to determine whether a general rule can be derived from this experience. The Brazilian case suggests that subsidy reform appears to be much easier to implement when the economy is generally doing well. Most of Brazil's subsidy reforms occurred when the Brazilian people were enjoying broader benefits of rapid economic growth. (And the marginalized populations that did not benefit from such reforms were, for the most part, not politically influential.) Yet other cases seem to show exactly the opposite. New Zealand undertook major subsidy reforms only when severe financial distress wracked the country and allowed reformers to take the reins of power.

Russia seems to exhibit both trends simultaneously—reform from prosperity and from crisis. In Russia, subsidies on energy products occurred in part because privatization of the oil industry gave Russian consumers little choice but to tolerate world prices—indeed, Russia is unusual in that only a tiny fraction of the country's subsidies are for oil.<sup>10</sup> In oil, the most successful reforms in pricing to remove most subsidies occurred in the wake of the country's severe financial crises in the 1990s. In natural gas supply, where the Russian state kept much firmer control over pricing because it kept monopoly ownership on the gas company Gazprom, efforts to raise internal prices were most active while the economy was growing in the 2000s. That economic growth was almost entirely due to higher prices for oil and gas exports. The difference between oil and gas may be explained by the fact that gas prices are much more visible to ordinary Russians.

---

<sup>10</sup> The IEA (2008) assessment suggests that worldwide, nearly half of all energy subsidies are for oil and oil products. Nearly all of Russia's \$50b U.S. in energy subsidies in 2007 flowed to gas and electricity.



### The Politics of Fossil-Fuel Subsidies

Successful reformers need to convince governments that rising living standards that occur in oil and gas-exporting countries when prices are high are a great opportunity to engage in subsidy reform—because the population sees other benefits—rather than an opportunity to use cash windfalls to cover the much higher cost of domestic subsidies.

In other countries, the goals may be quite different. In major energy-importing countries, for example, state goals include the weaning of the economy from dependence on imported fuels. Indeed, it is very difficult and dangerous to discuss subsidy reform in the absence of government goals. If those goals are broadly debated and accepted in a society, then they are also broadly legitimate. Subsidies can be an effective way to achieve such goals. For example, many governments—from essentially all members of the Organisation for Economic Co-operation and Development (OECD) to China and India—are today subsidizing research and development on renewable energy supplies and some fossil fuel technologies (e.g., coal power plants with “carbon capture”) on the premise that successful development of such technologies will help to reduce dependence on imported fuels while also managing the dangers of climate change. (On China, for example, see IEA, 2009.) Many of these arguments are not new; a fresh focus on subsidies has arisen with high energy prices, but there is no evidence that the arguments in favour of cutting subsidies are dramatically more compelling or effective today.

Second, the prevalence of a subsidy depends on the fiscal organization of government. Some fiscal systems create irresistible temptations for government to spend money on subsidies even though the long-term costs can be huge. In most cases, political leaders probably understand these costs but choose to ignore them. This tendency appears to be especially large in countries whose public budgets are dominated by earnings from natural-resource exports. Indeed, one of the central findings of the burgeoning literature on the “resource curse” is that the large influx of cash that comes from resource exports tends to shorten the time horizons of politicians and torque the political process to focus on the myriad ways to seize and spend earning windfalls (Ross, 2001; and Collier, 2007, Chapter 3). Countries avoid this trap usually when they have good systems of government—including strong democracies and fiscal systems that are relatively invulnerable to corruption—in place prior to the arrival of huge revenues.

A solution to this problem involves the creation of policies that are more “time consistent”—that is, policies that expose governments to the real cost of their actions today, rather than pushing costs into the future. Political scientists have long debated this issue because it arises in many areas of policy. In trade policy, for example, there are very strong incentives for governments to satisfy today’s constituencies by adopting damaging trade restrictions, even though such policies cause harmful long-term damage to the rules that the world has followed to open international trade—those tendencies are especially strong when government is fragmented and less able to focus on long-term policies (e.g., Lohmann and O’Halloran, 1994). Some governments manage this temptation well because they are structured to take a long-term perspective. Parliamentary governments with a strong civil service, for example, tend to adopt policies that reflect long-term perspectives (Moe and Caldwell, 1994). Some governments have many veto points that tend to lock policy into place (e.g., Tsebelis, 1995). For all other governments, special policy mechanisms are needed to “tie the hands” of government—in effect, to force the political process to consider the longer-term fiscal consequences of its actions rather than seize short-term political opportunities that might be popular but are fiscally reckless (e.g., North and Weingast, 1989).

One mechanism that has helped in this process is to shift export revenues to offshore funds so that windfalls that arise are not immediately available to the government, which helps to blunt the ability of interest groups to organize to seize these funds for their purposes. Norway pioneered this system, which shunts extra earnings into protected accounts when the price of energy exports rises. It helps explain why Norway, although flush with cash, is still able to resist the temptation to squander the resource. It charges among the very highest

### The Politics of Fossil-Fuel Subsidies

prices in the world for oil products (it is #4 on Figure 1). A few emerging markets have attempted to adopt similar policies. Azerbaijan, for example, has created an offshore oil fund. Angola and Nigeria have made similar efforts—as have some of the large oil-exporting states (Abu Dhabi and Kuwait among them). Such funds exist for many reasons—the autonomy of an offshore fund, for example, helps ensure that the resources are invested more widely and wisely than if the money were concentrated in the home market, and offshore funds also help to dampen adverse impacts on exchange rates that arise when large amounts of cash are held onshore in small countries—but the political benefits of their autonomy are particularly notable. With less money sitting in fungible government budgets, the political contest on how to allocate those funds is less intense. To be sure, such funds have not eliminated subsidization—Kuwait’s prices for final oil products are, for example, about one-third the western level (Stevens, 2008). Truly independent funds are still relatively rare and arise mainly when special enabling conditions exist—usually when a strong government is in place that has a long time-horizon. Those same conditions also generally lead to politics that are less prone to use subsidy as a way to ensure popular support of government because government is already more secure in its tenure.

Time inconsistency can be extremely costly in political systems that are structured to reward politicians who are able to deliver immediate benefits to politically mobilized populations even if such policies are extremely costly in the long term. India’s persistent troubles with fuel subsidies reveal this phenomenon. The Indian government obtains substantial revenues from fuel taxes that are mainly paid by a small number of high-income users. The revenues from those taxes are then pledged for future repayment of oil bonds that are used to cover the cost of large subsidies targeted to low-income populations. (In practice, those subsidies have come mainly to benefit middle-income users who, in turn, have organized politically to prevent their re-targeting to the poor populations that were the original intended beneficiary.) In effect, the government manages a huge system of cross-subsidy. Even when fiscally prudent managers control the government of India’s finance ministry—as in the present day—the temptation to lavish subsidies is irresistible. Part of the difficulty in reform is that the government has been unable to offer an alternative scheme that would deliver similar benefits to the same users. A series of political expectations has arisen around this cross-subsidy, elements of which are more than 30 years old. In Tullock’s (1975) terms, the benefits of the cross-subsidy have been capitalized politically and transition is difficult without unified government and a credible alternative policy.

Third, and probably most important, is that the supply of subsidies reflects the availability of alternatives. Perhaps the main reason why politically well-organized interest groups often, nonetheless, do not seek overt subsidies is that they have access to a wide array of other mechanisms that are even more effective and politically less visible than overt subsidy. In many countries, the supply of vital fossil fuels is a monopoly that the incumbent firms (themselves often owned by government) control. In such settings, overt subsidy is much less important than the much greater reward that government can offer to a self-interested industry: protection from competitors. Similarly, in countries where government regulates private enterprise, there are strong incentives to adopt regulations that allow private firms to manage and shift risk to other participants in the marketplace, such as consumers.

Indirect subsidies are rampant in the energy industry. In the U.S., for example, regulated electric power companies enjoy a much lower cost of capital than unregulated firms because the regulated enterprises are able to shift any expected increases in fuel costs to customers through a variety of regulator-blessed mechanisms such as cost pass-throughs. Many benefit from low taxation and access to tax-exempt funding for capital projects. In effect, transfers created through regulations and tax treatment are a form of off-budget

**The Politics of Fossil-Fuel Subsidies**

subsidy; nobody has calculated the full value of these transfers, but in some years they probably amount to tens of billions of dollars per year. The introduction of Liquefied natural gas (LNG) to the Japanese market, for example, was achieved through a myriad of government-backed policies that lowered risk for the gas and electricity companies that were pioneers in adopting LNG (see, generally, Victor et al., eds., 2006). In effect, such policies create a “rate-of-return” style of regulation for the firms they influence. Such an approach can lead to perverse effects, such as over-investment and a reckless approach to risk management—as evident, especially, in the overly rapid and costly embrace of nuclear power by U.S. utilities in the 1960s and early 1970s (Rai et al., 2009). Traditionally, the regulator is vested with the authority to protect the public from unwise investments; often, however, regulators are unable to assess the merits of novel technologies. Indeed, these same attributes also explain why this approach to regulation can also speed the introduction of some new technologies. Regulated firms, for example, are likely to be the first ones to build technologically and financially risky new “clean” coal plants and advanced nuclear plants because such firms are better able (in contrast with truly competitive enterprises) to manage the risks associated with the such investments. In the U.S., for example, it is not surprising that the state of Indiana is one of the first to attract investment in key gasification technologies that could be a central part of “clean coal.” Indiana regulators are particularly generous in allowing utility investors to protect themselves from risk when building untested new technologies (see, generally, Rai et al., 2009).

Most of the time when a government creates an overt subsidy, it is not because it is ignorant about the cost of such policies. Rather, they might reflect that government has few other instruments in its arsenal. In the states made rich by energy exports, governments have a readily available source of cash to pay for subsidies—except in the very few countries, such as Norway, that have successfully removed governments from the temptation to spend through such mechanisms as offshore funds. Moreover, nearly all energy-rich countries have energy sectors that are dominated by state firms, which offer the government a ready instrument for delivering politically valuable goods. These governments, in effect, face the temptation of large spending on subsidies and the availability of few competent actors who can actually carry out policies within the country. In Venezuela, for example, the true extent of the subsidy is evident not just in the low cost paid for energy products such as gasoline (the country ranks #3 on the left side of Figure 1) but also for a wide array of other “missions” that the state oil company, PdVSA, implements on behalf of the government.<sup>11</sup> Most other state-owned oil companies exhibit similar attributes. Often they are branded “states within a state” because they are the most capable actors on the landscape. Where governments can get them to perform politically useful functions they usually do that—and often that means providing their products at below its opportunity cost. The same is true of state-owned electric power companies, oil companies, railroads and sundry other services. One of the most important reforms that governments “in business” have adopted is to put the business functions at arm’s length so that government is less inclined to meddle. Moreover, government is not monolithic. The arm of government that sets subsidy policy may have little control over the arms of government that would actually implement a social policy that might use resources more effectively than through a subsidy. Each of these arms of government is subject to its own political forces.

---

<sup>11</sup> Whether the oil company would actually perform those missions was in doubt when the populist Hugo Chavez took control of the country. His firing of 18 000 PdVSA workers who were striking against the government’s efforts to meddle in the company helped settle the question (Hults, 2008).



### The Politics of Fossil-Fuel Subsidies

In India, most analysts focus on the \$15 billion U.S. in direct subsidy that the government pays in low, regulated prices for special kerosene fuel (which is intended to help the poor, although much ends up in adulterated diesel fuel and sold on the black market), LPG and other fuels. Yet an even larger subsidy is provided indirectly due to the government's price regulation on fertilizer. The political logic that leads governments to offer overt subsidies also rewards political efforts that deliver indirect (or covert) subsidies—and the latter are often more durable politically because their full financial and political costs are much less transparent. (For more on the intersection of India's agricultural and energy lobbies see Gulati and Narayanan, 2003.)

The Chinese experience with energy subsidies reveals how policies shift as governments devise a broader array of administrative capabilities. Twenty years ago China, like most developing countries, subsidized a variety of energy products and services—including electricity and petroleum products. It kept those subsidies in place because they were the instrument for making modern energy available to its rural population and because controls over energy prices were one instrument for regulating inflation. Gradually it has liberalized its economy and also built a more modern administrative state. It is now able, albeit imperfectly, to influence inflation through its control over the banking system and monetary supply—making direct control over the various factors of production, such as energy, less essential.

Moreover, reforms that have been aimed at boosting performance in the energy industries have also made it harder for government to regulate prices (and thus force the energy industry to deliver a subsidy). In electricity, for example, China has largely deregulated its coal industry over the last decade, which has made it much harder to regulate coal prices and, in turn, harder to impose binding limits on electricity prices.<sup>12</sup> In the oil sector, as well, a similar phenomenon is evident: while prices are regulated they, increasingly, adjust to world-market conditions through a price averaging system. Part of the reason for this shift is better fiscal management in the Chinese government (which makes policy-makers less willing to use subsidies); it is also rooted in the partial deregulation of the oil sector, which has left refineries with the requirement to cover the difference between crude oil prices (which float with world market conditions) and regulated product prices. As more companies (mainly state enterprises) have entered refining and as they have pursued their own interests rather than the bidding of the government, the state has been required to compensate them, at least partially, for lost income. When that subsidy is not forthcoming, product shortages and other dysfunctions have appeared (Jiang, forthcoming). In effect, the Chinese government, itself, has become exposed to the cost of subsidy while also building the capacity to implement other forms of less costly and more effective policies. Although there is some evidence that over the last 20 years government intervention in the market has declined, because China makes ad hoc adjustments to its retail prices, the subsidy is still large in periods of rapid upward movement in the world oil price. A recent estimate puts the total subsidy at about \$5–15 billion U.S. in 2007 (a year of particularly high prices) although in earlier years Chinese prices actually exceeded comparable prices in the U.S. or France (Tan & Wolak, 2009).

---

<sup>12</sup> When coal prices rise and electricity prices are fixed, the coal-fired generators are forced to absorb the difference and tend to under-invest in new capacity. Some of that behaviour has been evident in recent years and put pressure on the Chinese government to lift and then deregulate power prices. At present, power prices are still regulated at slightly below cost, but the regulation increasingly mimics the behaviour of the market and thus the subsidy is declining.

## IV. CONCLUSIONS FOR REFORMERS

Even as a growing number of analysts and politicians have accepted the wisdom that subsidies can be costly and harmful, this policy instrument persists. In a world of high world energy prices—as evident in the last five years and perhaps a permanent feature for most of the future—the full financial burden of subsidies can be particularly large. Many subsidies offset a fraction of the full cost of energy or fix the retail price of energy products. While real energy prices rise to high levels, the cost of existing subsidy policies rises sharply. Yet, in that same world, governments are struggling with the goals of taming energy consumption, making energy supplies more diverse and secure, and tackling environmental problems such as climate change. Solutions will probably require, in part, success in scaling back subsidies. Subsidy reform is hardly a unique challenge in the energy sector—very similar issues have confronted reformers in other sectors of the economy, notably agriculture (see, generally, Anderson, ed., 2009 reporting on papers presented at: <http://go.worldbank.org/QN2QBTH430>).

This paper suggests four lessons for reformers—those inside countries as well as external parties, such as lending institutions, that want to help countries adopt durable subsidy reforms. First, any reform strategy must begin with the political logic that led governments to create the subsidy. Reform must look beyond the symbolic buzzwords that are used to justify the subsidy and look at the political drivers that allowed the subsidy to be created and maintained. Fixing the subsidy problem requires a political strategy that compensates powerful interests that consent to a change in policy—or finds a way to inoculate policy reforms against their opposition. That political logic is often very difficult to redirect because once subsidies are supplied the interest groups that favour them become particularly well organized and aware of their interests. In the extreme form, the capitalization of subsidies in the form of investments and political organization creates a “trap” that is hard to escape. Where those traps exist, reform may be impossible without massive resources or a shock from external factors that force a re-pricing of capital assets. In the former case, large resources overcome large resistance to reform; in the latter, the resistance erodes. Ethanol subsidies, for example, are becoming capitalized into land values in the U.S.; when rising prices for other crops allow a shift away from ethanol feedstocks, it may be a particularly opportune time to attempt ethanol subsidy reforms.

Second, an effective political strategy usually benefits from transparency in the cost and purpose of the subsidy. Many subsidies—especially the indirect, covert subsidies that appear to be particularly large and pernicious—survive because the parties that carry the burden are unaware of the cost they are paying and because opacity makes it difficult to pursue an informed debate over the legitimate purposes of the subsidy. This problem of stealthy, indirect and opaque policies is hardly unique to the world of energy subsidies. In trade policy, for example, many governments protected domestic industries with trade barriers that were difficult to predict and thus new entrants found it challenging to compete. Japanese rice growers, for example, were famously shielded by such measures. The solution, in part, was transparency—over the last 15 years, Japan (under its obligations to the World Trade Organization) has shifted from opaque trade barriers to tariffs that, initially, mimicked the effect of the trade barrier (and thus were extremely high). Over time, it pared back the tariff, though it remains. Transparency, along with political effort to reduce protection for the Japanese rice industry and a small tariff-rate quota, has made it much easier for competitors to gain a foothold in the Japanese market.

### The Politics of Fossil-Fuel Subsidies

Third, where subsidies are unavoidable—either because they are rooted in an unwavering political calculus or because they serve legitimate public purposes—then better subsidy design can usually help reduce any pernicious effects of the subsidies and also ease the task of reforming them in the future. While subsidy design is a large topic, at least four salient features appear to be very important for the politics:

- *Time consistency.* The interest groups that favour subsidies are usually particularly interested in near-term policy because they have less leverage on the more distant future. Yet the real harm from most subsidies occurs as the costs multiply over many years. Government can solve these problems by paying closer attention to timing—by allowing subsidies in the near term where they are politically essential, but then adopting credible mechanisms to sunset those subsidies in time. Governments that are open to political influences—which is true of nearly all governments since political influence is a hallmark of responsive government—often find it very difficult to make such sunsets credible. Writing them into law helps in some circumstances (though usually it is easy to change laws). Outsiders can help in some circumstances—in monetary policy many governments rely on independent central banks that are difficult to sway politically. A similar fiscal institution could be created to manage subsidies. In some cases the multilateral development institutions can help by imposing credible constraints on government policy. Indonesia’s reforms of oil product subsidies, for example, were partly spurred by pressure from the International Monetary Fund. However, a recent analysis of external conditions placed on lending by the World Bank shows that, in general, conditionality related to energy policy reforms has declined (World Bank, 2009, Figure 4.1).
- *Pre-announced conditions.* The U.S. mandate for corn ethanol was adopted at a time when corn prices were low and farmers were particularly mobilized to find alternative values for corn. Had that policy also included explicit conditions for adjusting the subsidy—such as if corn prices rose, or if regulation and markets made alcohol fuels viable on their own economic terms—then it probably would have been easier to reform the policy when those new circumstances actually arose. It also would have dramatically lowered the cost of the policy since favourable economics would have led investors to view the alcohol industry through the lens of its own merits rather than investing on the basis of seizing windfalls from the subsidy.
- *Explicit adjustment mechanisms.* A recent careful World Bank review of subsidies concluded, in part, that the ad hoc mechanisms for adjusting subsidies multiplied their inefficiency.<sup>13</sup> In China, for example, although price averaging system means that, over time, the actual final cost of oil products and electricity for users is largely determined by market forces, the adjustment mechanism is opaque, and that makes it hard for investors (e.g., in new refining capacity) to predict market circumstances. That makes investors unsure of how to respond to possible changes in price and also probably causes needless politicization of the adjustment process. A more transparent mechanism would also make it easier to debate the conditions for continuing the subsidy.
- *Performance targeting.* Many subsidies serve useful purposes, and the task for designers is to marry the subsidy to the purpose and leave the suppliers of subsidized services and the users as much flexibility as possible to choose among competing means for meeting the social need. For example, in South Africa the government has adopted a zero tariff for low-income electricity users. (The exact volume of electricity supplied for free varies by location in the country.) The goal was to help the poor gain access to modern energy, but the instrument anointed grid electricity with the subsidy. That made it harder for other clean, modern rivals to gain a foothold in the market. A similar subsidy on LPG, for example, would have allowed households to select that fuel for cooking instead of being forced to cook with electricity, which is a more

<sup>13</sup> This is one implication of the price smoothing scenario in Bacon & Kojima (2008), Chapter 7. Similar findings are suggested in Bacon & Kojima (2006).

---

**The Politics of Fossil-Fuel Subsidies**

costly way for the government to subsidize cooking services. And the same subsidy did not apply to rural solar home systems, which meant that one class of users that were most deserving were unable to get the benefit from the subsidy (Howells et al., 2008). Selecting a single supplier makes it much harder for government to identify when the subsidy is no longer needed and also makes it easier for the beneficiaries of the subsidy to organize politically to block reform.

Fourth, and finally, subsidy reformers can have more success when governments have better administrative tools in their arsenal. Broad-spectrum subsidies are blunt instruments that are nonetheless popular because governments often have few choices. And the path dependence that is evident in their use makes it additionally difficult for a government to find an incentive to build alternative administrative tools. It may be difficult to justify building a modern administrative state just for the purpose of making it easier to redirect and reduce the blunt use of subsidies, but since many governments are already attempting to build that administrative apparatus, subsidy reform offers an additional reason for aiding them in that transition.

The Politics of Fossil-Fuel Subsidies

## REFERENCES

- Anderson, K. (ed.). (2009). *Distortions to Agricultural Incentives: A Global Perspective, 1955 to 2007*. London: Palgrave Macmillan and Washington: World Bank.
- Anderson, K. (1995). "The Political Economy of Coal Subsidies in Europe." *Energy Policy* 23: 485-96.
- Andresen, N.A. (2008). "Public Choice Theory, Semi-authoritarian Regimes and Energy Prices: A Preliminary Report." Fridtjof Nansen Institute, the Norwegian Institute for International Affairs and Econ Pöyry, RUSSCASP project. Working Paper 2008-010.
- Associated Press. (2009). "EU to Upgrade Ukraine's Outdated Gas Pipelines." 23 March.
- Bacon, R. and Kojima, M. (2006). *Coping with Higher Oil Prices*. Energy Sector Management Assistance Programme. World Bank.
- Bacon, R. and Kojima, M. (2008). *Coping with Oil Price Volatility*. Energy Sector Management Assistance Programme. World Bank.
- Barnes, D. (2007). *The Challenge of Rural Electrification: Strategies for Developing Countries*. Washington: Resources for the Future Press.
- Collier, P. (2007). *The Bottom Billion: Why the Poorest Countries are Failing and What Can Be Done About It*. New York: Oxford.
- Deacon, R. and Mueller, B. (2004). "Political Economy and Natural Resource Use." UC Santa Barbara Department of Economics. Working Paper 04-01.
- Ellerman, D., Joskow, P., Schmalensee, R., Montero, J.-P. and Bailey, E. (2000). *Markets for Clean Air: The U.S. Acid Rain Program*. Cambridge: Cambridge University Press.
- Ettlinger, M.P. (2002). "Our Bucket Is Leaking: Tax Expenditures and Loopholes in the Federal Budget" in *Bad Breaks All Around*, a report of the Century Foundation Working Group on Tax Expenditures, pp. 99-185.
- Farrell, A.E., Plevin, R.J., Turner, B.T., Jones, A.D., O'Hare, M. and Kammen, D.M. (2006). "Ethanol Can Contribute to Energy and Environmental Goals." *Science*. 311: 506-508.
- Guiyang, Z. (2007). "Energy Subsidy Policies and Their Reform: Providing Economic Incentives for Climate Change Mitigation." *Advances in Climate Change Research*. 3(Suppl.): 92J96
- Gulati, A. and Narayanan, S. (2003). *Subsidy Syndrome in Indian Agriculture*. New Delhi: Oxford University Press.
- Gupta, S., Verhoeven, M., Gillingham, R., Schiller, C., Mansoor, A. and Cordoba, J.P. (2000). *Equity and Efficiency in the Reform of Price Subsidies: A Guide for Policymakers*. Washington: IMF.
- Hults, D. (2008). "Petróleos de Venezuela, S.A.: The Right-Hand Man of the Government." Stanford Program on Energy and Sustainable Development. Working Paper #70.

**The Politics of Fossil-Fuel Subsidies**

Houser, T. and Rosen, D. (2007). *China Energy: A Guide for the Perplexed*. Washington: Peterson Institute for International Economics.

Howells, M., Victor, D.G., Gaunt, T., Elias, R. and Alfstad, T. (2006). "Beyond Free Electricity: The Costs of Electric Cooking in Poor Households and a Market-Friendly Alternative." *Energy Policy*. 34: 3351-3358.

Institut for Miljøvurdering (IMV). (2005). *Environmentally Harmful Subsidies: Linkages between subsidies, the environment and the economy*. Copenhagen: IMV.

International Energy Agency (IEA). (1999). *World Energy Outlook 1999 Insights: Looking at Energy Subsidies: Getting Prices Right*. Paris: IEA.

IEA. (2007). *World Energy Outlook 2007: China and India Insights*. Paris: IEA.

IEA. (2008). *World Energy Outlook 2008*. Paris: IEA.

IEA. (2009). *Cleaner Coal in China*. Paris: IEA.

Jiang, B. (Forthcoming). "China National Petroleum Corporation: Strategy and Performance." Stanford Program on Energy and Sustainable Development. Working Paper.

Joskow, P. and Marron, D. (1992). "What Does a Negawatt Really Cost? Evidence from Utility Conservation Programs." *The Energy Journal*. 13:41-74.

Karl, T. (1997). *The Paradox of Plenty: Oil Booms and Petro-States*. Berkeley: University of California Press.

Kojima, M. (2009). Changes in End-User Petroleum Product Prices: A Comparison of 48 Countries. Washington: World Bank Extract Industries and Development Series #2.

Koplow, D. (2006). *Biofuels – At What Cost? Government Support for Ethanol and Biodiesel in the United States*. Global Subsidies Initiative of the International Institute for Sustainable Development. Geneva: IISD.

Koplow, D. (2007). "Energy," Chapter 4 in: *Subsidy Reform and Sustainable Development: Political Economy Aspects*. Paris: OECD.

Kurlansky, M. (2003). *Salt: A World History*. New York: Penguin Books.

Lohmann, S. and O'Halloran, S. (1994). "Divided Government and U.S. Trade Policy: Theory and Evidence." *International Organization*. 48, pp. 585-632.

Lovins, A. (1994). "Apples, Oranges, and Horned Toads: Is the Joskow & Marron Critique of Electric Efficiency Costs Valid?" *The Electricity Journal*. pp. 29-49.

Moe, T.M. and Caldwell, M. (1994). "The Institutional Foundations of Democratic Government: A Comparison of Presidential and Parliamentary Systems." *Journal of Institutional and Theoretical Economics*. 150(1):171-195.

**The Politics of Fossil-Fuel Subsidies**

North, D.C. and Weingast, B.R. (1989). "Constitutions and Commitment: The Evolution of Institutions Governing Public Choice in Seventeenth-century England." *The Journal of Economic History*. 49(4): 803-32.

Olson, M. (1965). *The Logic of Collective Action*. Cambridge: Harvard University Press.

Organisation for Economic Co-operation and Development. (2003). *Environmentally Harmful Subsidies: Policy Issues and Challenges*. Paris: OECD.

Pearce, D. (2003). "Environmentally Harmful Subsidies: Barriers to Sustainable Development." pp. 9-30 in OECD.

Peltzman, S. (1989). "The Economic Theory of Regulation after a Decade of Deregulation." *Brookings Papers on Economic Activity*.

Rai, V. and Victor, D.G. (2009). "Climate Change and the Energy Challenge: A Pragmatic Approach for India." *Economic and Political Weekly* (in press).

Rai, V., Victor, D.G. and Thurber, M. (2009). "Carbon Capture and Storage at Scale: Lessons from the Growth of Analogous Energy Technologies." Stanford Program on Energy and Sustainable Development. Working Paper #81.

Ross, M. (2001). "Does Oil Hinder Democracy?" *World Politics*, 53, pp 325-361.

Rotman, D. (2008). "The Price of Biofuels." *MIT Technology Review*. January/February.

Sachs, J.D. and Warner, A.M. (2001). "The Curse of Natural Resources." *European Economic Review*. 45:827-38.

Schmidt, J., Helme, N., Lee, J. and Houdashelt, M.. (2008). "Sector-based Approach to the Post-2012 Climate Policy Architecture." *Climate Policy*. 8:494-515.

Stevens, P. (2008). "Kuwait Petroleum Corporation: Searching for Strategy in a Fragmented Oil Sector." Stanford Program on Energy and Sustainable Development. Working Paper #78.

Stigler, G.J. (1971). "The Theory of Economic Regulation." *The Bell Journal of Economics and Management Science*. 2(1):3-21.

Tan, X. and Wolak, F. (2009). "Does China Underprice its Oil Consumption?" Department of Economics. Stanford University.

Tongia, R. (2007). "The Political Economy of Indian Power Sector Reforms," pp. 109-174 in: D.G. Victor and T.C.Heller, (eds.) 2007, *Reforming Electric Power Markets in Developing Countries: Politics, Law and Institutions*. Cambridge: Cambridge University Press.

Tsebelis, G. 1995. "Decision Making in Political Systems." *British Journal of Political Science*. 25:289-326.



**The Politics of Fossil-Fuel Subsidies**

Tullock, G. (1975). "The Transitional Gains Trap." *The Bell Journal of Economics*. 6:671-678.

Victor, D.G. (2009). "Climate Accession Deals: New Strategies for Taming Growth of Greenhouse Gases in Developing Countries" in J. Aldy and R. Stavins, eds., *Post-Kyoto International Climate Policy: Implementing Architectures for Agreement*. Cambridge: Cambridge University Press.

Victor, N. (2008). "Gazprom: Giant Under Strain." Stanford Program on Energy and Sustainable Development. Working Paper #71.

Victor, D.G., Hayes, M. and Jaffe, A. (eds.). (2006). *Natural Gas and Geopolitics: From 1970 to 2040*. Cambridge: Cambridge University Press.

Victor, D.G. and Heller, T.C. (eds.). (2007). *The Political Economy of Power Sector Reform: The Experiences of Five Major Developing Countries*. Cambridge University Press.

Wagner, A. (2008). "Data Needs for Designing Responses to Rising Oil Prices in the Transport Sector." GTZ Transport Policy Advisory Services.

World Bank. (2009). *Climate Change and the World Bank Group: Phase I: An evaluation of World Bank Win-Win Energy Policy Reforms*. Washington: Independent Evaluation Group, World Bank.

World Energy Council (WEC)/Food and Agriculture Organization (FAO). (1999). *The Challenge of Rural Energy Poverty in Developing Countries*. London: World Energy Council. New York: United Nations.

Yacobucci, B.D. (2006). "Ethanol Imports and the Caribbean Basin Initiative." *CRS Report for Congress*. Washington: Congressional Research Service.

Yergin, D. (1993). *The Prize: The Epic Quest for Oil, Money and Power*. New York: Simon & Schuster.

Zahariadis, N. (2008). *State Subsidies in the Global Economy*. London: Macmillan.



The Politics of Fossil-Fuel Subsidies

## ABOUT THE AUTHOR:

### David G. Victor

University of California at San Diego

David Victor is a professor at the School of International Relations and Pacific Studies and Director of the School's new International Law and Regulation Laboratory. Looking across a wide array of issues from environment to human rights, trade and security, the Laboratory explores when (and why) international laws actually work.

Most recently, Victor served as Director of the Program on Energy and Sustainable Development at the Freeman Spogli Institute for International Studies at Stanford University, where he was also a professor at Stanford Law School. Previously, he directed the science and technology program at the Council on Foreign Relations (CFR) in New York. He also directed the Council's task force on energy co-chaired by Jim Schlesinger and John Deutch, and was senior adviser to the task force on climate change chaired by governors George Pataki and Tom Vilsack. Victor's research at Stanford and the Council examined ways to improve management of the U.S.'s \$50 billion strategic oil reserve, strategies for managing investment in "geoengineering," and a wide array of other topics related to technological innovation and the impact of innovation on economic growth. His research also examined global forest policy, global warming and genetic engineering of food crops.

His books include: *Natural Gas and Geopolitics* (Cambridge University Press, July 2006), *The Collapse of the Kyoto Protocol and the Struggle to Slow Global Warming* (Princeton University Press, April 2001; second edition July 2004); *Climate Change: Debating America's Policy Options* (New York: Council on Foreign Relations); and *Technological Innovation and Economic Performance* (Princeton University Press, January 2002, co-edited with Benn Steil and Richard Nelson). Victor is author of more than 150 essays and articles in scholarly journals, magazines and newspapers, such as *Climatic Change*, *The Financial Times*, *Foreign Affairs*, *International Journal of Hydrogen Energy*, *Nature*, *The New York Times*, *Science*, *Scientific American* and *The Washington Post*.

## THE GLOBAL SUBSIDIES INITIATIVE (GSI) OF THE INTERNATIONAL INSTITUTE FOR SUSTAINABLE DEVELOPMENT (IISD)

The International Institute for Sustainable Development (IISD) launched the Global Subsidies Initiative (GSI) in December 2005 to put a spotlight on subsidies – transfers of public money to private interests – and how they undermine efforts to put the world economy on a path toward sustainable development.

Subsidies are powerful instruments. They can play a legitimate role in securing public goods that would otherwise remain beyond reach. But they can also be easily subverted. The interests of lobbyists and the electoral ambitions of officeholders can hijack public policy. Therefore, the GSI starts from the premise that full transparency and public accountability for the stated aims of public expenditure must be the cornerstones of any subsidy program.

But the case for scrutiny goes further. Even when subsidies are legitimate instruments of public policy, their efficacy – their fitness for purpose – must still be demonstrated. All too often, the unintended and unforeseen consequences of poorly designed subsidies overwhelm the benefits claimed for these programs. Meanwhile, the citizens who foot the bills remain in the dark.

When subsidies are the principal cause of the perpetuation of a fundamentally unfair trading system, and lie at the root of serious environmental degradation, the questions have to be asked: Is this how taxpayers want their money spent? And should they, through their taxes, support such counterproductive outcomes?

Eliminating harmful subsidies would free up scarce funds to support more worthy causes. The GSI's challenge to those who advocate creating or maintaining particular subsidies is that they should be able to demonstrate that the subsidies are environmentally, socially and economically sustainable – and that they do not undermine the development chances of some of the poorest producers in the world.

To encourage this, the GSI, in cooperation with a growing international network of research and media partners, seeks to lay bare just what good or harm public subsidies are doing; to encourage public debate and awareness of the options that are available; and to help provide policy-makers with the tools they need to secure sustainable outcomes for our societies and our planet

**[www.globalsubsidies.org](http://www.globalsubsidies.org)**

The GSI is an initiative of the International Institute for Sustainable Development (IISD). Established in 1990, the IISD is a Canadian-based not-for-profit organization with a diverse team of more than 150 people located in more than 30 countries. The GSI is headquartered in Geneva, Switzerland and works with partners located around the world. Its principal funders have included the governments of Denmark, the Netherlands, New Zealand, Norway, Sweden and the United Kingdom. The William and Flora Hewlett Foundation have also contributed to funding GSI research and communications activities.

### FURTHER DETAILS AND CONTACT INFORMATION

**For further information contact Ms. Kerryn Lang at: [klang@iisd.org](mailto:klang@iisd.org) or [info@globalsubsidies.org](mailto:info@globalsubsidies.org) or +41.22.917.8920.**

GSI Programme  
International Institute for Sustainable Development  
9 chemin de Ballexert, 1219, Geneva, Switzerland  
Fax: +41.22.917.8054



**GSI** Global  
Subsidies  
Initiative

[www.globalsubsidies.org](http://www.globalsubsidies.org)

**iisd** International  
Institute for  
Sustainable  
Development Institut  
international du  
développement  
durable