

BAKER INSTITUTE POLICY REPORT

PUBLISHED BY THE JAMES A. BAKER III INSTITUTE FOR PUBLIC POLICY OF RICE UNIVERSITY

NUMBER 58



MAY 2014

NAVIGATING THE PERILS OF ENERGY SUBSIDY REFORM IN EXPORTING COUNTRIES

EXECUTIVE SUMMARY

Fossil fuel subsidies have allowed energy exporting countries to distribute resource revenue, bolstering legitimacy for governments, many of which are not democratically elected. But subsidy benefits are dwarfed by the harmful consequences of encouraging uneconomic use of energy. These effects include wasted resources, foregone revenue, and outsized emissions of carbon dioxide as well as local pollutants such as sulfur oxides (SO_x) and nitrogen oxides (NO_x). Now, with consumption posing a threat to long-term exports, governments face a heightened need to raise prices that have come to be viewed as entitlements. While reforms of state benefits are notoriously politically dangerous, previous experience shows that subsidies can be rolled back without undermining government legitimacy—even in autocratic settings—given proper preparation. Lobbying by external pressure groups can provide useful political cover for unpopular reforms.

INTRODUCTION

Big exporters of oil and gas have been maligned as prone to autocracy and corruption, and even to discrimination against women and minorities.¹ While the truth of these claims is debatable, another tendency is less controversial: they offer residents very cheap energy. Whether sold as bulk crude oil and natural gas or as retail electricity, gasoline, or diesel, the big exporters of OPEC, Russia, and others harbor some of the lowest domestic energy prices in the world. The International Monetary Fund attributes two-thirds of the \$480 billion tab in global energy subsidy (0.7% of global GDP)

to large hydrocarbon exporters.² Table 1 offers a selection of prices in comparison with those in the unsubsidized but relatively low-tax United States. Table 2 ranks countries by the overall size of their energy subsidies.

**TABLE 1: ELECTRICITY AND GASOLINE PRICES
IN SELECTED EXPORTING COUNTRIES, IN
COMPARISON WITH THE US (2012)**

Nation	Avg. res. electricity price (US cents per kWh)	Avg. gasoline price (US\$ per liter)
USA	11.8	0.97
Kuwait	0.7	0.23
Saudi Arabia	1.3	0.16
Iran	2.7	0.33
Venezuela	3.1	0.023
Angola	4.2	0.63
Algeria	5.9	0.29
Nigeria	7	0.62
Ecuador	9.6	0.58
Russia	11	0.99
Norway	14.9	2.53

Source: Gasoline prices from GIZ; electricity prices compiled by author.

TABLE 2: ENERGY SUBSIDIES IN MAJOR EXPORTERS IN BILLIONS OF US\$ AND PERCENT OF 2011 GDP

Nation	Oil subsidy (US\$bn)	Gas	Coal	Electricity	Total subsidy (\$bn) 2011	Total subsidy as share of GDP
Iran	41.4	23.4	0	17.4	82.2	16%
Saudi Arabia	46.1	0	0	14.8	60.9	9%
Russia	0	21.9	0	18.3	40.2	2%
Venezuela	22	1.9	0	3.2	27.1	9%
Iraq	20.4	0.3	0	1.6	22.2	12%
UAE	3.9	11.5	0	6.4	21.8	6%
Indonesia	15.7	0	0	5.6	21.3	3%
Mexico	15.9	0	0	0	15.9	1%
Algeria	11.3	0	0	2.1	13.4	7%
Kuwait	4.3	2.1	0	4.7	11.1	7%
Malaysia	5.4	0.9	0	0.9	7.2	2%
Qatar	2	1.9	0	2.1	6	3%
Kazakhstan	3.2	0.3	0.6	1.7	5.8	3%
Turkmenistan	0.8	4.4	0	0.7	5.8	20%
Ecuador	5.4	0	0	0.1	5.6	7%
Nigeria	3.6	0	0	0.7	4.3	2%
Libya	2.3	0.2	0	0.7	3.1	5%
Azerbaijan	0.6	0.8	0	0.5	1.9	3%
Angola	1.1	0	0	0.3	1.3	1%

Source: Subsidy data provided by IEA at author’s request, 2013; GDP figures (in current US\$) from World Bank, World Development Indicators 2014.

Reasons for subsidizing³ energy begin with a sense of resource abundance, followed by a wish to distribute wealth and improve lives. In more autocratic settings such as Saudi Arabia and the other Gulf monarchies, the public may attribute low energy prices to “generosity” of the ruler or consider it a “government responsibility” or a representation of their “fair share” of the country’s natural resources. Academic theory argues that autocratic governments in many oil-exporting states use cheap energy to derive popular legitimacy. Governments have long provided their citizens with jobs and benefits. In return,

governments expect political support, or at least acquiescence to their rule. Subsidies on energy are thus enshrined within unwritten social contracts or “ruling bargains” that form key parts of the political superstructure of exporting states.

However, underpriced energy has encouraged demand to the point that economies are undergoing serious damage. The direct cost of subsidies weighs on government budgets, while skewed domestic demand simultaneously reduces revenues (either real or potential) by reducing the amount of crude available for export. For instance, Venezuela sells gasoline at the lowest price on Earth—just 6 US

cents per gallon—which cost the government \$30 billion in foregone revenues in 2013, more than the combined value of all state social programs. While Venezuelans cherish cheap gasoline, the financial strain of meeting demand has become economically crippling. National productivity has suffered, while the state has been unable to recoup sufficient revenues for reinvestment in oil production, let alone provide full support for government budgets.⁴

Among the world’s largest per-capita consumers of electricity are residents of Kuwait, who have been able to purchase electricity for seven-tenths of a US cent per kilowatt-hour since 1966. In 2011, that price allowed the government to recoup just 5% of the cost of providing power, about 14 cents per kWh. Notably, most electricity in Kuwait is generated using exportable liquid fuels such as crude oil and diesel, which implies a huge opportunity cost in lost revenue. “The state itself is teaching people to waste funds and resources,” Ahmed al-Jarallah, editor of the Kuwait newspaper *Arab Times*, wrote in April.⁵

Prices are so low in some OPEC countries that eliminating subsidies would have a dramatic effect. Using a modest estimate for demand elasticity, a rationalization of electricity prices in Kuwait would cut long-run demand by something like 60%. An end to gasoline subsidies in Saudi Arabia implies a reduction of demand by a third; and in Venezuela by 90%.⁶ While these results are purely hypothetical, they give an idea of the role that subsidies play in stimulating consumption.

Despite the savings implied, reforms are politically toxic. The peril of raising prices has been demonstrated by recent unrest in Nigeria, Ecuador, Bolivia, and Jordan; in Iran’s gasoline riots of 2007; and the toppling of governments in OPEC members Indonesia in 1998 and Venezuela in 1993. In Venezuela in 1989, hundreds of people were killed in riots after the government attempted to raise gasoline prices. For governments, worries about short-term political survival tend to outweigh concerns over long-term economic sustainability.

HARM CAUSED BY SUBSIDIES

By encouraging demand, subsidies exacerbate emissions of carbon linked to climate change and local pollutants like SOx and NOx that present

immediate public health implications. While a carbon tax might be necessary to curb emissions in many settings, many of the big exporters can dramatically reduce emissions by simply moving to market pricing. The IMF calculated that eliminating energy subsidies in OPEC and other major exporters would accomplish about 13% of the carbon emissions reductions required to meet the target associated with the 2-degrees-by-2020 goal.⁷ The public health improvements of such a reduction in consumption would also be significant.

Encouraging domestic consumption also hurts exporters’ bottom lines. Saudi Arabia charges domestic customers \$5 for a barrel of crude that fetches \$104 outside its borders. At such a discount, it is no wonder the kingdom’s oil consumption has risen from about 3% of production in the 1970s to about a quarter of production now. Saudi demand has surpassed that of much larger countries like Germany or Brazil. Implications for foregone revenues are massive.

Reduced revenues for state-owned oil companies detract from reinvestment in infrastructure and production, which is required to maintain exports. Likewise, low domestic prices for natural gas undermine the impetus for exploration and production, since gas is normally consumed at home. Many oil-exporting states, including Saudi Arabia and Kuwait, are short on gas and burn valuable crude oil in their power plants.

These policies advance the day when domestic consumption will displace exports. This is already happening in small ways around OPEC. Onetime member Indonesia became a net importer and dropped out of OPEC in 2008 as domestic demand, aided by subsidies, overtook exports. Higher domestic prices rationalize demand and reduce waste; in turn, this increases revenue and extends the longevity of exports.

Retail subsidies also encourage smuggling. Iran, Venezuela, Algeria, and Saudi Arabia lose vast amounts of subsidized fuel to arbitrage opportunists who haul it across a neighboring border. Saudi Arabia’s 26-cents-per-gallon diesel is said to subsidize the trucking of goods around much of the Middle East. In a broader sense, subsidies undermine state competitiveness, since energy market realities are not incorporated into investment and operating decisions.⁸

PROSPECTS FOR REFORM

Subsidies are often described as asymmetric: easy to enact, difficult to retract. This is because government largesse creates beneficiary groups that rise up and threaten political leadership when their interests are jeopardized. Pierson argues that welfare societies thus maintain a constant potential for mobilization that raises the stakes of reform.⁹

Centralized power structures, like those in most OPEC states, intensify these difficulties. Concentration of authority also concentrates accountability. Regimes that cut benefits expose themselves to the full force of public reaction and can only pursue reform when they feel they can absorb the political consequences or when they are sheltered from blame. Given these issues, can subsidies be cut without undermining public support for the government?

Many scholars say no. Ending subsidies would look to citizens like a breach of the social contract, an illegitimate tax in systems where citizens may enjoy little formal representation. Regime legitimacy would be damaged, and citizens might respond by increasing demands for political participation.¹⁰

Perhaps the biggest risk implied by reforms of subsidies and social contracts is the possibility of unrest and overthrow of governments that launch them. As history shows, reductions in state-provided benefits are common triggers for political violence and overthrow of governments. Gurr's strategy for regimes seeking to minimize these risks starts with advice to *maintain the status quo in distribution of social, economic, and political goods*.¹¹ The caution with which regimes approach subsidy reform demonstrates the resonance of this advice.

REFORM IS POSSIBLE

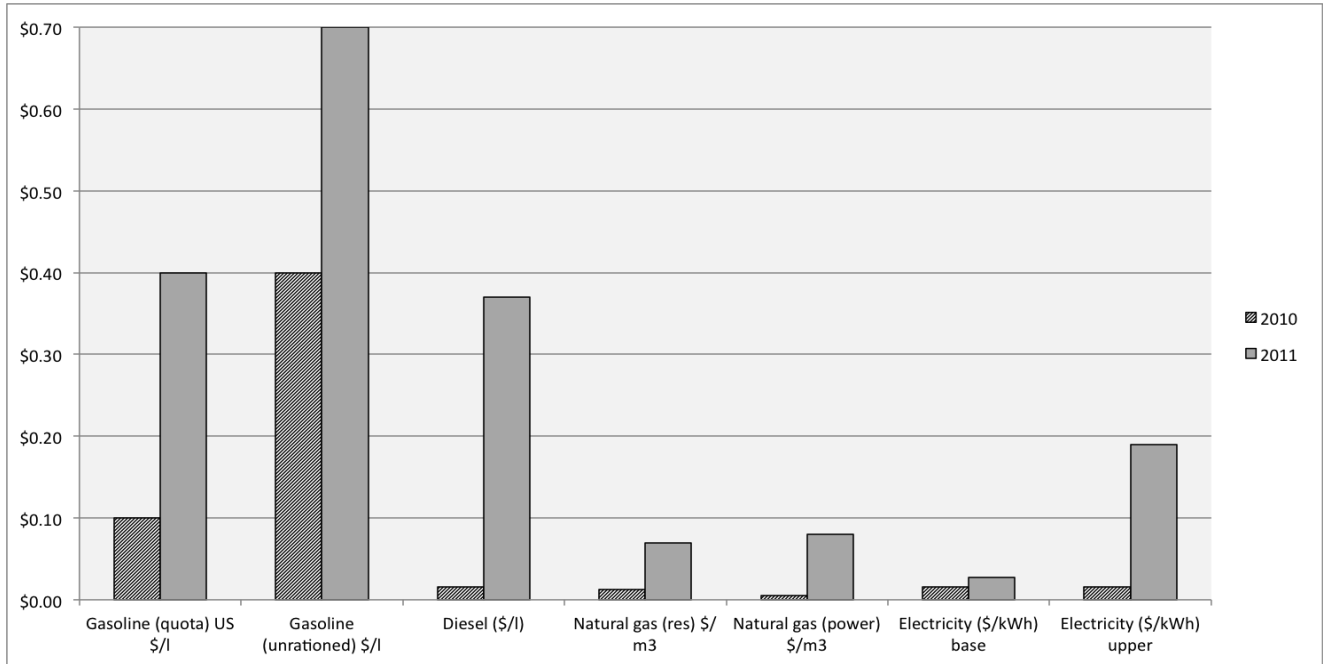
Despite such pessimism about reform, energy subsidies are not sacrosanct. According to the IMF, all but five of 28 substantial attempts to dismantle subsidies over the past two decades met with some success. The list of reformers includes energy exporters. Indonesia, after failed attempts in 1997 and 2003, successfully raised fuel prices in 2005 and 2008. Indonesia reduced its subsidy load from 3.5% of GDP in 2005 to 0.8% by 2009.

Yemen managed small reductions in fuel subsidies, which, however, still accounted for 7.4% of 2009 GDP. Mexico reduced gasoline subsidies in 2005 and 2006 after failing to reform electricity prices between 1999 and 2002. Malaysia underwent a series of attempts to reduce fuel subsidies (which stood at more than 1% of GDP in 2012), but most were reversed following public outcries. Nigeria's fuel price reforms of 2011–2012 may have triggered antigovernment unrest but still managed to reduce costs from 4.7% to 3.6% of GDP.¹² Dubai in 2011 managed a 15% increase in prices of electricity and desalinated water, even on the most politically sensitive customers.¹³

Perhaps the most encouraging example is that of Iran, the first country in the world to replace major subsidies with a universal cash transfer program for households. Iran's 2010 reform achieved positive welcomes from the IMF and, at least initially, the Iranian public, while halving the world's largest energy subsidy burden, valued at around \$100 billion or a quarter of 2010 GDP.¹⁴ Demand reduction was sufficient to permit a temporary increase in oil exports, before Iran's trade was blocked by international sanctions.¹⁵ The government built support for the reform by creating bank accounts for each household and depositing monthly payments worth about \$40 per person prior to the program's launch. Recipients could only access those payments after prices were raised.¹⁶ Plans called for prices to be increased to 90% of international levels over five years, but the reform was halted in 2012 by inflation and a lack of parliamentary support.¹⁷ The tightening of international sanctions targeting Iran's nuclear program in 2010 and 2012 made it difficult to separate the macroeconomic effects of the subsidy reform from those triggered by the embargo. Whatever the cause, severe inflation undermined the subsidy measure, reducing energy prices in real terms as well as the value of the replacement cash transfers.¹⁸

The economic outcome of Tehran's reform is inconclusive, but the political outcome is strongly positive. That a major exporter could recast deeply ingrained energy subsidies into the more equitable and efficient form of a cash benefit was not lost on others. Iran demonstrated that, with adequate preparation, the public might accept subsidy reform.

FIGURE 1: SELECTED PRE-REFORM AND POST-REFORM ENERGY PRICES IN IRAN, IN 2012 US\$



Source: IMF.

POLICY TO ENABLE REFORMS

Demand management in producer countries requires raising prices, which, as shown, involves high risk but potentially large rewards. Done properly, ending subsidies can add years to the longevity of exports, while keeping global markets supplied and reducing both local pollution and CO2 emissions. Mismanaged, eliminating “entitlements” can undermine government legitimacy and trigger unrest. In the Middle East, where pan-Arab revolts have toppled four governments and left a fifth in civil war, caution remains acute. In this context, the Iranian experience provides an intriguing model that uses a replacement benefit to generate public support for reform.

Survey work I have conducted in the Gulf monarchies offers further reason for optimism. A public poll by YouGov found that a majority of citizens were willing to pay higher electricity prices when informed of broader national interest goals of reducing waste of exportable resources.¹⁹ A poll of Gulf energy sector experts and policymakers found strong likelihood of reform of residential electricity

subsidies by 2020 in Saudi Arabia and the UAE, but weaker probabilities in the other monarchies.²⁰

One factor that has been shown to enable action in difficult settings is external pressure. A vociferous international outcry or pressure from a foreign government or NGO can provide political cover for governments to enact unpopular measures. This is especially useful in highly centralized systems that characterize big exporters, whether Angola, Iraq, or the Gulf monarchies.

For example, external pressure stemming from Saudi Arabia’s accession to the WTO in 2005 helped the kingdom enact economic reforms.²¹ In Kuwait, IMF director Christine Lagarde’s 2014 speech highlighted grave potential outcomes of energy underpricing, which provided cover for domestic critics to join the conversation. A different sort of external pressure aided Iran’s subsidy reforms: international embargo and financial sanction.

Vocal diplomatic or lobbying pressure is not the preferred interaction between the big oil exporters and their counterparts in the IMF or World Bank, or with friendly foreign governments that form their export clientele. The exporting states, especially the more autocratic ones, prefer quiet diplomatic

exchanges that take place out of the public eye. However, the quiet approach is probably ineffective when it comes to reforming subsidies that comprise citizen welfare benefits. The public needs to be brought into the discussion and informed about the threat implied by its rising demand. While regimes need to start this conversation, outside pressure can reinforce the message.

Reform pressure may arise regardless. Two new sources of international scrutiny appear to be mounting. The first relates to realizations that domestic demand threatens OPEC’s supply role in international markets. Gately et al. have shown that projections by major forecasters such as the US Department of Energy and the International Energy Agency (IEA) have serially underestimated growth in Saudi Arabia’s domestic demand.²² For now, new sources of unconventional oil production in the United States appear to have muted the outcry over any possibility of curtailed OPEC supply and, by extension, any impact on reduced OPEC supply on the global oil market balance. That could change if markets tighten.

A second source of international tension could arise from the disproportionate levels of CO2 emitted by exporting countries. Aggregate CO2 emissions from the Gulf monarchies are nearly the size of Japan’s, despite a population less than a third as large.²³ The IEA and IMF have made recent high-profile calls highlighting the role of fossil fuel subsidies in exacerbating climate change. OPEC countries’ status as major suppliers, subsidizers, and consumers of fossil fuels exposes them to increasing opprobrium on climate change from environmental groups and the international public.

Both of these scenarios could provide political cover to governments considering subsidy reform. Policymakers in exporting states already understand that reforming subsidies is a long-run strategy for preserving their political power, since export revenues are a key resource for political stability. Thus, constructive external criticism can provide regimes with persuasive tools for swaying public opinion of the need for higher prices and reduced demand. Given the right environment, an Iran-style “benefit exchange” offers a potential model for meeting these needs without triggering citizen revolt.

REFERENCES

1. There are ongoing debates within academic literature in “resource curse” and “rentier state theory” genres that either make these cases or argue against them. Proponents include Sachs and Warner (1995) and Ross (2001); and detractors include Herb (2005) and Haber and Menaldo (2011). See Jeffrey D. Sachs and Andrew M. Warner, *Natural Resource Abundance and Economic Growth* (working paper no. 5398), National Bureau of Economic Research, 1995; Michael L. Ross, “Does oil hinder democracy?” *World Politics* 53, no. 3 (2001): 325–361; Michael Herb, “No representation without taxation? Rents, development, and democracy,” *Comparative Politics* 37 no. 3 (2005): 297–316; Stephen Haber and Victor Menaldo, “Do natural resources fuel authoritarianism? A reappraisal of the resource curse,” *American Political Science Review* 105, no. 01 (2011): 1–26.
2. International Monetary Fund (IMF) staff, “Energy Subsidy Reform: Lessons and Implications” (research paper), International Monetary Fund, Washington, DC, 2013.
3. The IEA considers subsidies as any measure that keeps prices for consumers below market levels.
4. William Neuman, “Venezuela May Meet New Reality, and New Price, at the Pump,” *New York Times*, January 20, 2014, <http://www.nytimes.com/2014/01/21/world/americas/venezuela-gasoline-prices.html>.
5. Ahmed Al-Jarallah, “End subsidies,” *Arab Times*, April 11, 2014, <http://www.arabtimesonline.com/NewsDetails/tabid/96/smld/414/ArticleID/204962/reftab/96/t/End-subsidies/Default.aspx>.
6. Using a nonlinear demand formula for estimating effects of large price increases and assuming a relatively low price elasticity estimate of -0.3, meaning that a 100% price increase would lead to a 30% drop in demand. In Venezuela, the results look unrealistic because of the huge increase required to bring prices to international parity.
7. IMF, “Energy Subsidy Reform.” See also International Energy Agency, *Redrawing the Energy-Climate Map*, World Energy Outlook Special Report (Paris: IEA, 2013).
8. Doug Koplow and Steve Kretzmann, *G20 Fossil Fuel Subsidy Phase Out: A Review of Current Gaps and Needed Changes to Achieve Success*

(interest group report), Earth Track, Inc. and Oil Change International (2010): 13.

9. Paul Pierson, "The New Politics of the Welfare State," *World Politics* 48, no. 2 (1996): 143-179.

10. Many authors have articulated these ideas. See Giacomo Luciani, "Allocation vs. Production States: A Theoretical Framework," in *The Rentier State*, Hazem Beblawi and Giacomo Luciani (New York: Croon Helm, 1987), 85-98; See also Herb, "No representation without taxation?"; especially 74-75, 87-91, and 98-99.

11. Ted R. Gurr, *Why Men Rebel* (Princeton: Princeton University Press, 1970), 338-340.

12. IMF, "Energy Subsidy Reform."

13. Author interviews with Dubai energy officials on condition of anonymity, Dubai, 2012 and 2013.

14. IMF, "Energy Subsidy Reform"; Dominique Guillaume, Roman Zyteck, and Mohammed Reza Farzin, "Iran: The Chronicles of Subsidy Reform" (IMF working paper), International Monetary Fund, Washington, DC, 2011. See also Hamid Tabatabai, "The Basic Income Road to Reforming Iran's Price Subsidies," *Basic Income Studies* 6 no. 1 (2011): 1-24.

15. Middle East Economic Survey, "Second Phase Of Subsidy Reform Plan to Await Budget Approval," April 30, 2012, 17-18. See also "Petrol rationing saves Iran \$38 billion: Official," *Tehran Times*, December 31, 2011.

16. Guillaume, Zyteck, and Farzin, "Iran."

17. Najmeh Bozorgmehr, "Subsidy dispute adds to Iran's woes," *Financial Times*, April 12, 2012; IMF, "Energy Subsidy Reform."

18. IMF, "Energy Subsidy Reform."

19. YouGov public survey, November 28-December 4, 2011, 753 Gulf national respondents.

20. Elicitations of opinions of Gulf energy experts held from November 2011-2012. The author collected 135 responses by country from 92 experts.

21. Steffen Hertog, *Princes, Brokers and Bureaucrats: Oil and the State in Saudi Arabia* (Ithaca: Cornell, 2010), 223-245.

22. Dermot Gately, Nourah Al-Yousef, and Hamad M.H. Al-Sheikh, "The rapid growth of domestic oil consumption in Saudi Arabia and the opportunity cost of oil exports foregone," *Energy Policy* 47 (2012): 57-68.

23. *BP Statistical Review of World Energy 2013* (London: BP, 2013).

ABOUT THE AUTHOR

Jim Krane is the Wallace S. Wilson Fellow for Energy Studies at Rice University's Baker Institute. He specializes in energy geopolitics, focusing on energy consumption, technology, and political aspects of subsidy reform in exporting states.

ACKNOWLEDGEMENTS

Rice University student Walker Hall provided assistance with data collection for this article.



RICE UNIVERSITY'S
BAKER INSTITUTE - MS40
P.O. Box 1892
HOUSTON, TEXAS 77251-1892

NON-PROFIT ORG.
U.S. POSTAGE
PAID
HOUSTON, TEXAS
PERMIT NO. 7549

