



# Securing America's Future

Enhancing Our National Security by Reducing Oil Dependence  
and Environmental Damage

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Christopher Beddor, Winny Chen, Rudy deLeon, Shiyong Park, and Daniel J. Weiss August 2009

Center for American Progress



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# Introduction

On June 26 the House of Representatives passed the American Clean Energy and Security Act, or ACESA. The bill would cap greenhouse gas emissions, boost investments in energy efficiency and renewable energy such as wind and solar, and jumpstart the transition to a clean-energy economy. These new investments in clean-energy technologies would slash global warming pollution and reduce foreign oil use while creating jobs and increasing our economic competitiveness with China and other nations.

But in the lead up to the ACESA vote and in the weeks since House passage, conservative opponents of clean, domestic energy have wildly misrepresented the bill's content and cost, while resorting to scare tactics and half-truths in service of the status quo. On the contrary, America's reliance on imported fossil fuels instead of clean, domestic sources of energy has long been costly to our economy, our environment, and our national security—and will become even more so if we fail to act now.

America's dependence on foreign oil transfers U.S. dollars to a number of unfriendly regimes, while robbing the United States of the economic resources it desperately needs for domestic development and American innovation. American petrodollars fund regimes and economic investments that do not serve U.S. interests. And our enormous appetite for oil—America burns a full quarter of the world's oil—feeds the global demand that finances and sustains corrupt and undemocratic regimes around the globe. The perilous implications of this arrangement—increasing power and influence of oil exporters, many of whom comprise the world's worst regimes—will become more explicit if global demand increases as some current forecasts predict.<sup>1</sup>

What's more, the United States will increasingly turn to exporting countries that have opposing interests as oil production in friendly nations becomes depleted or less viable. Ultimately, the United States will become more invested in the volatile Middle East, more dependent on corrupt and unsavory regimes, and more involved with politically unstable countries. In fact, it may be forced to choose between maintaining an effective foreign policy or a consistent energy supply as U.S. consumers face higher energy prices.

The good news is that the United States has an historic opportunity to enhance its national security by reducing its dependence on oil. Policies to accomplish this goal, including more efficient fuel economy standards, investments in hybrid and electric vehicles, devel-

opment of natural gas-fueled heavy duty vehicles, and production of advanced biofuels would also create jobs and reduce global warming pollution.<sup>2</sup> A transformation from oil to no- and low-carbon energy sources will catalyze innovation that creates new technologies that the United States can market to other nations, leading to long-term economic growth and prosperity as well as enhanced security.<sup>3</sup>

This fall the Senate has a historic opportunity to reduce U.S. oil consumption as part of its debate on comprehensive clean-energy jobs and global warming pollution reduction legislation.

# State of play: America's reliance on oil

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## Domestic oil consumption

Levels of U.S. oil consumption have fluctuated over the last five decades. Consumption peaked in the United States during the three years leading up to the 1977-1979 oil crisis and the two years following the Iraq war in 2003 and 2004.<sup>4</sup> The mid- to late-1970s saw the most dramatic spike as consumption increased from 4.5 billion barrels to 5.5 billion barrels between 1974 and 1979, only to plummet again to 4.4 billion barrels in 1983—the lowest consumption level in the past 30 years.

The global economic downturn has lessened domestic consumption in 2008 and 2009. According to the Energy Information Administration, “[t]otal consumption of liquid fuels and other petroleum products is projected to decrease by 650,000 bbl/d (3.3 percent) in 2009 [compared to 2008], including a decline of 280,000 bbl/d (7.0 percent) in distillate fuel consumption and 140,000 bbl/d (8.7 percent) in jet fuel consumption.”<sup>5</sup> However, with signs of stronger economic activity in Asia and potential economic recovery in 2010, the decline in worldwide consumption will probably end as major economies recover.

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## Domestic oil production

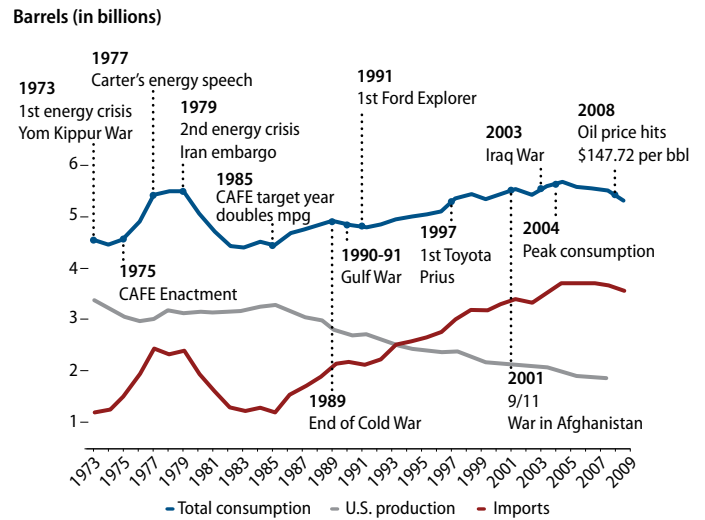
Even with a slowdown in U.S. consumption over the last several months, domestic oil production cannot keep up with demand. U.S. oil production has steadily declined since the mid-1980s, and today the United States has a consumption rate of over 5 billion barrels per year, while production hovers at only 1.8 billion barrels.<sup>6</sup>

The “drill, baby, drill” crowd believes that the United States can reduce its use of imported oil by vigorously developing domestic oil reserves. Unfortunately, this sloganeering doesn’t hold up to the facts. The amount of oil in proven U.S. reserves—reserves that the United States is fairly certain it can extract oil from in the future—has steadily decreased since the late 1970s from 31.8 billion barrels in 1977 to 21 billion barrels in 2007.<sup>7</sup> This means even if we drilled and produced all the U.S. oil reserves it would be exhausted in only about four years if consumption remains constant.

Some believe that drilling in the previously protected Outer Continental Shelf off both coasts would somehow meet our domestic energy needs. The OCS, however, contains only 3.9 billion barrels of proven oil reserves.<sup>8</sup> There is another 59 billion barrels of “technically recoverable undiscovered oil” in the OCS of the lower 48 states that are not part of the proven reserves. Eighty percent of this OCS oil is in areas long open to development.

Drilling restrictions on most of the remaining oil in the OCS ended last year. Yet the Department of Energy concluded that, “The projections in the OCS access case indicate that access to the Pacific, Atlantic, and eastern Gulf regions would not have a significant impact on domestic crude oil and natural gas production or prices before 2030.”<sup>9</sup> No DOE projections beyond 2030 are available, but clearly that we cannot meet our energy needs through offshore drilling. Oil is simply not a domestically sustainable energy source.

## U.S. crude consumption and supply



Energy Information Administration, “Petroleum Navigator—U.S. Crude Oil Supply and Disposition,” available at [http://tonto.eia.doe.gov/dnav/pet/pet\\_sum\\_crdsnd\\_adc\\_mbbbl\\_a.htm](http://tonto.eia.doe.gov/dnav/pet/pet_sum_crdsnd_adc_mbbbl_a.htm) (last accessed April 7, 2009).

FIGURE 1

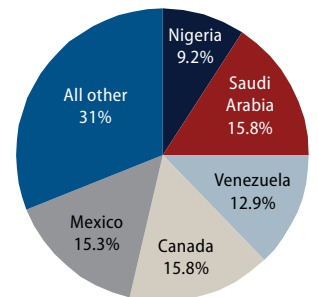
## Reliance on foreign oil

The last few years mark the highest rates of foreign oil imports in American history. Today America consumes 24 percent of the world’s oil supply while possessing only 2 percent of the world’s oil reserves. It has imported the majority of its crude oil supply since 1994. In 2008, the United States produced 1.8 billion barrels of crude oil domestically,<sup>10</sup> and imported twice as much—over 3.6 billion barrels (see Figure 1).<sup>11</sup> Petroleum—the major product of crude oil—is currently the leading source of all energy supply in the United States at 39.8 percent, providing 96 percent of transportation fuel and 44 percent of industrial fuel.<sup>12</sup>

The United States has imported the majority of its oil from Canada, Saudi Arabia, Mexico, Venezuela, and Nigeria over the last 10 years—in that order (see Figure 2).<sup>13</sup>

America is at least fortunate that 47 percent of its oil imports come from countries with long-lasting relationships with the United States—Canada, Mexico, and Saudi Arabia.<sup>14</sup>

## U.S. crude import shares

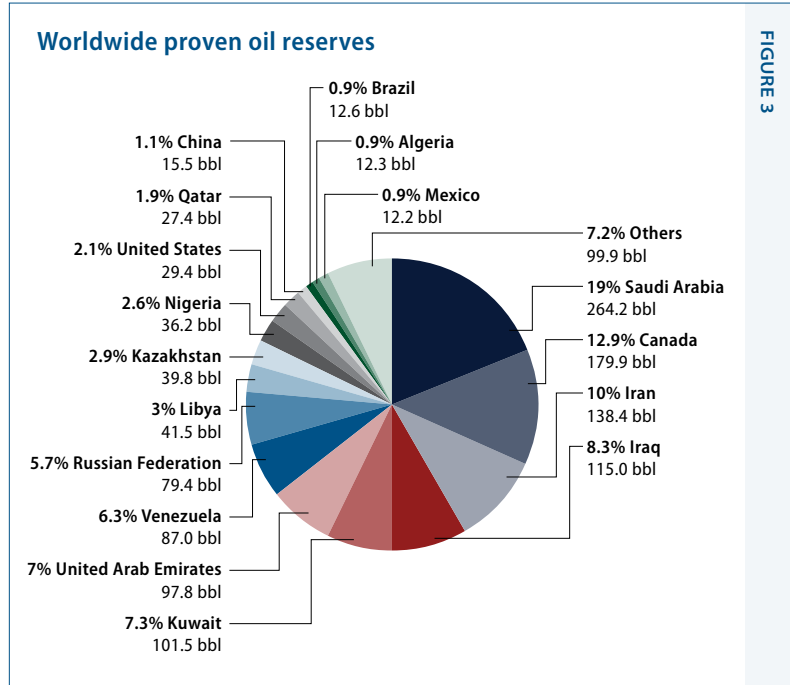


Energy Information Administration, “Petroleum Navigator—U.S. Crude Oil Imports by Country of Origin,” available at [http://tonto.eia.doe.gov/dnav/pet/pet\\_move\\_impcus\\_a2\\_nus\\_epc0\\_im0\\_mbbbl\\_a.htm](http://tonto.eia.doe.gov/dnav/pet/pet_move_impcus_a2_nus_epc0_im0_mbbbl_a.htm) (last accessed April 7, 2009).

FIGURE 2

Canada has steadily upped its flow of oil exports by drawing from its vast oil sand reserves, and in 2004 it surpassed Saudi Arabia to become the leading exporter to the United States. Mexico has also increased its supply to the United States, overtaking Saudi Arabia's exports in three of the past five years.

Increasing oil exports from reliable neighbors is a good development, but it will not continue for much longer. Canada appears to have sufficient reserves to last over 100 years if it continues at its current level of production, but the majority of Canada's oil is in oil sand reserves—an extremely dirty fuel that is expensive to refine. Strip mining, water pollution, and toxic hydrogen sulfide production hinder the extraction of oil sands,<sup>15</sup> and the process is the leading cause of greenhouse gases in Canada, emitting 40 million tons of carbon dioxide per year.<sup>16</sup> These harmful environmental consequences make oil sands unsustainable,<sup>17</sup> and Canada's oil production will likely diminish in the near future as a result. Meanwhile, Mexico's crude oil production has fallen 17.3 percent just since 2004,<sup>18</sup> and its primary oil fields will be depleted within a decade.



BP Statistical Review June 2009, available at [http://www.bp.com/liveassets/bp\\_internet/globalbp/globalbp\\_uk\\_english/reports\\_and\\_publications/statistical\\_energy\\_review\\_2008/STAGING/local\\_assets/downloads/spreadsheets/statistical\\_review\\_full\\_report\\_workbook\\_2008.xls](http://www.bp.com/liveassets/bp_internet/globalbp/globalbp_uk_english/reports_and_publications/statistical_energy_review_2008/STAGING/local_assets/downloads/spreadsheets/statistical_review_full_report_workbook_2008.xls)

The member nations of the Organization of Petroleum Exporting Countries, or OPEC, produce approximately half of America's oil supply. At times this cartel has driven up prices or reduced supplies, which caused economic upheaval in the United States. The 1973 oil embargo by OPEC—then known as OAPEC and including Egypt and Syria—triggered high inflation and required states to divert valuable attention and resources to address the crisis. Most recently, OPEC refused to increase output in 2008 when oil hit \$147 per barrel, driving gasoline prices up to \$4 or more nationwide just as the United States began to feel the effects of a broader economic recession.

America's significant dependence on imported oil also comes at a time when Great Britain and Mexico face even more looming supply issues. Oil production in Britain's North Sea oil fields—the primary source of the country's oil—is expected to fall 66 percent by 2020 from its peak production level in 1999.<sup>19</sup> And because Mexico's crude oil production has fallen and its sources will soon be depleted, the country will have to begin importing oil to meet domestic demands within five years. This will pit it against the United States for foreign reserves.<sup>20</sup>

Without any infrastructure changes the United States will be forced to rely more on Venezuela, Russia, and Middle Eastern and African nations for fuel as “friendly” foreign oil disappears. This would place our national security at a much higher risk since many of these nations are unstable, harbor hostility toward the United States, and often use their energy reserves to pursue aggressive political agendas.

The fact that Venezuela—a country without ambassadorial ties to the United States—is one of the top five oil exporters to the United States should be a cause for concern. Venezuelan President Hugo Chávez has made clear his antipathy toward America on various occasions, stating that Washington should “go to hell,”<sup>21</sup> alleging that the CIA is plotting to assassinate him,<sup>22</sup> and threatening to cut off oil sales to the United States. Chávez stated in a radio interview, “If you end up freezing [Venezuelan assets] and it harms us, we’re going to harm you.”<sup>23</sup>



# Oil and its costs to America

## Financial costs

The United States' oil habit is no longer affordable. It imported 66 percent of the oil it consumed in 2008,<sup>24</sup> which accounted for 16 percent of all import spending that year.<sup>25</sup> This widens the U.S. annual trade deficit, weakens the American economy, and means that our credit bill could interfere with our political interests.

We spent a total of \$2.3 trillion on crude oil over the past decade, and \$1.5 trillion in nominal dollars on imports (see Figure 4). This spending has only increased over time: The United States tripled its oil imports from 1985 to 2008, while domestic production fell by nearly 50 percent. And in 2008 alone the United States purchased \$357 billion worth of foreign crude oil—equivalent to 2.3 percent of our nation's gross domestic product and the highest level ever recorded (see Figure 5).<sup>26</sup>

## Climate and environmental costs

Oil consumption has had a devastating and widespread effect on the environment, too. Its production, transport, and combustion lead to wilderness destruction, pollution, and global warming. Seismic wave testing for feasibility studies for oil production in the Outer Continental Shelf disorients marine wildlife and has led to mass beaching of whales, while construction of major infrastructure on land—such as roads, jet landing strips, repair shops, homes, and industrial complexes—has destroyed natural habitats and been linked with cancer in wildlife.<sup>27</sup>

**Annual spending on oil**

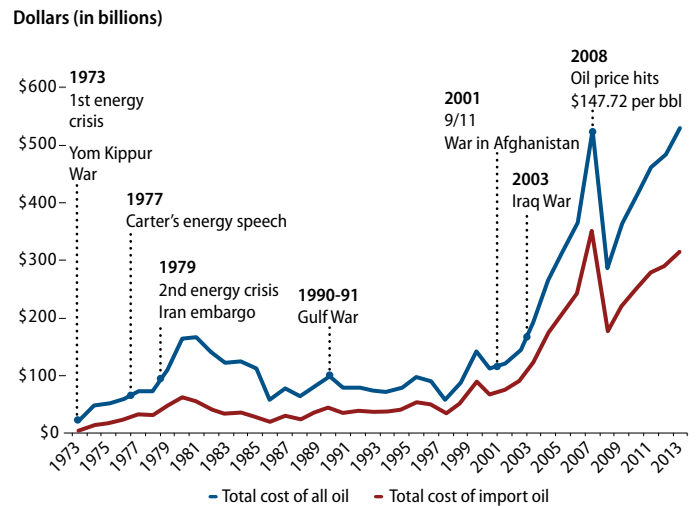


FIGURE 4

Energy Information Administration, "Petroleum Navigator-U.S. Crude Oil Supply and Disposition," available at [http://tonto.eia.doe.gov/dnav/pet/pet\\_sum\\_crdsnd\\_adc\\_mbbbl\\_a.htm](http://tonto.eia.doe.gov/dnav/pet/pet_sum_crdsnd_adc_mbbbl_a.htm) (last accessed April 7, 2009).

**Annual spending on oil as percentage of GDP**

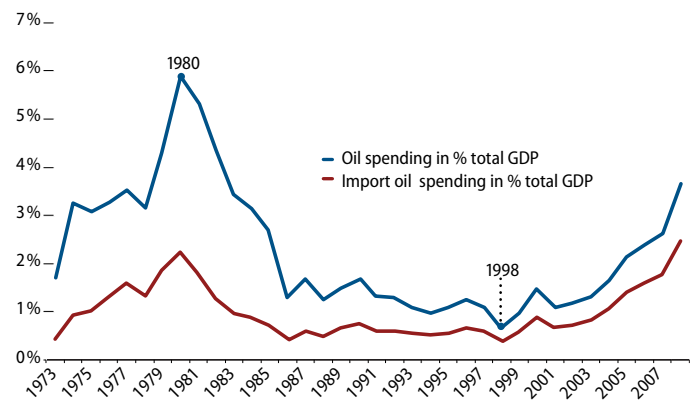


FIGURE 5

Energy Information Administration, "Petroleum Navigator-U.S. Crude Oil Supply and Disposition," available at [http://tonto.eia.doe.gov/dnav/pet/pet\\_sum\\_crdsnd\\_adc\\_mbbbl\\_a.htm](http://tonto.eia.doe.gov/dnav/pet/pet_sum_crdsnd_adc_mbbbl_a.htm) (last accessed April 7, 2009).

A related concern is oil spills, which have resulted in mass mortality and contamination of wildlife, fish, and other food species in the ocean. The most recent spill occurred in July 2009, when a cracked underwater pipeline 33 miles off the Louisiana shore spilled 63,000 barrels of oil into the surrounding Gulf of Mexico. Mammals, reptiles, amphibians, and birds that live in or near the ocean are poisoned by oil waste from these spills. It damages the delicate ecosystem of our oceans and disrupts the food chain on which fish and sea creatures depend, and on which their reproduction is based.

Burning fossil fuels such as coal and oil constitute the greatest source of greenhouse gas emissions that cause global warming. The EIA found that “energy-related carbon dioxide emissions, resulting from the combustion of petroleum, coal, and natural gas, represented 82 percent of total U.S. anthropogenic greenhouse gas emissions in 2006.”<sup>28</sup>

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## National security costs

The United States will remain vulnerable to volatile oil prices and supply shortages as long as it heavily depends on other nations for fuel and energy. Its need for steady supplies of oil means it must adjust its behavior and strategies in order to maintain relations with less-than-savory regimes including Venezuela, Nigeria, and Russia. These countries, as well as smaller nations such as Angola, will therefore hold an increasingly disproportional amount of bilateral and regional power, while the United States has diminished leverage and constrained policy options in strategic regions such as the Middle East and Central Asia.

This trend will be exacerbated as continued depletion of oil production and exports from friendly regimes forces the United States to import more from antagonistic countries in the future in order to offset the tapering supply.

Former military officials are speaking out on this issue. The CNA Military Advisory Board, a group of distinguished retired military leaders, issued a report in May 2009 arguing that America’s reliance on foreign oil poses a serious threat to U.S. national security. The report, entitled “Powering America’s Defense: Energy and the Risks to National Security,” concluded that “U.S. dependence on oil weakens international leverage, undermines foreign policy objectives, and entangles America with unstable or hostile regimes.”<sup>29</sup>

America’s oil dependence has other indirect but no less serious impacts on U.S. interests. For example, high rates of American consumption drive up global demand for oil, which fuels lofty prices and helps to fund and to sustain undemocratic and corrupt regimes. Because of this anti-Western nations such as Iran—with whom the United States by law cannot trade or buy oil—benefit regardless of who the end buyer of the fuel is.

Last year, record oil prices driven by global demand and speculators flooded Iran’s treasury with oil money, which helped keep Mahmoud Ahmadinejad afloat. Prior to Iran’s presidential election *The Economist* noted, “The president’s open-handed economic policies,

based on a windfall of \$250 billion in oil sales during his four-year term and intended to redistribute wealth, have won friends among the poor.”<sup>30</sup>

Reducing U.S. oil demand in the world market would be a big financial hit to Iran and other unfriendly petrostates. And it would have the added benefit of making more fuel from stable nations available to countries such as China, which currently purchases from Iran and Sudan because U.S. demand dominates oil trade with friendly sources.

The revenues and power from oil exports also undermine American interests in rule of law, good governance, development, and democracy promotion around the world. Funds from oil exports are rarely distributed among the people of oil-exporting countries. They often stay concentrated in the hands of a small group of ruling elites who exploit oil revenues to preserve their hold on power.

In some cases oil revenues skew political processes and hinder good governance. As a Council on Foreign Relations report noted, “States that are politically unstable and poorly governed often struggle with the task of responsibly managing the large revenues that come from their oil and gas exports ... Production in fragile democracies, such as Nigeria, can be undermined when politicians or local warlords focus on ways to seize oil and gas rents rather than on the longer-term task of governance.”<sup>31</sup>

In another example, Angola—the sixth largest exporter of oil to the United States—remains one of the poorest nations with the highest mortality rate in the world, and its corrupt ruling regime continues to reject International Monetary Fund assistance.

The significant contribution of oil combustion to global warming leads to serious national security concerns as well. As mentioned earlier, oil consumption results in far-spanning and acute environmental damage, including global warming. In 2007, the CNA Military Advisory Board published a study on the effect of climate change on American security interests. Their study found that “climate change poses a serious threat to America’s national security ... [It] acts as a threat multiplier for instability in some of the most volatile regions of the world.”

It will:

- Create destabilizing conditions, including reduced access to fresh water, impaired food production, health catastrophes, and loss of land, which will place additional strains on weak governments.
- Exacerbate marginal living standards in developing countries in Asia, Africa, and the Middle East, creating widespread instability and increasing the likelihood of conflict, mass migrations, and failed states.

- Make Defense Department operations more vulnerable because extreme environmental conditions will considerably increase operation and maintenance costs, compromise seal-level military bases, complicate ship and aircraft operations, and expose the national power grid upon which DoD is heavily reliant.<sup>32</sup>

These findings were backed up by a 2007 Center for American Progress report, “The Security Challenges of Climate Change,” which in addition to these findings identified other effects on national security. These included “increased U.S. border stress due to the severe effects of climate change in parts of Mexico and the Caribbean” and a “strain on the capacity of the United States—and in particular the U.S. military—to act as a ‘first responder’ to international disasters and humanitarian crises due to their increased frequency, complexity, and danger.”<sup>33</sup>

A few weeks ago retired Admiral Dennis McGinn re-emphasized these key points in testimony before the Senate Foreign Relations Committee.<sup>34</sup> He stressed that climate change places our military in jeopardy and is enormously expensive; our reliance on fossil fuels compromises our foreign policy and international leverage; and fossil fuels make the U.S. economy vulnerable to sudden shocks.

Some critics argue that the United States should not deal with this issue now and instead rely on investments in clean-energy technology and voluntary measures to reduce pollution. But this approach failed over the last eight years. In fact, Venture Capitalist John Doerr of Kleiner, Perkins told the Senate that “We must put a price on carbon and a cap on carbon emissions,” to spur investments in the clean-energy technologies of the future.<sup>35</sup>

We should heed expert advice and take action now to significantly reduce oil use and reduce global warming pollution. Transitioning to a low-carbon economy and reducing America’s dependence on foreign imports in the process isn’t just vital for our environment—it’s vital for our security.

# Taking the next step: Clean-energy sources

The United States is in an ideal position to move in a new direction, and it is critical that we do so. But first we must carefully examine the future implications of our next step.

A telling case in point: As the polar ice caps melt and the Arctic Ocean becomes more open to oil exploration, the potential to extract the estimated 90 billion barrels of Arctic crude oil reserves has attracted attention from several countries.<sup>36</sup> Russia has taken a particularly aggressive stance, increasing naval activity and even planting a flag at the bottom of the Arctic Ocean.<sup>37</sup>

Tension is inevitable without international laws governing the Arctic resources. And even if we are able to secure this band-aid solution of additional oil reserves, we are ignoring a paradox: Arctic oil has only become available through environmental degradation, a phenomenon caused largely by the world's consumption of oil. And burning this oil will produce pollution and increase degradation from global warming. This is a slippery slope that will bring devastating consequences.

The most viable program for sustained energy supply and lower oil use is a three-pronged approach that includes significantly more fuel-efficient cars, including hybrids and electric cars; the use of alternative fuels for transportation, including production of advanced biofuels and natural gas; and significant investment in public transit.

The Obama administration has taken the first steps toward this approach with the American Recovery and Reinvestment Act, which allocates \$71 billion for energy efficiency, renewable energy, "smart electrical grid" technology, and more efficient transportation. It also includes \$20 billion in tax incentives for investments in these technologies.<sup>38</sup> The planned high-capacity smart electrical grid will connect wind and solar energy from the Great Plains and the Southwest with businesses and households across the country, which will allow us to use more of our clean-energy resources.<sup>39</sup>

Yet we must do more than increase renewable sources. The transportation sector is responsible for the vast majority of oil consumption in the United States, and no marketable mechanism exists to use renewable energy in vehicles. But we do have the technology to connect vehicles to wind, solar, and geothermal power stations. Natural gas can combine with wind or solar plants to ensure that these power sources provide power around the

clock. Plug-in hybrid electric vehicles, although in their infancy, show the potential for drastic cuts in oil consumption, and several auto manufacturers are developing the next generation of electric cars.

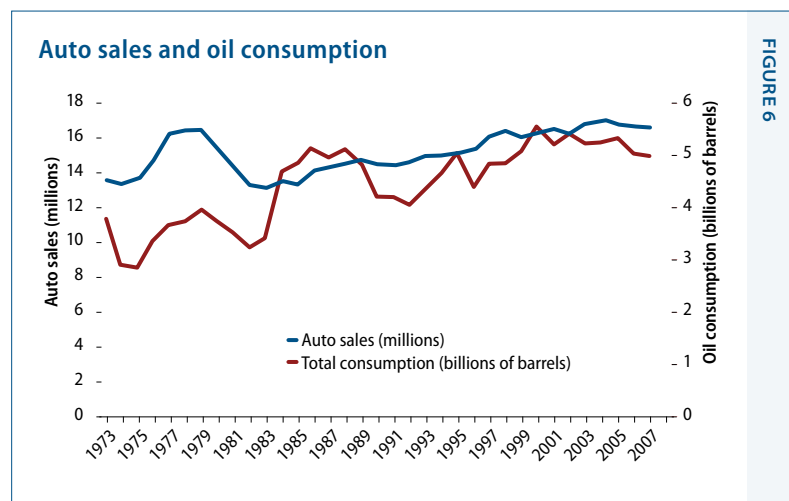
## U.S. natural gas can increase energy security and decrease oil use

Natural gas is “by the far the cleanest burning” fossil fuel, and produces slightly more than one-fifth of all U.S. energy.<sup>40</sup> Oil and coal combined comprise about two-thirds of all energy consumption, and their combustion produces substantially more global warming and other conventional pollution than natural gas. Combusting natural gas to power motor vehicles produces about one-third of the global warming pollution of petroleum burned in cars.<sup>41</sup> It should therefore play a larger role in our energy mix and help reduce our oil use given its domestic abundance and its lower pollutant levels.

The recent development of technology that enables the affordable development of significant shale gas reserves in the lower 48 states could fundamentally alter the U.S. energy system and play a larger role in helping to more rapidly and cost-effectively speed our reduction in oil use and enhance our national security. The Energy Information Administration estimates that the United States has approximately 1,770 trillion cubic feet, or tcf, of technically recoverable gas,<sup>42</sup> including 238 tcf of proven reserves.<sup>43</sup> At the current production rates, the Department of Energy believes that “the current recoverable resource estimate provides enough natural gas to supply the United States for the next 90 years.”<sup>44</sup>

Transportation accounts for about 70 percent of U.S. oil consumption<sup>45</sup> and about one-fifth of U.S. greenhouse gas pollution.<sup>46</sup> President Obama proposed to reduce our foreign oil use by one-third by 2016. The expansion of known and potential reserves of natural gas could replace oil in heavy trucks that are often centrally fueled and are too heavy for hybrid battery-petroleum engines.

The following policy proposals would increase the use of natural gas as a heavy-duty transportation fuel and as a substitute for coal in electricity production, which would reduce oil use and greenhouse gas pollution.



Environmental Protection Agency, “Executive Summary, Light-Duty Automotive Technology and Fuel Economy Trends: 1975 Through 2006,” 2006, available at <http://www.epa.gov/otaq/cert/mpg/fetrends/420r06011.pdf> (last accessed April 7, 2009).

## Passage of the NAT GAS Act

The NAT GAS Act, S. 1408, would boost investments in heavy-duty vehicles powered by natural gas. This fuel has the potential to replace 100 percent of the petroleum used

in heavy-duty vehicles. The bill extends, expands, and modifies tax incentives to encourage the purchase of natural gas vehicles as well as to build infrastructure for fueling them. When complying with federal fleet alternative-fuel fleet purchase requirements, federal agencies would purchase dedicated alternative-fueled vehicles, unless the agency can show that alternative fuel is not available or purchasing such vehicles is impractical. Finally, under the bill the Department of Energy would provide grants to light and heavy-duty engine manufacturers for research and development of better natural gas engines.

### Convert urban vehicle fleets to low-carbon fuels

Urban fleets—cabs, municipal vehicles, and delivery trucks—are significant contributors to air and global warming pollution. These centrally fueled fleets could easily use cleaner, alternative fuels such as compressed natural gas. Converting the refueling infrastructure would be relatively easy.

### Bus rapid transit

Bus rapid transit—which operates like a subway system, using a small number of dedicated intersecting roads or lanes for high-speed buses only—can address many problems at once. This system can provide public transit to get commuters out of their cars, reducing traffic congestion. This would also reduce oil use and greenhouse gas pollution. And construction of BRT systems cost 30 times less than a subway system.<sup>47</sup> If the buses were powered by compressed natural gas, they would further reduce both oil use and pollution.

### Electricity

Electricity is responsible for about 30 percent of all U.S. greenhouse gas emissions. Currently, coal fuels nearly 50 percent of U.S. power generation, while natural gas and nuclear power account for about 20 percent each, with nonhydro renewables hovering around 3 percent.

Natural gas could also help meet future electricity demand while reducing the national security threat posed by floods, drought, famine, and other global warming impacts. In the electricity sector, natural gas is already cheap, available, and ready to meet the nation's power needs while improving climate security. It emits about half the carbon dioxide and far fewer of the heavy metals associated with coal, which has traditionally been relied upon for base power. And gas is even more appealing for peak-power needs because it can be turned on and off easily and immediately. .

There are a number of policies that would encourage the substitution of natural gas for dirtier coal in electricity production.

- Establish incentives to retire aging, inefficient, dirty coal-fired power plants and replace them with renewable and low-carbon electricity.
- Establish a dedicated incentive for development and deployment of “dispatchable” renewable energy to build markets for electricity storage technology.
- Require that the carbon price and other costs are included when determining the dispatch order for moving electricity onto the grid to prioritize natural gas and other clean electricity.

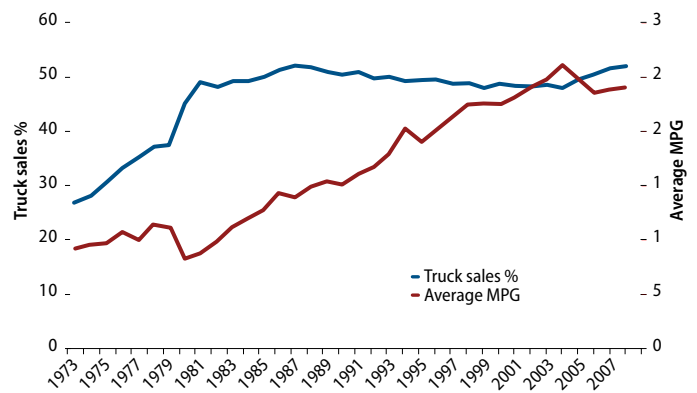
What’s more, using clean domestic natural gas will enhance our economy. Since it is produced in the United States, higher gas demand will create more jobs, and using domestic gas in lieu of imported oil would reduce our trade imbalance, keeping energy dollars at home instead of exporting oil dollars overseas. Gas could also be the basis for development of new, clean-energy technologies such as wind-gas hybrid electricity plants, carbon capture and storage, and natural gas transportation fuels. Such low-carbon technologies would find a market overseas.

### New oil use reduction measures adopted in 2009

This year has seen progress on efforts to reduce oil use. The American Recovery and Reinvestment Act, which became law on February 17, would invest over \$20 billion in the research and development of more efficient motor vehicles, public transit, and high-speed rail. ARRA also includes tax incentives to purchase plug-in hybrid electric vehicles that will achieve 80 miles per gallon or more.<sup>48</sup> It would require more fuel-efficient heavy trucks and off-road vehicles and provide assistance to public transit systems.

President Obama has been a longtime advocate of reducing oil consumption by increasing motor vehicle fuel economy. He proposed on May 19 to require an increase in average fuel economy for cars and light trucks to 35.5 miles per gallon in 2016. This is a 30 percent increase from current standards and moves up the original deadline from 2020. This policy would save an estimated 1.8 billion barrels of oil over the lifetime of vehicles sold over the next five years.<sup>49</sup>

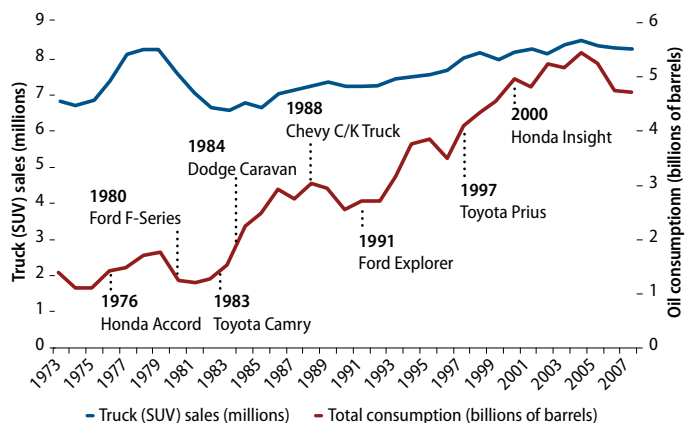
Truck (SUV) sales and MPG



U.S. Department of Transportation, “Summary of Fuel Economy Performance,” available at <http://www.nhtsa.dot.gov/Cars/rules/CAFE/CAFEData.htm>.

FIGURE 7

Truck (SUV) sales and oil consumption



U.S. Department of Transportation, “Summary of Fuel Economy Performance,” available at <http://www.nhtsa.dot.gov/Cars/rules/CAFE/CAFEData.htm>.

FIGURE 8



Some argue that the limits and reduction of carbon pollution in ACESA may force the United States to shift from friendly but dirtier (to produce) sources of oil to unfriendly but more accessible and cleaner sources. However, this argument misses the point. The goal of the new ACESA is to cut American oil consumption period—not make Americans decide between the lesser of the two evils.

An analysis from the Natural Resource Defense Council found that the ACESA requirements and programs would go far in enhancing energy security. The cleaner cars incentives provide a good example of how the ACESA bill would help reduce our dependence on foreign oil. The bill provides the retooling incentives and loan guarantees needed to achieve President Obama's aggressive targets for cleaner, higher mileage vehicles by the year 2016. These targets are expected to cut U.S. oil dependency by 1.4 million barrels a day by 2020, according the Union of Concerned Scientists. This is roughly equivalent to the amount of oil we currently import from Saudi Arabia today.<sup>50</sup> ACESA would save 320 million barrels of oil annually by 2020.<sup>51</sup> The Senate will debate similar legislation this fall.

## What the American Clean Energy and Security Act Would Do

On June 26, 2009, the U.S. House of Representatives passed H.R. 2454, the American Clean Energy and Security Act of 2009. The act takes a big first step toward tackling global warming by limiting pollution and putting a price on carbon.

### It includes several elements:

- Reduces oil use with new investments in clean transportation technologies including plug-in hybrid and other electric vehicles, natural gas-fueled heavy vehicles, and resources for communities to reduce their transportation-related pollution.
- Accelerates the development and deployment of clean-energy technologies, including electric vehicles, smart grids, renewable energy such as wind and solar power, and carbon capture and sequestration from coal-fired power plants.
- Requires and incents energy efficiency, including stronger codes for appliances and buildings, and increased aid to states for clean-energy and energy efficiency projects.
- A cap-and-trade program that sets limits and reduces emissions of carbon dioxide and other greenhouse gases, particularly from coal-fired power plants.

# Conclusion

For more than three decades the United States has repeatedly erred on the side of inaction. Policymakers, rather than pursuing long-term sustainable goals, were swayed by the prospect of immediate benefits or political risks. And the public was too focused on falling prices at the pump after successive energy crises to see the bigger picture of ever-escalating oil imports.

We stand at a similar crossroads today, but this time it is no longer a matter of financial inconvenience. It is a matter of national security, global economy, and sustainable human existence.

It is imperative for our current and future national security and economic stability that we invest in and develop ultra-efficient vehicles, clean-advanced biofuels, domestically produced renewable energy and natural gas, and better public transportation. Continuing to rely on oil will only defer the inevitable switch to a more efficient, low-carbon system, and further delay will only raise costs for future generations.

We must quickly diversify our sources of energy to overcome our overreliance on dirty fossil fuels and make up for the past 30 years of inaction. We must realize the full potential of effective legislation, address consumer behaviors, and invest in scientific research and innovative technologies. President Obama and Congress have taken important steps toward oil use reduction. Now the Senate must take additional steps toward efficiency and renewable energy production.

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