

A Progressive Energy Platform

A century ago, smokestacks and oil rigs were signs of America's growing industrial might. Now, they symbolize an addiction to carbon-based fuels that endangers America's national security, economic vitality, and environmental health.

Once, coal-fired power plants lit America's burgeoning cities and spread hope and opportunity to rural communities. Now, gases from those first-generation plants are warming the Earth's atmosphere, raising the tides, and unleashing violent storms. All told, the country belches nearly 6 billion metric tons of carbon dioxide into the air a year,¹ approximately one-quarter of the world's total.²

America was once the world's leading oil producer and exporter. Now it is the world's biggest oil consumer and importer. It guzzles more than 14 million barrels of foreign crude and petroleum products a day.³

To feed its oil habit, the United States depends increasingly on a rogue's gallery of corrupt, despotic, and hostile countries. America's insatiable appetite, along with exploding demand from fast-growing countries like China and India, makes possession of oil and gas reserves the new currency of power for autocrats like Iran's Mahmoud Ahmadinejad and Venezuela's Hugo Chavez.

There is abundant evidence that U.S. petrodollars, recycled to extremists by Islamic "charities," have been used to finance terrorism. Saudi Arabia, which controls the world's largest proven reserves, has funneled \$75 billion in the last two decades to aid the spread of Wahhabi puritanism across the globe.⁴ That has helped create a culture of intolerance, bigotry, and fanaticism in the Muslim world.

Yet, despite the dangerous consequences of America's energy crisis, the Bush administration and the Republican Congress have responded with an astounding series of obfuscations, evasions, and failures of leadership. They have devoted their energies to preserving the status quo rather than changing it.

Breaking his 2000 campaign pledge, President Bush has refused to impose mandatory controls on carbon emissions. His administration has offered a laughably inadequate plan to raise auto fuel efficiency standards by less than two miles a gallon,

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“One person with a belief is a social power equal to ninety-nine who have only interests.”

—John Stuart Mill

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even as inefficient SUVs flood America’s highways. He signed a GOP energy bill that lavished \$11 billion in new tax breaks for oil and gas companies, but offered comparatively puny temporary credits for consumers who buy hybrids.

In a Road to Damascus moment, the president finally conceded America’s oil addiction in his 2006 State of the Union address.⁵ But his proposed solution, a so-called “Advanced Energy Initiative,” is wholly inadequate to the challenge. It amounts to little more than a feel-good increase in the Department of Energy’s paltry clean-energy research budget. It completely overlooks the sine qua non of any credible plan for energy security: making fossil fuels more expensive to burn—not just when oil prices spike, but as a matter of course.

Meanwhile, critics of the administration’s energy polices have issued ringing but vague calls for a new national initiative modeled on the fabled Manhattan Project and Apollo moon missions. They hope to discover and invent new, clean, renewable energy sources and technologies for the future. They urge adoption of ambitious national goals, such as creating 3 million new clean energy jobs⁶

or cutting oil use in half in 20 years.⁷ But conspicuously absent from their well-intentioned schemes is a plausible roadmap for getting from here to there.

It is time for progressives to fill the leadership void by offering a realistic plan that begins in the here and now and leads quickly to a clean energy future.

The plan must address America’s two distinct energy needs: fuel for transportation and power to generate electricity.

For transportation, the United States must dramatically speed up development of renewable alternatives to oil. For electricity, it must adopt a “no fuel left behind” strategy. The country’s electricity grid must draw on a wide array of power sources and avoid becoming overly dependent on any source that is not plentiful and clean.

The first plank in any credible energy platform must be capping U.S. carbon emissions—now.

A mandatory, economywide carbon cap will galvanize action on three critical fronts. First, by effectively raising the price of burning oil and fossil fuels, it would give carmakers a financial incentive to build cars and trucks that use less oil and gas. Second, when

combined with a flexible, market-based system that allows companies to trade emissions allowances, a carbon cap would harness market forces to reduce greenhouse gas emissions dramatically. Third, it would unleash a torrent of private investment in clean energy technologies and fuels such as biofuels, “clean coal,” natural gas, and zero-emission sources like nuclear, wind, biomass, and solar power.

Lawmakers can create such a national cap-and-trade system for greenhouse gases in one fell swoop, or in steps. They could start with the electricity sector, which produces 40 percent of the nation’s greenhouse gas emissions, and then fold in the rest of the U.S. economy, including the transportation sector, with a tailpipe emissions trading system for vehicle manufacturers.

Beyond capping carbon, PPI proposes a host of other steps that will harness market forces and American ingenuity to hasten the development of a post-oil economy that is strategically, economically, and environmentally sustainable.

Here is a detailed outline of a progressive energy platform for America.

I. Breaking America’s Oil Habit

There is no way for America to drill its way to “energy independence”; it controls just 3 percent of the world’s proven reserves. So as long as the U.S. economy runs on oil, America will be dependent on foreign supplier countries. Quite apart from the environmental impact of burning more than 20 million barrels of oil a day, the strategic and economic implications of this dubious arrangement should compel lawmakers to break America’s oil habit and start investing more U.S. energy dollars at home.

There are only two ways to do that. The first is to use less oil through smarter, more efficient consumption. The second is to use fuels other than oil for transportation. To those

ends, progressives should support several immediate steps:

□ Cap carbon now

By creating a profit motive for companies to burn less oil and other fossil fuels, a national cap-and-trade regulatory system to control carbon dioxide emissions can be the policy lever that decisively shifts the U.S. economy in a new direction.⁸

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Such a system would set a mandatory national cap on carbon dioxide emissions. Companies that keep their emissions below set limits under the cap would be able to sell excess emissions credits to companies that exceed their limits. Companies that exceed their limits would be required to buy extra credits. That would create a financial incentive for burning less oil and other fossil fuels—and a financial penalty for burning too much of them.

This would amount to a policy twofer—simultaneously weaning the country from oil and curtailing global warming—with several other residual benefits to boot.

Farmers could benefit in a national cap-and-trade system for greenhouse gas emissions if they are allowed to sell emissions credits based on the amount of carbon dioxide their crops suck out of the atmosphere.

If the cap-and-trade system includes “tailpipe trading” to control carbon dioxide emissions from cars and trucks, farmers would also benefit from new demand for crops such as soy, peanuts, and switchgrass that can be converted into clean-burning biofuels. As a robust market for biofuels takes hold, an increasing share of consumer spending on

energy will go to onshore players in the biofuel production and supply chain—farmers, refiners, distributors, and retailers—instead of foreign oil suppliers.

□ ***Replace fuel economy standards with “tailpipe trading”***

America’s system of fuel economy requirements for cars and trucks has become a terrible failure. It is so mired in congressional gridlock that President Bush’s proposal to raise the standards for trucks by between 1.5 and 1.8 miles per gallon—which would do little to improve overall fuel efficiency and may actually encourage automakers to build larger, more inefficient light trucks—almost seems reasonable, because more aggressive changes would never pass.

Since Congress first created this system of so-called Corporate Average Fuel Economy (CAFE) standards in 1975, the share of new vehicles classified as light trucks (SUVs, minivans, and pickups) has shot up from 20 percent to more than one-half of the market. Worse, a loophole excuses the biggest behemoths from fuel-economy standards altogether—vehicles with a gross weight of between 8,500 and 10,000 pounds, including the Hummer H2, Ford Excursion, and the Chevy Suburban. As a result of all this, U.S. automobiles and passenger trucks emit nearly one-half of the greenhouse gases that are emitted by all passenger vehicles globally.⁹

It is time to abandon CAFE standards and replace them with a tailpipe emissions trading system that is integrated into a national cap-and-trade system for carbon dioxide and other greenhouse gases.

As with national cap-and-trade proposals that would cover energy producers, factories, and other big emitters, a tailpipe trading system would give automakers a profit motive to produce cars and trucks that keep carbon

dioxide emissions under set limits. Companies with fleets that miss the mark could buy credits from other sources (any company covered in the national trading system, not just other automakers), or pay into a fund that could be used to further spur innovation.

Because of the profit motive it would create, such a policy is far more likely to reduce both oil consumption and air pollution than the long-since-stalled CAFE system of miles-per-gallon standards. In fact, a tailpipe trading system with no loopholes or exclusions for big SUVs could end up saving 2 million barrels of oil a day—roughly the amount that America imports from the Persian Gulf.¹⁰

□ ***Substitute homegrown biofuels for oil***

About 5 million U.S. vehicles are already capable of running on biofuel blends—either gasoline mixed with ethanol, or petroleum-based diesel mixed with biodiesel—and U.S. automakers intend to build a million more cars and trucks capable of running on these bio-blends in 2006 alone. This trend has the potential to reduce carbon dioxide emissions implicated in global warming and reduce gasoline consumption by 3.5 billion gallons a year.¹¹

Progressives should further spur the growth of the market for biofuels by requiring vehicle manufacturers to offer every model of car and truck with the option of an engine that runs on gasoline or ethanol—a modification

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that costs as little as \$25 per car. That would help to reduce U.S. gasoline consumption by one-quarter by 2025.

Additional measures to grow the market for biofuels can include: streamlining Environmental Protection Agency (EPA) approval and auto warranty requirements for alternative fuels such as cellulosic ethanol that is made from plant waste instead of just corn, or biodiesel that is made from peanuts or soy; investing in the development, production, distribution, and retail sales of near-term, commercially available alternative fuels; and requiring federal, state, and large private vehicle fleets to lead the way by switching to advanced vehicles and alternative fuels.

□ *Capture the “clean tech” market*

In the same way that the birth of commercial oil production in the late 19th century helped usher in a new era of industrialization, America today has at its disposal new energy-saving technologies that may help reduce its oil consumption and serve as the cornerstone of a clean energy future. For example, cars made from advanced carbon composite material or lightweight steel can nearly double the efficiency of today’s popular hybrid-electric cars and light trucks, while improving safety and performance.¹²

Green technologies, including alternative energy technologies and technologies that increase energy efficiency—collectively known as “clean tech”—represent a huge new economic opportunity for the United States. The global market for biofuels, wind power, solar photovoltaics, fuel cells, and distributed hydrogen is expected to quadruple in the coming decade from \$40 billion in 2005 to nearly \$170 billion by 2015.¹³

But because America’s energy policies have been so backward in recent years, the country

could miss the chance to establish a firm leadership position in the clean tech market. Consider the fact that most U.S. vehicles do not meet China’s stringent fuel economy standards, which limits American access to the world’s fastest growing consumer market. Or, consider this: California was the birthplace of wind power technology, but because the United States is stuck in slow motion in utilizing it, the country’s total wind power generation capacity of 6,370 megawatts is now dwarfed by Germany’s 14,600 megawatts. Similarly, while the United States was once the largest manufacturer of solar photovoltaic cells, Japan now produces more than twice as many solar cells as America does.¹⁴

To reestablish America’s lead in clean tech—particularly in the transportation sector, which is so utterly dependent on foreign oil—progressives should champion tax incentives and investments that will encourage auto manufacturers to dramatically step up their production of hybrid, plug-in hybrid-electric, and other clean vehicles.

To further spur clean energy technology, progressives should redouble efforts to encourage cutting-edge research and innovation by directing the National Science Foundation to establish between five and 10 new centers of clean technology excellence at U.S. universities. Funding should be \$5 million per university and build on NSF’s existing program in engineering research.¹⁵

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II. Reinventing America's Electricity Sector

America is blessed with vast energy resources, including abundant supplies of coal and renewable resources like wind, solar, and biomass. It is also the world leader in developing such clean energy technologies as coal gasification and next-generation nuclear power. The challenge is to roll all of those advantages together into a diversified and sustainable national energy portfolio.

A cap-and-trade system that limits carbon dioxide and other greenhouse gas emissions will kick-start progress toward a cleaner electricity sector by discouraging the use of pollution producing energy technologies. But progressives must also champion policies that will ensure that America finds a sustainable balance of clean energy sources.¹⁶ For starters:

□ *Increase natural gas supplies—and diversify into other energy sources*

When natural gas is used to generate electricity or power vehicles, it produces far fewer smog-causing substances and greenhouse gases than other carbon-based fuels. Unfortunately, the promise of natural gas is also a pitfall. Placing limits on carbon dioxide emissions will goose electricity producers' reliance on it, deplete America's cheap and abundant supplies, and raise prices.

In anticipation of that trend, lawmakers should take steps to increase the supply of natural gas, and electricity producers should ramp up their use of coal, nuclear, and other energy sources, in addition to natural gas, so they do not become overly dependent on it.

To increase natural gas supplies, progressives should support construction of

a pipeline from Alaska to the lower 48 states and measures to tap abundant supplies in the central and western Gulf of Mexico.¹⁷ Progressives also should support an inventory of U.S. offshore natural gas resources to better estimate future supplies.

To encourage diversification, progressives should support investments in coal gasification, biomass, and other technologies that can be used to generate electricity while reducing greenhouse gas emissions.

□ *Expand nuclear power*

Nuclear power holds great potential to be an integral part of a diversified energy portfolio for America. It produces no greenhouse gas emissions, so it can help clean up the air and combat climate change. And new plant designs promise to produce power more safely and economically than first-generation facilities.

For example, the Nuclear Regulatory Commission (NRC) has certified three new designs that would use significantly fewer pumps, pipes, valves, and cables than first-generation facilities. That will reduce the plants' complexity, making them easier to inspect and maintain. From a safety perspective, the new plants rely on natural forces such as gravity, natural circulation, and condensation, assuring safe shutdown even in the event of an accident.

In addition to these three new approved designs, at least four other designs may soon win NRC approval. Among these is the promising modular, "pebble bed" reactor design. As the name suggests, these smaller plants would use hundreds of thousands of uranium pebbles rather than large cores to generate power. As researchers at MIT recently concluded, these pebbles burn more completely than their traditional counterparts and are thus less of a weapons proliferation concern, simply

because there is much less viable material left at the end of the process.

It will take time to bring these next-generation facilities online. Progressives should support efforts to expedite the process.

The energy bill of 2005 included a few worthy measures on that front, including federal investments, loan guarantees, and tax credits that promise to trim \$200 million to \$300 million off the costs of new reactors, allowing them to generate power more cost-effectively than gas- and coal-fired power plants.

❑ *Bring “clean coal” plants online*

With natural gas prices soaring and prospects for bringing online more nuclear, solar, wind, and biomass facilities just getting off the ground, coal’s profile is higher than it has been in decades. The U.S. Department of Energy says coal will remain America’s main source of electricity through 2025, and predicts that the country will need more than 100 new coal-fired plants between now and then just to keep pace with demand.

Conventional coal-fired plants remain a leading source of pollutants linked to smog, acid rain, mercury pollution, and climate change. But a promising new technology called “integrated gasification combined cycle” (IGCC)—also known as “coal gasification,” or “clean coal”—represents a way to make electricity from coal while producing far less air pollution, greenhouse gas emissions, and waste.¹⁸

Unfortunately, IGCC plants are still 25 percent more expensive to build than conventional coal plants. The 2005 energy bill provides a tax credit to offset those higher construction costs. That is a start, but progressives should support a federal funding stream to further commercialize IGCC technology and assist in the development of carbon sequestration projects that will offset the plants’ emissions.

❑ *Aggressively expand the use of renewable energy*

Expanding the use of natural energy resources such as wind, solar power, and geo-thermal heat can help create jobs, clean the air, and enhance energy security. But the federal government has done little to encourage and support efforts to exploit these renewable resources, while states have leapt ahead. For instance, no thanks to President Bush, his home state of Texas has established a program mandating that 2,000 megawatts of new renewable capacity be built in the Lone Star State by 2009. That would constitute about 3 percent of the state’s electricity demand. California is setting the pace by requiring retail sellers of electricity to purchase 20 percent of their electricity supply from renewable resources by 2010, and 33 percent by 2020.

To provide a more uniform national system for renewable power, progressives should demand that the federal government create a

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national renewable portfolio standard for electric utilities. Specifically, progressives should endorse a goal of bringing 100,000 new megawatts of clean power online by 2020.¹⁹

❑ *Build smarter, greener buildings*

The buildings in which we live and work are responsible for two-thirds of America’s electricity consumption and the greenhouse gases that come from generating that electricity.²⁰ But new technologies and green-building techniques can dramatically reduce

the amount of energy that is required to construct, heat, cool, and maintain homes, offices, and other facilities. Upfront costs can be higher, but the investments quickly pay off in the form of lower power bills. In fact, new commercial and office equipment, advanced lighting, and improved construction materials and techniques can reduce commercial buildings' energy use by as much as 70 percent. Similarly, energy-efficient homes, particularly those with "smart" features that sense when to adjust the thermostat and turn appliances on and off can save residents 10 percent on their annual power bills.

Using computers and sensors to regulate buildings' energy use can also moderate demand on the electricity grid. These systems can literally be configured to receive spot market prices for gas and electricity, and automatically adjust energy use accordingly, with a minimum of noticeable difference for building occupants. Leveling power use in this way can mitigate against energy price spikes—reducing power costs for all consumers, regardless of whether they themselves use smart-building technologies. Furthermore, most experts agree that time-sensitive pricing and price-responsive energy use are both essential for making electric competition work.

Progressives should champion the nascent movement to build smarter, greener buildings. At the same time, the Department of Energy should team with state and local energy agencies and utilities to lead a national effort to transform America's commercial building stock from dumb and inefficient to green and smart.

□ *Modernize the grid*

There has long been talk of modernizing the aging system of power stations, transformers, and monitoring technologies—collectively known as "the grid"—that supplies

America's electricity. But the talk has not produced many results.

Slowly, a new generation of communication, monitoring, and grid control technologies is emerging from laboratories, and these technologies are beginning to make their way into the transmission system. The new technologies would, for example, create greater capacity and stability, which would allow the grid to support a new generation of plug-in hybrid-electric vehicles—and also allow vehicles powered by fuel cells to feed electricity back to the grid when they are not in use.²¹

These new technologies often have higher initial costs and greater operating risks than more conventional technologies. Progressives should therefore support greater federal investment in research and development, demonstration, and installation assistance. They should also push for a federal and state regulatory climate that encourages accelerated deployment of new technologies to create a smarter and more secure electricity grid with a greater emphasis on modern, clean, distributed energy.²²

□ *Generate more power closer to consumers*

As part of the effort to modernize America's electricity grid, utility companies should expand "distributed generation," which entails locating clean, small-scale power sources such as micro-turbines, fuel cells, and combined heat and power (CHP) plants, also known as co-generators, closer to consumers.²³ This can help reduce the need for larger plants and long-distance power delivery wires. Technologies such as CHP, which boosts electricity production by capturing steam that would otherwise be lost, also emit fewer pollutants and greenhouse gases than many conventional electricity

generation sources. Finally, by supplementing power from the grid, distributed generation also can make the nation's electricity system more secure.

To encourage distributed generation, progressives should break down regulatory barriers and ensure that new technologies can be developed and rolled out commensurate with the economic and environmental benefits they offer.

Conclusion: No Time To Lose

America's national security, economic vitality, and environmental health demand that the country neither accept today's energy policy status quo, nor passively wait for some distant wholesale shift to a clean energy future. Although the United States is gradually moving away from a 50-year-plus policy of

propping up despotic regimes in the Middle East to protect oil supplies, it has yet to make a credible effort to actually break its oil dependence, diversify its energy portfolio, or modernize its electricity sector.

President Bush and Republicans in Congress seem content with this state of drift, as evidenced

by their enthusiastic embrace of the decidedly conventional 2005 energy bill. It therefore falls to progressives to champion an energy plan that will turn America in a new direction and make the future happen now.

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Endnotes

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