



## FIGHTING GLOBAL WARMING ENDING OUR DEPENDENCE ON OIL

### The Tipping Point

As worldwide oil supplies continue to decline, America's dependence on foreign oil will become an increasing threat to national security. U.S. reliance on oil and other fossil fuels is also one of the leading contributors to the growing threat of global warming. Climate scientists from around the world now warn that we must begin immediately to reduce emissions of heat-trapping greenhouse gases in order to avoid the most devastating consequences of global warming. More violent storms, droughts, floods, increasingly intense heat waves, and spreading infectious diseases are all part of the forecast for a warming world. While the task before us is challenging, the technology exists today to reduce global warming emissions, increase energy security, and ensure a healthier, more secure future for our nation and the planet.

### Energy Efficiency

The fastest, safest and most affordable way to curb greenhouse gas emissions and achieve energy security is to become more efficient in our energy use. In fact, efficiency improvements have already proven to be one of the most important "sources" of energy in the U.S. and have contributed tremendously to our nation's economic growth. Since the Arab oil embargo of 1973, the U.S. has gotten more than four times as much new energy from efficiency improvements than from expansion of domestic energy supplies.<sup>1</sup>

At home and in the office there are a number of ways to reduce energy use. Replacing older home appliances with more efficient models, improving heating and cooling systems, better insulation for commercial and residential buildings, and replacing old light bulbs with compact fluorescent or LED bulbs are all steps that will cut global warming pollution and will lower energy bills. The American Council for an Energy Efficient Economy estimates that wider adoption of economically viable efficiency measures could reduce demand for both electricity and natural gas by more than 20 percent within the next twenty years.<sup>2</sup> Others believe the potential savings from increased energy efficiency to be even greater. Amory Lovins of the Rocky Mountain Institute estimates that 75 percent of total electricity consumption in the U.S. could be reduced by more widespread use of the best electricity-saving technologies.<sup>3</sup>

By making energy efficiency the foundation of a new national energy policy and by implementing the appropriate

standards and incentives, our government can ensure that American businesses achieve increasingly higher levels of energy savings while steadily reducing both operating costs and global warming emissions.

### Nature's Power

Harnessing the power of the sun, wind, and other natural forces is also crucial. In the U.S., the potential for generation of clean, renewable power is virtually infinite. While renewable energy (excluding hydroelectric power) currently provides only about two percent of our electricity nationwide,<sup>4</sup> a recent analysis by the National Renewable Energy Laboratory estimates that it is technically feasible for a mix of existing renewable technologies to meet the entire U.S. electricity demand by 2020.<sup>5</sup> In fact, solar energy alone could generate all of the electricity needed in the U.S. on just 0.3 percent of the nation's land.<sup>6</sup> Energy from the sun also creates wind, another energy source with tremendous potential. In twelve states alone, wind turbines could produce as much as 2.6 times the total electricity generation of the entire U.S.<sup>7</sup>

In addition to the direct and indirect energy provided by the sun, several other renewable energy sources exist that could further contribute to reducing global warming pollution and increasing domestic energy supplies. Geothermal energy taps the earth's internal thermal (heat) energy and can be used directly both for the heating and cooling of buildings or indirectly to produce electricity. The Geothermal Energy Association estimates that with improvements in technology, geothermal resources could produce as much as 200 billion kilowatt-hours of electricity annually in the United States<sup>8</sup> – enough to power nearly 18.5 million homes.<sup>9</sup> The ocean's tides, currents and waves also hold enormous energy generation potential. The Electric Power Research Institute (EPRI) estimates that wave energy off the U.S. coasts is equal to 2.1 trillion kWh per year<sup>10</sup> – enough to meet more than 55 percent of total U.S. electricity demand.<sup>9</sup>

Advances in technology during the past twenty years have vastly improved the economics of renewable energy. Since the 1980s, the price of electricity generated by wind has fallen by more than 80 percent<sup>11</sup> and at its current cost of four to six cents per kWh, wind energy already is cost-competitive with new coal and gas-fired power plants and is less expensive than nuclear energy. Geothermal energy, at about three to four cents per kWh, is even cheaper than wind and also is less

expensive than nuclear, coal and natural gas.<sup>6</sup> Solar energy is also expected to become cost-competitive in the near future as technologies and production methods improve.

Unfortunately, the potential for renewable energy has yet to be fully tapped. In part, this is because the U.S. government is still spending a significant portion of federal energy dollars supporting polluting fossil fuels and dangerous nuclear power. Both state and federal policymakers can accelerate the growth of safe, renewable energy sources by mandating their use and by providing tax credits for renewable energy production.

## Fuel Economy

With the U.S. automotive fleet accounting for 40% of the nation's 20 million barrel a day oil addiction<sup>12</sup> and 20% of its carbon dioxide emissions,<sup>13</sup> better fuel economy for America's cars and light trucks must be made a central component of U.S. energy policy. Making passenger vehicles travel farther on a gallon of gas would slow global warming, enhance energy security, and decrease air pollution, all while saving consumers money at the gas pump.

Unfortunately, the fuel economy of America's automobiles has been backsliding for the last twenty years primarily because of the growth in sales of SUVs, minivans and pick-up trucks. With cars and light trucks achieving just 20.8 miles per gallon (mpg) on average today, automotive efficiency is at its lowest point since the early 1980s.<sup>14</sup> However, the U.S. doesn't have to settle for gas-guzzlers. The Union of Concerned Scientists estimates that conventional technologies are capable of nearly

doubling average fuel economy to 40 mpg in just ten years and that even more drastic improvements are also possible in the near future as hybrid technology matures and as new technologies such as hydrogen fuel cells enter the market.<sup>15</sup>

In addition to increasing automotive fuel economy, expanding the use of biofuels like ethanol and biodiesel can also reduce U.S. dependence on foreign oil and slow global warming. Although it is difficult to establish a precise estimate of the potential of biofuels, a recent joint study by the U.S. Departments of Agriculture and Energy found that advanced biofuels could substitute for 37 percent of U.S. transport fuel use within the next 25 years, with the figure rising to 75 percent if vehicle fuel economy is doubled.<sup>16</sup>

To improve the performance of our nation's automotive fleet, Congress must raise fuel economy (CAFÉ) standards and must provide incentives to American auto companies to switch to manufacturing plug-in, flex-fuel, hybrid vehicles.

## Ensuring a Secure and Healthy World

If we are to confront the dual threats of energy dependence and global warming, the U.S. must act now. On an individual level, each of us can be smarter and more efficient users of energy. At the government level, the U.S. must adopt mandatory controls on greenhouse gas emissions and make major investments in energy efficiency and the production of clean, renewable energy sources. The future of our nation and the world is in the balance.

For more information on PSR's Prescription campaign visit: [www.psrprescriptions.org](http://www.psrprescriptions.org)

### ENDNOTES

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