

The Next Presi

Last

November, Lord (David) Puttnam debated before Parliament an important bill to tackle global warming. Addressing industry and government warnings that we must proceed slowly to avoid economic ruin, Lord Puttnam recalled that precisely 200 years ago Parliament heard identical caveats during the debate over abolition of the slave trade. At that time slave commerce represented one-fourth of Britain's G.D.P. and provided its primary source of cheap, abundant energy. Vested interests warned that financial apocalypse would succeed its prohibition.

That debate lasted roughly a year, and Parliament, in the end, made the moral choice, abolishing the trade outright. Instead of collapsing, as slavery's proponents had predicted, Britain's economy accelerated. Slavery's abolition exposed the debilitating inefficiencies associated with zero-cost labor; slavery had been a ball and chain not only for the slaves but also for the British economy, hobbling productivity and stifling growth. Now creativity and productivity surged. Entrepreneurs seeking new sources of energy launched the Industrial Revolution and

inaugurated the greatest era of wealth production in human history.

Today, we don't need to abolish carbon as an energy source in order to see its inefficiencies starkly, or to understand that this addiction is the principal drag on American capitalism. The evidence is before our eyes. The practice of borrowing a billion dollars each day to buy foreign oil has caused the American dollar to implode. More than a trillion dollars in annual subsidies to coal and oil producers has beggared a nation that four decades ago owned half the globe's wealth. Carbon dependence has eroded our economic power, destroyed our moral authority, diminished our international influence and prestige, endangered our national security, and damaged our health and landscapes. It is subverting everything we value.

We know that nations that "decarbonize" their economies reap immediate rewards. Sweden announced in 2006 the phaseout of all fossil fuels (and nuclear energy) by 2020. In 1991 the Swedes enacted a carbon tax—now up to \$150 a ton—closed two nuclear reactors, and still dropped greenhouse emissions to 5 tons per person, compared to the U.S. per-capita rate of 20 tons. Thousands of entrepreneurs rushed to develop new ways of generating energy from wind, the sun, and the tides, and from woodchips, agricultural waste, and garbage. Growth rates climbed to upwards of three times those of the U.S. The heavily taxed Swedish economy is now the world's eighth richest by G.D.P.

Iceland was 80 percent dependent on imported coal and oil in the 1970s and was among the poorest economies in Europe. Today, Iceland is 100 percent energy-independent, with 90 percent of the nation's homes heated by geothermal and its remaining electrical needs met by hydro. The International Monetary Fund now ranks Iceland the fourth most affluent nation on earth. Geothermal and hydro produce so much cheap power that Iceland has become one of the world's top energy exporters. (Iceland exports its surplus energy in the form of smelted aluminum.) The country, which previously had to beg for corporate investment, now has companies lined up to relocate there to take advantage of its low-cost clean energy.

It should come as no surprise that California, America's most energy-efficient state, also possesses its strongest economy.

The United States has far greater domestic energy resources than Iceland or Sweden does. We sit atop the second-largest geothermal resources in the world. The American Midwest is the Saudi Arabia of wind; indeed, North Dakota, Kansas, and Texas alone produce enough harnessable wind to meet all of the nation's electricity de-

dent's First Task

A MANIFESTO

BY ROBERT F. KENNEDY JR.

mand. As for solar, according to a study in *Scientific American*, photovoltaic and solar-thermal installations across just 19 percent of the most barren desert land in the Southwest could supply nearly all of our nation's electricity needs without any rooftop installation, even assuming every American owned a plug-in hybrid. This is, incidentally, a much smaller footprint than would be required by the equivalent power from coal.

In America, several obstacles impede the kind of entrepreneurial revolutions that brought prosperity to Sweden and Iceland. First, that trillion dollars in annual coal-and-oil subsidies gives the carbon industry a decisive market advantage and creates a formidable barrier to renewables. Second, an overstressed and inefficient national electrical grid can't accommodate new kinds of power. Third, a byzantine array of local rules impede access by innovators to national markets. And fourth, state and federal governments have failed to develop efficiency standards and long-promised market incentives for green buildings and machines.

There are four things the new president should immediately do to hasten the approaching boom in energy innovation. A carbon cap-and-trade system designed to put downward pressure on carbon emissions is quite simply a no-brainer. Already endorsed by Senators McCain, Clinton, and Obama, such a system would measure national carbon emissions and create a market to auction emissions credits. The supply of credits is then reduced each year to meet pre-determined carbon-reduction targets. As supply tightens, credit value increases, providing rich monetary rewards for innovators who reduce carbon. Since it is precisely targeted, cap-and-trade is more effective than a carbon tax. It is also more palatable to politicians, who despise taxes and love markets. Industry likes the system's clear goals. This market-based approach has a proven track record.

The next president must push to revamp the nation's antiquated high-voltage power-transmission system so that it can deliver solar, wind, geothermal, and other renewable energy across the country. Right now, a Texas wind-farm manager who wants to get his electrons to market faces two huge impediments. First, our regional power grids are overstressed and misaligned. The biggest renewable-energy opportunities—for instance, Southwest solar and Midwest wind—are outside the grids' reach. Furthermore, traveling via alternating-current (A.C.) lines, too much of that wind farmer's energy would dissipate before it crossed the country. The nation urgently needs more invest-

ment in its backbone transmission grid, including new direct-current (D.C.) power lines for efficient long-haul transmission. Even more important, we need to build in "smart" features, including storage points and computerized management overlays, allowing the new grid to intelligently deploy the energy along the way. This backbone would operate at the speed of light and incorporate sophisticated new battery and storage technologies to store solar energy for use at night and to deploy wind energy during the doldrums. Construction of this new grid will create a marketplace where utilities, established businesses, and entrepreneurs can sell energy and efficiency.

The other obstacle is the web of arcane and conflicting state rules that currently restrict access to the grid. The federal government needs to work with state authorities to open up the grids, allowing clean-energy innovators to fairly compete for investment, space, and customers. We need open markets where hundreds of local and national power producers can scramble to deliver economic and environmental solutions at the lowest possible price. The energy sector, in other words, needs an initiative analogous to the 1996 Telecommunications Act, which required open access to all the nation's telephone lines. Marketplace competition among national and local phone companies instantly precipitated the historic explosion in telecom activity.

Construction of efficient and open-transmission marketplaces and green-power-plant infrastructure would require about a trillion dollars over the next 15 years. For roughly a third of the projected cost of the Iraq war we could wean the country from carbon. And the good news is that the government doesn't actually have to pay for all of this. If the president works with governors to lift constraints and encourage investment, utilities and private entrepreneurs will quickly step in to revitalize the grid and recover their investment through royalties collected for transporting green electrons. One investor anxious to fill this breach is Stephan Dolezalek, a managing director of VantagePoint Venture Partners, one of the world's largest green-tech venture-capital firms. Dolezalek scoffs at claims that a carbon-free economy is still decades away. "With the right market drivers and an open-access marketplace, we can completely decarbonize our electric system within years," says Dolezalek. He analogizes the grid initiative to the federal Arpanet high-speed Internet backbone that accelerated the P.C. revolution and the information-technology boom in the 1990s. "In 1987, there were less than 500 networks," he recalls. "By 1995, there were 50,000. By 1996, there were 150,000. The en-

ergy sector has the potential to evolve forward more quickly than most people can grasp today. We're going to see those same quick responses in the renewable-energy sector. As soon as the national marketplace is up, the curves will go vertical."

Energy expert and former C.I.A. director R. James Woolsey predicts: "With rational market incentives and a smart backbone, you'll see capital and entrepreneurs flooding this field with lightning speed." Ten percent of venture-capital dollars is already deployed in the clean-tech sector, and the world's biggest companies are crowding the space with capital and scrambling for position. Says Dolezalek, "The Internet boom caused information flow to increase exponentially, but the price per bit dropped to almost zero. The same thing can happen with energy. Remember, the electrons are hitting the earth for free. We just need to erect the infrastructure to harvest and deliver them to the consumers." Solar and wind plants are far quicker to deploy than conventional power plants because of their simple design and lower environmental-impact concerns. The plants have modest maintenance and operation costs. There are no costly mining, refining, and transportation costs or the catastrophically expensive environmental and military penalties associated with carbon.

"We have the ability to make clean energy both abundant and cheap," says Dolezalek. Accessible markets will give every American the opportunity to become an energy entrepreneur. Homes and businesses will become power plants as individuals cash in by installing solar panels and wind turbines on their buildings, and selling the stored energy in their plug-in hybrids back to the grid at peak hours. "As capital and entrepreneurs rush into this space, the pace of change will accelerate exponentially. As energy production goes up, you could see the price per unit drop to practically nothing."

The president's final priority must be to connect a much smarter power grid to vastly more efficient buildings and machines. We have barely scratched the surface here. Washington is a decade behind its obligation, first set by Ronald Reagan, to set cost-minimizing efficiency standards for all major appliances. With the conspicuous exception of Arnold Schwarzenegger's California, the states aren't doing much better. And Congress keeps setting ludicrously tight expiration dates for its energy-efficiency tax credits, frustrating both planning and investment. The new president must take all of this in hand at once.

We need to create open national markets where individuals who devise new ways to produce or conserve power can quickly profit from their innovations. Open, efficient markets will unleash America's entrepreneurial energies to solve our most urgent national problems—global warming, national security, our staggering debt, and a stagnant economy. Everyone will profit from the green gold rush. By kicking its carbon addiction, America will increase its national wealth and generate millions of jobs that can't be outsourced. We will create a decentralized and highly distributable grid that is far more resilient and safe for our country; a terrorist might knock out a power plant, but never a million homes. We will cut annual trade and budget deficits by hundreds of billions and improve public health and farm production. And for the first time in half a century we will live free from Middle Eastern wars and entanglements with petty tyrants who despise democracy and are hated by their own people. □

A version of "The Next President's First Task" appears in the May 2008 issue of Vanity Fair.