ENERGY INNOVATION
POLICY & TECHNOLOGY LLC

www.energyinnovation.org
98 Battery St. #202; San Francisco, CA 94111
hal@energyinnovation.org

WRITTEN STATEMENT: HAL HARVEY

Every American I have ever met wants energy that is affordable, reliable, and clean. These core goals should be the north star of our energy policy. And every energy expert I've met, no matter their profession or party affiliation, has agreed that technology is the key to our energy future, and that America can lead in this realm.

With these core precepts, one can begin to build an energy strategy that does not fracture along party lines. The basic idea is simple: For technologies that are far from ready in the marketplace, we must maintain a vigorous and disciplined R&D program. For technologies that offer great benefits, but need refinements and economies of scale to become commercial success, we must set clear, long-term, steadily stronger performance standards. And for any option that is close to competitive, and offers great social benefits, we must use carefully designed economic signals to close the gap.

This troika—R&D, performance standards, and economic signals—can unleash the power of the private sector, create jobs, and ensure that American energy is affordable, reliable, and clean.

American technology is, or can be, second to none. In the energy field, every single major technology development has been borne out of a partnership between smart national or state programs and a vigorous private sector. 3-D seismic imaging, directional drilling, and fracking were all borne in DOE labs—and they ushered in our gas boom. Of course, all three also required great private sector commitments—and offered huge private sector awards. The advanced turbine engines that run our natural gas power plants came from military aircraft turbine programs. The astounding advances in wind and solar energy were due to both government R&D and performance standards mandated state by state. Nuclear power is emphatically a federal invention. The list goes on. The point is simply that the options we have today came from commitments of yesteryear. The same holds going forth. But this country spends less than one-half of one percent of its energy budget on R&D. That foretells failure.

The next crucial element to the strategy is strong performance standards. When American companies are given a clear performance standard and enough time to meet it, they can do heroic things. We cut acid rain emissions in half, at about 10 percent of the projected cost. We have reduced conventional tailpipe emissions in new cars by some *98 percent* with good performance standards. Energy use in buildings in California has been cut by 80 percent through good building codes. Of course, performance standards can be badly designed, but when they are properly structured, they unleash technology and free market magic.

Finally, there is a suite of economic policies that can help deliver on core energy policy goals. Much of the American highway system was built with very modest gasoline taxes. This is the right kind of economic signal, because it aligns costs and beneficiaries very closely. A long-term set of modest fees and rebates can likewise be transformative.

There is one final and crucial lesson that we must learn from decades of energy and environmental policy: The jobs-versus-environment argument is a pure myth. There is no evidence that a clean environment destroys jobs. In fact, it is quite the reverse: A healthy environment requires a healthy economy, and vice versa. The counter examples are legion: Consider the costs China will have to pay over decades to try to reclaim poisoned waterways and poisoned land. The only relationship between high pollution and a larger GDP is, sadly, in increased hospital visits, and those costs are staggering and heartbreaking.

The history of the Clean Air Act and other well-designed environmental standards shows that prosperity, jobs, and a clean environment can go hand in hand. We need to take the lessons from this work and extend it to new challenges, emphatically including climate change.