Thirty years ago, as the atmosphere’s protective ozone layer was dwindling at alarming rates, we were serving proudly under President Ronald Reagan. We remember his leading role in negotiating the Montreal Protocol, which continues to protect and restore the delicate ozone layer. Today the world faces a similar challenge: the threat of climate change.

Just as in the 1980s, there is mounting evidence of problems with the atmosphere that are growing too compelling to ignore. And, once again, there is uncertainty about what lies ahead. The extent to which climate change is due to man-made causes can be questioned. But the risks associated with future warming are so severe that they should be hedged.

The responsible and conservative response should be to take out an insurance policy. Doing so need not rely on heavy-handed, growth-inhibiting government regulations. Instead, a climate solution should be based on a sound economic analysis that embodies the conservative principles of free markets and limited government.

We suggest a solution that rests on four pillars. First, creating a gradually increasing carbon tax. Second, returning the tax proceeds to the American people in the form of dividends. Third, establishing border carbon adjustments that protect American competitiveness and encourage other countries to follow suit. And fourth, rolling back government regulations once such a system is in place.

The first pillar, a carbon tax, is the most cost-effective way to reduce emissions. Unlike the current cumbersome regulatory approach, a levy on emissions would free companies to find the most efficient way to reduce their carbon footprint. A sensibly priced, gradually rising tax would send a powerful market signal to businesses that want certainty when planning for the future.

A “carbon dividend” payment, the second pillar, would have tax proceeds distributed to the American people on a quarterly basis. This way, the revenue-neutral tax would benefit working families rather than bloat government spending. A $40-per-ton carbon tax would provide a family of four with roughly $2,000 in carbon dividends in the first year, an amount that could grow over time as the carbon tax rate increased.

A carbon dividends policy could spur larger reductions in greenhouse-gas emissions than all of President Obama’s climate policies. At the same time, our plan would strengthen the economy, help working-class Americans, and promote national security, all while reducing regulations and shrinking the size of government.

The third pillar is a border adjustment for carbon content. When American companies export to countries without comparable carbon pricing systems, they would receive rebates on the carbon taxes they have paid. Imports from such countries, meanwhile, would face fees on the carbon content of their products. Proceeds from such fees would also be returned to the American people through carbon dividends. Pioneering such a system would put America in the driver’s seat of global climate policy. It would also promote American competitiveness by penalizing countries whose lack of carbon-reduction policies would otherwise give them an unfair trade advantage.

The eventual elimination of regulations no longer necessary after the enactment of a carbon tax would constitute the final pillar. Almost all of the Environmental Protection Agency’s regulatory authority over carbon emissions could be eliminated, including an outright repeal of President Obama’s Clean Power Plan. Robust carbon taxes would also justify ending federal and state tort liability for emitters.

With these principles in mind, on Wednesday the Climate Leadership Council is unveiling “The Conservative Case for Carbon Dividends.” The report was co-authored by conservative thinkers Martin Feldstein, Henry Paulson Jr., Gregory Mankiw, Ted Halstead, Tom Stephenson and Rob Walton.

This carbon dividends program would help steer the U.S. toward a path of more durable economic growth by encouraging technological innovation and large-scale substitution of existing energy sources. It would also provide much-needed regulatory relief to U.S. industries. Companies, especially those in the energy sector, finally would have the flexibility they now lack, removing one of the most serious impediments to capital investment.

Perhaps most important, the carbon dividends plan speaks to the increasing frustration and economic insecurity experienced by many working-class Americans. The plan would elevate the fortunes of the nation’s less-advantaged while strengthening the economy. A Treasury Department report published last month predicts that carbon dividends would mean income gains for about 70% of Americans.

This plan will also be good for the long-term prospects of the Republican Party. About two-thirds of Americans worry a “great deal” or “fair amount” about climate change, according to a 2016 Gallup survey. Polls often show concern about climate change is higher among younger voters, and among Asians and Hispanics, the fastest-growing demographic groups. A carbon-dividends plan provides an opportunity to appeal to all three demographics.

Controlling the White House and Congress means that Republicans bear the responsibility of exercising wise leadership on the defining challenges of our era. Climate change is one of these issues. It is time for the Grand Old Party to once again lead the way.

Mr. Shultz was secretary of state (1982-89) and Treasury secretary (1972-74). Mr. Baker was secretary of state (1989-92) and Treasury secretary (1985-88).