

Green Energy Coalition Overview and Strategy:

Green Energy Coalition: Value Proposal

Over the next 5 years, if a significant reduction of yearly carbon emissions can be obtained, we might still have a chance to limit catastrophic damage to the world's climate. The key strategy to this plan aims to reduce the demand for fossil fuels, especially oil, which will reduce the cost of gasoline and eventually electricity. The theory is that a small change in the demand for oil will show up as a significantly lowered price of both crude oil and gasoline. The key policy challenge is to institute state and federal policy to maintain a floor price on gasoline as real costs drop. A significant portion of this difference should be used to fund rapid investment in methods to continue to reduce fossil fuel demand.

By taking a systems approach that considers the customers first, the primary objective lowers demand causing lower costs for all kinds of transportation energy and energy generation which has the intended consequence of reducing released carbon and saving the planet from the worst deleterious effects of anthropogenic global warming.

Essentially the plan pulls together a consortium of private, public, and academic entities with the goal to create a huge customer (the Green Energy Coalition) for green energy technology products. This group would have a strong profit motive to find, develop, and deploy, technology related to green transportation, green power generation, energy conservation, energy efficiency, and GHG mitigations. In addition, climate and meteorological studies, agronomy and forestry, as well as research into areas such as oceanography and fisheries, would be sponsored by this group to measure the impact that the new technology and energy policies have on the planet.

Green Energy Coalition: Business Plan

The first challenge is to create an overarching Green Energy Coalition (GEC) whose goal is to line up a group of investors willing to provide approximately \$80B in investment capital over five years. This kind of investment will make an impact in overall demand for crude oil, gas, and coal in the world and will significantly lower the cost of crude oil and the associated carbon based vehicle fuels, with a portion of the savings redirected toward lowering green power generation costs. Although raising \$80B seems unattainable, if fifty entities (companies or states) join the Green Energy Coalition, the annual average investment would fall below an average of \$330M per member. For many large energy and manufacturing companies, this is less than 5% of their annual capital budgets. Many of the companies would elect to invest in part, because the GEC initiatives would substantially increase the market for their products. Consequentially, a powerful coalition of hundreds of companies should support the formation of the Green Energy Coalition, even if some don't invest directly in the GEC.

After reviewing existing energy policies, including their impact on the market for vehicle fuels and crude oil, and evaluating current incentives offered to increase green vehicle sales, an unintended consequence was discovered. As green vehicles significantly penetrate into the vehicle fleet, the majority of transportation and fuel cost savings actually accrues to crude oil customers, and not to the green vehicle purchasers. Reduced petroleum demand due to rapid green vehicle deployment and increased biofuel

supply lowers crude oil prices. Our analysis shows, that if global oil demand falls by only 3% in an accelerated timeframe of five years, crude oil prices would fall 50%, as evidenced by the market price drop in late 2008.

The next step in the business plan uses the Green Energy Coalition to create the following business units:

- A Green Vehicle Group (GVG) operation with the objective of financially supporting enterprises that will reduce crude oil demand through the expansion of substitute fuels and vehicles into the American vehicle fleet.
- A Green Power Coalition (GPC) with an objective of financially supporting publicly owned green power enterprises.
- A Natural Gas Market Group (NGMG) that has the objective of financially supporting efforts to control shale gas development and keep the price of natural gas above a critical substitution cost level.
- A Coal Power Plant Group (CPPG) that has the objective of using a variety of methods to negotiate the shutdown of coal-fired power plants.
- An Environmental Effectiveness Team (EET) that consists of engineering, meteorology, and climate experts with the objective of assessing costs and benefits of various courses of action to address climate changes.

The Green Vehicle Group incentives would need funding of approximately 30% of the decline in oil prices caused by deploying green vehicles or biofuels. Funding the other business units in the Green Energy Coalition likely requires capture of an additional 20% of the expected savings from declining oil prices. The funding requirements could need half the oil price drop caused by the group's actions in the vehicle fuels market, if all the above initiatives fund from a crude oil tax tied to dropping oil prices. Alternatively, a shale gas severance tax, or a moderate carbon fee, could cover some of the financial load, but we believe targeting crude oil prices creates the key enabling strategy leading to the successful implementation of a green energy transition.

Green Energy Group: Policy Challenge

The currently proposed carbon tax solutions are too small to have an impact on oil and natural gas usage, even as they increase coal costs. Government regulation of GHGs in the near term seems unlikely with the ineffectiveness of the federal government in creating appropriate legislation. Our proposed solutions take a portion of savings from declines in oil prices as usage goes down (due to ramp up of any kind of technologies and practices that replace oil products).

Under one scenario, the cost of the incentives to increase the green vehicle penetration of the American vehicle fleet, totals about \$800 billion over the next 15 years, added to another \$1.0 trillion for extending existing tax credits. But crude oil customers, together with green vehicle owners, could save over \$10 trillion in fuel expenditures during the same time period. The cost of the incentives should easily be covered by the proceeds collected from a crude oil tax tied to oil price declines from the forecast trend, for most of the first 15 years. In this scenario, the maximum net investment by the green vehicle group could eventually reach \$85B spread over the first five years, with a rate of return on this funding that exceeds 35%, assuming the green vehicle group receives 30% of crude oil cost savings.

If a group of vehicle manufacturers and suppliers together with visionary universities and energy companies lobbied for compensation tied to dropping oil prices (e.g. a crude oil tax of 30% of the drop from the existing price trend), they would have strong incentives to invest and take other actions to reduce

oil demand and drive global oil prices down. Our study shows that unleashing private sector efforts to reduce oil demand would result in an extraordinary rate of return to society.

As the price of oil falls, the (good) challenge involves making green energy investments fast enough to keep the rate of return down to reasonable levels. But if oil prices collapse, investing the flood of incoming cash (from a crude oil tax tied to falling oil prices) will be challenging. The ability to identify good investments and executing the necessary research, innovation, and implementation in green technology is key to executing this plan.

What could a Green Energy Coalition Accomplish?

The large extra benefits achieved by vehicles that substitute electricity and biofuels for oil products create the huge economic driving force that would cause a successful Green Vehicle Group strategy. If we couple a crude oil tax capturing 50% of the drop in oil prices, to incentives to deploy more green vehicles, the result would be a downward spiral of crude oil prices, eventually shutting in high cost oil, and hopefully tar sands oil.

The proceeds from this crude oil tax would be sufficient to additionally subsidize 26-30% of the capital costs of a "pipeline of green power projects" large enough to supply 80% of America's electricity within thirty years. We propose using a Green Power Coalition that would build a "pipeline" of publicly owned power projects that receive the 30% CapEx subsidy, and use low interest public financing for the remainder. The Green Power Coalition pipeline of projects could generate electricity at less than 6 cents per kWh (in \$2012) over the period, and this would substantially lower American household cost of energy.

The two initiatives taken together would cut the household cost of energy from over 8.6% of total GDP costs today, to almost 4.0% of GDP within thirty years. These initiatives beat BAU just on the cost of energy, and without even considering environmental, national security, and general economic benefits from restructuring our energy industries and infrastructure.

The attached presentation deck covers some of the basis for these conclusions, along with additional critical recommendations to address shale gas development issues, and green power replacement of existing coal generated electricity.

The deck also raises the specter of extreme weather events currently under review by climate scientists and meteorologists. We believe that these droughts, heat waves, and extreme precipitation events, will serve as "triggering events", and lead to increasing public awareness of the deleterious effects of climate change. Within a few years, Americans will be demanding action to address these disruptive weather patterns caused by Arctic amplification and alteration of jet stream patterns. They will demand and want solutions to the problem, and the Green Energy Coalition we propose, can respond with the solutions needed to reduce carbon emissions quickly and economically.

Now is the time to "Just Do It".