



Briefing Paper

The Energy Policy Dilemma

Is curbing CO2 emissions and global prosperity mutually exclusive?

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January 10th 2010

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1. Introduction

The world is at a cross roads, where certain decisions on energy will fundamentally affect global prosperity—in which direction is the wild card. We now ponder the aftermath of the UN Copenhagen conference, where no post-Kyoto II agreement was reached, where a lot of divisions emerged and the pundits were left wondering if the U.S. Senate will pass a Cap and Trade Bill. Then of course there is China and India forcefully telling the developed world not to put restrictions on their CO2 emissions.

Whilst some of this can be seen as posturing, it shows a universal concern from the Midwest of the USA, to the cities of Australia to the bustling streets of metropolises in China and India, around the impact a cost on carbon has on global prosperity. Simply put, people do not want to see their standard of living reduced.

2. The Four Pillars

So how can we bridge this seemingly impossible impasse?

We can bridge this if we seriously consider the formulation of a holistic energy policy that does not pick winners and addresses *'the four pillars'*.

A comprehensive and holistic energy policy that is effective must address the four key pillars of:

1. Sustainable economic growth
2. Energy security
3. The environment
4. Water consumption

These are some of the key pillars that drive global prosperity. A comprehensive energy policy is a very complex subject; however, the following will provide a flavor of what is needed.

Sustainable economic growth – a country’s policy must ensure that it can deliver sufficient power to fuel economic growth. Affordable and accessible electricity is one of the cornerstones of economic development—consider over 1.5 billion people today have no electricity. Many of the countries where these people are located will burn coal to generate the required electricity—because coal is accessible and cheap.

In the U.S., with projected population growth to 370 million¹ over the next 20 years and moderate economic growth of say 3%, our power needs will not be met if we exclude certain sources of energy, e.g., nuclear and coal even, with significant advances in renewable energy and big gains in efficiency. Alarm bells are already ringing in California where future economic growth will be threatened by power shortages. The WSJ reported on July 3, 2009 that the state auditor warned that the electricity sector poses a high risk to the state economy as a result of its renewable energy focus.

Energy security – our transportation systems rely heavily on imported oil and we are increasingly going to use natural gas for electricity generation, much of which will be imported in the form of LNG. If we were serious about significantly reducing reliance on imports we would simultaneously be pursuing efficiencies and cost and environmentally effective ways to utilize the USA’s vast coal and shale reserves.

The environment – despite what side of the climate change debate you are on, everyone agrees we must improve stewardship of our planet and the resources we use to drive our prosperity. There is much more we can do to conserve energy and reduce our demands on the planet. However, given the urgent need to reduce dependence on foreign oil and ensure future prosperity, we must be pragmatic when evaluating energy sources that were once the enemy of environmentalists. As a sign of the times, The Energy Foundation now supports the use of coal if we can reduce its CO2 footprint and even the founder of Greenpeace has embraced nuclear energy.

Water usage – this is the one resource we depend on for our survival. We can survive without energy but we cannot survive without water. Nearly all forms of energy generation consume significant amounts of water. Solar thermal requires 200,000 liters of water per MWh and coal, one of the lowest consumers of water,

¹ U.S. Census Bureau,
<http://www.census.gov/population/www/projections/summarytables.html>

requires 78,000 liters per MWh. Of course wind and solar photovoltaic (PV) are exceptions with negligible water usage. However wind and solar PV, even at a break neck speed of technology breakthrough and deployment, will not satisfy our future needs, yet alone replace all the coal plants around the world.

3. Summary

In summary, we cannot trade one of these pillars for another—people will not be prepared to make the trade. We see this clearly in the developing world, in particular India and China. However these are not mutually exclusive goals but the policy makers in many developed countries have treated them as such, sometimes unconsciously, creating policies that have unintended consequences.

Furthermore, ideology has blocked our pragmatism and we get distortions that if continued will cost us dearly. Interestingly the command and control style of government in China, who is pursuing all forms of energy, primarily as a necessity to satisfy its prosperity goals, most likely will have more renewable energy than the U.S. in 20 years, both in absolute MWhs generated and as a percentage of the total energy mix. In a way, China has a market driven energy policy.

So, the author advocates a broad based energy policy that seriously addresses each of these 4 pillars, expands renewable energy and drives energy efficiency in both transportation and electricity. The policy must also pursue nuclear energy; ways to reduce the CO2 footprint of coal; an effective way to exploit shale reserves and address water management. This approach, which has many subtleties, will drive a broader and agreed global action plan, which currently totally eludes us.