

“Climate Change and Energy Security: Obama’s Historic Challenge” ♦

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1. The Obama Administration’s Energy Policy Challenge

Milestones:

It was a long 35 years ago that Richard Nixon proclaimed, “Our national goal should be to meet our own energy needs without depending on any foreign sources.” Even now that goal of energy security remains elusive although it has occupied an attention almost continuously. (Chart 1 U.S. Petroleum Consumption, Production and Imports. Chart 2 U.S. Oil Imports by Country of Origin) Under the sharp increase in oil prices until last year, the past several years have made a huge impact on public awareness and have contributed to a growing concern about energy independence. At the same time, a big difference has come about in attitudes toward climate change. In December 1997, when tough negotiators agreed to the Kyoto Protocol, the United States Senate was at odds with the international community, voting 95-0 against the accord. Now the cultural landscape is full of cover articles in major media publications on such topics as powerful hurricanes, 100 year storms, disappearing species, as well as Al Gore’s book and film “An Inconvenient Truth” and his Nobel Peace Prize. Global warming has arrived at center stage as a major concern for economics and national security. Governors are taking dynamic steps to fight climate change, major companies are working for strategic measures, venture capitalists are pouring money into alternative energy, military specialists are engaged by the global security dangers of climate change, and civil societies are demonstrating against global warming.

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Obama's "Green" Objective:

After such a huge change in the last decade, President Obama and his administration started aggressive work to realize his presidential campaign commitment to "Change" in a speedy manner. The new administration's policy has given top priority to economic issues, including the stimulus package and financial stability, then energy and environmental issues followed by healthcare and education. Confronting the climate and energy challenge is one of the top presidential priorities. The new administration's energy policy can be viewed as simultaneously addressing three issues, namely: scaling down dependence on foreign oil, developing alternative energy sources, and confronting climate change. The issue at hand is President Obama's "green" objectives and how his agenda will play out in 2009 and beyond. Nowadays world citizens have a better understanding of why they need an energy transformation. The election of Barack Obama signifies a major turning point in the energy and climate policies of the U.S. administration. President Obama has clearly signaled that large-scale investments in efficiency and renewables are needed, driven by the administration's concerns over energy security, climate change and the future economic competitiveness of the U.S. The President's inaugural speech was powerful and simple enough, asserting that "We will harness the sun and the winds and the soil to fuel our cars and run our factories". It is now apparent that the time has come for addressing the challenges of climate change and the energy dependence. There is also a tension between the tight timeline for the international climate negotiations at COP 15 in Copenhagen this coming December and the ability of the U.S. government to pass supportive climate legislation.

"New Energy for America Plan" and the Green Dream Team:

The Obama-Biden comprehensive “New Energy for America Plan” specifies several points. In short, its important key words are new jobs, less oil, hybrid cars, renewable energy, climate change and cap-and-trade, and its essence is captured by the following 6 items.

- 1) This plan intends to create 5 million “Green Collar” new jobs by investing 150 billion dollars over the next 10 years to catalyze private sector’s efforts to build a clean energy future.
- 2) This plan hopes to save more oil than is currently imported oil from the Middle East and Venezuela combined, within a 10-year term.
- 3) This plan aims to put 1 million plug-in hybrid cars on the road by 2015. Those cars will reach up to 150 miles per gallon and will be built in U.S.
- 4) This plan proposes to ensure 10% of electricity comes from renewable sources by 2012 and 25% by 2025.
- 5) This plan proposes implementing a cap-and-trade program to reduce greenhouse gas emissions 80% below 1990 levels by 2050 and make the U.S. a leader in confronting climate change.
- 6) This plan also includes proposals to double U.S. production of alternative energy in 3 years, promote Carbon Capture and Storage (CCS), aim for commercial scale projects of Clean Coal, and seek grid efficiency, security and reliability via “Smart Grid” technology.

In order to achieve these challenging goals, a Green Dream Team was created under the Obama’s administration, including Stephen Chu as Secretary of Energy, Carol Browner as Assistant to the President for Energy and Climate Change, John Holdren as White House Science Advisor, Lisa Jackson as Environmental Protection Agency (EPA) head, Todd Stern as Special Envoy for Climate Change and Nancy Sutley as White House Council on Environmental Quality (CEQ) Chair. They are a combined team of Nobel Prize winning physicist, lobbyist, government official, professor and think-tank fellow but all of them are strong

environmental protection supporters and some were members of former Vice President Gore's team.

Key Challenges:

President Obama made the first big green move by directing the EPA to reconsider an application by California and 13 other states to set stricter limits on greenhouse-gas emissions from cars and trucks opening the way for tighter fuel efficiency standards nationwide. Another signal is Obama's willingness to take on America's disastrous auto sector, which contributes heavily to climate change and the country's addiction to foreign oil. The Energy and Commerce Committee released in March a draft of new clean energy legislation with the ultimate goal of creating jobs, helping end dangerous dependence on foreign oil, and combating global warming. The proposed American Clean Energy and Security Act of 2009 is meant to be a comprehensive approach to the U.S.'s energy policy leading to a clean energy economy. As this was one of the presidential campaign commitment, Obama has strengthened nationwide efforts to support this legislation. The target is for the Congress to complete this legislation before COP 15 in December. Shifting the U.S. and major countries to a low-carbon economy will take decades. Although modernization presents a significant economic challenge, it also offers a clear opportunity for the global players to sustain economic growth while shifting energy priorities in favor of greater efficiency and low-carbon fuels. Seizing this opportunity will change the geopolitical, economic, and environmental dynamics of a challenging future. The cost will be high, but it will be much higher if immediate action is not taken. If policymakers start promptly and make smart decisions, the benefits of this transformation can become much greater in terms of economic opportunity and a more secure future for the world. However, the short-term hurdles ahead are quite severe: the continuing global

financial crisis, energy price volatility, the short time remaining until COP 15 in Copenhagen, and delicate legislative considerations. But the elements are in place for the achievement of a resolution. A sustainable coalition of forces advocating the three Es, namely Energy security, sound Economic growth and healthy global Environment, are required to take a comprehensive and balanced approach to address all these issues simultaneously. White House National Science Advisor John Holdren has said, “Without energy there is no economy. Without climate there is no environment. Without economy and environment there is no material wealth, no civil society, no personal or national security.” That is absolutely true.

2. New Trends and Changes in the World Energy Situation

Energy Sector’s present and future:

Energy powers our daily lives. It runs our factories, fuels our vehicles, and heats and cools our homes and businesses. At the same time, it is clear the energy sector is a major contributor to our climate change. Worldwide about 60% of greenhouse gas emissions are related to energy production, delivery or use. In the U.S., the energy sector is far more dominant, responsible for over 80% of the country’s greenhouse gas emissions. Under the growing world population, living standards are expected to rise, and society will require more resources such as food, water and energy to sustain this expansion. The current global economic crisis will add an element of uncertainty to short-term energy forecasts. Oil price has shown a historic volatility in the last year. The averaged WTI price in 2008 was 100 U.S. dollars per barrel which is a record high in history. The important factor is that the price kicked off at 100 dollars in January 2008 and peaked at 147 dollars in July, then dropped off to 30 dollars by the end of the year. (Chart 3 WTI Crude Oil Price) Although it took almost 35 years to increase from 1 dollar to 100 dollars a

barrel, it was just 6 months from 100 to 147 and it was also just 6 months from 147 to 30 dollars. It was an exceptionally volatile market, with the global economic boom and crisis affecting the price. Fundamental negative factors remain unsolved, related to geopolitical risks, investors' huge amounts of money flowing in and pulling out, shortage of skilled labor forces on site at oil fields, growing tension of resource nationalism and prolonged shortage of refining capacities. In particular, resource nationalism has heightened geopolitical tension, slowed public and private investment, and caused prices to increase even more. National ministries and national oil companies now control over 80% of global conventional oil reserves and their share of world oil production is expected to rise from 57% today to 62% by 2030. (Chart 4 World Oil Reserves Control) While the economic recession has temporarily reduced oil prices and slowed down near-term energy demand, lower prices will decrease new supplies and investment, thereby leading to a resurgence in energy price when demand eventually recovers.

Middle East's New Challenge:

Under the volatile market in the last decade, we could see new trends emerging in the Middle East oil-producing countries. One is the Middle East countries' direction towards buy-out of overseas farmland to secure long-term food security. Bio-ethanol has been gaining popularity owing to the price hike in gasoline retail price, causing substantial price increases for food and grain. The Kingdom of Saudi Arabia plans to acquire agricultural farmland from Thailand, Indonesia or Vietnam under the strong leadership of King Abdullah. Not only Saudi Arabia but also other oil producers such as United Arab Emirates and Qatar are also working the same way to acquire overseas farmland in Pakistan, Sudan or elsewhere for national security. Oil-rich countries are attempting to change oil for soil strategically for sustainable growth.

Even if they are rich in oil, once they run short of water, electricity or food, national security and stability will be in danger and therefore they are actively partnering with Asian countries to promote the agricultural supply chain from upstream to downstream, using their ample petro-dollars. This approach could contribute bilateral benefits both for Asian countries and the Middle East oil producers: for Asian countries it is good for energy stability, and for the Middle East it is good for food security. Another new direction is the Middle East oil-producing countries' approach to alternative energy. Saudi Arabia Oil Minister Naimi is campaigning to promote solar energy as a core electricity source and expressing Saudi's desire to become a solar electricity exporter within 5 to 10 years term. Abu Dhabi's challenge is highlighted in the Masdar project, which promotes a carbon emission-free Future Energy City. MIT is a technological partner and G.E. supports this Masdar project as an anchor partner. Abu Dhabi's dynamic plan further hopes to produce renewable energy accounting for 7% of domestic demand by 2020. The Middle East countries' population has grown dramatically and they have achieved remarkable economic growth, causing their standard of living to greatly improve. Now they exhibit dual, competing features as both oil-producing countries and oil-consuming countries. In fact, their combined oil consumption surpassed Japan's in 2004, and over the period from 2007 to 2030, their increase in oil demand is projected to rank second only to China, with India ranking third. (Chart 5 Oil Demand Change by Region) In world number one oil exporter Saudi Arabia, King Abdullah has started a nationwide campaign for electricity saving for Saudi citizens.

American Motorization Society is changing:

Even in the U.S., the average lifestyle is likely changing. At the time when gasoline price peaked up to 4 dollars a gallon, the American

automobile society started to change. According to the U.S. Transportation Department, the average mileage driven per month by American motorists has been dropping continuously since November 2007. Major oil companies started to sell off their gas stations; for example, ExxonMobil will sell 2200 stations and Shell will sell 2400 stations; in a retreat from the retail gasoline business. At the same time, the Indian conglomerate Tata group has started to sell a small-car named “Nano” at an ultra-cheap price of 110 thousands rupee (or a bit over 2000 U.S. dollars) in order to expand the automobile society in India and replace U.S cars. The world’s wealthiest family, the Rockefeller family, is taking a lead as a shareholder against ExxonMobil, proposing that they develop more renewable energy and depart from single reliance on the oil business model. This is a warning message for ExxonMobil to seriously re-evaluate its role, in order to continue playing a key role as a Major even in the new low-carbon society; that is, to change its stance from “Oil Major” to “Green Major”. Thus a clear recognition of the coming low carbon society is spreading gradually and widely, even among oil business founders such as the Rockefellers.

3. US/Japan Collaboration and Leadership

Long-Term Vision for Low-Carbon Future:

After World War II, world leaders had a vision to create greater economic security through a liberalized economic system. To achieve that vision, they established the Bretton Woods system in order to supervise the financial relations of major industrialized countries. In a similar manner, especially under the current global economy, the Obama administration should clearly articulate a long-term vision for a low-carbon future. It is recommended for a transition of this magnitude that policymakers establish a long-term vision for the future first, then reset the energy system on the right path by updating energy policies and

incentives, and finally continue to manage energy demand while addressing the tradeoffs between climate change and energy security. Implementing these recommendations will require the Obama administration and Congress to think comprehensively, take aggressive action, pay sustained attention, and engage globally.

Strategic Partnership with Japan and Critical Partnership with China:

It is critical for the United States to engage the global community as it works to address energy security and climate change. Nations will need to work together to bring about technology and policy changes. The United States can leverage the strengths and leadership of other countries through strategic partnership. Japan is one of the most energy-efficient countries in the world and has a proven track record of driving efficiency improvements year by year. The United States should work with Japan to develop a global energy efficiency partnership, based on the current Asia-Pacific Partnership on energy intensity improvements. If appropriately mapped onto U.S. policy, Japanese leadership on energy efficiency could drive significant improvements. The two countries could jointly serve as a worldwide model of how to succeed in this arena through the G20 and other multilateral processes. The U.S. and China's bilateral technology cooperation is also an important key factor. Without China's engagement, the world cannot contain global warming. China uses 7 times the resources to produce the same dollar's worth of goods as Japan does, 6 times as much as the U.S., and almost 3 times as much as India. China and the U.S. together will account for about 40% of global carbon emissions in 2007. Under such a situation, the U.S. should treat China as a partner even for the climate change issues. The two countries have a profound common interest in working together. Energy and environment should be areas of constructive cooperation in a relationship that will inevitably have its

share of frictions. A partnership will require these two issues as a top priority, focusing on coal, energy efficiency, and renewable energy; this could very well provide environmental benefits to China and the world, as well as economic return for U.S. technology companies.

First President to give Greens Hope:

President Obama consistently recognized the role that energy plays in the U.S. economy and in its foreign affairs. His statement is that U.S. efforts to deploy low-carbon energy sources and energy efficient technologies can reduce costs to consumers in the long run and create new jobs, mitigate the worst impacts of climate change and ensure a stable supply of energy to support future economic growth and development. Achieving these goals will require a complete transformation of the energy system which the U.S. has relied on for a century. The technologies and infrastructures that must replace it are largely theoretical and potentially expensive. At a time when budgets are tight, energy spending should be seen as a long term investment and a key component of economic stimulus efforts. Increased spending alone will not solve energy security and climate change problems. These challenges require long-term planning as well as economic incentives that could prevail largely by strong public and political support. President Obama will not be able to solve all of these problems by the end of his term, but it is wise enough to allow him to place the U.S. on the path for a low-carbon future. Only with the president's fully committed leadership can the U.S. succeed in establishing the right policies and incentives. Obama is hardly the first U.S. President to declare war on the country's foreign oil addiction. Obama chose to tackle fuel economy at the start of his Administration and is trying to do more to reduce oil dependence and fight global warming than ever, which gives greens hope. It is truly a change in the march of U.S. history.

The Anchor Role of the U.S.:

The United States should take an anchor role on its climate change diplomacy. Climate change is certainly a global challenge and it is a global problem that requires a global solution. It is now widely acknowledged that a core group of 8 countries accounts for the major share of global emissions. This core group of countries consists of Brazil, China, European Union, India, Japan, Russia, South Africa and the United States. They represent the key economies in each region of the world and account for more than 70% of global carbon emissions. (Chart 6 Global Emissions by a Core Group) The core group is expected to play a dual function. The first is to create a consensus for the post-Kyoto protocol global regime. The second is to press ahead in specific areas such as energy efficiency, clean coal technology, an increase in hybrid vehicles and renewable energy. At the same time, the U.S. must acknowledge that it will have no international credibility until it acts decisively at home. Climate change represents a unique combination of danger and opportunity, but the opportunity is remarkable. With the right policies in place, this can be a time of great innovation and economic growth. While the U.S. must take the lead, all countries must take action together. Moving the U.S. to a low-carbon energy system will create tremendous opportunities to strengthen the economy, protect national security and improve the standing of the U.S. internationally. While the U.S. must assume a lead role, all countries must strive together. It is time now for all stakeholders to step up and play their respective roles toward a new era of low carbon for eternal prosperity.

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