Perspectives – Energy Policies in the United States and Europe: Divergence or Convergence?

Are United States and Europe, leaders in the developed world, diverging or converging on national energy policies? The question is important since common policies are more likely to set global standards. But there is no single answer because the answer differs depending on which part of the energy sector one is talking about. Accordingly, I will try to answer the question sector by sector starting with oil and proceeding through natural gas, non-hydro renewable and energy efficiency, and ending with climate change. It should be noted that oil is used almost exclusively in the transportation sector; natural gas for electricity production and heating; and non-hydro renewables for electricity production. Energy efficiency and climate change involve both the transportation and electricity sectors.

Oil

With respect to oil, there is a broad convergence of objectives and a growing convergence of policies to achieve those objectives between the U.S. and Europe. Both are net

oil importers in the aggregate, although individual U.S. states such as Louisiana or European countries such as Norway may be net oil exporters. Both are therefore concerned about protecting themselves from the effects of large price changes and supply disruptions in the short-term and becoming less dependent on foreign suppliers in the long-term. The U.S. and Europe both have strategic petroleum reserves and coordinate policy responses bi-laterally and through the International Energy Agency in Paris.

Since the 1970s the U.S. has become increasingly exposed to more price spikes and supply disruptions relative to Europe as its oil consumption has steadily risen and its domestic production has steadily declined. Over the last five years, however, these trends have reversed due the economic recession, increases in U.S. corporate average fuel economy standards (CAFE) and the opening up of new domestic oil reserves through hydraulic fracturing or "fracking." The resulting flattening of U.S. oil demand and fall in U.S. oil imports have brought the U.S. oil market more into line with Europe's. This convergence will be further enhanced as more efficient and less oil-dependent vehicles like the Toyota Prius gain market share on both sides of the Atlantic. The one area where the U.S. remains behind Europe is in using fuel taxes to raise revenue and encourage efficiency.

The U.S. and Europe also face a common challenge in dealing with China, India and other developing countries whose oil consumption and imports are rising rapidly. Both developed countries have an interest in helping developing countries gain access to newly discovered oil reserves in Africa, the Arctic and other remote areas in an environmentally sustainable manner, keeping maritime and terrestrial oil supply lanes open, and managing price shocks and supply disruptions with minimum damage to their economies. Coordination of responses to oil spills, cooperation in protecting choke points like the Malacca Straits from

terrorist attacks, and assistance to developing countries in building their strategic oil reserves are three excellent candidates for transatlantic cooperation. The Arctic Council provides a model of how such cooperation might be structured.

Natural Gas

With respect to natural gas, there is between the U.S. and Europe, a convergence of policy goals, but a divergence of means for achieving those goal. Both have an interest in securing reliable long-term natural gas supplies, avoiding excessive reliance on a single source of supply, and using natural gas as a transition fuel towards a low-carbon future. The U.S. has been better placed to achieve those objectives than Europe throughout the post-war period, and the gap between the two has recently widened due to the "fracking" revolution in the U.S. Europe remains uncomfortably dependent on a single supplier, Russia-based Gazprom, for its natural gas supplies and continues to pay prices pegged to the oil price under long-term contracts. In contrast, U.S. is benefitting from a surge of cheap gas from fracking that has driven gas prices to their lowest level in decades and has put the U.S. in a position to be a net gas exporter (the U.S. price per mmBTU (one million BTUs) is around $3.50; European prices are in the eight to twelve dollar range).

This low price has had the added benefit of attracting billions of dollars of new investment in the U.S. from petrochemical and other industries using natural gas as a feedstock. It has also helped to enable the U.S. to reduce its dependence on coal for electricity production from over fifty percent to thirty two percent (as of April 2012) and to increase its use of gas for that purpose from approximately twenty percent to thirty-two percent (also as of April 2012). This fuel-shifting has in turn reduced U.S. carbon emissions, with the result that the U.S. was one of only two countries in the OECD to actually reduce its CO2 emissions last year (the other being Germany).

Europe has the potential of narrowing this gap by exploiting its own reserves of shale gas and by renegotiating its contracts with Gazprom to delink gas from oil prices. Neither will be easy. Europe combines greater population density and a strong green movement with exaggerated public concerns about the environmental consequences of fracking. As the U.S. gains experience in how to reduce the negative environmental impacts from fracking operations and how to strike the right balance between economic and environmental objectives, Europeans are likely to become more comfortable with at least limited fracking. Poland and other Eastern European countries are prepared to move more quickly, but early results have been disappointing. Gazprom, which is already experiencing erosion in its market share, knows that it will have to give ground on pricing, but will do so only grudgingly.

As in the case of oil, the U.S. and Europe have a strong interest in cooperating to help China, India and other developing countries use natural gas to achieve common objectives. In particular, continued exploitation of abundant coal reserves in China and India for electricity production will make it almost impossible to protect the global climate from serious disruption. Both the U.S. and Europe have a vital interest in helping those countries switch from coal to gas in the electricity sector to mitigate climate change. In the longer-term, all countries will need to develop non-carbon energy sources, but in the meantime natural gas is a critical transition fuel.

Non-hydro Renewables

With respect to non-hydro renewables, there is a basic convergence of policy objectives between the U.S. and Europe, but a substantial divergence in meeting those objectives, this time in Europe's favor. Europe, and particularly Germany, is well ahead of the U.S. in developing wind and solar resources, largely because its combination of high feed-in tariffs, ambitious targets for the percentage of

electricity produced from renewable sources (EU 20% by 2020 and Germany 25% by 2020), and government support for green technology development. These European stratagems have proved far more effective than short-term and undependable U.S. federal tax credits and state subsidies and a kaleidoscope of state renewable portfolio standards in the States. Low natural prices in the U.S. have also disadvantaged U.S. renewable energy developers relative to European counterparts.

The gap in non-hydro renewable energy penetration between the U.S. and Europe is likely to narrow somewhat over the coming decade as the U.S. develops a more consistent and effective policy framework (a federal renewable portfolio standard, multi-year tax incentives, new transmission lines from high prairie wind production sites to consumption centers) and U.S. natural gas prices rise from their current level of approximately $3.50 per mmBTU to $5 per mmBTU or more. The gap, however, will not be eliminated absent a change in U.S. climate policy. The long-overdue cornerstone of such a change would be putting a meaningful price on carbon. Another Sandy or two may be required to bring this about.

As with oil and natural gas, the U.S. and Europe face a common challenge from China on non-hydro renewables. The Chinese renewable energy industry has experienced explosive growth over the last ten years, and China is now the world's largest and lowest cost producer of solar photovoltaic (PV) modules. This rapid expansion of the Chinese solar PV industry, driven in large part by central and provincial government subsidies, has put tremendous pressure on U.S. and European PV module producers, which have been unable to compete on price. A number of U.S. producers have gone out of business and Siemens has withdrawn from the market.

The U.S. and EU have responded to this situation by bringing major trade cases against China, both bi-laterally and through the WTO. China has responded by bringing cases against U.S.

and European suppliers of polysilicon, alleging discrimination in favor of domestic suppliers. This trade war cries out for a negotiated solution involving U.S., European and Chinese governments and companies since all producers are suffering losses caused by global over-capacity, and all have an interest in an orderly expansion of the solar PV market consistent with trade rules. Close transatlantic cooperation will be essential to crafting such a solution.

Energy Efficiency

With respect to energy efficiency, both the U.S. and Europe recognize that improving the efficiency of energy production, distribution and use is the lowest-cost way of reducing energy demand and carbon emissions. Throughout the post-war period, however, Europe has been far more efficient in the distribution and use of energy than the U.S. as a result of historical, cultural and ideological factors. European countries introduced high fuel taxes and electricity tariffs decades ago to raise revenue and reduce dependence on imported energy. The resulting high energy prices have had the collateral benefit of depressing demand and encouraging investment in energy efficiency.

Europe has a tradition of deferring to state power and high population density; the U.S. a tradition of individual autonomy, distrust of state power and dispersed settlement, all of which have encouraged urban sprawl and high individual mobility supported by low energy prices. Europeans are generally comfortable with state intervention in the market to achieve public goals; many Americans have a deep-seated ideological aversion to such intervention and regard it as a threat to the "American way of life." The result of these differences is that Europeans use roughly half the energy per capita as Americans and pay roughly twice as much per British Thermal Unit (BTU).

Fortunately the U.S. is beginning to narrow the gap with

Europe on energy efficiency as it follows the example of California, which has an average annual per capita electricity consumption of about 7,000 kilowatt hours compared with about 6,000 for Germany and about 13,000 for the rest of the U.S. In the electricity sector, minimum energy efficiency standards for appliances and other products at the federal level, stricter building codes at the state level and LEED (Leadership in Energy and Environmental Design) requirements developed by the U. S. Green Building Council are all improving end-use efficiency, particularly in new buildings. In the transportation sector, higher CAFE standards, more efficient diesel engines and growing sales of hybrid vehicles are likewise improving end-use efficiency. One area where the U.S. remains far behind Europe is the use of combined heat and power technologies for district heating and power generation.

Climate Change

On climate change, the U.S. is deeply divided in a manner that Europe is not. A majority of Americans, particularly those living in big cities and "blue states" such as California, New York and Massachusetts, regard climate change as a serious problem and believe that the U.S. should do more to address it. A substantial minority, however, particularly those living in rural areas and "red," energy producing states, believe that the threat of climate change is exaggerated and may even be a hoax perpetrated by liberal elites to gain control of the U.S. economy and make it more like "socialist Europe."

This minority relies on the opinions of "climate skeptics" disseminated through Fox News, talk radio and other conservative media outlets. Most members of this minority, which is centered in Appalachia and the other areas governed by the old Confederacy, used to be Southern Democrats but have now become Republicans in response to the civil rights revolution of the 1960s. The result of this shift is that climate change has become a partisan issue dividing Democrats

and Republicans.

The blocking power of conservative Republican members of Congress representing this minority has made it impossible for legislation putting a price on carbon either through a cap-and-trade system such as the one contained in the Waxman-Markey bill passed by the House before the 2010 elections or through a carbon tax to be passed by Congress today. (Waxman Markey would be roundly defeated in the current House). It is interesting to note that American industry has for the most part dropped its opposition to putting a price on carbon – Waxman Markey was largely drafted by Jim Rogers, Chairman of Duke Energy, with the support of the Edison Electric Institute, and Rex Tillotson, the Chairman of Exxon-Mobil. We are now left with the Jacobins of the Right and their representatives in Congress.

In the aftermath of hurricane Sandy and the re-election of President Obama, the U.S. will move further towards Europe on climate change, however slowly. Blue states like California and cities like Chicago, Los Angeles, New York, Seattle and Portland are already setting emissions targets similar to Europe's. The Obama administration's Copenhagen target of a 17% reduction in emissions from 2005 levels by 2020 can be accomplished through the aggressive exercise of existing authority under the Clean Air Act. Unfortunately German commitments to phase out nuclear power plants could help narrow the gap in the reverse direction. Whatever progress is made in the U.S. and Europe, however, will be overwhelmed by emissions growth in China and other rapidly growing developing countries. Therefore the world is already committed to a significant increase in average surface temperature by 2100 (estimated by the Executive Director of the International Energy Agency at six degrees Celsius).