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Energy Security and Climate Change

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Transatlantic Policy Forum

Energy Security and Climate Change

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The Transatlantic Policy Forum (TAPF) was launched by Europeum and its partners in 2008 to encourage dialogue and debate on a number of salient issues impacting transatlantic relations. As a platform for discussion between U.S. and EU experts, the project examines four policy areas in which the current state of transatlantic cooperation is evaluated and recommendations are formulated for strengthening relations. This paper addresses the issue of energy security and climate change in the framework of U.S.-EU cooperation, highlighting areas where the Czech Republic, as it hosts the EU presidency beginning in January 2009, can lead transatlantic efforts.

Energy Security – Current State of Affairs

Energy security is a transatlantic concern that can only be improved with joint action. The issue is complex with multiple stakeholders; states alone are not the only actors. Within Europe, the fundamental priorities for energy security are the same, but the approach differs within the continent. In Western Europe energy security is coupled with climate change, whereas in Central and Eastern Europe (CEE) it overlaps with neighborhood policy. The U.S., on the other hand, is primarily concerned with reducing dependence on oil imports and further developing renewable technologies. At the same time, Washington is concerned about the resurgence of Russia in Europe, its monopolization of energy resources, infrastructure, and even state officials.

European long-term energy security is threatened by its increasing dependence not only on Russian gas and oil supplies and by the non-transparent commercial deals that are part of Russia's energy trade.[1] This pressure is felt especially in the states of Central and Eastern Europe (CEE) that are closer in proximity to Russia and have higher dependence on its energy

[1] It must be noted that supplies of gas and oil are rapidly decreasing in both Europe and the United States, increasing the two countries / regions' dependence on imports of oil from an increasingly small number of oil-producing countries. Further, there is an obvious link between oil usage and climate change.

supplies. With increasing European demand for energy, Russian companies have sought to monopolize supply routes and infrastructure leading west. Acting in their self-interest, many European countries have signed bilateral deals with Russian-state-owned companies, thus undermining joint EU initiatives to diversify energy supplies and playing into Russia's strategy to divide Europe and dominate its energy portfolio through which growing political influence can be exerted.

To further complicate matters, Russian gas supplies are decreasing. It is predicted that in the next five years Russian energy supplies will plateau and will then face a shortfall. Russia's output (including Central Asian resources) will not meet growing supply demands and commitments from European countries, its own internal market, Russian industrial customers, and emerging Far East consumers as Russia tries to diversify its customer base. As supplies decline**,** European states will increasingly compete with one another to secure energy. This trend is already visible in the EU's lack of commitment to pan-European energy projects.

At the center of this debate is the EU-sponsored Nabucco pipeline project where the objective is to decrease European dependence on Russia by bringing Caspian gas to Europe and bypassing Russia. To undermine the Nabucco project, Moscow launched the South Stream pipeline initiative and recruited several CEE and West European countries to sign contracts claiming the unreliability and lack of commitment to Nabucco. South Stream was aimed at complementing the Nord Stream pipeline by further increasing Gazprom's monopoly of the EU energy market. South Stream was given a boost by Austria's sale of half of its large gas trading center to Gazprom. In the oil sector, Russia has secured supplies from Central Asian countries through various contracts initiated by the Rosneft company, whose aim is to become the leading provider to Europe. As Russia strikes deals with individual EU member states, the need for a common EU energy policy with solid commitments grows ever more urgent.

Russia has been creating monopolies within Europe's energy sectors. Russian companies have purchased and invested in various distribution facilities in CEE to create a monopoly over transit pipelines toward Europe. The overall strategy is succeeding, as Gazprom and Rosneft have acquired oil and gas producing and storage capabilities in several EU member states. In fact, many western companies in Europe are owned by Gazprom and serve as "Trojan horses" gaining access to European gas markets and eliminating competitors through various takeovers. By operating through European subsidiaries, Russian gas and oil companies operate under the radar of EU judicial institutions and operate without constraint,

while EU and U.S. companies face tough challenges and constant harassment in the Russian energy market. The EU lacks a reciprocal policy for dealing with Gazprom and Rosneft. As long as the Russian companies operate opaquely in Europe, they will be able to monopolize the energy markets of EU member states.

Europe faces a growing dependence on Russian energy as North Sea oil production declines, and gas production will increase only marginally. The leading EU countries have refused to give the EU Commission the power to enforce a uniform policy. Nor has the EU compelled Russia to carry out its commitments under the Energy Charter Treaty. The CEE states are feeling particularly squeezed as their dependence on oil and gas from Russia is on the rise while the EU has mandated that their nuclear power plants close.

Europe as a whole has become more dependent on oil and gas imports[2] due to decreased production and efforts have been uneven in the area of renewable fuels, emphasizing agrofuels over more sustainable and environmentally-sound renewable technologies.[3] EU member states have continued to build gas-powered plants, further increasing their dependence on energy imports. In addition, energy is wasted due to ailing infrastructure and outdated technologies. For example, almost one-third of the energy supply that transits through Ukraine to Western Europe is lost because of outdated infrastructure. It is a European interest to maintain Ukraine's ownership of the transit system and to provide EU assistance of the modernization of the Ukrainian system to prevent Gazprom from controlling the system.

Both the U.S and EU must find reliable partners for securing medium-to-long term supplies. Further, the U.S. and EU will need to work in tandem to deal with companies or countries whose agendas are to gain control of the energy market through illegal and opaque transactions and to use this as leverage in foreign policy. A transatlantic approach would carry more weight than the U.S. or EU acting alone. The authors of this paper recommend the formation of a standing U.S.-EU body for energy security.

Impact of the Global Debate on Climate Change

[2] The EU is the world's top importer of gas and oil. Fifty-seven percent of its gas and 82 percent of its oil is purchased from third-party states. Over the next 25 years, this is expected to increase to 84 percent and 93 percent respectively. The Associated Press, "Europe Eyes 'Low-Carbon Economy,'" January 10, 2007.

[3] This is true only for "renewable" fuels. The EU has committed to developing renewable sources of energy beyond transport, for all energy sources, providing the opportunity for wind, solar, etc. to develop.

The urgent debate on Europe's energy security is a key component of the debate on climate change as tackling climate change effectively can help to considerably allay energy security concerns. As Europe and the U.S. seek to diversify energy sources, concerns are mounting not only about the shrinking supplies of fossil fuels, but about their impact on the global environment. The world's leading economies produce about 80 percent of the world's greenhouse gases (the U.S. and EU produce about 40 percent).[4] There is a growing fear among many developing nations that the more developed and richer states will place the burden to reduce emissions on poorer countries seeking to develop. This perception will worsen and exacerbate global tensions should the developed nations fail to play an effective global role in reducing global warming.

Brussels has been leading efforts to enact groundbreaking EU-wide policies to reduce carbon emissions, foster energy efficiency, and promote cleaner energy technologies. Washington has lagged behind these efforts despite the U.S. private sector's lead in developing renewable technologies. Though the U.S. withdrew its signature from the Kyoto Protocol on climate change during President George W. Bush's first term in office, drawing sharp criticism from the EU, there are a lot of other positive activities happening. Only toward the end of the Bush presidency has the U.S. signaled a change in its position about global warming. In December 2007 Bush signed the Energy Independence and Security Act (EISA), which included a Renewable Fuels Mandate, raising the usage of renewable fuels by 500 percent by the year 2022.[5] In 2008, the U.S. put forward legislation that would stop the growth of U.S. greenhouse emissions by 2025. Additionally, the Bush administration initiated the Major Economies Meeting (MEM), which involve regular discussions between the leading global greenhouse gas emitters (China, India, the G8, and the EU), as well as Mexico, Indonesia, Australia, South Korea, and Brazil. Critics argued that U.S. efforts still fall short of what is urgently required.

At the end of 2009 the United Nations Climate Change Conference will be held in Denmark where the successor treaty to the Kyoto Protocol will be negotiated.[6] There are great expectations that the incoming U.S. administration, in the country that is the largest greenhouse gas emissions producer, will assume a leading role in climate change policies. The

[4] Leigh Phillips, "EU Lukewarm on Bush Climate Plan," *Eurobserver*, April 18, 2008.
[5] Press Release, "Fact Sheet: Increasing Our Energy Security and Confronting Climate Change Through Investment in Renewable Technologies" The White House,
[6] The Kyoto protocol was signed in 1997 in an effort to stabilize greenhouse gas emissions. The treaty came into force in 2005. It has been ratified by 175 states. The U.S. has not been among the ratifiers.

U.S. and the EU must work together to address climate change through joint policies, knowledge, and technologies. Their common efforts can be a powerful force against global warming, while transatlantic disagreements will "give countries such as China, India, Brazil, and Russia an excuse to do nothing."[7] In addition to joint policies and coordinated strategies in dealing with energy monopolies and transparency in the oil and gas sectors, collaborative efforts are needed in the area of sustainable and renewable energies.

Sustainable (Renewable) Energy Debate

While there is no single solution that can guarantee energy security, renewable energy resources have five major advantages: they are free (after initial investments and apart from maintenance costs); are available on a national basis; provide opportunity for investment and job creation; are sustainable; and apart from construction costs, they contribute zero pollution. According to the United Nations Environmental Program (UNEP), new funding in the sustainable energy sector rose to over USD 148 billion last year, up 60 percent from 2006.[8] Sustainable energy companies accounted for 19 percent of all new capital raised by the energy sector on global stock markets in 2007, flowing mostly into Europe and followed by the U.S. At the same time, investments in China, India, and Brazil grew from 12 percent in 2004 to 22 percent in 2007, representing an increase of 14 times in absolute terms from USD 1.8 billion to USD 28 billion.[9]

Oil is the primary source of energy for air and sea transport, and a significant percentage of land transport, and oil and gas are fundamental for heating much of Europe. But electricity from renewable resources and nuclear energy can, over time, meet much of the energy demands from households, industry, commerce, public services, public transport, rail, and communications. In addition, substitution of electricity from non-oil and gas powered sources will significantly reduce the demand for hydrocarbons, prolonging their availability and lowering their cost. Less concern about future oil and gas supplies will also curtail speculation about these resources that some have argued is currently driving prices to record highs.

[7] U.S. Department of State Press Release, "Europe and Eurasia: Green Diplomacy: Environmental Diplomacy in Europe," May 26, 2008.
[8] United Nations Environmental Programme, "Global Trends in Sustainable Energy Investment 2008."
[9] Ibid.

Wind energy has attracted the greatest investment globally out of all non-fossil fuel based technology.[10] In Europe, wind capacity additions accounted for 40 percent of new power capacity in 2007; in the U.S. this figure was 30 percent. Also in 2007, solar energy attracted venture capital and private equity investment totaling USD 3.7 billion. Further, biomass and waste to energy technologies grew at a rate of 432% last year. Venture capital and private equity investment in biofuels fell by almost one third in 2007 to USD 2.1 billion due to high feedstock costs and falling ethanol prices. Investments have shifted to Brazil, India and China.[11] Coal fired power plants remain a primary source of electricity and a major contributor to global warming, but developing clean coal and carbon capture technologies in addition to increased electricity production by carbon-free renewables will significantly reduce carbon emissions.

Contested Energy Sources

Part of the energy security and climate change debate are two more controversial energy sources that have received a lot of attention of late.

Agro or biofuels have become the most publicized and controversial energy source. The U.S. has quintupled its production of ethanol (ethyl alcohol) over the past ten years. The EU has had similarly ambitious targets, adopting a Biofuels Directive in 2003 for promoting biofuels and other renewable energies for use in transport and setting a target of 5.75% market share for biofuels for 2010. In the spring of 2007 the EU adopted a more ambitious renewable fuels target, advocating that each EU member state meet a 10 percent target for biofuel production out of transportation fuels by 2020.[12] Recently, however, the EU and several national governments have stated that the EU's biofuels objective was overly optimistic and should be reduced.

Although there is hope that agro or biofuels can help to reduce fossil fuel consumption and slow the warming of our planet, scientists and policymakers are learning that these harm the environment in the longer term. For example, to make up the damage from carbon emissions that are released into the atmosphere after clearing forests, wetlands, and fields for biofuel production (corn, sugarcane, and soybean, for example), scientists estimate that it will take "more than 300 years of biodiesel use to 'pay back' the carbons" emitted by clearing peatlands for palm oil, 93 years for "clearing grasslands to grow corn for ethanol," and 167

[10] Ibid.
[11] Ibid.
[12] James Kanter, "EU Moves to Cut Back Target on Biofuels Use," *International Herald Tribune*, July 7, 2008.

years for the deforestation for corn ethanol.[13] Further, the production of biofuels pits the wealthy industrialized world against poorer countries. Analysts predict that the race for biofuels will widen this divide.

The global food crisis in the spring of 2008 caused a rift between the U.S. and the EU where Brussels blamed the surge in world food prices on irresponsible U.S. policies that redirect corn crops to support ethanol production. EU Trade Commissioner Peter Mandelson wrote in the UK *Guardian* that "the race to grow maize for ethanol subsidies in the U.S. reduces the supply of food crops on world markets and drives up the cost of this important staple," arguing that the EU has a more responsible policy for developing biofuels. The biofuels crisis illustrated that joint U.S.-EU cooperation throughout the renewable energy sector, as well as in nuclear energy, is sorely needed.

Nuclear power is another contested energy source. Some West European states oppose nuclear energy due to safety concerns and have made the closure of Soviet-era nuclear reactors part of the process for CEE states to join the EU. However, CEE states, squeezed by Russia for much of their energy supplies, would like to see nuclear energy revived within the EU. In April 2008, addressing the European Nuclear Assembly in Brussels, European Commissioner for Energy Andris Piebalgs stated that nuclear energy could address the global challenge of climate change and could also help ease Europe's energy security crisis.[14] He also urged EU members to cooperate in ensuring safety and security at nuclear installations and gain public support for the development of nuclear energy. The Commission launched three initiatives – the High Level Group on Nuclear Safety and Waste Management, the European Nuclear Energy Forum, and the Sustainable Nuclear Energy Technology Platform. In May 2008 Prague hosted the European Nuclear Energy Forum where the CEE states advocated that nuclear energy be at the core of EU energy policy.[15] The U.S. should also enter this debate. As nuclear power is reexamined, coordinated U.S.-EU efforts will produce better and safer policies, especially in the areas of nuclear proliferation and storage of nuclear waste.

Coordinated investments in renewables can create a region-wide infrastructure capable of integrating energy inputs from various sources at various times depending on local conditions (sunlight, wind, water, etc.). With a stable investment and marketing system, sustainable energy has the potential to significantly reduce dependence on foreign oil and gas

[13] Time Magazine [add FULL NOTE]
[14] Leigh Phillips, "Nuclear energy a solution to climate change, says Brussels," *Eurobserver,* April 15, 2008.
[15] Chris Johnstone, "Central Europe Fuels Demands for European Nuclear Revival," *Agence France Presse,* May 27, 2008.

suppliers, increase energy security, lower costs, and slow the current rise of "resource nationalism."

The potential of transatlantic cooperation in joint research and development in this area has not been fully utilized. It is unclear which EU institutions would be in charge of renewable/sustainable energy. Also unclear are what the ground rules will be. That said, the time is ripe for bold initiatives in both research and industrial cooperation in areas like next generation of nuclear, clean coal (carbon capture and storage/sequestration), smart solutions in demand management, energy savings, and energy efficient housing.

Recommendations for both the United States and the European Union

- *Appoint a consultative standing body specifically for transatlantic energy security.* What is a threat to Europe now will be a threat to the U.S. very soon. There is a danger of resource expansion of Gazprom, taking over gas fields in the Western hemisphere. A U.S.-EU consultative mechanism must be created to address this joint threat. This means that *the United States must appoint a U.S. Special Representative for Energy to allow for more effective U.S.-EU Cooperation.* Because the issue of energy security falls across the jurisdictions of many U.S. departments, the U.S. should appoint an individual with the capacity to set new initiatives in motion. This individual would complement the important roles played by the U.S. president, U.S. secretary of state, and U.S. secretary of energy, in this area.[16]
- *Diversify energy sources.* The Nabucco project must be activated to transmit gas from Central Asia into Europe. Capital must be urgently raised, investors found, and supplies from the Caspian Basin countries secured, otherwise Russia will increase its monopsonistic and monopolistic position between Central Asia and Europe. The West must prepare for the day when Iranian natural gas can be added to the mix of other countries' gas from Azerbaijan, Turkmenistan, Kazakhstan, and Iraq. The EU should form a consortium that can supply commercial contracts to these countries for supplying the Nabucco, buying gas at the border. The success in raising capital and attracting investors for diversification projects such as Nabucco depends mainly on the EU's ability to provide incentives and loan guarantees and EU funds that would match

[16] Dr. Zbigniew Brzezinski in a hearing of the Senate Foreign Relations Committee on June 12, 2008.

the level of Russian support of the alternative project (South Stream). Building LNG terminals in Europe would increase capacity for non-Russian gas.

- *Improve efficiency.* Energy efficiency is an essential component to solving simultaneously the energy security and climate change equations. The International Energy Agency estimates that Central Europe could save on its current energy consumption by 20 percent while Southeast Europe and the Commonwealth of Independent States could save between 30 and 50 percent.[17] The International Finance Corporation and the Global Environmental Facility have guaranteed loans from local banks across the region for the installation of energy efficient equipment.[18] There is a lack of information in the region about energy saving technologies and the real cost of energy. In 2005 the European Commission noted that a lack of information was perhaps the biggest obstacle to energy efficiency in CEE.[19] European Parliament member Claude Turmes (Greens-EFA, Luxembourg) has put forward several proposals for reducing energy waste, including the renovation of buildings and public transport in CEE.[20]
- *Coordinate research efforts of renewable energy technologies.* Sharing research saves money and time. A concerted and coordinated world effort is required to develop recommendations for renewable energy, energy efficiency, demand management, and advanced energy technologies in housing, transport, etc.
- *Prioritize energy security as a key sector of the EU Neighborhood Policy (ENP) and in complementary projects of U.S.-EU cooperation in the wider European neighborhood.* The EU must be more active in its neighborhood policy in the areas of building energy connections/supply grids, by adding or enlarging energy infrastructure. Within the European Union, the EU should integrate the Baltic states into existing EU energy grids, ending the Baltic states' exposure as an energy island. The U.S. can play a role in this process.
- *Obligate environmental assessment, transparency, and public discussion.* The North Stream and South Stream projects should only be able to start only once both have met the following prerequisites: fully transparency, a full assessment of the projects'

[17] TOL, "Money Down the Drain," *Transitions Online*, April 11, 2008.
[18] See TOL. Also, International Finance Corporation, at http://www.ifc.org/ifcext/media.nsf/Content/Efficient_Energy_Finance (Accessed June 14, 2008).
[19] See TOL.
[20] European Report, "Renewable Energy: MEP Turmes Under Fire for Rejection of Biofuels," June 2, 2008.

environmental impact, full disclosure of the implications for the EU's competition policy, as well as a broader public discussion about the environmental impact.

- *Support nuclear energy.* The supply of nuclear energy will have a positive effect on climate change and is not subject to political disruption. The U.S. and EU should support Lithuania's proposal to keep its Ignalia nuclear power plant online to prevent the country's increased dependence on Russian supplies.

Recommendations for the European Union

- *EU member states must cooperate in developing an effective common policy that works to the benefit of all member states.* As Russia strikes deals with individual EU member states, the need for a common EU energy policy with solid commitments grows ever more urgent. The authors of this paper recommend that an EU member state notify DG-COMP, DG-TREN, and the Energy Commissioner 30 days prior to signing an agreement with a non-EU member country. Further, any non-EU member country operating in Europe must comply with European legislation in the areas of transparency, antitrust, and competition.
- *Enforce EU unbundling requirements to promote transparency and foster competition.* The biggest challenge for the EU market is to protect liberalization from external monopolizing efforts. The biggest challenge for the European Commission is to ensure that EU member states adhere to EU legislation and transparency. Ownership unbundling as required by the EU will have a positive impact in the energy sector. As a result, there will be greater transparency in various deals between energy companies and gas prices will decline. Ownership unbundling has been pursued by a few EU members and proved successful in facilitating a move to competitive gas markets, marking a major improvement on the previous system of vertically integrated utilities. It continues to be strongly resisted by certain companies and Russian subsidiaries in Europe because it will foster greater competition. All of Europe is vulnerable to undisclosed deals with Russian energy companies due to a prevalence of corruption in the energy sector. The EU should establish agencies to monitor all major energy agreements between EU members, foreign companies and national governments, and it should be more rigorous in enforcing existing anti-trust and competition policies. Further, countries that bid on EU companies on the market due to unbundling must be similarly open to purchase by EU companies. There are rules, but they are violated.

An EU member state must notify DG-TREN and the EU Energy Commissioner at least 30 days before signing an energy agreement with a non-EU member state. Companies should not be allowed to operate in the EU unless they meet the highest standards of transparency and accounting procedures.

- *Increase technical assistance in the energy field.* The EU should provide technical assistance to Ukraine to meet goals in the energy field set by the International Energy Agency, World Bank, the European Bank for Reconstruction and Development, and the EU itself. The EU can advise Ukraine on drawing up open tenders inline with international standards and containing provisions for Stockholm arbitration n awarding exploration, development, and distribution rights. The European Union should fund and support twinning programs and open audits involving representatives from the above organizations working alongside Ukrainians in the energy and industry ministries, in the state oil and gas companies, in Ukrtransnafta and Naftogaz Ukrainy, and in the oversight committees in the Rada.
- *Support renewable resources.* The Czech EU Presidency support and obtain the approval of the Directive of the European Parliament and the Council on the promotion of the use of energy from renewable resources. The proposed Directive aims to establish an overall binding target of a 20 percent share of renewable energy sources in energy consumption and a 10 percent binding minimum target for biofuels in transport to be achieved by each Member State, as well as binding national targets by 2020 in line with the overall EU target of 20 percent.
- *End subsidies of electricity and natural gas.* Many governments along the EU's eastern border heavily subsidize electricity and/or natural gas. These low prices do not provide any additional monies for upgrading networks. Further, consumers do not understand the real price of energy and consume more as a result.[21]

[21] TOL, "Money Down the Drain," April 11, 2008.