Testimony of David L. Goldwyn, Nonresident Senior Fellow, Brookings Institution, and President, Goldwyn Global Strategies, LLC before the U.S. Senate Foreign Relations Committee Subcommittee on International Development and Foreign Assistance, Economic Affairs, International Environmental Protection, and Peace Corps.

"U.S. Security Implications of International Energy and Climate Policies and Issues"

July 22, 2014

The Harmonization of U.S. National Security and Climate Goals

Mr. Chairman and Members of the Subcommittee, it is an honor to speak with you today about challenges to U.S. national security interests and their impact on both our energy security and climate change. We are experiencing a period of great instability in the world's major energy producing regions. We have been able to mitigate the impacts of this instability due largely to unprecedented growth in U.S. and more broadly North American energy supply. Going forward we will need to use a variety of tools to enhance our security, including promotion of competitive energy markets, advocacy of energy policy reform in other countries, technical assistance to help countries produce their own energy and promotion of energy exports. I believe we can harmonize our interests in mitigating global climate change – a national security risk itself – and advancing our energy security. In many cases the alternative sources of energy supply the United States should promote are lower in carbon than those that vulnerable countries rely on today. In Europe, in the Caribbean and Central America, in Africa and elsewhere, the U.S. can make lower carbon energy, especially natural gas, more available and affordable, through effective diplomacy and promotion of open markets.

Challenges to U.S. National Security

The national security challenges the United States faces across the globe have inherent energy components. The most prominent issues include the threat posed by Iran's nuclear program, continued Russian efforts to foment instability in Ukraine, the emergence of the Islamic State of Iraq and the Levant (ISIL) as a destabilizing force in Syria and Iraq, continued instability in North Africa, and the recent acceleration of the Israeli-Palestinian conflict. These are conflicts involving a great percentage of the world's major energy suppliers. We face additional challenges to the stability of Central America and the Caribbean, as Venezuela's economic deterioration puts its ability to provide credit support for regional energy purchases through Petrocaribe at increasing risk. Energy poverty in Africa and South Asia pose risks to stability in those regions. The way in which each of these issues is managed or resolved has implications for global energy markets and by extension our own economic growth and prosperity.

Climate change itself poses a significant risk to national security. The Pentagon's Quadrennial Defense Review, released in March 2014, identifies climate change as a threat multiplier capable of exacerbating poverty, environmental degradation, political instability, and social tensions — all of which contribute to terrorist activity and other

forms of violence.[1] A report issued by the government-funded CNA Military Advisory Board, released in May 2014, drew similar conclusions and discussed, among other issues, the contributions of climate-induced drought toward fomenting regional and ethnic tensions in the Middle East and Africa.[2]

The U.S. Policy Toolkit

The U.S. has multiple tools at its disposal to mitigate the impacts of energy supply disruptions, help countries enhance their own energy security and mitigate global climate change. In Energy and Security: Strategies for a World in Transition, a book that I co-edited and was published last year, we argue that these tools include using diplomacy to advocate policy reform, providing technical assistance to other nations to help propagate the unconventional oil and gas revolution abroad, and promoting deep and competitive energy markets by embracing energy exports as means of making energy more affordable and accessible to friends and allies.[3]

Energy Diplomacy. As in every area of foreign policy, diplomacy is our first line of defense. Diplomacy is the means by which we produced multilateral sanctions to bring Iran to the negotiating table. It will also be required to keep Iraq from fragmenting, and facilitating unity among stakeholders so that ISIS is repelled and Iraq's contribution to global energy supply is sustained. In many regions the U.S. needs to advocate for the policy reforms required to attract energy investment, reduce subsidies, reduce dependency on a single fuel or supplier or open markets to U.S. exports or investment. The new energy bureau at the State Department that I helped to design when I served under Secretary Clinton has a leading role in this mission. One of the best historical examples of this work is U.S. policy on European energy security. Over the past two decades the U.S. has been more vigorous in advocating the need for Europe to have an integrated gas market, more energy storage, more diverse production, and stronger antitrust policy. The U.S. has shared advancements we made in energy efficiency and renewable energy with Europe, including building and appliance standards that have helped Europe greatly diversify its energy supply base and better weather Russian gas supply interruptions.

Technical Assistance. The U.S. can also help other countries grow their own energy supply through technical assistance. Two examples of this are all of government programs led by Department of State Bureau of Energy Resources (ENR): the Unconventional Gas Technical Engagement Program (UGTEP) and the Energy Governance and Capacity Initiative (EGCI). UGTEP takes many forms, from U.S. Geological Survey resource assessments to help countries understand if they have recoverable resources, to visitor programs where country delegations can meet with Federal, state and local regulators to understand how to protect air, water and land and see first hand how an operation looks on the ground. The EGCI program helps countries

[1] "Quadrennial Defense Review 2014," United States Department of Defense, March 2014, p. 8.
[2] "National Security and the Accelerating Risks of Climate Change," CNA Military Advisory Board, May 2014
[3] Jan H. Kalicki and David L. Goldwyn, "Energy and Security: Strategies for a World in Transition," Woodrow Wilson Center Press and Johns Hopkins University Press, 2013 (Kalicki and Goldwyn, 2013)

considering energy development avoid the resource curse by teaching their Central Banks and Finance ministries how to manage the income from energy production, while teaching their petroleum ministries how to understand their resource base, and use licensing to protect the environment.

Competitive markets and free trade. A major pillar of American foreign policy since the Second World War has been the promotion of open markets to promote economic growth and bind nations together. We have worked for decades to encourage those with resources – oil, gas, coal or rare earth materials, to produce what they can, use what they need and make the rest available for trade. We have benefitted enormously from this system whenever we needed imports of energy, and commodities flowed easily and efficiently to our shores in times of crisis, like the days after Hurricanes Rita and Katrina. We fight against restrictions on rare earth minerals in the WTO to ensure that energy efficient products can be produced and then made available to the global market.

For the U.S. today this means that our contribution to our own energy security and that of the planet is to produce our own energy, use what we need and export the balance. For our own sake we need to produce our own new resources with safety and the environment as top priorities. All companies—including the smaller independents—need a strong safety culture, from ensuring well bore integrity in deepwater or deep shale beds, to securing the safe disposal of water produced from "tight" hydrocarbon plays.

But the reality is that, we can dramatically enhance our own security and that of others by connecting ourselves to the global market we have spend decades developing and benefitting from. First, we can enhance our own prosperity. The United States and other stable, democratic countries, such as Canada and Australia, are well poised to meet a considerable share of the world's growing oil and gas demand and attain the associated export revenues. From a geopolitical perspective, increased LNG exports from the U.S. and its allies would shift rents away from traditional, autocratic suppliers, including Russia, that have used the proceeds to finance policies at odds with U.S. national security interests. U.S. supply also promotes price competition and stability in global oil and gas markets. Price stability benefits U.S. economic growth, and also better ensures that U.S. adversaries that are major oil and gas exporters are less able to enjoy higher export revenues stemming from major global supply disruptions. Numerous studies have shown the U.S. enjoys net benefits from exports, with minimal domestic price impacts from LNG exports and potential decreases in domestic gasoline prices from crude oil exports.[4]

Second, building a more competitive LNG market can help mitigate global climate change. In the coming decades, the greatest risk of greenhouse gas emissions growth comes from non-OECD Asia, which is forecast to account for 65% of total energy demand growth through 2035. China and India alone are expected to build nearly 40% of the world's new generation capacity, and both countries are currently heavily reliant on

[4] W. David Montgomery, Robert Baron, Paul Bernstein, Sugandha D. Tuladhar, Shirley Xiong and Mei Yuan, "Macroeconomic Impacts of LNG Exports from the United States," NERA Economic Consulting, December 2012; Daniel Yergin, Kurt Barrow, James Fallon, Mohsen Bonakdarpour, Sandeep Sayal, Curtis Smith and Jamie Webster, "U.S. Crude Oil Export Decision: Assessing the impact of the export ban and free trade on the US economy," IHS Global Insight, May 2014.

coal as a base load fuel.[5] While work on creating commercial scale carbon sequestration continues, the best way to address emission growth is to help these countries meet incremental demand through lower carbon alternatives. These alternative sources need to be able to supply base load electricity supply at scale. The currently available, scalable options are petroleum products such as fuel oil or diesel, nuclear power, and natural gas. Petroleum products are an inefficient, expensive and high carbon means of electricity generation. Nuclear energy is a complex technology, and safe infrastructure takes over a decade to build.

U.S. LNG exports help make gas more affordable for Europe and Asia where, unlike the U.S., natural gas is now much more expensive than coal. U.S. natural gas production has already lowered global LNG prices by displacing supplies meant for the U.S. market. The increased availability of natural gas on global energy markets from future LNG exports makes it increasingly cost effective for the largest emerging energy consumers, including China and India, to convert their electric power infrastructure to natural gas. The growing adoption of natural gas as a fuel for electricity generation in the Chinese and Indian markets would render considerable positive climate impacts. It would also have a multiplier effect, as increased adoption of natural gas by these large energy consumers would leave smaller yet still important consumers better positioned to attain financing of their own to build or convert infrastructure to accommodate more natural gas in their own energy mixes.

Natural gas thus remains the obvious fuel choice to serve as a bridge to scalable renewable energy. While we should continue to pursue a future with abundant use of renewable energy, renewables will not be able to be adopted for grid based systems at scale in the developing world until the battery storage challenge is addressed. Ensuring that renewables are significant source of longer-term supply, and embracing natural gas as a bridge fuel to cut emissions now, are not mutually exclusive goals. Even at their current limited scalability, the U.S. should support efforts to integrate renewables into the energy mix where they are viable. Additionally, the fact that most energy demand growth is expected to come from the non-OECD does not absolve the U.S. from embracing policies that will reduce our own carbon emissions. Indeed, U.S. efforts to lead by example and in cooperation with our allies are likely to facilitate more international buy-in of such policies.

Meeting Our Current Challenges

We will need to use all the tools in our tool kit to meet the energy and security challenges we face today.

Ukraine. The most obvious national security challenge where energy security issues are explicitly at play is Russia's continued aggression in Ukraine. Russia continues to lend material support to separatists operating in Eastern Ukraine and last month stopped supplying natural gas to Kiev. While this is yet to bring about a critical gas shortage in

[5] "World Energy Outlook 2013," International Energy Agency, November, 2013, http://www.iea.org/newsroomandevents/speeches/131112_WEO2013_Presentation.pdf. (IEA, 2013)

Europe or Ukraine, there are justifiable fears that such shortages will ensue if the Russian cutoff persists into this winter, when the seasonal heating period begins and demand increases considerably.[6]

The U.S. needs to use diplomacy, technical assistance and support exports to help not only the the efforts of Ukraine, but also other countries proximate to Russia, including those in Western Europe, to diversify their sources of supply. The diplomatic agenda is pressing for a divided Europe to finish the work of integrating its gas market, promoting internal market reform in member countries, developing further infrastructure to support alternative gas supplies and interconnections among member countries, and encouraging indigenous gas development. However, there is also ample space where the United States has and can continue to provide assistance. In the past the U.S. promoted infrastructure projects, such as the Baku-Tbilisi-Ceyhan and the Southern Corridor. More recently the U.S., led by the ENR bureau, has advocated "reverse flows" of gas, including from Europe to Ukraine. Earlier this month Slovak gas pipeline operator Eustream indicated that it would have a route transiting EU gas to Ukraine running at full capacity before the winter heating season begins. Reverse flows are also reaching Ukraine from both Poland and Hungary.[7] Additionally, ENR, under the auspices of both UGTEP and EGCI, has engaged with countries in the region on potential paths forward in developing their shale resources to boost their domestic energy production and provide new regional sources of supply. This advocacy should be elevated to higher levels.

Export policy can help as well. A clear signal from the U.S. that LNG exports will be available to European allies for future purchase would put immediate pressure on Russia's market share and export revenues, and would also provide a market signal to help accelerate investment in and construction of gas transportation infrastructure in Europe. The new policy change suggested by the Department of Energy for considering LNG exports should help provide certainty to the market in this regard.[8] Price expectations matter. The U.S. shale boom, through freeing up LNG cargoes originally destined for the U.S. to instead reach Europe, has already put downward pressure on European gas prices. These developments contributed to the increased leverage that Gazprom's European customers have enjoyed in recent years, enabling them to renegotiate contracts for the purchase of natural gas from Gazprom to their advantage. While many skeptics question whether Europe would receive U.S. LNG due to the expected higher prices in Asian markets, the fact remains that European prices could easily approach Asian levels in the event of a Russian supply cutoff. Additionally, purchasers consider not only price, but also the diversity of supply source and the likelihood of timely project completion, which may leave at least some European purchasers predisposed to paying a premium price for U.S. gas that rivals the market

[6] Peggy Hollinger, Christian Oliver, and Jack Farchy, "Europe risks 'significant' gas shortages this winter," *Financial Times*, July 11, 2014. http://www.ft.com/intl/cms/s/0/a119b2e4-082e-11e4-acd8-00144feab7de.html?siteedition=intl#axzz37f86ohSP

[7] Tim Gosling, "Slovak gas link to give Ukraine 'chance of lasting through the winter'," *Financial Times*, July 8, 2014. http://blogs.ft.com/beyond-brics/2014/07/08/slovak-gas-link-to-give-ukraine-chance-of-lasting-through-the-winter/

[8] For more information about this issue see: David L. Goldwyn, "DOE's New Procedure for Approving LNG Export Permits: A More Sensible Approach," Brookings Institution, June 2014

price Asian purchasers are willing to pay.[9]

A robust U.S. market share in the Asian gas market offers geopolitical advantages to the United States, and has positive implications for the future of our climate, as well.

Iraq. Geopolitical tensions also continue to plague the Middle East, as the Islamic State of Iraq and the Levant's (ISIL) takeover of large shares of territory in western Iraq marks the first major spillover of the Syrian civil war that threatens the free flow of oil from the region. To date, the violence has not affected Iraq's key export infrastructure, which is located in the heavily Shiite far south of the country. But the July 20 ISIS takeover of gas fields in Syria and its efforts to gain control of the Baiji refinery in Iraq signal its intent to disrupt energy infrastructure. Iraq's geography does not entirely mitigate the risk of a supply disruption. Violence in the far south could induce international companies to pull out larger shares of their foreign personnel, which would have negative implications for Iraqi production.

The U.S. approach in Iraq should primarily comprise efforts to foster reconciliation among Iraqi stakeholders. Yet the U.S. should also be prepared to continue supporting the stability of the global oil market should a supply disruption occur. U.S. domestic production growth has helped keep the global market well supplied and prices stable even as unplanned supply disruptions, including in places likes Libya, South Sudan, and Yemen, have emerged.[10] However, the U.S. could do more, including taking steps to authorize the export of light sweet crude grades that we have in excess, to help keep the global market stable. While promoting global market stability is among the goals of strategic reserves, the United States does not need to tap the Strategic Petroleum Reserve at this time. Instead, it only needs to signal very clearly that it is prepared to export grades of excess crude if disruptions worsen and the global market requires more supply. Numerous studies emerging this fall, including one from Brookings to be released this September, will closely examine the impacts of such action on the U.S. economy.

Central America and the Caribbean. One major opportunity the U.S. has to promote regional security and climate change mitigation is in our own neighborhood. Last week the Atlantic Council published a report[11] I authored on the Caribbean region's dependence on Petrocaribe, a Venezuelan-backed program that allows cash-strapped Caribbean and Central American countries to purchase Venezuelan crude oil and petroleum products on generous financing terms. While this program once provided these countries with immediate-term budget support, it left them increasingly indebted to Venezuela, and reliant on high-carbon, expensive fuel oil and diesel for electricity generation. The high cost of this fuel has made these economies uncompetitive: a recent

[9] David L. Goldwyn, "Refreshing European Energy Security Policy: How the U.S. Can Help," Brookings Institution, March 2014

[10] Conglin Xu, "Global Oil Market Well Supplied Despite Disruptions to Producers," *Oil and Gas Journal*, July 47 2014. http://www.ogj.com/articles/print/volume-112/issue-7/special-report-midyear-forecast/global-oil-market-well-supplied-despite-disruptions-to-producers.html

[11] David L. Goldwyn and Cory R. Gill, "Uncertain Energy: The Caribbean's Gamble with Venezuela," Brookings Institution, July 2014

Inter-American Development Bank Study[12] found that the average retail tariff for ten major Caribbean utilities in 2012 at $0.33 per kilowatt-hour, compared to $0.10 across all sectors of the U.S. in April 2014.[13]

A recent IDB Pre-Feasibility Study found that replacing liquid fuels with natural gas, in combination with energy efficiency and renewable energy measures, produced net benefits to every surveyed Caribbean country, lowering the cost of fuel and the price of power, as well as substantially reducing carbon emissions. We recommended that the U.S. build on Vice President Biden's recent visit to the region, and its Caribbean Energy Security Initiative (CESI), by expanding CESI to promote credit incentives to attract investment to make natural gas a more considerable share of the Caribbean's shorter- and medium-term energy mix. The IDB study determined that U.S. Gulf Coast LNG was the cheapest form of delivery, and that small-scale regasification technology could provide every country with appropriate infrastructure at a reasonable long-term cost.

These findings suggest that the U.S. could facilitate a natural gas bridge in the Caribbean by providing credit enhancements through CESI and declaring LNG exports to all Caribbean nations reliant on Petrocaribe, with the exception of Cuba, to be in the national interest. This would contribute to facilitating the marketing of supply to these nations. U.S. LNG is in close proximity to the Caribbean market, and will be cost competitive.

Promoting the adoption of gas in the Caribbean and Central American energy mix would bring about several benefits for U.S. interests. The risk of harm to the region's economies from a Venezuelan interruption of credit support would decrease. Electricity costs for industrial and residential consumers would decline as cheaper natural gas replaces more expensive fuel oil and diesel for electricity generation. Finally, cleaner burning natural gas would reduce the region's carbon footprint.

Conclusion

The acknowledgement that national security and climate security concerns are inherently linked is a crucial development for the evolution of U.S. policy both at home and in the national security sphere. This strategic conception of the problems we face should provide policymakers with space to develop policies that maximize global energy supply, promote low-carbon sources, support price stability, and provide our allies and partners with secure sources of supply, either through global markets or their own domestic production, to ensure that their energy security is not at the mercy of a single supplier.

I believe that Congress also has a role to play in accelerating the leveling of the energy playing field. Congress can support the State Department's role in energy diplomacy,

[12] Jed Bailey, Nils Janson, and Ramon Espinasa, *Pre-Feasibility Study of the Potential Market for Natural Gas as a Fuel for Power Generation in the Caribbean*, Inter-American Development Bank, December 2013. http://publications.iadb.org/handle/11319/6015?scope=123456789/1&thumbnail=true&rpp=5&page=30&group_by=none&etal=0.

[13] EIA Electric Power Monthly, June 23, 2014. http://www.eia.gov/electricity/monthly/epm_table_grapher.cfm?t=epmt_5_6_a

expand our technical assistance programs, and consider thoughtfully the role of energy exports in advancing energy security and promoting access to lower carbon fuels.

Thank you, again, for providing me with the opportunity to testify today. I would be pleased to address any questions you may have.