

Energy Security in the Caribbean:

Unique Challenges



American Security Project

Perspective Paper

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Governor Christine Todd Whitman

Christine Todd Whitman is the President of the Whitman Strategy Group, a consulting firm that specializes in energy and environmental issues.

In this Report:

On Wednesday, February 4, 2015, The American Security Project hosted a conference examining energy security in the Caribbean. This report summarizes the results of that conference and asks questions that future ASP research will focus on.

- **Energy, Economics, & Geopolitics in the Caribbean**
- **Technology Advances and Policy Challenges**
- **What is to be done? Public and Private Sector Solutions**

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IN BRIEF

- The islands of the Caribbean face unique challenges in achieving energy security.
- The US has a unique opportunity to help increase energy security in the Caribbean.
- Declining oil prices, the US energy revolution, and warming US-Cuba relations have created an opportunity for investment.
- The US Government can help organize multilateral public-private partnerships in providing energy projects and infrastructure to the Caribbean.
- The Caribbean islands have an opportunity to move away from dirty dependence on fuel oil and commit to newer, cleaner energy systems.

Energy Security in the Caribbean: Unique Challenges

Introduction

Energy security is an issue that affects many countries worldwide. The potential problems posed by energy are threefold: availability, flexibility, and affordability. These characteristics are especially so in the islands of the Caribbean. Limited fossil fuel resources coupled with a lack of infrastructure requires these islands to rely almost exclusively on energy imports. The high cost of these imports in turn places a heavy economic burden on these countries.

However, recent events in the global energy market have combined to create a unique opportunity for the islands of the Caribbean. The significant drop in the price of oil, the energy revolution in the United States leading to a boom in natural gas production, and the warming of US-Cuba relations has led to renewed efforts from public and private corporations to invest in new and innovative energy technologies in the Caribbean. This shift to the Caribbean regarding energy security was highlighted in US Vice President Joe Biden's speech on the Caribbean Energy Security Initiative (CESI) at the US Department of State on January 26th, where multiple Caribbean heads of state and high-ranking delegates were present. The theme was clear: the islands of the Caribbean have been presented an opportunity to enhance their energy security, and the US will help them to make it happen.

The American Security Project hosted a conference on Wednesday, February 4th examining energy security in the Caribbean. Nearly 100 experts from academia, International Financial Institutions, the US government, and private corporations attended the conference which consisted of three panels. The first panel laid out the geopolitical landscape of the Caribbean, placing particular emphasis on declining oil prices and its effect on the Venezuelan economy, the Petrocaribe program, and renewed US-Cuba relations. The second panel discussed policy challenges and viable energy alternatives to fossil fuels in the region, examining these issues primarily from a private sector point of view. The third and final panel offered policy prescriptions on how to deal with the specific issues facing the Caribbean islands.

Introductory remarks were offered by Andrew Holland, ASP's Senior Fellow for Energy and Climate. He gave a brief overview of the Caribbean's current energy situation and emphasized the importance of the recent American energy revolution and its role in reducing energy dependence in the region by providing affordable, available alternatives.

Panel 1: Energy, Economics, & Geopolitics in the Caribbean

The conference opened with a summary overview of the energy situation currently facing the islands of the Caribbean. The current situation is disheartening. Some countries import nearly 99% of their total energy, most of which is petroleum products. For real energy security, dependence on a single source of fuel presents a vulnerability to a country's national security, a clear issue in the Caribbean. However, the proliferation of natural gas and other energy sources in the US has created a unique opportunity for the Caribbean via public and private sector investment opportunities.



BGen Stephen Cheney



Panel 1, Left to Right: Dr. Jonathon Benjamin-Alvarado, Christian Gomez, BGen Stephen Cheney



Christian Gomez, Council of the Americas

The first panel examined the current geopolitical and economic landscape in the Caribbean in an effort to show the feasibility of future outside investment. The panelists focused on three major issues having a direct effect on the region: falling oil prices, Venezuela's rapidly decreasing economic strength and its effect on the Petrocaribe program, and Cuba's potential role in the region moving forward. BGen Stephen Cheney, USMC (Ret), ASP's CEO, chaired the panel.

Falling oil prices and the rapid decline of Venezuela's economy were at the forefront of the first panel's discussion. Declining oil prices over the last year have significantly harmed the Venezuelan economy. In terms of magnitude, 25% of Venezuela's GDP, 96% of its export earnings and 50% of its fiscal revenues are dependent upon oil and gas. A significant portion of these revenue streams come from the country's involvement in the Petrocaribe program. The Petrocaribe program is an organization of Caribbean states that purchase oil from Venezuela at preferential prices. The two panelists, Christian Gómez (Council of the Americas) and Dr. Jonathan Benjamin-Alvarado (University of Nebraska Omaha) described the situation in Venezuela as "precarious," and their economy "devastated."



Dr. Jonathan Benjamin-Alvarado, Univeristy of Nebraska Omaha

Dr. Benjamin-Alvarado went on to describe Cuba’s preparedness concerning alternative energy solutions, emphasizing the need for capital and access to international financial institutions. Although US-Cuba relations are beginning to warm, they are still on rough terms. “The 55 years of animus have not set the table for harmonious relations,” Dr. Benjamin-Alvarado concluded.

Concerning Cuba’s potential role in the region amidst warming relations with the US, Dr. Benjamin-Alvarado was clear:

“Economically, Cuba is a monster. It has the potential to be a true, regional juggernaut.”

While falling oil prices and Venezuela’s declining influence in the region present potential problems for Caribbean energy security, it also creates a unique set of circumstances for the US to take the lead. Amidst this energy revolution, the energy epicenter has undoubtedly shifted to North America. The huge expansion of natural gas reserves, described by Mr. Gómez as a “bridge fuel” to green energy- and emerging energy technologies have opened up a host of new and attractive markets to investors. Future investments from the US may allow certain Caribbean countries to begin their move away from fossil fuel dependence. Indeed, Cuba alone relies on Venezuelan oil for 50% of its energy imports. This is not a sustainable model for the country as it emerges from isolation. Investments in alternative energy sources are no longer a drain on growth, but a positive impact.



Panel 2: Technology Advances and Policy Challenges

The second panel of the event addressed the policy challenges to bringing viable energy alternatives to fossil fuels in the Caribbean. These issues were examined largely through the lens of the private sector, aided by investments from public sector and International Financial Institutions. Panelists included Natacha Marzolf, Principal Energy Specialist in the Energy Division of the Infrastructure and Environment Department of the Inter-American Development Bank, Brian O’Hanlon of the Overseas Private Investment Corporation, and Michael Zehr of HBW Resources. ASP’s Senior Fellow for Energy and Climate Andrew Holland opened the panel with a brief overview of the role renewable energy can have in the Caribbean, highlighting the potential of new and emerging energy technologies.

Natacha Marzolf of the Inter-American Development Bank (IDB) spoke first, describing her organization’s role in the Caribbean via investments and policy loans in an effort to reduce dependence on oil. She highlighted two initiatives that the IDB is currently undertaking in Barbados and Trinidad & Tobago as current examples. At the macro level, projects include solar photovoltaic arrays and wind generation plants, while micro level projects include projects as simple as retrofitting streetlamps with LED lightbulbs and replacing inefficient air conditioning units in homes. As an example, IDB is investing in housing outfitted with solar photovoltaic arrays. These arrays would allow homeowners to consume as much energy as they need while selling back any excess energy to the public grid. Marzolf described this project as one with significant “commercial potential.” She goes on to discuss the benefits of using liquid natural gas (LNG) as an energy alternative in the Caribbean:

“LNG is a very good alternative. It is safe, it is clean, and there is enough of it.”

Calls for investment in the Caribbean via the private sector were also echoed by Brian O’Hanlon of OPIC, who said “the US is looking to solve real problems on an island-by-island basis.” O’Hanlon underlined the importance of mobilizing US development in emerging markets and countries through funding renewable energy projects. In procuring funding, he emphasized the importance of the nexus of governance, finance, and donor support. The effects of each are not mutually exclusive, O’Hanlon argues, so it is imperative that all three are given equal attention and weight. While good donor support can aid in mobilizing finance, poor governance would likely result in a lack of execution in the country of interest, and energy initiatives there could falter.



Natacha Marzolf, Inter-American Development Bank



Brian O’Hanlon, OPIC



Michael Zehr, HBW Resources

Michael Zehr of HBW Resources described the shift in the energy paradigm due to the American energy revolution, focusing on the newfound “attractive markets” in the Caribbean. These markets present a huge investment opportunity for the US in the Caribbean. Zehr on the shale expansion and its potential role in the region:

“We know where the resources are. We’ve got the geological data to find it and go get it; we just need markets to sell it. It has introduced an entirely new element to investments in those places.”

However, the potential for US investments in the Caribbean is no easy process. While the Caribbean presents great opportunities for the US energy sector, there are certain mitigating factors at work as well. Each panelist, for example, cautioned against grouping all of the islands together under the term “Caribbean,” considering that to be a gross overgeneralization. Each island poses distinctive challenges and opportunities. For example, Jamaica has almost no natural resources for energy production while Trinidad & Tobago have significant amounts of natural gas reserves. Thus, sweeping infrastructure projects that would attempt to provide a blanket solution to the region’s energy security problems would surely end before it even began. Zehr mentioned the issue of market access for certain islands in the Caribbean, citing island-specific government regulations and corruption as barriers to energy projects. Additionally, funding for these markets is substantial. Marzolf estimates the cost of producing LNG capacity for some islands at roughly \$1.3-\$1.5 billion, for example.

Fortunately, energy security has proven to be a politically bipartisan issue in the US so far. The US has both the interest and the capital to invest, and the second panel stressed the importance of a third factor needed for successful energy ventures in the Caribbean: private sector support.

When asked about the risk of investing in the Caribbean, all the panelists were positive. Low oil prices have created an avenue for the US to take the lead in providing energy to the region, and they should take advantage of these market conditions while they can.



Panel 3: What is to be Done? Public and Private Sector Solutions

Dante Disparte, CEO of the Risk Cooperative and member of the Business Council for American Security, opened the final panel of the afternoon with a simple question: “What do you do from here?” This was the topic discussed by the third panel, featuring Dr. Natasha Vidangos from the US Department of State, Luis Humberto Berrios of Tropigas, and Chris Burgess of the Carbon War Room. The panel examined potential solutions to energy security issues facing the Caribbean and offered prescriptions for how to deal with these problems.

Dr. Vidangos opened the panel optimistically, reaffirming the idea that “the US cares a lot about prosperity in the Caribbean,” sentiments made by US Vice President Joe Biden concerning the Caribbean Energy Security Initiative. Dr. Vidangos spoke on the immense benefits of public-private partnerships concerning energy investment in the region, calling for a “strong political will combined with willing partners” to drive growth. Emphasis on private organizations was plainly stated. Fruitful, lasting ventures in establishing new and efficient energy infrastructures in the Caribbean cannot be accomplished without both public and private sector resources. Dr. Vidangos elaborated on this issue, stating that these partnerships are necessary to produce real, durable results, not “just a series of one-off projects” that have limited economic benefits. She illustrated the positive effects of public-private partnerships using the Blue Mountain Renewables LLC project in Jamaica as an example. The project boasts a 34MW wind power plant, one of many efforts to reduce the country’s dependence on energy imports.

Luis Humberto Berrios, Vice President of Tropigas, continued the discussion of reducing this dependence on fossil fuels:

“Every single island in the Caribbean is completely dependent on fuel imports.”

His organization Tropigas is an importer and retailer of liquid petroleum gas (LPG), specifically propane. The shale revolution in the US, he stated, has also led to increased amounts of other natural gases as well, like propane, ethane, and butane. These gases provide a cheaper, cleaner, and more reliable source of energy, and their emerging abundance in the US has vast potential for the Caribbean islands. Berrios explained the need for the islands to start transitioning their economies to a more affordable, cleaner energy:



Dante Disparte, CEO Risk Cooperative



Dr. Natasha Vidangos, US Department of State



Luis Humberto Berrios, Vice President Tropigas

“The best way to bring about social and economic change is through low energy costs. Let’s look at the whole picture and use an energy mix of LNG and LPG.”

Puerto Rico and the US Virgin Islands face a unique challenge in developing their energy security. Both are US territories and do not qualify for investment. For example, a stipulation for OPIC lending, O’Hanlon mentioned, was that the country in question must be foreign. This has added to the challenges for the two territories, Berrios noted.



Chris Burgess, Carbon War Room

Chris Burgess of the Carbon War Room echoed these sentiments. Referring to his organization as a “do tank” and “the sharp end of the spear.” Burgess called for an increase of private investment into renewables in the Caribbean in an effort to establish long term, tangible energy projects. He also highlighted the positive effects that current projects are already producing, referring to his organization’s work in St. Lucia, Jamaica, and the Bahamas.

In summary, the final panel demonstrated the positive effects that many energy projects are having as the result of public-private partnerships in the Caribbean. Addressing the diverse nature of each island is key in recognizing what types of projects are feasible at the outset.

Conclusion

There are clear benefits for a nation in increasing its energy security through diversification of its resources. Relying on multiple sources of energy increases flexibility and creates new, diverse markets for outside investment. This is essential to the islands of the Caribbean, who are almost exclusively dependent on imports for their energy needs. Reliance on fuel oil has limited their economies and handcuffed them to oil exporters like Venezuela, whose economy is currently in shambles. The move away from fuel oil and toward LNG, LPG, and renewables makes sense. The current situation will not last forever. A key aspect of energy security is reducing dependence on other countries, and these new forms of energy enable the Caribbean island to do just that.

Furthermore, the Caribbean is in a prime position to take advantage of the ongoing energy revolution in the US. This energy revolution has led to increased production of natural gas that can provide a cleaner, more available alternative to fossil fuels, and serve as a “bridge fuel” to green energy and renewables. This, coupled with the decreasing price of oil and the willingness of US public and private sectors to invest, bodes well for the region’s energy security situation moving forward.

However, there are significant obstacles that the Caribbean presents to outside investors in terms of energy provisions. The complex makeup of the islands themselves, specifically the unique characteristic of each island, presents a challenge. While some islands may be more receptive of projects to improve or create their energy infrastructures, others may not. Projects that are feasible on some islands are simply not in Michael Zehr’s terms, “bankable” on other islands. Factors such as market size, governmental regulations, and existing energy infrastructures are the biggest contributors to this challenge.

The US has a unique opportunity to take the lead on investing in, and providing affordable energy to, the Caribbean. Venezuela’s crippled economy, declining oil prices, and the subsequent energy revolution have created an opportunity for US and the Caribbean islands to mutually increase their energy security for years to come. The benefits of providing energy and investments for projects have been stated throughout each panel. US investments in Caribbean energy would address all three of the energy security issues mentioned at the outset. The newfound abundance of natural gas, coupled with emerging energy technologies addressed the issues of affordability and accessibility, and reliance on multiple sources of energy as opposed to a singular dependence on fossil fuels addresses the issue of flexibility. Dr. Vidangos summed up the conference appropriately:

“The Caribbean has a one of a kind opportunity here, and we hope to help make that happen.”

Further Reading

[America's Energy Choices - White Paper \(2014\)](#)

[Energy & Climate Security: A Necessary Nexus](#)

[Global Natural Gas Pivot to Asia](#)

[Effective Measures for Tackling Climate Change: An Analysis of the Divestment Movement](#)

[The Geopolitical Implications of U.S. Natural Gas Exports](#)

About the Sponsor

Tropigas of Puerto Rico, Inc. and Progasco, Inc. are market leaders and are constantly searching for new technologies to provide its customers with products and services in liquid propane gas (LPG). Tropigas of Puerto Rico and Progasco together form the most technologically advanced company in the LPG market in Puerto Rico. With sales of 30 million gallons per year, the company has 27 bottling plants located around the island. The company provides services to industrial and commercial customers as well as independent dealers from 27 gas filling plants, located around the island.



PUERTO RICO

Speaker Biographies

Panel 1

Jonathan Benjamin-Alvarado is the Assistant Vice Chancellor and Professor of Political Science at the University of Nebraska at Omaha (UNO), with an emphasis on U.S. Foreign Policy, International Development and National Security. He is also Director of the Intelligence Community Scholars Program at UNO which is a member of the Great Plains National Security Education Consortium. He was Treasurer of the American Political Science Association, founding Assistant Director for Research and Outreach for the UNO Office of Latino and Latin American Studies (OLLAS), and is a Senior Faculty Associate with the University of Georgia's Center for International Trade and Security.



He has conducted research related to Cuba's efforts to develop a nuclear energy capability and broader energy development issues. Since 1992, he has visited Cuba 27 times for field research on energy and economic development and has conducted interviews with a number of senior government officials in Cuba's energy and related agencies. He has served as a technical advisor to a number of US delegations to Cuba and Latin America states on energy development, national security and strategic (nonproliferation) trade issues.

He has published numerous articles, monographs and commentaries on these subjects in Spanish, Russian, German and English in newspapers, scholarly and policy journals including *The Political Science Quarterly*, *The Nonproliferation Review*, *Cuba in Transition*, and *Yaderni Kontrol* (Russia). In 2012, he edited *Cuba's Energy Future: Strategic Approaches to Cooperation* with the Brookings Institution Press. He is also the author of *Power to the People: Energy and the Cuban Nuclear Program* (Routledge, Inc., 2000). He has worked in collaboration on projects with the Center for Nonproliferation Studies, the Brookings Institution, the World Security Institute, the Carnegie Endowment for International Peace, the MacArthur Foundation and the Ford Foundation. He received his Ph.D. from the University of Georgia in 1997, and M.A. from the Monterey Institute of International Studies in 1992. He has also attended UCLA, and Harvard University.

Christian Gómez, Jr. is director of energy at the Washington office of the Council of the Americas. In this capacity, he coordinates the activities of the Council's Energy Action Group, a private-public dialogue on hemispheric energy issues that develops strategic energy policies and publishes working papers on key hemispheric energy topics. Prior to joining COA in 2013, Gómez was a consultant at the International Finance Corporation (IFC), focusing on business models that reach the base of the pyramid worldwide. He was previously program assistant for democratic governance at the Inter-American Dialogue and served as executive director of Princeton in Latin America (PiLA). Gómez started his career at the Arias Foundation for Peace and Human Progress in San José, Costa Rica.



He has been interviewed in print and broadcast media, and he has authored or co-authored articles in *The Miami Herald*, *El Universal*, *U.S. News and World Report*, *Latin Business Chronicle*, *Foreign Policy Digest*, and *Latin America Advisor*. He is also a contributing blogger to AQ Online.

Gómez received an MBA from the Wharton School of the University of Pennsylvania, an MA from the Paul H. Nitze School of Advanced International Studies (SAIS) of Johns Hopkins University, and an AB with honors in Political Economy and Latin American Studies from Princeton University.

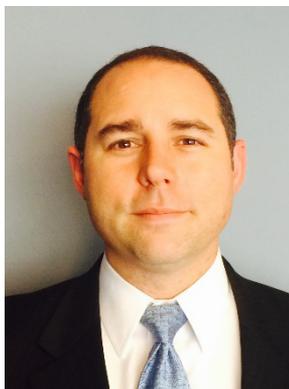
Panel 2



Natacha C. Marzolf is a Principal Energy Specialist in the Energy Division of the Infrastructure and Environment Department and is based in Washington DC. She joined the Bank in 1996, selected by the Young Professional Program and has over 20 years of experience originating, structuring and disbursing sovereign and non-sovereign transactions, in particular in the energy sector in Latin American and the Caribbean. She has worked both in the private sector and public sector of the Bank in various infrastructure projects, including several awards and obtained the 2005 Deal of the Year “Campos Novos” in Brazil. Her most recent publications in the energy field include a policy paper on “Fiscal and Non-Fiscal Incentives to promote Renewable Energy in Chile” (2012) and her Department’s first monograph on “Power and Possibility: the Energy Sector in Jamaica” (2011). Her third publication “Harnessing Geothermal Energy in Colombia” (book) was published in December 2013 and captures the methodology proposed to impulse the geothermal potential in Colombia. She is currently finishing her last paper on Sustainable Energy in Trinidad and Tobago. Ms. Marzolf is a graduate of Harvard Law School and holds a post-graduate degree in Development and Economics Law from the University of Paris II and a Master in International and European Law from Paris II – Assas.



Brian O’Hanlon is the Director for Business Development for Renewable Energy and Sustainable Development at the Overseas Private Investment Corporation. Prior to his current position, Brian served as a Director in OPIC’s political risk insurance division. A specialist in renewable energy, Brian join OPIC after serving as the senior analyst for U.S. renewable energy companies and international markets at the U.S. Commerce Department. In 2010, Brian led the development of the U.S. Government Renewable Energy and Energy Efficiency Export Initiative and the establishment of a private sector advisory committee to advise the Secretary of Commerce on issues affecting renewable energy companies. He has a Masters of International Affairs from American University and a Bachelor of Arts in History and Political Science from Pacific Lutheran University.



Michael Zehr joined HBW in 2011 as Vice President of Federal Affairs. Michael has over a decade of experience as a senior energy policy advisor in the U.S. Senate where he served on the staffs of four U.S. Senators, including U.S. Senate Majority Leader Mitch McConnell. A procedural and legislative strategist, Michael has specialized in developing legislative proposals and advocacy plans dealing with complicated and politically sensitive initiatives.

While on the Hill, Michael served as Legislative Director for U.S. Senator George LeMieux (FL), Legislative Director for U.S. Senator Mel Martinez (FL), Staff Director for the Senate Special Committee on Aging, Legislative Assistant for U.S. Senator Mitch McConnell (KY), and Legislative Assistant for U.S. Senator Tim Hutchinson (AR). During his service in the Senate, Michael played a critical role in helping shape and negotiate key pieces of agriculture and energy legislation including the Farm Security and Rural Investment Act of 2002, the American Jobs Creation Act of 2004, the Energy Policy Act of 2005, the Gulf of Mexico Energy Security Act of 2006, the Energy Security and Independence Act of 2007, and the Small Business Jobs and Credit Act of 2010. Michael also advised Members on opportunities to utilize Committee hearings, the appropriations process, and federal nominations to advance policy objectives and priorities within executive branch departments and agencies.

As Vice President of Federal Affairs, Michael monitors all federal activities affecting HBW’s clients, and he directs the firm’s federal lobbying activities in Washington, DC. He also organizes and hosts the firm’s Energy Roundtable Series with Members of Congress, which provides key insights into the energy and environmental policies being considered by government officials. Michael maintains a broad network of contacts throughout the

federal government and is actively engaged in efforts to shape energy, environment, and transportation policy development through educational outreach and direct advocacy.

Michael holds a Master of Arts degree in National Security and Strategic Studies from the U.S. Naval War College, a Master of Science degree in Biotechnology from Johns Hopkins University, and a Bachelor of Science degree in Chemistry from the University of Virginia. He was also awarded a Howard Hughes Research Fellowship at Dartmouth College where he conducted biophysics research published in the scientific journal *Structure*.

Panel 3

Natasha Vidangos is a Latin America/Caribbean Energy Officer for the U.S. Department of State. She specializes in the geodiplomacy of energy policy, developing diplomatic relationships and analyzing foreign perspectives on energy choices ranging from macro oil politics to the deployment of clean, small-scale energy technologies. A scientist and educator by training, she brings skills in research, analysis, complex systems and technical fluency together with an ability to communicate complex topics clearly, accurately and succinctly to a wide variety of audiences.



Ms. Vidangos earned a B.S. in Chemistry from Yale University in 2004 and a Ph.D. in Biophysics and Chemistry from the University of California, Berkeley in 2011. She was also the Fulbright Fellow for Molecular Biochemistry at the Instituto Leloir in Buenos Aires, Argentina from 2004-2005.

Luis Humberto Berríos serves as the Vice President of Tropigas de Puerto Rico, a leading supplier of LPG and related products and services. Tropigas excels in commercial power generation, complex projects, energy efficiency and redundancy in Puerto Rico and neighboring islands. With more than 13 years in the energy field, Mr. Berríos has most recently spearheaded initiatives to develop island-wide power generation projects leveraging alternative fuel sources.

Mr. Berríos has a degree in business administration from Bryant University and a JD from Inter-American University of Puerto Rico, School of Law where he was admitted to the Puerto Rico Bar Association in 1998.





Christopher Burgess is the Operations Manager for Smart Island Economies at the Carbon War Room. He has over 15 years of experience as an environmental professional and project manager with practice in a variety of multi-disciplinary energy and infrastructure projects. Chris brings a wealth of environmental, renewable energy and project management experience to his current role.

Before joining the Carbon War Room, Chris was the Chief Operating Officer at Alpha Energy, a renewable energy development company in Annapolis, Maryland. At Alpha Energy, Chris was responsible for the company's feasibility studies and overall project management for commercial and utility scale wind and solar installations. He regularly managed multi-million dollar projects both domestically and internationally.

Chris also has previous experience as an environmental planner for new and reclaimed commercial site development, as well as a program analyst and team leader with the U.S Environmental Protection Agency. At the EPA, Chris provided operations support and technical assistance for environmental emergencies nationwide. He was instrumental to operations during EPA's high profile responses, including Sept. 11th, Columbia Shuttle and the Hurricane Katrina disaster.

He earned his master's degree in Environmental Science and Policy from Johns Hopkins University in Baltimore, Maryland and a bachelor's degree in Coastal and Environmental Planning from East Carolina University in Greenville, North Carolina.

Chris has been active in Maryland's renewable energy policy progression through advocacy organizations such as the American Wind Energy Association, the Solar Energy Industry's Association and the Business Network for Maryland Offshore Wind. He has written and testified on several provisions for Maryland's current renewable energy laws, including interconnection, aggregate net-metering and Maryland's recently enacted Offshore Wind Energy policy.

About the Author

[William George](#) (@WGeorgeUCF) is an Energy Security research intern at ASP. He recently earned his Master's in Political Science-International Studies at the University of Central Florida in Orlando, FL. His Master's thesis used quantitative modeling to explain psychological correlates of foreign policy behavior, focusing specifically on US engagement in international crises. William also served as the Senior Research Fellow for the Prince Mohammad Bin Fahd Program at UCF. His research interests include political psychology, energy policy, terrorism studies, and foreign policy decision making.

The American Security Project (ASP) is a nonpartisan organization created to educate the American public and the world about the changing nature of national security in the 21st Century.

Gone are the days when a nation's security could be measured by bombers and battleships. Security in this new era requires harnessing all of America's strengths: the force of our diplomacy; the might of our military; the vigor and competitiveness of our economy; and the power of our ideals.

We believe that America must lead in the pursuit of our common goals and shared security. We must confront international challenges with our partners and with all the tools at our disposal and address emerging problems before they become security crises. And to do this we must forge a bipartisan consensus here at home.

ASP brings together prominent American business leaders, former members of Congress, retired military flag officers, and prominent former government officials. ASP conducts research on a broad range of issues and engages and empowers the American public by taking its findings directly to them via events, traditional & new media, meetings, and publications.

We live in a time when the threats to our security are as complex and diverse as terrorism, nuclear proliferation, climate change, energy challenges, and our economic wellbeing. Partisan bickering and age old solutions simply won't solve our problems. America – and the world - needs an honest dialogue about security that is as robust as it is realistic.

ASP exists to promote that dialogue, to forge that consensus, and to spur constructive action so that America meets the challenges to its security while seizing the opportunities that abound.



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