Annotated Bibliography

This annotated bibliography details the first phase of literature collection pertaining to my spring 2016 capstone topic of Central American energy integration. When discussing Central American energy integration, I am specifically referring to the *Sistema de Interconexión Eléctrica de los Países de América Central* (SIEPAC) line that currently runs a single electrical circuit (also referred to as a seventh open-access market) of 300MW from Guatemala in the north to Panama in the south. The idea was conceptualized as early as 1987 and became fully functional in 2013. SIEPAC and the seventh market, however, have not been used to their maximum potential due to technical and geopolitical obstacles, as well as other tangential topics that are further detailed in this literature review. Although my topic of regional integration focuses on electricity, the proliferation of liquid natural gas (LNG) and transition from oil dependency to renewable utilities are still very much intertwined. My capstone project will build off a previous paper in which I wrote about SIEPAC after traveling to Central America to interview energy specialists about the tribulations of overcoming the technical and geopolitical obstacles that prevent SIEPAC’s maximum utility. I have developed my current research around the issues that my interviewees highlighted as the problems’ catalyst and their theoretical solutions.

Over the past several years, hundreds of thousands of men, women, and mostly children have arrived at the U.S.-Mexico border from the Northern Triangle of Central America seeking asylum and economic opportunity. El Salvador, Honduras, and Guatemala, the three countries that compose the Northern Triangle, have been plagued by gang violence, high homicide rates, State corruption, a sometimes-nonexistent education system, and turbulent economies. These duplicitous circumstances have coalesced into a regional powder keg that the United States has just begun to address. The aforementioned deluge of illegal immigrants has not only polarized the United States to the point where building a wall along the southern U.S. border sounds like the best possible solution, but is now perceived as a threat to national security. A formidable threat which is actually the result of a decade of U.S. negligence to their own ‘backyard’, but nevertheless a present-day problem that requires the United States’ utmost attention, and now billions of tax payer’s dollars too. In this annotated bibliography, there are articles, reports, and journals that research, summarize, and critique the policies that have developed around the immigration crisis, and highlight the effects and reasoning for the prioritization of energy integration within each policy. Almost all of the summarized literature was written between 2014 and 2016, and contain reports that were published as recent as the day the first draft of this assignment was written.

The Alliance for Prosperity Plan, the U.S. Caribbean Task Force, Connecting the Americas 2022, the U.S. Strategy for Engagement in Central America, and PetroCaribe are a few of the policies, initiatives, and agreements that will be discussed. As well as their critiques and recommendations for action following their abrogation, if applicable. A reoccurring criticism for several of these pieces is the neo-liberal, imperialistic provisory that the United States foists upon each of the vulnerable, yet open-armed Central American countries. From a critical theory lens (seen in the *TruthOut* analysis), it would seem as though the United States is providing funds to militarize Mexico and the Northern Triangle—the only land based entry for Latin
America—in order to prevent a domestic uprising, which doesn’t provide a long-term solution and actually makes the region more dependent on U.S. assistance. The examination of the recently inaugurated Panama Canal extension also delves deeper into the intentions of U.S. development abroad. With the desire to transition towards cleaner, cheaper energy, and the fact that the United States will eventually be the world’s third largest producer/exporter, then the United States’ intentions to double the capacity of SIEPAC has deeper motives than simply solving the immigration problem. Furthermore, the role that the increasingly irrelevant PetroCaribe agreement that Venezuela has used throughout the Caribbean to balance soft power with the United States is an important factor that deserves further review. Lastly, the renewable movement in Nicaragua and Costa Rica were touched on but, along with every other issue summarized in this bibliography, requires further analysis in the ongoing process of capstone research.


Similar to other passages in this bibliography, this article criticizes the methodology behind the implementation of the Alliance for Prosperity Plan (APP), but for different reasons. The main issue that the author has is the reality that the APP “increases the control of the US and further makes the region more dependent on the U.S.”, and that the proliferation of anti-gang security tactics will possibility turn the Northern Triangle into militarized states. These are obviously not favorable solutions for long-term development nor the people it will affect. The APP, the author posits, simply exploits the entrenchment of CAFTA-DR and Plan Mesoamerica, “…the United States’ call for regional integration, which is part of their plan to control the region militarily and economically.”

In 1998, the Clinton administration launched Plan Colombia. Ten years later, Bush proposed the Merida Initiative to fight crime in Mexico—critics argue that both plans led to “increased human rights violations, further militarization and the rapid dispossession of indigenous land by transnational companies.” Many praise the success of Plan Colombia, such as Vice President Joe Biden in his New York Times op-ed. However, research shows that violence and drug trafficking became worse following the Plan, it might have even intensified the violence, and that there was consequential growth in palm oil production which lead to the displacement of hundreds of rural farmers. The author uses these examples plus the APP to explain how the United States hasn’t shied away from their interventionist Monroe Doctrine-esque ways of the twentieth century. The author then talks about how Plan Mesoamerica established Guatemala as the primary producer of energy by facilitating the comparative advantage. Abbot also believes that the U.S. has encouraged regional integration due to the exploitable markets that the U.S. can capitalize upon once they are integrated themselves. Lastly, in the 1970s, when the United States facilitated energy growth in Guatemala, the projects resulted in the displacement and massacre of large indigenous Mayan populations.

This 2014 study examines the determinants of renewable energy consumption per capita for all seven Central American countries from 1980 to 2010. The authors, or data analysts, use math, equations, and methodology that is way too advance for me to understand, however their Introduction and Findings provided me with several bits of helpful information that have given me insight into new topics to be researched further. The article opens by explaining that the reliance on fossil fuel and changes in environmental vulnerability has garnered interest from both the general public and politicians to initiate policies such as “renewable portfolio standards, financial incentives (tax credits, rebates, low-interest loans), net metering policies, and voluntary green power programs”, to address aforementioned concerns. When discussing renewables, Costa Rica leads, followed by Panama, and Nicaragua in last. However, the whole region has an abundance of hydroelectric and geothermal capacities, which have since been exploited, and is “emerging as a major ethanol producer and exporter.” The study’s conclusion references the importance of the Energy and Environment Partnership, which came as a result following the United Nations World Summit on Sustainable Development in 2002 as the “structural break in the co-integrating [renewables] relationship.” The initiative explains the “reduction in the legal and institutional barriers in the expansion of the renewable energy as well as enhances the use of renewable energy sources through financial incentives, access to emerging technologies, and the technical expertise in the development and assessment of the renewable sector.”


At the moment of writing this, in 2016, Costa Rica’s electrical grid has run off of 100% renewable energy sources for 150 days. No other country on Earth has done this to date. Costa Rica’s transportation system, which accounts for 70% of the country’s energy consumption, however, has not. Nevertheless, Costa Rica’s model for clean, renewable energy is a paragon for other countries looking to transform their own energy sector. Granted the country is geographically located in a renewables hotbed, and lacks indigenous populations like other Central American nations, it is still an extraordinary feat. Another landmark for the country’s energy sector was inaugurated September 2016: The Reventazon Hydroelectric Plant. The 305MW dam is the country’s largest infrastructure project to date, second-biggest infrastructure work in Central America following the Panama Canal, cost $1.4 billion, was completed three months ahead of schedule, and will power more than 520,000 homes with power—a source of pride for the socio-environmentally progressive nation that managed and created the dam with local talent. Lastly, Costa Rica recently pushed back their goal of becoming completely carbon-neutral from 2021 to 2085.


In Vice President Biden’s op-ed, he explains to the American people the four problems of Central America: inadequate education, institutional corruption, rampant crime, and a lack of investment, then asks for the country to understand and support the proposed $1 billion assistance to the region with the explanation that no action would precipitate repercussion for the American people, too. He then emphasizes three main goals for improving conditions south of the border: first and foremost, “security makes everything else possible”; “good governance begets the jobs and investment that Central America need”; and “there is not enough government
money, even with assistance from the US and the international community to address the scale of economic need.” Biden ends with a sobering message that this initiative will not be an overnight success, and repeats that this will be a long but worthwhile fight due to the implications that failure may have for the entire Western Hemisphere, especially the United States. Biden uses his successful senatorial experience with combatting drug trafficking in Colombia, beginning in 1999 through Plan Colombia, to explain that the proposed solution has worked before, but took fifteen years and $9 billion U.S. dollars, and that the cost of replicating the activities in Central America are modest in comparison to the outcome of letting “violence and poverty fester.” The biggest fight will be for the Central American government who have a lot of reforms to make and money to invest, but could be the “next great success story of the Western Hemisphere.”


This New York Times article is a good compliment to the Institute of the America’s report on the Panama Canal’s inauguration because it highlights the mishaps of the Canal extension’s background, and pontificates the details that portend a disastrous future for the new locks, Gatun Lake, and the corruption surrounding everything to do with the Canal’s management. The article’s second sentence summarizes the mismanagement, or corruption, that began from the projects inception: “After an intense two-year competition, a consortium led by a Spanish company in severe financial distress learned that its rock-bottom bid of $3.1 billion had won the worldwide competition to build a new set of locks for the historic Panama Canal [expansion].” The budget left no room for errors, requested an amount of cement 71 percent lower than the next bidder, allotted roughly 25 percent less for steel to reinforce that cement, and consequently water began to gush through the concrete of the completed locks that were supposed to last 100 years. Furthermore, geologists believe that Panama is a lot more vulnerable to earthquakes than previously estimated, and will have to withstand tremors as large as 8.0 in magnitude. The article is written with help from Karen Smits, a Dutch organizational anthropologist Ph.D. student, who arrived in Panama to write her thesis on cultural dynamics within the consortium as it set out to build the new locks. Aside from the huge problem of using tug-boats to guide the neo-Panamax vessels through the new locks, the article talks about the more than practical demand—almost double—that the new locks will have on Lake Gatun, and that due to climate change and the fact that the Lake is the only source of potable drinking water for the people of Panama, everyone should be worried.


As this May 2016 report states: “The U.S.-Caribbean-Central America Task Force (U.S.-CCA) was created as a means to diminish the vulnerability of small electricity markets in Central America and the Caribbean to fluctuations in global energy markets, and contribute to an aggregate reduction in tariffs for consumers, elevating the competitiveness and economic prosperity in both regions. The U.S.-CCA Task Force also proved a forum for the joint and collaborative identification of challenges and opportunities for energy diversification, clean energy investment, regional energy cooperation and integration.” Within Central America (also the region of focus for the Connecting the Americas 2022 (Connect 2022) initiative, which
resulted from the 2012 Summit of the Americas initiative), the Central American Task Force (U.S.-CA Task Force) has recommended actionable steps to strengthen, optimize, and accelerate SIEPAC. This recommendation includes actions to make the region’s electricity market (MER) more competitive by resolving short-term market constraints, as well as the efforts of the three MER institutions to expand and strengthen the MER.” One of the salient points from the Summit and concurrent reports is the plan to double the current 300MW capacity to 600MW by installing a second circuit. Practically every page of the 28-page document is worth referencing, however given the assignment I will only highlight these two referenced quotes, but it should be known that this Task Force strategy will be the foundation of my Capstone.


This 58-page report summarizes the results of a performance assessment of the Connecting the Americas 2022 initiative (this is the Central American Energy Integration equivalent to the Rosetta Stone). After the evaluation team interviewed key stakeholders in Central America, Mexico, and Canada, and conducted a survey, this report was published to document the initiative’s progress up until May 2015 and, most importantly, made recommendations for overcoming current obstacles, then lists those obstacles. The two recommendations: try to persuade Mexico and Colombia to join SIEPAC; and to strengthen existing MER institutions and establish clear guidelines for long-term transmissions, are actually already being implemented in 2016. In the footnotes relating to the first recommendation, the authors mention that “Mexico and Colombia want to sell energy in MER but have not asked to join SIEPAC since that requires a new treaty that has to be agreed upon through a long and onerous process [emphasis added].” Connect 2022 is led by the U.S. State Department’s Bureau of Energy Resources (ENR) with a goal to “build regional power markets across the five sub-regions [of the Americas] …while creating an attractive climate for investment in power sector infrastructure and clean generation capacity.” A big problem with Connect 2022 in Central America is that regional laws are interpreted differently by each nation, there is no uniform system of adjudication to resolve differences, and some national operators tax MER energy which results in unequal treatment. The report highlights the geographical advantages of Guatemala, due to its proximity to Mexico (similar to the relationship between Panama and Colombia in the South), and, as its largest contributor, Guatemala’s effective use and capitalization of SIEPAC. An issue that the report emphasizes, and something I was repeatedly told while doing research in Guatemala this summer, is the problem with short- and medium- rather than long-term energy plans, which preclude market investment and hinder development for a potentially robust electricity trading market…great literature support for qualitative research that I already have.


In May 2016, the Atlantic Council released a 24-page document describing the effects of Venezuela’s oil agreement, PetroCaribe, and recommended policy initiatives for the Obama administration just prior to Vice President Biden’s appearance at the U.S.-Caribbean-Central America Energy Summit. Venezuela established PetroCaribe in 2005 “as a means to provide generous credit financing for Caribbean and Central American countries to purchase Venezuelan
“crude oil”, and ultimately try to balance Latin American favor against that of the United States. As the document explains the agreement, “Countries make an up-front payment to Venezuela ranging from 30 percent to 95 percent of the official market price, and roll over the remainder into loans ranging from seventeen- to twenty-five-year durations with 1-2 percent interest rates. PetroCaribe provided immediate-term budget support to recipient states that faced severe fiscal restraints during a time when oil prices were over $100 per barrel.” In the early 2010s, when oil prices were at an all-time high, the agreement worked wonderfully; however, it significantly increased the overall debt of many recipient states. Furthermore, recipient countries therefore lacked incentive to diversify and transition from fuel to renewable or cleaner energy sources, and instead plugged budget deficits and financed new social programs. This lack of foresight left consumers with electricity tariffs of $0.30 per kilowatt hour, the most expensive in the Western Hemisphere (the United States pays $0.10), and eroded the political freedoms of recipient governments—Venezuela frequently used PetroCaribe to exert influence at the Organization of American States (OAS) meetings. Now with new, lower oil prices, combined with the fact that Venezuela is teetering on the edge of collapse, PetroCaribe has become increasingly irrelevant. Although some countries such as the Dominican Republic and Jamaica have paid their debts at a heavy discount, other countries such as Nicaragua, a significant PetroCaribe member who has 80% of their oil demand fulfilled by Venezuela, are so dependent on Venezuela today that a sudden end to the agreement would be disastrous for the regional economy and undoubtedly precipitate a migration problem.


The Plan of the Alliance for Prosperity (APP) is a strategic action aimed to:

1) Stimulate the productive sector to create economic opportunities
2) Develop opportunities for the people of the Northern Triangle
3) Improve public safety and enhance access to the legal system
4) Strengthen institutions to increase people’s trust in the State

The Plan was designed in reaction to the overwhelming number of immigrants arriving at the U.S.-Mexico border—9 percent of the Northern Triangle’s total population—due to the lack of economic opportunities and gradual rise in gang violence and homicide rates throughout the region. The Plan is a 30-page document that pontificates the stagnant growth factors that have plagued the region (there is no shortage of graphs!), and then outlines the strategic lines of action for moving forward. For the purpose of my Capstone, on page seventeen the ‘strategy for reducing energy costs and ensuring the reliability of electricity supply’ details the tasks that the countries included in SIEPAC have begun to encounter. The most important point in the section is the restructuring and strengthening of the institutional framework in order to securely guarantee long-term contracts that are needed to attract foreign investment.

This article from the 2015 *Prism* journal is written by the current Honduran president as he reflects on the Alliance for Prosperity Plan (APP). The author begins by explaining that the blowback from successful policies, which have resulted in the closing of Caribbean drug trafficking routes, has led to Honduras becoming a host to the preferred transit point for northern bound drugs, consequently increasing the presence of drug cartels and the number of homicide rates throughout the country. Hernandez then goes on to describe how he himself has overhauled the legal framework, the national police force, and military to prevent drugs from entering the country, and corruption from allowing people to get away with it. He says that as a result the homicide rate “has been contained and decreased 25 percent over the last four years from its peak in 2011” (this part is true). President Hernandez then goes on to mention how is still needed to be done: the social and educational programs need to catch up to the demographic boom; the private sector nor growth has been able to absorb the growing workforce (one of the main reasons for immigration); the lack of “educational and technical capacity to engage in value-added enterprises”; institutions need to be rebuilt and strengthened; and so on. 9% of the population has migrated, 5 times the amount of any other country in Central America. The author then mentions his plans and expected results for the actions he will take to address these problems. Most importantly, he says that the U.S. ‘pull’ is not a factor because if so, then Costa Ricans and Panamanians would be leaving their countries, too, and that it is a problem Honduras must continue to deal with. Moreover, he repeatedly extols the United States for what they do and continue to do for Honduras, and lauds the multinational institutions that have been created to effectively manage and assist the region. Another interesting fact, he pledged to reduce the country’s homicide rate by 10 percent each year for the next five years—50% over the span of his term.


In light of the 2017 fiscal year budget proposal for the Alliance for Prosperity Plan (APP) scheduled for later this year, this August 2016 report evaluates the effectiveness of the APP since its implementation in November 2014. In December of 2015, the U.S. Congress allocated $750 million toward the goals of the APP: “reduce the migrants’ incentives to leave their countries by prioritizing a cause-based approach to address what is often seen as an ongoing immigration crisis.” The report criticizes the APP from a human rights perspective and lists the violations that have occurred or neglected to be addressed as a result of the initiative. For example, previous U.S. assistance was designed to go towards development when in reality 60% has gone towards ‘security measures’, which could possibly be “just a continuation of the several failed strategies” that we have already seen throughout Central America. Moreover, despite the fact that the USG says the plan is working and migrants arriving at the U.S.-Mexico border are decreasing, supposedly, in the last six months of 2015, Central American migrants apprehended at the southern border increased 171 percent. In the last three months of 2015, the ‘unaccompanied alien children’ from the same region were three times greater than the year before. Another criticism is the neoliberal approach “to control migration by regulating or influencing labor markets”, including the promotion of direct foreign investment via CAFTA-DR and development programs funded through the U.S. Agency for International Development (USAID). Even before the APP was implemented, many of the inclusive countries’ leaders agreed that the “medium-range plans exceeded the fiscal capabilities of the participating countries.” Furthermore, the
report concludes that the foreign direct investment encouraged though CAFTA-DR only favors a few, select wealthy locals, and that the USAID programs follow a neo-liberal model that doesn’t allow for the long-term development needed to stop the migration problem.


In 2013, Martin describes the economic and developmental advantages behind the success of the Sistema de Interconexión Eléctrica de los Países de América Central (SIEPAC), as well as the political and technical obstacles that hinder the project around the time the article was written. Running from Guatemala in the north all the way to Panama in the south, a seamless power grid for delivery of electricity would reduce consumer costs, strengthen energy security, and, perhaps most importantly, make regional generation projects affordable. As Martin observes, the central obstacle to moving from “blueprint to reality is the lack of political will at the highest levels to address the complex challenges required to complete the regulatory interfaces among the six countries’ systems”, the countries being: Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, and Panama. The Inter-American Development Bank (IDB) estimates the reduction in average electrical generation costs to be between 10-15 percent, making the project hard to dismiss. However, the fundamental challenge of setting up a regional market and regulatory system in which “political intervention assists rather than impedes integration” has delayed the system’s potential, and is one of the reasons that the 2008 completion date was not met. Another incentive for the project is Central America’s dependence on oil imports, surpassing $13 billion in 2011. A more seamless regional market would provide incentives for medium- and large-scale generation projects, Martin says, and encourage investment in natural gas that could displace many of the diesel fuel power plants, which are the leading cause of carbon emissions throughout the region.


The 1,800-kilometer electric transmission line, known as SIEPAC, is designed to interconnect the electric systems of all Central American countries, except Belize. This article does an exceptional job at summarizing the project’s background, details and goals. For example, “the project will consist of 15 substations and 230KV high tension transmission line that will allow for a capacity of 300MW in both directions” at the outset but, as history will have it, is already in the process of doubling capacity to 600MW through the installation of a second circuit. According to data from the Energy Organization of Latin America (OLADE), as of 2012, electricity represented 35% of total demand from primary energy sources in Central America. There are currently no natural gas-fired power generation plants operating in Central America and the region is increasingly exposed to oil market volatility as the preponderance of thermoelectric generation (47% of total electricity generation in 2008) depends on imported fuel oil. In 1996, SIEPAC was formalized in the Tratado Marco del Mercado Eléctrico de América Central (Treaty), which formally introduced the creation of a seventh regional market, the Mercado Eléctrico Regional (MER), to establish the institutional, legal, and technical mechanisms to facilitate the participation of the private sector in the development of increased
electric generation capacity; and establish the infrastructure for electrical interconnection, e.g., transmission lines, substations, that permit the exchanges of electrical power among the participants of MER. Ever since the project’s conception in 1987, the project’s build-out has been led by the Empresa Propietaria de la Red (EPR), an established consortium (since 1998) of private and public companies from Central America, Mexico, and Spain that is headquartered in San Jose, Costa Rica (since 2002). The EPR “counts participation of each country in the region’s electric company in charge of transmission as follows: INDE in Guatemala; CEL and ETESAL in El Salvador; ENEE in Honduras; ENATREL in Nicaragua; ICE and CNFL in Costa Rica; and ETESA in Panama. The consortium also has three extra regional shareholders: Comisión Federal de Electricidad (CFE) from Mexico, Endesa from Spain, and ISA from Colombia. In accordance with the Treaty, and the two aforementioned goals of the SIEPAC project, two supporting institutions were created as part of the project’s mandate: The Comisión Regional de Interconexión Eléctrica (CRIE) and Ente Operador Regional (EOR). CRIE serves as regulator for the new regional wholesale market and its board is formed by one representative from each country, its offices are in Guatemala City. EOR acts as the system’s operator and administrator of regional power transactions and its board counts two members from each country.” Again, this article does an excellent job clarifying the objectives of each agency.


The Atlantic Council’s July 2015 Task Force report details the nature of energy abundance in the United States, the importance of “deploying U.S. prowess in innovation and technology to other countries” (allies) around the world, and the way that the United States can pursue its responsibilities as a global leader on energy and the environment, while leveraging domestic supply abundance at the same time. Due to “innovation and entrepreneurship, the United States has become the world’s largest oil and natural gas producer, with exportable surpluses of natural gas, light oil, and petroleum products.” Therefore, the United States has the tools to help other (developing) nations gain autonomy, prosperity, and energy security—multiplying the speed of results via unfettered natural gas and oil exports. Since oil supply disruptions will be inevitable in the future, e.g., half of the world’s oil reserves in the MENA regions, 30% of the world’s LNG traversing the Strait of Hormuz, ISIS, al-Qaeda threats to Saudi Arabia, civil wars throughout MENA (Syria, Yemen, Iraq, Libya), the United States should assist in making foreign energy markets more competitive and diminish the market power of those who seek to earn monopoly rents. U.S. natural gas production rose from 18 to 25.6 trillion cubic feet (tcf) during 2005-2014. The document then recommends policy approaches for each region around the world, and when addressing Central America, says that Venezuela (PetroCaribe) and the future limited supply and volatile prices may endanger growth in the region. The Task Force mentions Vice President Biden’s Caribbean Energy Security Initiative (CESI), and talks about how this program, including Connect 2022, seek to create an environment for renewables to “make the Central American economies competitive for investors and create more security of supply.”

In this August 2016 article, Sonia Nazario describes the violence and high homicide rates in the Northern Triangle of Central America, specifically Honduras, that have led to the increased amount of asylum seekers arriving at the U.S.-Mexico border, then explains the U.S. aid programs that are now ameliorating the contributing problem: gang violence. As the article explains, three years ago Honduras had the highest homicide rate in the world—Honduras dropped to number three this year. Even though more than 60% of Americans believe that the U.S. should focus inward and solve domestic problems, the historic negligence towards Central America is what precipitated the large migration of men, women and mostly children in the first place, which is now considered a threat to national security. Furthermore, the foreign aid that the United States has already provided has shown to positively work. The United States had included hundreds of millions of dollars in their annual budget to, according to the U.S. Strategy for Engagement in Central America, focus on reducing the presence of gangs—the root causes of insecurity—and promote prevention activities within vulnerable communities. The article highlights the events of Riviera Hernandez, a community in San Pedro Sula, once the deadliest city in the world, where as a result of U.S. assistance, homicide rates have decreased 62 percent. The money restructures towns and provides community leaders with the resources needed to nonviolently tackle crime by changing the environment in which it festers. These programs have shown to be successful in Honduras over the past several years and the number of Hondurans arriving at U.S. borders has decreased as a result. The problem is that now more than ever the United States should ratchet up its foreign aid to ensure the long-term success of such programs. The U.S. does not have the best track record with such precautionary approaches, however it is imperative for national security. If U.S. citizens are fearful for their security to the point of ideologically dividing the country and physically isolating themselves from the world, then the relative peanuts from the U.S. national budget should continually be dedicated towards improving the security conditions throughout the Northern Triangle. Not only would it reduce the exodus of immigrants taking the perilous journey across the Mexican desert, but it would encourage hemispheric and domestic unity as well.


On September 23, 2016, Vice President Biden and presidents Salvador Sanchez Ceren of El Salvador, Jimmy Morales of Guatemala, and Juan Orlando Hernandez of Honduras met at the IDB’s Washington D.C. headquarters to essentially catch-up and see where each country stands in regards to their institutional goals set over the past several years. The topics of discussion, which were to no one’s surprise, were regional migration, security, governance, and economic challenges that all fall under the framework for both the 2016 U.S. Strategy for Engagement in Central America (see below) and the 2014 Plan of the Alliance for Prosperity (see below). Nothing revolutionary was introduced and no new goals were set, or old ones done away with, however all four countries established the U.S.-Northern Triangle High Level Dialogue (whatever that means), which will supposedly “further the efforts to promote a secure, stable and prosperous Central America.” In this case, the increasing dependence on institutional effectivity is a large success for liberal theory and seems oddly close to Roosevelt’s Good Neighbor policy, which may or may not have been a product of liberal imperialism, inevitably making the region
even more dependent on the United States into the future. Again, the article highlights each country’s progress to date, with some of the most impressive achievements being: homicides in El Salvador have dropped 50 percent since the beginning of the year; Honduras’ implementation of tax reform to fight against corruption (known by its Spanish acronym MACCIH); the reorganization of the Honduran National Police by removing 40 percent of active officers in the fight against corruption; and recognized the Obama administration for their commitment to the Plan ($$$).

**PowerPoint Presentation about the Mercado Eléctrico Guatemalteco (Received in Guatemala, directly from CNEE) July 2016**

While researching Central American energy integration in Guatemala over the summer, CNEE gave me a presentation with information, analyses, and graphs that displayed the evolution of Guatemala’s energy sector and their utilization of the SIEPAC line. According to the presentation, the creation of MER (the seventh market) and the ‘opening’ (apertura) to private sector investment increased nationwide electrical coverage from 48.3% in 1996 to 89.58% in 2013. Since 1990, the economic growth and rise in electricity access and coverage reflected the rise in maximum demand potential over the past 26 years, which was around 370%. The consumption of energy has commensurately increased over time from 5,000 GWh in 1999 to 10,500Gwh in 2015, for an 210% increase over 17 years. With a composition of over ten sources—too many to list here—today, Guatemala has an efficient and robust energy matrix that supplies secure and competitive energy, hydro leads with 41.2 percent. Most importantly, and possibly the future focus of my Capstone, Guatemala has the lowest and most competitive cost of energy in Central America! Moreover, Guatemala is the largest and principle exporter or energy to the SIÉPAC line with 48.9%, second is El Salvador with 22.5%, and the most secure—Guatemala does not depend on energy importation via SIÉPAC—0.0%.


The most recent (September 2016) Central American renewable energy project has just recently secured funding in Nicaragua. The IDB has agreed to finance half of the $103.4 million project that will “support site investigation to help determine the technical viability of exploiting geothermal potential [around Cosiguina] …including activities such as commercial-width well exploration” to attract foreign investment. Nicaraguan officials have set goals of 75 percent renewable energy by 2017 and 90 percent by 2020. In 2015, 50.6 percent of Nicaragua’s energy generation came from renewables (30% from geothermal), and the country has an estimated geothermal potential of 1,500 MW—of which “only 10 percent has been developed”! Nicaragua, the second poorest country in the Western Hemisphere after Haiti, is geographically located in a particularly advantageous spot for renewable energy generation, with an ideal wind corridor in the South, volcanoes spanning the country for geothermal, and rivers traversing the country for hydro. The ability to have energy autonomy and be less dependent on purchasing foreign oil would create incredible opportunities for the country’s development into the future.

This recent report from the Institute of the Americas details the positive effects that the 2016 Panama Canal extension will have on the proliferation of liquid natural gas (LNG), and the subsequent transition from fuel oil and diesel to natural gas in the post-Paris Accord world. After ten years of planning and implementation, and over $5 billion spent, the canal expansion was inaugurated on June 26, 2016. The entirely new, larger, and deeper lane now allows for the transit of New-Panamax ships, which are one and a half times the size of previous Panamax ships and can carry twice the amount of cargo. Up from 6% for the existing canal lane, the expansion makes it possible for 90% of global LNG tankers to pass through the isthmus, and by 2021 as many as 550 tankers will pass through annually. The US Energy Information Administration (EIA) says that by 2020, due to the expansion, the US will be the third largest exporter of LNG following Australia and Qatar. As the report says, the expanded Canal will cut the round trip voyage from the US Gulf to Asia to about 20 days, compared with the 31-day trip through the Suez Canal (saving $3.2 million per trip) or the 34 days around Africa’s Cape of Good Hope (saving $2.8 million per trip). Although there is debate as to whether the expansion has come a little too late to serve as the major conduit for global LNG, there is little doubt surrounding the fact that it will have a large impact on global energy supplies during the worldwide transition to cleaner energy. Even though the report lacks criticism, and the facts that encourage such analysis, it does mention that the canal’s locks draw water from the Gatun Lake—the country’s main source of potable water. The new lane will utilize “Water Saving Basins” that have a surface area of 25 Olympic-size pools, but inevitably will demand twice the amount of water to operate both the original and new locks...unsustainably dangerous.


Although there is no date to distinguish when such goals were released, I believe the U.S. Strategy for Engagement in Central America, which is available on the White House website, was released in early 2016 and is intended to be implemented throughout the year and into 2017. It is clear from the beginning that the U.S. strategy is developed around U.S. national security. The combination of “economic stagnation, weak governmental institutions, and insecurity in some countries has plagued Central America,” however the United States has recently begun to experience the repercussions. Therefore, the United States intends to “promote regional prosperity through regional integration, deepen security cooperation to reduce gang violence and the influence of organized crime, and provide technical assistance to promote good governance and fiscal management.” These three overarching areas for action are mutually reinforcing and of equal importance. The success of these goals will depend upon the readiness of Central American governments to demonstrate the political will to undertake substantial political and economic commitments needed to bring about positive change. The United States believes that Central American governments should play the leading role in developing the solution and prioritizing areas for action. When it comes to energy assistance, the strategy explains that “full benefits will only accrue if countries adopt integrated regulatory regimes and governance policies that attract foreign investment, increase modernization and privatization, and encourage adoption of regional energy solutions and standards. [The U.S.] will provide technical assistance
to help countries modernize their regulatory systems, diversify their energy matrixes, and facilitate increased financing for investment in energy-related projects.”