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CHAIR MESSAGE

Andrew Schatz, Stephanie Altman and R. Juge Gregg, Shannon Broome and Emily Fisher, Kimberly Diamond and Roger Stark, Keith Casto, Renee Martin-Nagle, and Kim Smaczniak

As the chairs of the Section of Environment, Energy, and Resources’ International Environmental and Resources Law Committee (IERLC); Climate Change, Sustainable Development and Ecosystems (CCSDE) Committee; Renewable, Alternative, and Distributed Energy Resources (RADER) Committee; Energy and Environmental Markets and Finance (EEMF) Committee; and the Section of International Law’s International Environmental Law Committee, we are pleased to offer a joint newsletter focusing on international energy and climate change.

Energy is directly correlated with the human condition. It influences things like human health, human rights, gender equality, and quality of life. Its creation also changes the environment, and its by-products have been linked as one of the primary contributing factors to climate change. Energy security has long been an aspiration for many countries, and for some, has been used as a geopolitical weapon. Simultaneously, many countries are actively working on ways to reduce climate change. The result is a dance of competing interests. This newsletter covers energy and climate change matters spanning the globe from Liberia to the European Union—all the way to India, the United States, and Canada. It reflects our joint committees’ commitment to publishing relevant topics on international environmental and resources law.

The first half of the newsletter addresses energy security. Johanna Thibault begins with an eloquent discussion of the European Union’s response to the Russian-Ukrainian crisis and highlights the importance of having a well-defined and properly measured definition of energy security. Andrew Teodorescu revisits the United States oil export ban and outlines the history of the export ban, resurgence in domestic oil production, and debate surrounding removal of the ban—ending with a prediction of conflict due to the legal complexity and competing interests. Shannon Frede tackles the challenges facing homeowners in the United States regarding installation of residential solar panels and provides guidance on how to combat illegal solar panel prohibitions.

The second half of the newsletter examines climate change. Anupam Jha explores India’s position on climate change, citing actions India has already implemented with a candid discussion of how India could lead the Paris COP 21 negotiations in Paris, France. Andrew Falk provides an update on the recent agreement between Liberia and Norway, demonstrating international progress toward protecting important forests as a measure to mitigate climate change. Finally, confronting the juxtaposition of energy use and climate change, co-authors Dan Kirby, Jack Coop, Richard King, Jennifer Fairfax, Patrick Welsh, and Rebecca Hall-McGuire discuss international carbon trading with a focus on cap-and-trade between Ontario and California.

We are pleased to report that SEER held another successful Spring Conference in San Francisco, with plenty of content for international environmental lawyers. We encourage members to attend and enjoy interesting CLE content and networking with colleagues. SEER continues to provide timely information and assistance to our members to aid them in becoming better lawyers. Please take note that the next SEER 23rd Fall Conference will be held in Chicago, Illinois, October 28–31, 2015.

Our committees enjoy active participation by members, with quality programs arising from member involvement. If you want to get more involved in any of our committees’ activities, please let our committee chairs know (IERLC: Stephanie Altman at stephanie.l.altman@gmail.com or R. Juge Gregg at jugegregg@gmail.com).
CCSDE: Shannon Broome at shannon.broome@kattenlaw.com or Emily Fisher at EFisher@eei.org; RADER: Kimberly Diamond at kimberlydiamond@hotmail.com or Roger Stark at rdstark@stoel.com; EEMF: Keith Casto at kcasto@cwclaw.com; or SIL IELC: Kim Smaczniak at kimsmaczniak@gmail.com or Renee Martin-Nagle at renee.martinnagle@gmail.com). Additional information is available on the committee websites.

Our newsletter editors are always ready to entertain article ideas and we also welcome periodic guest editors to help put together these newsletters. If you wish to propose an article, please contact our committee newsletter vice chairs (IERLC: Shannon Martin Dilley at dilleyshannon@gmail.com or Jonathan Nwagbaraocha at jonathan.nwagbaraocha@gmail.com; CCSDE: Victor N. Baltera at vbaltera@sandw.com or Eric Waeckerlin at eric.waeckerlin@dgslaw.com; RADER: Misty A. Sims at misty@simsandsimslaw.com; EEMF: Keith Casto at kcasto@cwclaw.com; and SIL IELC: Fatima Ahmad at fatima.maria.ahmad@gmail.com or Guillermo Malm Green at gmalmgreen@brons.com).

Andrew Schatz, Stephanie Altman, and R. Juge Gregg are co-chairs of the International Environmental Law and Resources Committee. Shannon Broome and Emily Fisher are co-chairs of the Climate Change, Sustainable Development, and Ecosystems Committee. Kimberly Diamond and Roger Stark are co-chairs of the Renewable, Alternative, and Distributed Energy Resources Committee. Keith Casto is the chair of the Energy and Environmental Markets and Finance Committee. Renee Martin-Nagle and Kim Smaczniak are co-chairs of the International Environmental Law Committee of the Section of International Law.

**EUROPEAN UNION’S RESPONSE TO THE RUSSIAN-UKRAINIAN CRISIS: WILL IT BE A MODEL FOR ENERGY SECURITY?**

**Johanna R. Thibault**

**Introduction**

Energy services are a critical component of today’s modern lifestyles. Although a third of the world’s population still lives without electricity, the developed world would not function without it. Economist E. F. Shumaker explained that energy services in modern society are “not just another commodity but the precondition of all commodities, a basic factor with air, water, and earth.” Benjamin K. Sovacool & Marilyn A. Brown, *Competing Dimensions of Energy Security: An International Perspective*, 35 ANN. REV. ENV’T RESOURCES 77, 79 (Nov. 2010). Because of this extreme energy dependence, “energy security is arguably one of the most important forms of human security.” *Id.* at 78.

Today, the definition of energy security needs to encompass more than merely disruption in supply and should extend to a strategic awareness of global and regional energy developments. Contemporary global energy markets shape much more than the derivative economic impacts of energy supply. Energy developments are now oftentimes inextricable from national and international security interests. For example, shipments of oil create maritime security issues particularly with regard to acts of piracy; falling oil and gas prices increase instability in countries whose economies are highly dependent on energy exports (e.g., Nigeria and Venezuela); and energy infrastructure is subject to numerous vulnerabilities, yet remains a critical component of global energy security.

Fatih Birol with the International Energy Administration has stated that in order to enhance energy security, it is necessary to reduce dependence on oil and gas by efficient use of energy through diversification of both fuel type and its geographic sources. Ana Penha, *Oil Companies’
As will be discussed further below, the Russian-Ukraine crisis demonstrates the vulnerabilities that occur when energy security is too narrowly defined.

This article first addresses the importance of a well-defined and properly measured definition of energy security. Contemporary notions of energy security are then discussed as well as an emerging multidimensional view developed through a scholarly appraisal of academic literature composed of interviews with energy experts and surveys of energy end users. The article then reviews the Russian-Ukrainian crisis and how it has exposed, once again, the European Union’s (EU) vulnerabilities in its energy supplies. Finally, the article provides a brief analysis of the EU Council’s response to this energy security crisis through creation of an Energy Union, and closes with an analysis of the conclusions the Energy Union presented to the council in light of more modern perceptions of energy security.

**Energy Security Defined**


According to the EU Institute for Security Studies, the term “energy security” can be interpreted both narrowly as disruption of physical supply, and broadly, as including the economic, environmental, and political consequences of variations in energy markets. Iana Dreyer & Gerald Stang, *What Energy Security for the EU*, INSTITUTE FOR SECURITY STUDIES (Nov. 8, 2013), http://www.iss.europa.eu/publications/detail/article/what-energy-security-for-the-eu/ (last visited Aug. 4, 2015). In the United States, energy security is also defined along a broad range; however, most definitions are aligned with the IEA’s primary focus upon the supply of energy and the risks associated with a disruption of such resources. Another common energy security definition used by policymakers and U.S. media sources is “having the flexibility to choose not to import oil from countries associated with terrorism.” Congressional Budget Office, *Energy Security in the United States* at 1 (May 2012), available at http://www.cbo.gov/sites/default/files/05-09-EnergySecurity.pdf. Often, this is also expressed as “energy independence.” These terms frequently are used interchangeably in the United States, particularly as the United States emerges as the leading oil and gas producer in the world.

Energy independence implies that a country produces as much oil and gas as it uses, thereby making it less vulnerable to hostile acts by foreign sources such as cutting off supply or raising prices prohibitively. If energy security is defined by physical supply, one could assume that energy independence would ensure energy security and limit or mitigate vulnerabilities; however, the reality is far more complex.

A comprehensive definition of “energy security” is multidimensional and has both broad and narrow applications. The “security” portion of
the definition is viewed differently in political, military, academic, and industry circles. More important is that a nation’s “security” is highly dependent on whether it is a producer or consumer of energy resources—most commonly oil and gas. We often think of energy security along the lines of supply; however, producing countries are equally as concerned about the security of demand as a consuming country is about the security of supply.

Various academic studies have analyzed energy security and its complexities to develop a more thorough and appropriate definition. Although they vary, these definitions are based primarily on the interconnected factors of availability, affordability, efficiency, and environmental stewardship. 

Sovacool & Brown, supra, at 81. A recent analysis of energy security among 22 developed countries concluded that a majority of these nations have regressed in terms of energy security. Those countries that were leaders in energy security did not leave this matter to the marketplace, and their success can be best attributed to government intervention and progression of energy policy mechanisms. Id. at 102–03.

**Russian-Ukraine Crisis Impacts on Energy Security in the EU**

In the wake of Moscow’s annexation of Crimea and its actions in Ukraine in early 2014, the EU’s energy dependence upon Russia was made even more apparent. In March 2014, Gazprom (the largest oil and gas company in Russia that is 51 percent government owned) drastically increased oil and gas prices for Ukraine and threatened to terminate supply of those resources to the EU if Ukraine defaulted on its payment. In response, the European Council prepared for various contingencies to increase energy security and declared specifically at the Brussels G7 summit that “[t]he use of energy supplies as a means of political coercion or as a threat to security is unacceptable.” European Council, *The Brussels G7 Summit Declaration* (June 4–5, 2014), available at http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ec/143078.pdf.

The interdependence of the EU and Russia in the energy sector creates political, economic, and security vulnerabilities for both. Wanting to prevent energy from being used as a weapon in the future, the EU is striving for greater energy independence by diversifying from Russian energy sources through its own unconventional oil and gas resources, alternative energy sources, and energy efficiency. Facing diminished demand from Europe, Russia has explored shifting its exports east toward China and Asia, but this relationship is complex and is not without detriment to Russia. Moreover, the interconnectedness between Asia and Siberian gas fields is underdeveloped, requiring massive new infrastructure before a meaningful shift in exports may be accomplished. Finally, it is unlikely that Russian exports to Asia could replace the monetary value of current exports to EU countries. If the EU is successful in attaining energy independence from Russia, it will need to remain acutely aware of the political and security risks that come at the cost of Russia’s resulting economic instability.

An additional challenge the EU faces is the considerable variability in political relationships of each EU member state with Russia; therefore, independent political goals may affect the approach each member state takes with regard to its energy dependence with Russia. Moreover, while energy security implicates issues of national security, it is important to recognize that the EU lacks a fully integrated defense policy. Instead NATO, an organization outside EU control, bears responsibility and ultimately primacy of military defense strategies of most EU member states. While falling imports from potentially hostile foreign countries become less of a concern through energy independence, the global energy market is observing firsthand how decreased needs for oil and gas can greatly destabilize nations.

**EU Council Energy Union Conclusions**

The European Council released its conclusions on an approach to energy security in the EU in March 2015. The EU reports that it remains committed

The EU’s conclusions on providing a more secure Energy Union were developed in tandem with energy security definitions recently adopted in academia, including consideration of all facets of availability, affordability, efficiency, and environmental stewardship. The challenges the EU faces to gain independence from Russia with regard to energy services is far more complex than that of other regions of the world. Complete energy independence from Russia might not meet the security needs of EU member states as such an action would likely destabilize the Russian economy and potentially put border countries at risk. Moreover, to successfully accomplish such independence would require the various nations within the EU to act in tandem to ensure such security is feasible.

In drafting the EU conclusions, the EU focused on the weaknesses that appear to exist by advocating the acceleration of infrastructure projects across borders and tying rural and remote renewable energy sources to the existing grid. The conclusions call for continued and rigorous enforcement of existing energy legislation, adopting additional legislation related to emissions reduction, energy efficiency and renewables, and developing a reliable and transparent governance system. Finally, the conclusions call for strong coordinated action and monitoring in achieving the 10 percent electricity objective by 2020 and the

Central Eastern and South Eastern European Gas Connectivity efforts.

Conclusion

The way in which a nation defines energy security is critical to how it strategizes to secure its economic output, political stability, and well-being of its citizens. Energy powers industries and businesses including manufacturing and distribution, transportation, development and processing of food resources, and keeping citizens warm or cool. An effective energy security definition takes into consideration more than simply supply and affordability of energy sources and instead focuses on energy efficiency, environmental stewardship, strengthening and expanding the existing electrical grid across borders, and enhancing energy legislation while encouraging more rigorous government solutions.

In dealing with its crisis of interdependence on Russian oil, the EU has presented conclusions for achieving a more secure energy future by considering a multitude of factors that incorporate the approaches advanced through recent academic literature, namely a focus away from supply and affordability and more toward energy efficiency, diversity, and environmental stewardship. The EU’s success in this endeavor could lead the way for building more energy secure nations across the world.

Johanna R. Thibault received an LL.M. degree in environmental law from Vermont Law School with a Certificate in Energy Law. Her expertise focuses on energy law and policy particularly with the acceleration of renewable resource development throughout the world. She is a contributing writer to In-Dependent.org, a website that focuses on supporting spouses of military members and helping them strive for a stronger and healthier lifestyle. She is also a volunteer associate with Plains Justice, which is based in Montana and provides a legal and scientific voice for northern plains communities to conserve natural resources and make the transition to a new energy future.
The U.S. crude oil export ban has come under scrutiny recently as the country has been experiencing a renaissance in domestic oil and gas production. During the 113th Congress, several bills were introduced aimed at modifying or eliminating crude oil export restrictions and, more recently, President Obama entered the fray by allowing more lightly processed crude to be sold overseas. Barney Jopson, Obama Sets Stage for Debate Over US Oil Export Ban, Fin. Times, Jan. 4, 2015; See also, Phillip Brown et al., U.S. Crude Oil Export Policy: Background and Considerations, Cong. Res. Serv., R43442, at 32 (2014). This article discusses the history of the export ban, the recent resurgence in domestic oil production, and the various arguments surrounding the potential effects of removing the ban.

History of the Export Ban

Restrictions on the export of domestically produced crude oil involve a myriad of laws and regulations, most notably the Energy Policy and Conservation Act of 1975 (EPCA) administered by the Bureau of Industry and Security (BIS). While most of these laws date back to the 1970s, the United States had actually implemented restrictions on oil trade as early as the 1950s, when cheap oil from Venezuela and the Middle East flooded the U.S. market. Jason Bordoff & Trevor Houser, Navigating the U.S. Oil Export Debate at 10 (2015). In 1959, President Eisenhower limited the importation of crude and refined oil by creating the Mandatory Oil Import Quota Program (MOIP). Charles J. Cicchetti & William J. Gillen, The Mandatory Oil Import Quota Program: A Consideration of Economic Efficiency and Equity, 13 N.M. Rev. 399, 402-03 (1973) (discussing the history of the Mandatory Oil Import Quota Program). The rationale behind MOIP was to protect domestic production and in turn, national security, by curtailing the amount of imported crude oil and refined products allowed into the United States. Bordoff & Houser, supra, at 11. MOIP functioned essentially as a quota system, limiting import levels based on percentages of demand. Cicchetti & Gillen, supra, at 403. Limits were initially set at approximately 9 percent and later adjusted to 12.2 percent in 1962. Id. at 403. As would be expected, under MOIP there was an increase in domestic oil production, with crude output rising by almost 2.6 million barrels per day (b/d) between 1959 and 1970. Bordoff & Houser, supra, at 11. Also during this time period and despite high domestic oil prices, U.S. gasoline demand grew by 46 percent due to suburbanization, the rise of the large passenger vehicles, and overall economic growth. Id. at 10; see also Frank A. Verrastro & Guy Caruso, The Arab Oil Embargo—40 Years Later, Center for Strategic & Int’l Stud. (Oct. 13, 2013), http://csis.org/publication/arab-oil-embargo-40-years-later (last visited Aug. 4, 2015). Concerns over air pollution also contributed to an increase in demand as petroleum products replaced coal as fuel sources in factories, power plants, and homes. Id. at 12.

The first signs of trouble arose in 1970 when U.S. crude production peaked while overall demand continued to increase. Id. at 12. In response, import quotas under MOIP were relaxed throughout the 1970s, with imported oil growing to 36 percent of demand in 1973. Id. The MOIP quota system was finally suspended in 1973 when, in a special message to Congress, President Nixon explained that domestic oil production was unable to keep up with demand. The American Presidency Project, Richard Nixon: Special Message to the Congress on Energy Policy (Apr. 18, 1973), http://www.presidency.ucsb.edu/ws/?pid=3817 (last visited Aug. 4, 2015).

Import limitations of oil were replaced by export restrictions in 1973 when the Organization of Arab Petroleum Exporting Countries (OAPEC) imposed a total embargo on crude oil delivered to the United States in response to President Nixon’s call to Congress for emergency aid for Israel following a surprise attack by Syria and Egypt. U.S. Dep’t of State, Office of the Historian, Oil Embargo, 1973–1974 (Oct. 31, 2013), https://history.state.
gov/milestones/1969-1976/oil-embargo (last visited Aug. 4, 2015). While the embargo was lifted in March 1974 as hostilities between Israel, Egypt, and Syria ended, serious questions remained about the reliance of the United States on crude oil imports. This and a related rapid increase in oil prices, the declining leverage of U.S. oil corporations, and persistent high inflation spurred Congress to action. Phillip Brown et al., supra, at 3.

In 1975, President Ford signed EPCA into law, which provided for, among other things, the creation of a strategic petroleum reserve capable of reducing the impact of energy supply interruptions and the restriction of U.S. crude oil exports. 42 U.S.C §§ 6201, 6212. EPCA directs the president to restrict the export of coal, petroleum products, and natural gas as he determines to be necessary. 42 U.S.C. § 6212(a). Exemptions may be made by a presidential determination that crude oil and natural gas exports would be consistent with the national interest. 42 U.S.C. § 6212(b)(1). Such exemptions are based on the “purpose for export, class of seller or purchaser, country of destination, or any other reasonable classification(s) or basis.” 42 U.S.C. § 6212(b)(2).

The general export prohibitions and exemptions set forth by EPCA and found in BIS regulations require that a license be obtained to export crude oil to all destinations, including Canada. 15 C.F.R § 754.2(a). Current BIS regulations create specific categories in which an export license would be granted if BIS determines that the export is “consistent with the specific requirements pertinent to that export.” 15 C.F.R § 754.2(b)(1). These categories include (1) exports from Alaska’s Cook Inlet; (2) exports to Canada for consumption or use therein; (3) exports in connection with refining or exchange of strategic petroleum reserve oil; (4) exports of heavy California crude oil up to an average volume not exceeding 25,000 b/d; (5) exports consistent with international agreements; (6) exports that are consistent with findings made by the president under applicable statute; and (7) exports of foreign origin crude oil where the exporter can demonstrate that the foreign oil has not been commingled with oil of U.S. origin. 15 C.F.R § 754.2(b)(1)(i)-(vii). Applications falling outside these categories are reviewed by BIS on a case-by-case basis and will generally be approved if granting the license is determined to be consistent with national interests and EPCA. 15 C.F.R § 754.2(b)(2). An export license is not required for foreign origin crude stored in the strategic petroleum reserves, small samples exported for testing purposes and exports transported by pipeline over a right-of-way granted pursuant section 203 of the Trans-Alaska Pipeline Authorization Act. 15 C.F.R § 754.2(a).

The Domestic Oil Resurgence

While the evolution of crude oil import/export restrictions has been a slow journey, the conditions surrounding the actual extraction of oil in the United States have changed dramatically in a short period of time. Advances in extraction techniques such as hydraulic fracturing and horizontal drilling and other technologies used to locate oil formations have reversed a multi-decade decline in domestic production. Bordoff & Houser, supra, at 19. Much of this increased production is in the form of light tight oil (LTO), a less dense and lower sulfur content (sweet) oil from tight resource formations. U.S. Energy Info. Admin., U.S. Crude Oil Production to 2025: Updated Projections of Crude Types (May 28, 2015), http://www.eia.gov/analysis/petroleum/crudetypes/ (last visited Aug. 4, 2015).

According to the U.S. Energy Information Administration (EIA), roughly 90 percent of the nearly 3.0 million b/d growth in production in the United States from 2011 to 2014 consisted of light, sweet grades. In its Annual Energy Outlook 2015 report, the EIA projected that the U.S. supply of light crude, coming primarily from three tight oil formations in Texas and North Dakota, will continue to outpace medium and heavier crudes. Although 2015 has seen a slight slowing in the overall growth rate, the EIA forecasts that 65 percent of production growth between 2013 and 2020 will consist of light, sweet grades while 25 percent of the growth will be attributed to an
increase in production from Lower 48 offshore production, categorized as medium sour grades.

The Export Ban Debate

The debate over the crude oil export ban is complex and multifaceted. Issues involving the transportation of newly extracted crude to refineries, and even the ability of refineries to process the crude given that many are configured to run lower-quality medium and heavy crudes, are just some of the considerations. Blake Clayton, The Case for Allowing U.S. Crude Oil Exports, COUNCIL ON FOREIGN REL. PRESS (July 2015), http://www.cfr.org/oil/case-allowing-us-crude-oil-exports/p31005 (last visited Aug. 4, 2015). The following discussion represents the broader economic, geopolitical, and environmental topics for consideration.

Economic Impacts

Economic impacts from lifting the ban consist of the effect on crude oil and gasoline prices in both the United States and internationally. Crude oil prices are determined on the world market. According to a report by the Congressional Research Service, there will likely be three economic effects of lifting the export ban: (1) the domestic price of LTO, which is currently discounted, will converge toward the world price; (2) the price of U.S. reference crude (West Texas Intermediate, or WTI) will likely adjust relative to the world reference crude (Brent); and (3) the world price of oil will likely adjust relative to the additional supply. Phillip Brown et al., supra, at 19–20. The magnitude of price adjustments will depend on the amount of crude exported, but increased availability and favorable pricing of LTO could help investments in U.S. oil production and related job creation while benefiting U.S. producers. Id. at 20. Reductions in the WTI-Brent spread would also likely be favorable to European consumers as they experience price reductions. Id.

If the ban is lifted, consumer costs for petroleum products such gasoline and diesel would likely vary regionally as refiner’s costs make up a large portion of the retail price (some 68 percent of the consumer cost for gasoline). Id. at 21. However, if world prices decline due to the additional supply of LTO, national prices for petroleum products could also fall as refiners use a mix of domestic and imported crude that is tied to the world price. Id. All things being equal, increasing the supply of crude available on the world market would likely suppress world oil prices, if only modestly. A 1.2 million b/d increase in supply is estimated to achieve a relatively modest decline in price of $0 to $4 per barrel on average while reducing non-U.S. oil production from between 200,000 to 1.0 million b/d on average. Bordoff & Houser, supra, at 52–53.

Geopolitics

While the U.S. government does not directly control oil production, allowing domestic crude into the world market could potentially have significant geopolitical effects. Lowering both crude prices and non-U.S. output arguably weakens the global power and influence of other large oil-producing countries. Id. at 53. Additionally, countries that had previously viewed the United States as a declining power might have to reexamine that position in light of the United States’ new competitive advantage in energy production. Brown, supra, at 22. Looking only at world events in the past two years, U.S. geopolitical “foes” such as Russia and Iran could conceivably have less leverage in the world political space, strengthening the impact of sanctions and other U.S.-led political efforts while softening price volatility in the world’s crude oil market. The effects, however, are not all positive.

Non-U.S. countries that have invested heavily in oil extraction and production at a time when crude oil was fetching record prices could face stiff economic repercussions as the price of oil comes down. Political unrest in such countries and regions is a very real possibility with wide-ranging effects. Though speculative, instability in the Middle East, Africa, and Latin America would likely not be contained to just those regions and could present significant national security risks to the United States. Bordoff & Houser, supra, at 53.
Environmental Impacts
The environmental consequences, while uncertain, potentially touch on several different areas. Environmental impacts in the extraction process and the general contributions to climate change associated with burning fossil fuels are focal points in the opposition to lifting the export ban.

Since LTO is primarily contained in formations of shale or sandstone with low permeability, special extraction methods such as hydraulic fracturing, or fracking, are employed. ROBIN M. MILLS, THE MYTH OF THE OIL CRISIS: OVERCOMING THE CHALLENGES OF DEPLETION, GEOPOLITICS, AND GLOBAL WARMING, 158 (2008). While fracking has been instrumental in the oil production boom, questions have emerged regarding potential impacts on air and water quality in the vicinity of fracking operations. Brown, supra, at 27. There is, however, much uncertainty about the long-term effects of fracking on ground water.

The U.S. Environmental Protection Agency (EPA) recently released its assessment of potential consequences of fracking on drinking water and found that no evidence currently exists pointing to “widespread, systemic impacts” on drinking water resources. U.S. ENVTL. PROT. AGENCY, Assessment of the Potential Impacts of Hydraulic Fracturing for Oil and Gas on Drinking Water Resources, at ES-6 (2015). However, the EPA conceded that these findings could be limited by the lack of long-term systemic studies and the inaccessibility of information on some fracking activities. Id. at ES-6.

The potential impacts on the world’s climate are also a chief concern among certain environmental groups opposed to lifting the export ban. In 2012, the International Energy Agency established a “carbon budget” for greenhouse gases, signifying the amount of additional greenhouse gases that can be released into the atmosphere while still presenting a 50 percent chance of not leading to a global temperature increase of 2°C. Lorne Stockman, SHOULD IT STAY OR SHOULD IT GO? THE CASE AGAINST U.S. CRUDE OIL EXPORTS, 16 (2013).

Organizations concerned about climate change say that exceeding a 2°C increase in overall global temperature could expose the planet to the worst effects of greenhouse gas-induced climate change. Brown, supra, at 27. Environmental groups worry that incentivizing the production of additional crude oil sources by lifting the ban could make it even more difficult to remain within the carbon budget. Stockman, supra, at 17. However, the validity and appropriateness of the carbon budget and the potential effects on it by the lifting of the export ban are largely uncertain and without consensus. Id. at 17.

Conclusion
The debate surrounding the crude oil export ban under EPCA is multifaceted and complex, with many competing interests at play. While it is not possible to predict the future of EPCA, it is likely that the debate will heat up as the oil and gas industry seeks to further develop domestic resources and bring its product to market.

Andrew Teodorescu is a 2013 graduate from Pace University School of Law with a Certificate in Environmental Law. He is currently practicing corporate law.
The deployment of residential solar is likely to keep growing due to the steady fall in equipment prices and the rise of net metering policies. Shannon Baker-Branstetter, Distributed Renewable Generation: The Trifecta of Energy Solutions to Curb Carbon Emissions, Reduce Pollutants, and Empower Ratepayers, 22 VILL. ENVTL. L.J. 1, 7 (2011). As residential photovoltaic (PV) systems, often rooftop solar panels, become increasingly common, access to sunlight is an obvious essential for a functioning solar energy system. However, the threat of shading from neighboring trees or structures to the productivity of a solar energy system can deter some property owners from investing in the installation. Troy A. Rule, Property Rights and Modern Energy, 20 GEO. MASON L. REV. 803, 824 (2013).

In addition, many homeowners still encounter local ordinances or homeowner association rules that prohibit or restrict solar energy system installation. These measures may be for the preservation of a historic district, or may serve to protect the aesthetic quality of a particular neighborhood. Evan J. Rosenthal, The Trend Is Your Friend: Embracing and Incentivizing the Private Sector’s Shift Toward Climate Consciousness, 12 FLA. ST. U. BUS. REV. 175, 207 (2013). Treating solar access as a property right thus becomes necessary to protect property owners not just from the physical blockage of their access to sunlight by neighbors—but also from regulatory blockage by homeowner association restrictions.

Overview and Recent Developments

A property owner’s ability to utilize a defined amount of sunlight on her parcel and defend this right against other property owners evolved over time from common law. Jamie E. France, A Proposed Solar Access Law for the State of Texas, 89 TEX. L. REV. 187, 189 (2010). The “ad coelum doctrine,” an early principle of land ownership that entitled a property owner to both the land below the surface and the airspace above, gave way to the “doctrine of ancient lights,” which provided landowners with the ability to obtain a prescriptive easement for the passage of light and air over an adjoining property. At first, U.S. courts were not receptive to the English ancient lights doctrine, and refused to recognize an implied easement for light or air. In recent years, court decisions have trended toward increased recognition of solar access rights under both property law and other legal theories. For example, in 1982, the Wisconsin Supreme Court recognized an unprecedented private nuisance law action for obstruction of sunlight to a solar collector. Prah v. Maretti, 108 Wis. 2d 223, 321 N.W.2d 182 (1982).

Nevertheless, courts remain reluctant to completely favor solar access rights over all other property rights and have allowed local regulations to trump established state policies that recognize solar access rights. In response, 28 states have enacted laws that explicitly recognize property owners’ solar access rights.

A review of current solar access laws by the Solar Foundation identified a number of common elements shared by many (but not all) solar access laws pertaining to homeowner associations: (1) statement of legislative intent, which establishes a public policy preference for solar energy; (2) invalidating private contractual prohibitions against solar, thereby rendering all covenants that prohibit the installation of solar energy systems void and unenforceable; (3) language specifying the types of restrictions that homeowner associations may place on solar energy systems; (4) identification of the types of properties to which protections apply, such as residential property (usually excluding condominiums); (5) awarding of attorney’s fees; (6) grandfathering clause, which permits associations whose governing documents prohibited or restricted solar energy systems before the state solar access law became operative to enforce these rules; (7) homeowner association policy mandates, which requires associations to
adopt detailed guidance for homeowners to follow in installing solar systems; (8) “no avoidance or delay” requirements, which expressly make withholding approval of a homeowner’s application for a solar energy system a violation of the law and in some cases giving associations a time frame in which applications must be processed; and (9) provisions governing ground mounted systems, which specify restrictions associations may place on installations of ground mounted solar collectors, as distinct from rooftop solar. The Solar Foundation, *A Beautiful Day in the Neighborhood: Encouraging Solar Development Through Community Association Policies and Processes* (2015), http://www.thesolarfoundation.org/a-beautiful-day-in-the-neighborhood-encouraging-solar-development-through-community-association-policies-and-processes/ (last visited Aug. 4, 2015).

Nine states, including Arizona, California, Hawaii, Illinois, Maryland, New Jersey, North Carolina, Virginia, and Washington have enacted solar access statutes expressly limiting a homeowner association’s ability to restrict solar energy system installations. A typical statute prohibits a governing body from adopting covenants, conditions, and restrictions (CCRs) that prohibit or have the effect of prohibiting the installation of solar collectors. Arizona’s solar access law was tested in *Community Ass’n v. Madigan*, where the court considered several factors to determine whether the homeowner association regulations “effectively prohibited” the installation of the solar heater, including the additional cost of complying with the policy, the feasibility of making the required modifications, and the alternatives available to the homeowner. The court found that because compliance required a $5,000 addition to the home, the policy did effectively prohibit the installation and was thereby void and unenforceable. *Garden Lakes Cnty. Ass’n, Inc. v. Madigan*, 204 Ariz. 238, 62 P.3d 983 (Ct. App. 2003).

**The (In)adequacy of Enforcement**

Even when homeowner associations impose *reasonable* restrictions, a gray area emerges in which property owners are able to install, but may be unable to maximize the generation capacity of their system. Uma Outka, *Siting Renewable Energy: Land Use and Regulatory Context*, 37 *Ecology L.Q.* 1041, 1080 (2010). This gray area varies among different state solar access provisions pertaining to homeowner associations. Some add only a few, general lines to existing state statutes, while others are much more specific. The Solar Foundation, *A Beautiful Day* (2015). At the permissive end of the spectrum, Virginia and Washington’s solar access laws allow associations to establish reasonable restrictions without mention of their effect on the effectiveness of the device. Va. Code Ann. § 67-701; Wash. Rev. Code Ann. § 64.38.055.


Finally, at the restrictive end of the spectrum, Hawaii and Illinois require associations to adopt affirmative guidance for homeowners to install solar energy systems. Hawaii’s solar access law sets a statutory deadline by which “each private entity” must adopt rules that “facilitate the placement of solar energy devices.” Haw. Rev. Stat. § 196-7. In Illinois, associations are required to adopt an “energy policy statement” within 120 days of a homeowner’s request, outlining “the location, design, and architectural requirements of solar energy systems.” 765 Ill. Comp. Stat. Ann. § 165/20. Hawaii takes enforceability a step further by providing that associations may not restrict placement “so as to render the device more than 25 percent less efficient or increase the cost of the device by more than
fifteen percent.” Haw. Rev. Stat. § 196-7. New Jersey’s statute also provides numerical figures for cost and efficiency, and is the only statute to designate an agency, the commissioner of community affairs, with enforcement authority. N.J. Stat. Ann. § 45:22A-48.2. The provision of a penalty or other enforcement mechanism saves both homeowners and their associations the time involved in appealing a denial to install, during which the homeowner may give up the installation opportunity too soon.

The Role of State Consumer Protection Divisions

Judicial decisions pertaining to renewable energy access laws are few and wide-ranging. See Tesoro Del Valle Master Homeowners Ass’n v. Griffin, 200 Cal. App. 4th 619, 133 Cal. Rptr. 3d 167 (2011), as modified (Nov. 1, 2011) (CCRs and design guidelines applicable to solar energy systems were reasonable where guidelines specifically mirrored the California Solar Rights Act). But see Fox Creek Cnty. Ass’n v. Carson, No. 1 CA-CV 11-0676, 2012 WL 2793206, at *1 (Ariz. Ct. App. July 10, 2012) (upholding CCRs and guidelines requiring that solar devices must be shielded from view despite statute prohibiting association restrictions “effectively” banning solar devices). Many of the existing cases on solar access rights predate such laws and were typically predicated on nuisance principles or a violation of common law property rights. Evan J. Rosenthal, The Trend Is Your Friend, 12 FLA. ST. U. BUS. REV. 211 (2013). The paucity of litigation since the enactment of solar access statutes is likely better explained by parties’ preference for mediation and arbitration over protracted litigation—rather than the absence of homeowner association conflicts.

One source of conflict between solar access laws and homeowner associations is the architectural review committee (ARC), which must approve additions or renovations to existing residences. Kristina Caffrey, The House of the Rising Sun: Homeowners’ Associations, Restrictive Covenants, Solar Panels, and the Contract Clause, 50 NAT. RESOURCES J. 721, 733 (2010). The ARC may illegally deny a homeowner’s application to install a solar system effectively or outright, unaware that state law preempts the prohibition of solar installations. In some respects, the resulting homeowner association dispute over solar access laws bears characteristics that make litigation appropriate—the case involves novel legal issues and ambiguous precedent, meaning a judgment would contribute to the development of the law.

However, litigation has its costs and many states require mediation before a filed complaint can proceed. For example, California law mandates mediation before parties may file a homeowner association enforcement action in court. Cal. Civ. Code § 5930. In 2013, the North Carolina legislature enacted a law encouraging voluntary private mediation prior to civil court action in disputes between homeowners and their associations. N.C. Gen. Stat. Ann. § 7A-38.3F.

Supporters of mediation and arbitration contend they offer homeowners a far less expensive and quicker means of settling disputes. Sam Hankin, Mediation, Arbitration Catch On, WASH. POST, Oct. 8, 1988. In mediation, a neutral third party assists participants in reaching a settlement. In arbitration, both sides agree to abide by the decision of the neutral third party, who then hears the case and issues a judgment. A lawsuit over a homeowner association violation typically can cost each party thousands of dollars to go through a trial, whereas the services of an arbitrator, if supplied by a government program, are usually free. Id. Even private organizations such as the American Arbitration Association and the National Academy of Conciliators usually charge a fee that is less than the costs of litigation. Id. In addition, mediation and arbitration are speedier than litigation. Mediation of a homeowner association dispute typically involves a two- to four-hour process, rather than months (or years) of litigation. Fla. S., Comm. on Regulated Industries, Rept. No. 2008-148, Alternative Dispute Resolution for Homeowners’ Associations (Oct. 2007).

In many jurisdictions, consumer protection-driven mediation services offer a framework for resolving disputes arising from recently enacted solar access laws. Such options include complaints
to the county office of consumer affairs, if one exists, or the state office of consumer protection. For example, the Maryland Consumer Protection Division mediates most disputes between individual consumers and businesses—including homeowner associations, which are corporations established under the nonprofit corporation statutes. Md. Code Ann., Bus. Reg. § 6-101 et seq. At the local level, the Montgomery County, Maryland Office of Consumer Protection established a Commission on Common Ownership Communities to resolve grievances between homeowners and their associations. If mediation fails to secure a resolution, the commission can accept jurisdiction and appoint a panel of three members for a public hearing, in which parties may be represented by an attorney or represent themselves pro se. Complaint Form & Instructions, Montgomery County Maryland Office of Consumer Protection (2015), http://www.montgomerycountymd.gov/OCP/ccoc/ccoc_complaints.html (last visited Aug. 4, 2015). In similar fashion, the Consumer Protection Unit of the Marin County, California District Attorney’s Office provides free mediation for homeowner association disputes. Marin County District Attorney, Community Resource Guide (June 4, 2015), https://www.marinhhs.org/community-resource-guide/marin-county-district-attorney-consumer-protection-unit (last visited Aug. 4, 2015).

Even in states and localities where government-administered mediation is not available, courts often maintain a list of private mediators and arbitrators who are willing to mediate or arbitrate homeowner association disputes. For example, the Virginia Department of Judicial Services provides a searchable list of mediators by type of dispute. Supreme Court of Virginia, Off. of the Executive Secretary, Searchable Mediator Directory (2009), http://www.courts.state.va.us/courtadmin/aoc/djs/programs/drs/mediation/searchable_mediator_directory.html (last visited Aug. 4, 2015).

**Conclusion**

With the abundance of sunlight, solar energy systems are an attractive form of energy for homeowners. States enforce solar rights differently and despite some states enacting legal protections, review committees may ignore the law. Homeowners at an impasse over solar energy system installations with their homeowner association—and the counsel they retain—can “see the light” by becoming familiar with the solar access protections enacted by their state. Parties may consider exploring the public and private mediation options available to them in their jurisdiction to resolve conflicts expediently.

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Countries across the globe are committed to create a new international climate agreement by the conclusion of the UN Framework Convention on Climate Change (UNFCCC) Conference of the Parties (COP 21). The aim of the Paris COP 21 scheduled in December 2015 under the auspices of the United Nations is to facilitate access to a low carbon pathway and resilient sustainable development for all, while keeping the global temperature rise below two degrees centigrade.

This commitment was made expressly at the last COP 20 summit in 2014 where it was agreed that each party to the convention would communicate to the UNFCCC Secretariat its intended nationally determined contribution (INDC) toward achieving the objective of the convention as set out in Article 2. UNFCCC, Further Advancing the Durban Platform, Report of the Ad Hoc Working Group on the Durban Platform for Enhanced Action, Lima (Dec. 1-12, 2014), available at http://unfccc.int/files/meetings/lima_dec_2014/in-session/application/pdf/cpl14.pdf. In preparation, countries agreed to publicly outline their INDCs. According to the World Resources Institute, “[T]he INDCs will largely determine whether the world achieves an ambitious 2015 agreement and is put on a path toward a low-carbon, climate resilient future.” World Resources Institute, What Is an INDC?, http://www.wri.org/indc-definition (last visited Aug. 4, 2015). A number of countries, such as the United States, Russia, Norway, Switzerland, Japan, Gabon, Mexico, and the European Union have already submitted their INDCs.

India shares this responsibility to act promptly on the matter, as it is the world’s fourth largest producer of greenhouse gases (GHG) after China, the United States, and the European Union. U.S. ENVTL. PROT. AGENCY, Global Greenhouse Gases Emissions Data, http://www.epa.gov/climatechange/ghgemissions/global.html#four (last visited Aug. 4, 2015). India’s emissions totaled 2.1 billion tonnes in 2013 (excluding land use). These data include carbon dioxide emissions from fossil fuel combustion as well as cement manufacturing and gas flaring. Within the next 20 years, India’s emissions will likely surpass China in both population and energy use. The Intergovernmental Panel on Climate Change’s (IPCC) Fifth Assessment Report was released in November 2014, which, inter alia, predicts that in order to limit global temperature rise to two degrees centigrade above pre-industrial levels (1850–1900), total carbon emissions must not exceed 1 trillion tonnes. IPCC, IPCC FIFTH ASSESSMENT REPORT, 310 (2013).

India is vulnerable to several climate-related disasters. It is considered to be one amongst the world’s most disaster prone areas—59 percent of land vulnerable to earthquakes, 8.5 percent of land vulnerable to cyclones, and 5 percent of land vulnerable to floods. Cyclones, floods, and droughts affect the poor population, who are dependent on agriculture. GOV’T OF INDIA, MINISTRY OF URBAN DEV., BUILDING MATERIALS & TECHNOLOGY PROMOTION COUNCIL, VULNERABILITY ATLAS OF INDIA: EARTHQUAKE, WINDSTORM AND FLOOD HAZARD MAPS AND DAMAGE RISK TO HOUSING (1997). With an economy closely tied to its natural resource base and climate-sensitive sectors, such as agriculture, water, and forestry, India may face a major threat because of the projected changes in climate. GOV’T OF INDIA, MINISTRY OF ENV’T & FORESTRY, NATIONAL ACTION PLAN ON CLIMATE CHANGE (2008), available at http://www.moef.nic.in/downloads/home/Pg01-52.pdf.

Responding to these possible climate threats and their effects, especially on poor people, the government released a visionary National Action Plan on Climate Change in 2008. All 29 states, except the newly formed Telangana, have prepared their own action plans and many of them have been endorsed by the national steering committee, which finances the state plans on approval. Meena Menon, 28 States Prepare Climate Action Plans, THE HINDU, Aug. 16, 2014, http://www.thehindu.com/news/national/28-states-prepare-climate-action-plans/article6324142.ece (last visited

Notwithstanding the foregoing assertions to prioritize poverty eradication, India’s mitigation moves on climate change are remarkable. In 2010, India pledged to reduce its gross domestic product (GDP) emissions intensity by 20 to 25 percent by 2020 compared to 2005 levels, a target that does not cover emissions from the agricultural sector. Climate Action Tracker, India (June 3, 2015), http://climateactiontracker.org/countries/india.html (last visited Aug. 4, 2015). This amounts to avoiding emissions from fossil fuel use and cement of between 3.5 and 3.6 gigatons of carbon dioxide emissions (GtCO₂e) in 2020. Avik Roy, India Considers Twin-Track Climate Plans Towards UN Deal, RESPONDING TO CLIMATE CHANGE, Apr. 20, 2015, http://www.rtcc.org/2015/04/20/india-considers-twin-track-climate-plans-towards-undead (last visited Aug. 4, 2015). Scaling down the importance of a cap on emissions, Foreign Secretary Jaishankar said at a March 16, 2015, conference in Delhi that India needs to “change the narrative from a negative one on emissions capping to a more positive one on cleaner energy and energy efficiency.” Id.


On energy efficiency, the Energy Conservation Act that was enacted in 2001 has guided several initiatives to start energy-efficient appliances and buildings. To implement its mandates, the Bureau of Energy Efficiency’s (BEE) standard and labeling program currently applies to 19 types of equipment and electrical appliances, such as air conditioners, ceiling fans, and color televisions. GOV’T OF INDIA, MINISTRY OF POWER, BUREAU OF ENERGY EFFICIENCY, ABOUT STANDARDS AND LABELING PROGRAM, http://beestarlabel.com/. In addition, the NMEEE seeks to improve energy efficiency in all areas of the economy including power, urban housing, consumer goods, appliances, and other industries. A labeling scheme for fuel economy is gradually being introduced to enhance energy efficiency in the transport sector as well.

The government began using super critical technology to make thermal power plants more
energy efficient with the first ultra-supercritical power plant expected in 2017. Large-scale adoption of this technology would after a few years further reduce the emission intensity of the Indian power sector. Rita Pandey, Sanjay Bali & Nandita Mongia, The National Clean Energy Fund of India: A Framework for Promoting Effective Utilization, 2 (2014). Also, there are plans to retire old and inefficient coal-based power-generating units. In addition, there are 13 thermal power stations in the country, which have achieved 100 percent or more ash utilization during 2010–11. Planning Commission, Twelfth Five Year Plan (2012–17), ch. 14, at 148 (2013). The Ministry of Environment and Forests issued notifications for achieving 100 percent utilization of fly ash. Gov’t of India, Ministry of Env’t & Forests, Superior Order 2804 (E) (2009).


Biofuels are also being promoted through the biofuels policy of 2009. This law encourages supplementing transport fuels (petrol and diesel for vehicles) and proposes a target of 20 percent biofuel blending (both biodiesel and bio-ethanol) by 2017. The government also launched the National Bio-diesel Mission identifying *Jatropha curcas* as the most suitable tree-borne oilseed for bio-diesel production. However, the lack of assured supply of feedstock has hampered efforts by the private sector to set up biodiesel plants in India. Salman Zafar, Biodiesel Program in India: An Analysis, BioEnergy Consult, Dec. 25, 2013, http://www.bioenergyconsult.com/tag/biodiesel-production-in-india/ (last visited Aug. 4, 2015). The National Clean Energy Fund announced in the Union Budget 2010–11 is regarded as a major step in India’s quest for energy security and reducing carbon intensity of energy. Rita Pandey et al., supra, at 2. To build the corpus of this fund, the government levied a clean energy cess (tax) on coal produced in India at a nominal rate of 50 rupees (Rs.) per tonne. In the Union Budget 2015–16, the government has increased the clean energy cess from Rs. 100 to 200 per metric tonnes of coal. The government is also launching a scheme for faster adoption and manufacturing of electric vehicles with an initial outlay of US $12 million. The adaptation measures are reflected in the government’s plan to install 100 GW of solar energy by 2022, to develop 60 GW of wind power, 10 GW of bio power, and 5 GW of small hydropower by 2022. Girish Shiva Kumar, What the Union Budget (2015) Means for Renewable Energy?, Wordpress, Mar. 1, 2015, https://girishshivakumar.wordpress.com/2015/03/01/what-the-union-budget2015-means-for-renewable-energy/ (last visited Aug. 4, 2015).

The new government also offered full support to France for a successful outcome of COP 21 to the UNFCCC to be held in Paris. In a joint statement issued after their bilateral meeting in April 2015, President of France Francois Hollande, and Prime Minister of India Narendra Modi expressed confidence that the Paris Conference will finalize a historic agreement for the post-2020 period. NDTV, Full Text of PM Narendra Modi and French President Francois Hollande’s Joint Statement, Apr. 10, 2015, http://www.ndtv.com/india-news/full-text-of-pm-narendra-modis-french-president-francois-hollande-joint-statement-753988.

In preparation, India plans to submit two INDC options similar to Mexico’s—one could be achieved by its own domestic resources and the second could be achieved if financing is made available by industrialized countries and technologies are available at affordable cost. Joydeep Gupta, India Offers Two Options for UN Climate Deal, India Climate Dialogue, Feb. 3,
Reference to finances to be made available by industrialized countries harkens to the COP held at Cancun in 2010, which introduced a new financial mechanism called the United Nations “Green Climate Fund” (GCF). This fund was set up to finance climate change mitigation and adaptation needs of the developing countries under Article 11 of the UNFCCC and has the potential to restore trust between the developed and the developing countries on reaching a legally binding outcome on the contentious issue of mitigation. Anwar Sadat, *Green Climate Fund: Unanswered Questions*, 46 ECON. & POL. WEEKLY, 22 (2011). As envisaged, the fund has the mandate to administer US $100 billion to be mobilized by the developed countries jointly per year by 2020 to address the mitigation and adaptation needs of the developing countries. Every year developed countries pledge US $10 billion toward this fund until 2020 to finally make it a corpus of US $100 billion. These contributions will be a critical part of getting any agreement in Paris in 2015, as the stumbling block has always been financing to help developing countries with their mitigation and adaptation programs. News. Com.au, *Green Climate Fund: US, UK, and Japan Announce Major Contributions*, Nov. 18, 2014, http://www.news.com.au/finance/economy/green-climate-fund-us-uk-and-japan-announce-major-contributions/story-e6frflo9-1227127134881 (last visited Aug. 4, 2015).

In the second week of November 2014, the United States and China set up post-2020 GHG emissions reduction goals. Crowell Moring, *US Announces Agreement with China, US $3 billion Pledge to Help Mobilize Climate Finance* (Nov. 14, 2014). After the US-China deal, U.S. President Barack Obama pledged US $3 billion in contributions over four years to the Green Climate Fund during the G 20 summit in Brisbane, Australia. Doyle Alister, *G20 Pledges Lift Green Climate Fund Towards $10 billion UN Goal*, REUTERS, Nov. 16, 2014, http://www.reuters.com/article/2014/11/16/us-g20-summit-climatefund-japan-idUSKCN0J00UL20141116 (last visited Aug. 4, 2015). Obama’s pledge is regarded as a big step toward the successful working of the GCF and to bring India on the center stage. Already several other developed countries such as France (US $1 billion), Japan (US $1.5 billion), Germany (US $1 billion), Australia (US $200 million), South Korea (US $100 million), and Switzerland (US $100 million) have contributed to this fund, bringing the total to US $7.5 billion.

India is in the midst of an interesting moment in climate politics. The spotlight is on India with the pressure to adopt suitable pathways—whether it be adopting time-bound emission limits like China, focusing on poverty eradication and inclusive development, or a combination of both. China has committed to “peaking” its emissions by 2030, but has also not provided any targets for emission growths until 2030. Should India also decide a peaking year like China? To answer this question, one has to first decide whether India has a credible analytical base for determining a year beyond which its GHG emissions would not rise. The available research shows that the existing models do not predict climate and energy scenarios beyond 2030. Navroz K. Dubash & Radhika Khosla, *The Road from Lima: Instead of Meeting Climate Benchmarks Set by Others, India Should Lay Out Its Own*, HINDUSTAN TIMES, Dec. 12, 2014, http://indianexpress.com/article/opinion/op_eds/the-road-from-lima/ (last visited Aug. 4, 2015). Hence, it is difficult to credibly predict a peaking year for India.

The better approach for India is to build further upon the existing policies and actions undertaken at various levels. India needs to promote solar, wind, and nuclear energy and further enhance energy efficiency in all sectors. The National Action Plan envisaged in 2008 that the share of renewable electricity in the electricity mix, which was 7 percent in 2011–12, should reach 12 percent by 2016–17. For this, the corresponding renewable power requirement would be 52,000 MW. The share of nuclear power, another clean source from
a carbon emission perspective is expected to rise from 3 percent in 2012 to 5 percent in 2017 and to 12 percent in 2030. Taking all these clean energy sources together, the share of hydro, renewables plus nuclear energy is expected to rise from 26 percent in 2012 to 39 percent by 2030. Twelfth Five Year Plan, supra, at 147. Climate objectives and development objectives should inform and complement each other. India’s “co-benefits approach” to simultaneously advance development and climate-change related objectives of adaptation and mitigation will differentiate what is needed for domestic action both with and without international financial support.

At the same time, emissions intensity updates should be regularly provided by the government and independent organizations. India’s announcements, made after the Copenhagen summit, that it would reduce emissions by 20 percent until 2020 compared to 2005 levels has to be updated. After five years after its announcement, has India been able to reduce its GHG emissions by 10 percent until now? This exercise should begin at the earliest opportunity to show how India is serious about implementing its planned approach. Notwithstanding the lack of updates on emission intensity and reliable announcement of a “peaking” year, India is poised to chart a responsible course of action in preparation for COP 21 without compromising the concerns for its rural and poor population.

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Less than 100 years ago, much of West Africa was cloaked with the verdant Guinean forest. The region receives up to 130 inches of rain per year and is home to thousands of species of plants and animals, many of which are unique to this region. By the mid-1980s, however, much of this forest had been cleared. Subsistence farmers used slash-and-burn techniques to clear the forest, plant one season, and repeat the process, abandoning the once-used, former forestland. Logging companies clear-cut vast swaths of forest with or without permission. Many animal species that called this area home, including leopards, forest elephants, and multiple types of non-human primates are now endangered. Indigenous peoples who relied on the forest for their livelihoods have been severely threatened by this deforestation.

To address deforestation globally, the United Nations held a Climate Summit (summit) in New York on September 23, 2014. Over 100 heads of state and more than 800 leaders from business, finance, and nongovernmental organizations attended. In conjunction with addressing deforestation, the purpose of the summit was to build momentum for the 2015 Conference of the Parties (COP) in Paris. Attendees were asked to address climate action in five ways: cutting emissions, mobilizing money and markets, pricing carbon, strengthening resilience, and mobilizing new coalitions. United Nations, 2014 Climate Change Summary—Chair’s Summary (Sept. 23, 2014), http://tinyurl.com/me6rju4 (last visited Aug. 4, 2015).

Among the tangible products of the summit was the New York Declaration on Forests (declaration), a non-binding statement created and signed by the participants at the summit. United Nations, New York Declaration on Forests (Sept. 23, 2014), available at http://tinyurl.com/ohgorps. The declaration embodied the participants’ agreement
to cut the loss of forests in half by 2020 and to end deforestation by 2030. United Nations, Press Release, Governments, Business, Civil Society and Indigenous Leaders Pledge to End Loss of Forests (Sept. 23, 2014), available at http://tinyurl.com/orpjuco (hereafter, U.N. Press Release). The summit participants anticipated that this action would eliminate the emission of between 4.5 and 8.8 billion tonnes of carbon each year—more than the carbon emissions of the one billion cars currently on the world’s roads and more than the amount that the United States emits annually. Id.

The declaration also calls for the restoration of over 350 million hectares of forests and croplands, a move that could lead to significant climate benefits and remove pressure from existing forests. Id.

The New York Declaration was not without detractors, many of whom decried the fact that it was not legally binding and did not impose immediate sanctions for continuing deforestation. Such critics worried that by the time the declaration would take effect, so many forests would be gone that there would be little left to save. Carey L. Biron, Flimsy UN Agreement Means There May Be “Not Much Forest Left to Save” by 2030, IPS News, Oct. 3, 2014, http://tinyurl.com/nmprca3 (last visited Aug. 4, 2015). Nevertheless, the participating parties found hope and inspiration in the case of Brazil, where deforestation in the Amazon has been reduced 75 percent since 2004. U.N. Press Release. Columbia and Mexico have also taken concrete steps to reach zero deforestation goals by 2020 and about 75 other countries are preparing or effectuating strategies to reduce deforestation, revitalize forests, or manage their forest resources, either specifically pursuant to the New York Declaration or as a part of other similar goals. Id.

During the summit, many participants announced specific actions and partnerships to implement the New York Declaration. Germany, Norway, and the United Kingdom announced that they would work with 20 developing nations to pay for reduced deforestation rates. U.N. Press Release. At the same time, a coalition of indigenous peoples from Asia, Africa, and Central and South America promised to work to protect more than 400 million hectares of tropical forests under their control. The Democratic Republic of Congo, Ethiopia, Guatemala, Uganda, and several other countries pledged to restore more than 30 million hectares of degraded lands. Id.

One such agreement, in which an industrialized nation volunteered to pay a developing nation to protect its forest, was between Norway and Liberia. Although Liberia is one of Africa’s smallest

Map depicting Liberia’s forestation courtesy of Saah A. David; used with permission.
nations, it contains one of the largest remaining portions of the Guinean tropical rainforest; nearly half of Liberia is forested, which composes about 42 percent of the remaining Guinean rainforest. Harrison S. Karnwea & Saah A. David, Mid-Term Progress Report (2014), available at http://tinyurl.com/pp79axl (hereafter, MTPR).

In announcing his country’s agreement with Norway, Liberian Minister of Foreign Affairs Augustine Kpehe Ngafuan stated that the government of Liberia recognized the “negative impacts of climate change on critical sectors” of Liberia. Augustine Kpehe Ngafuan, Statement by H.E. Mr. Augustine Kpehe Ngafuan, Minister of Foreign Affairs of the Republic of Liberia at the 69th Regular Session of the United Nations General Assembly (Sept. 29, 2014), available at http://tinyurl.com/nqoqywt (hereafter, Ngafuan Statement). Ngafuan noted that Liberia had already been engaged in the development of a national Reduced Emission from Deforestation and Forest Degradation Strategy (REDD+). Ngafuan Statement. See also Government of the Kingdom of Norway & Government of the Republic of Liberia, Letter of Intent between Liberia and Norway on Cooperation on Reducing Greenhouse Gas Emissions from Deforestation and Forest Degradation (REDD+) and Developing Liberia’s Agricultural Sector 1 (Sept. 23, 2014), available at http://tinyurl.com/ovevd3d (hereafter, LOI). Ngafuan also challenged other nations, noting that “if all countries, small or big, developing or developed, do not make similar and proportionate contributions to this noble effort, what we do here today will not avail much.” Ngafuan Statement.

Harrison Karnwea, the managing director of Liberia’s Forestry Development Authority, further observed that the preservation of Liberia’s forests will also help build the country’s resistance to flooding and soil erosion. Ros Donald, Liberia and Norway Pledge to Tackle Deforestation, RESPONDING TO CLIMATE CHANGE (Sept. 23, 2014), http://tinyurl.com/oq42trh (last visited Aug. 4, 2015).

The agreement between Norway and Liberia was not unprecedented. In the past, Norway signed similar agreements with Brazil, Indonesia, and Guyana. Norwegian officials stated that what was unique about the Norway-Liberia agreement, however, is that it was the first time one country entered an agreement with another country as a whole in an effort to prevent deforestation. Matt McGrath, Liberia Signs “Transformational” Deal to Stem Deforestation, BBC NEWS, Sept. 23, 2014, http://tinyurl.com/n9bk67e (last visited Aug. 4, 2015). Although the Norway-Liberia agreement was in many ways unique, it built on well-established groundwork. In 2006, Liberia enacted its National Forestry Reform Law (2006 NFRL). MTPR, supra, at 12. The 2006 NFRL provided that the Forestry Development Authority could issue a private use permit, which is a forest resources license allowing the user to make commercial use of forest resources on private land. E-mail from Saah A. David Jr., National REDD+ Project Coordinator, Liberia Forestry Development Authority, to Andrew Falk, Senior Fellow, Sagamore Institute (July 20, 2015) (on file with author) (hereafter, David Correspondence).

In 2009, Liberia established its national REDD+ Working Group. MTPR, supra, at 3. Liberia has a strong legal and regulatory framework but it lacks effective enforcement. Id. In 2013, Liberia drafted a land rights policy and is drafting a new land law that will more specifically address land tenure and user rights.

Stakeholder participation is encouraged in the agreement. It took pains to consider the perspective of all Liberians affected; both Norway and Liberia agreed to “[g]ive all relevant stakeholders, including local communities and civil society, and in particular women, the opportunity of full and effective participation in REDD+ planning and implementation.” LOI, supra, at 2. The letter of intent further promises to “[r]espect the rights of individual, indigenous, forest dependent and local communities to give or withhold their Free, Prior and Informed Consent (FPIC) to operations on lands to which they hold legal, communal or customary rights, and ensure that those tenure rights are respected.” Id.
Financing is proportional and progressive. The agreement made clear that Norway’s payments to Liberia were neither to be paid in one lump sum nor to be made unconditionally. Instead, the countries would pursue “a proportional and progressive scaling up of financing, actions and results over time, based on the principle of payments for performance.” Id. at 2. It also provided that 30 percent or more of Liberia’s forest estate would be accorded protected area status. Id. at 6. This is also in line with Liberia 2006 NFRL, which states:

The Authority shall establish a Protected Forest Areas Network, together with Conservation Corridors, and incorporating existing National Forests, to cover at least 30 percent of the existing forested area of Liberia, representing about 1.5 million hectares.

NFRL ch. 9, § 9.1(a), Protected Forest Areas Network and Conservation Corridors (2006).

Accountability and action are at the forefront of the agreement, which imposed an immediate moratorium on the award of new industrial logging concessions until all concessions have been reviewed to insure that the parties involved were in legal compliance. All commercial activity in which suspected illegal conduct is involved is suspended until proper investigation. LOI, supra, at 4. Additionally, government officials and private individuals who were suspected of violating the law were suspended. Id. It also established the development of a measurement, reporting, and verification (MRV) system and provided that the countries would partner with Global Forest Watch to help with MRV methodology. Id. at 5; MTPR, supra, at 16. It specifies that a study will be made to consider alternative models of agricultural investment and to identify land suitable for deforestation-free agricultural land. LOI, supra, at 6.

In addition, the agreement promotes cooperation. It states that Liberia will cooperate with companies who are committed to complying with the “Wilmar Standard.” Id. at 7 n.2. Wilmar International is an agribusiness company whose environmental standards on deforestation are used as a guideline in the Liberia-Norway agreement. There are several aspects to the Wilmar Standard precluding deforestation. First, the most unambiguous aspect forbids burning, such that no fire may be used in land development. Wilmar International, No Deforestation, No Peat, No Exploitation Policy (Dec. 5, 2013), available at http://tinyurl.com/kdk3dqr. Second, no development of high carbon stock forests may occur. This is based on research that breaks forests into six categories. Under this system, only young scrub forests and cleared/open land may be developed. High, medium, and low-density forests, as well as young regenerating forests, cannot be developed. Third, no development of “high conservation value” areas having conservation value aside from their forests may occur. These areas are more difficult to identify. As such, Wilmar is working to train people to help identify these areas. Finally, progressive reduction of emissions must take place with regard to machinery and mills. Id.

Furthermore, the agreement specified that standards for “low impact logging practices” would be established. LOI, supra, at 7. The agreement provided for both protection for the environment as well as “respect for the land rights of people living in proposed investment areas.” Id. Finally, it provided that REDD+ contributions from Norway to Liberia would be triggered by Liberia meeting specific tasks, up to an amount of $150 million, starting in 2014. Id. at 8.

It is important not to overstate what Liberia promised to do. Several accounts made this mistake, stating, for example, that “all deforestation will be stopped” by 2020. Bridget Reed Morawski, Norway Pays Liberia to Halt Deforestation in a First of Its Kind Deal, NOVANEXT, Sept. 25, 2014, http://tinyurl.com/qdarajo (last visited Aug. 4, 2015). See also McGrath, supra. Both the agreement and Liberian REDD+ officials make clear that Liberia’s agreement with Norway was not precluding all logging; instead, the agreement “[e]ncourage[s] conservation based community
forestry, and work[s] to ensure that any logging that takes place in community forest areas is managed by and for local communities and follows verifiably low impact logging practices.” LOI, supra, at 2; David Correspondence. Landowners and communities are allowed to harvest their forests but it must be done in compliance with the 2006 NFRL and the Environmental Protection Agency laws of Liberia. When landowners decide not to harvest timber and choose conservation of the forest instead, the Norway-Liberia agreement provides that compensation will be provided to the landowners, although how payments will be provided is still being worked out. 

In conclusion, many details have yet to be resolved. Perhaps most concerning to many people, in both Norway and Liberia, is how and when Liberia will be paid. At least one observer has noted that in similar previous deals, Norway has not paid out all the money available. Chris Lang, Almost Half of Norway’s Climate and Forest Aid Remains Unspent, REDD MONITOR, Sept. 20, 2013, http://tinyurl.com/p3f33fy (last visited Aug. 4, 2015). Because the agreement here is based on performance, it will be interesting to see what may happen if disputes arise as to whether Liberia has actually complied with its deforestation prevention terms. At a recent conference at which European Union officials visited Liberia, the EU officials were encouraged with Liberia’s deforestation efforts, but noted that it was too soon to ascertain whether actions were being adequately completed. Nevertheless, it is positive that everyone seems to be on the same page and that outside observers are involved to help keep both sides accountable. Most encouraging is the fact that Liberia was taking positive steps to preserve its tropical rain forests even before Norway became involved, but now is better funded and equipped to do so.

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THE NEW NORMAL OF CARBON PRICING: PROVINCE OF ONTARIO, CANADA, TO UNVEIL A CAP-AND-TRADE SYSTEM IN AN EFFORT TO REDUCE GREENHOUSE GAS EMISSIONS

Dan Kirby, Jack Coop, Richard King, Jennifer Fairfax, Patrick Welsh, and Rebecca Hall-McGuire

On April 13, 2015, the Provincial Government of Ontario, Canada, announced that Ontario will unveil a cap-and-trade system linked to other jurisdictions including Quebec and California. This system will set greenhouse gas (GHG) emissions limits on a sector-by-sector basis and will allow businesses to sell unused portions of their GHG quotas. The details of the program remain to be worked out in a consultation process that will span several months. However, businesses in Ontario have been given notice by the government that carbon pricing in Ontario is going to be the new normal. Canadian Press & Ashley Csanady, Ontario Joins Quebec Carbon Cap-and-trade Plan, But at What Cost? Don’t Ask, Says Wynne, NAT’L POST, Apr. 13, 2015.

While the mechanics of the system have yet to be determined, some broad highlights have been announced. First, the cap-and-trade system will set a “hard ceiling” on GHG emissions in each sector of the economy. Press Release, Gov’t of Ontario, Cap and Trade System to Limit Greenhouse Gas Pollution in Ontario (Apr. 13 2015) (hereinafter, Cap and Trade Announcement). Businesses that require more than their allotted quota will be required to purchase additional permits from the market; businesses that have excess emission permits will be able to sell them. Second, Ontario will be joining the cap-and-trade system under the Western Climate Initiative (WCI), the largest carbon market in North America, which includes Quebec and California. As such, Ontario intends to work closely with Quebec and California to align its GHG market with theirs. GOV’T OF ONTARIO, MINISTRY OF THE ENV’T AND CLIMATE CHANGE, How Cap and Trade Works (Apr. 13, 2015) (hereinafter, Cap and Trade Backgrounder). Third, the government will reinvest the proceeds from the cap-and-trade system “in a transparent way” back into projects that will further reduce GHG emissions and help business remain competitive. Cap and Trade Announcement, supra.
In announcing the new program, Premier Kathleen Wynne stated it would “irresponsible” to speculate on what the cost of the cap-and-trade system would be, particularly since the system has not been designed yet. Margo McDiarmid, *Ontario to Sign Cap-and-Trade Agreement with Quebec to Cut Carbon Emissions*, CBC News, Apr. 10, 2015, (hereinafter, CBC News). A recent government backgrounder on cap-and-trade mentions several reports, which put the price of a cap-and-trade system at approximately 2 to 3.5 cents per litre on the cost of gasoline. Cap and Trade Backgrounder, *supra*. The government backgrounder also notes that British Columbia saw a 17 percent decrease in fossil fuel use five years after implementing a carbon price (achieved through a tax on each tonne of carbon emitted), and that the province’s economy had outperformed other provincial economies subsequent to establishing the price. *Id.*

Quebec launched its cap-and-trade system in January 2013 and linked it to California’s market the following year. Geoffrey Vendeville, *Ontario and Quebec Sign Cap-and-Trade Deal to Curb Climate Change*, Montreal Gazette, Apr. 13, 2015 (hereinafter, Montreal Gazette). In Quebec’s cap-and-trade system, the government issues permits to companies that emit 25,000 tonnes or more of carbon dioxide. The permits specify how much carbon each company is allowed to emit. If a company wants to exceed the permitted limit, it must buy additional permits at auction. In Quebec and California’s last joint auction, a permit to burn one tonne of carbon dioxide cost approximately CAD $15 on average. *Id.* As of February 2015, Quebec had auctioned off $190 million worth of emission credits. CBC News, *supra*, at 1.

At present, the Ontario Environmental Protection Act allows for the establishment of “market-based approaches, including without being limited to emissions trading” by way of regulation. Once Ontario introduces its cap-and-trade system, more than 75 percent of Canadians will live in provinces that have some form of carbon pricing. Cap and Trade Announcement, *supra*. Further, climate scientists have said that by joining Quebec and California’s carbon market, Ontario has made it easier for other provinces to follow suit. Montreal Gazette, *supra*.

The announcement of April 13, 2015, is an important next step for the government of Ontario in the development of its GHG emissions reduction strategy. See previous Osler Update for additional background: Patrick G. Welsh et al., *Change Is in the Air: Ontario Closer to a Cap-and-Trade System* (Feb. 21, 2013), available at http://www.osler.com/NewsResources/Change-is-in-the-Air-Ontario-Closer-to-a-Cap-and-Trade-System/. However, the details of how the cap-and-trade system, and in particular the sector-by-sector approach, will work remain murky. The Ontario government has stressed that it will assist certain sectors so that they will not be put at a competitive disadvantage by the cap-and-trade system (for example, in Quebec, free emissions credits have been provided to certain industries). One of the biggest challenges will be to ensure that the allocation of permits between sectors and within sectors is fair and does not cause undue hardship. For example: How will early responders be treated? Will the economic impacts be evenly distributed? It may be more expensive for some sectors and businesses to reduce emissions. These are issues that will likely be closely scrutinized by the business community unless the ultimate costs are inconsequential.

The increased costs faced by businesses will likely be passed on to the ultimate consumer. Nonetheless, the Ontario government has made it clear that carbon pricing is coming to Ontario and has given notice that businesses must adapt to this new reality. Like any government-created market, there may be opportunities for businesses to profit from the system, particularly those who actively reduce their GHG emissions and can become net sellers of their carbon credits. It is expected that law firms will be busy assisting industry in making submissions during Ontario’s consultation process and helping industry adapt to the new cap-and-trade regime when it is unveiled. While businesses anxiously await the details of Ontario’s cap-and-trade system, they must also begin preparing for the “new normal” of carbon pricing in Ontario.

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