GREEN IS IN: LEGAL CONSIDERATIONS ON RENEWABLE ENERGY DEVELOPMENT IN THE PHILIPPINES*

*Richmund C. Sta. Lucia***

> *"The protection and improvement of the human environment is a major issue which affects the well-being of peoples and economic development throughout the world; it is the urgent desire of the peoples of the whole world and duty of all Governments."*
> —Declaration of the UN Conference on the Human Environment[1]

> *"If we are gone tomorrow, the Earth will not miss us*[.]
> *Let's be clear. The planet is not in jeopardy. We are in jeopardy."*
> —Michael Crichton[2]

---

* *Cite as* Richmund C. Sta. Lucia, *Green is In: Legal Considerations on Renewable Energy Development in the Philippines*, 89 PHIL L.J. 181, (page cited) (2015).

** Associate, Litigation and Dispute Resolution Department, Angara Abello Concepcion Regala and Cruz Law Offices (ACCRALAW) (2014 – present). Senior Lecturer, Cesar E.A. Virata School of Business (College of Business Administration), University of the Philippines Diliman (2015 – present). Associate, Banking & Finance Practice Group, Quisumbing Torres/Baker & McKenzie Law Offices (2012-2014). J.D., University of the Philippines (2011). C.P.A., B.S. Business Administration and Accountancy, University of the Philippines (2004). Editor, PHILIPPINE LAW JOURNAL (2010-2011). Member, Order of the Purple Feather Honor Society (2007-2011).

[1] Report of the United Nations Conference on the Human Environment, U.N. Doc. A/CONF.48/14/Rev.1 (1972).

[2] MICHAEL CRICHTON, JURASSIC PARK 369 (1991), *quoted in* Stuart Bruce, *Climate Change Mitigation through Energy Efficiency Laws: From International Obligations to Domestic Regulation*, 31 J. ENERGY & NAT. RESOURCES L. 313, 313 (2013).

I. INTRODUCTION: THE REALITY OF ENVIRONMENTAL AND ENERGY CRISES

Humanity currently faces a serious problem with the natural environment. Disasters and tragedies caused by natural calamities are commonplace in the news. Their toll on health, property, and even human lives continues to record staggering statistics. This is the stark reality brought about by the unmitigated degradation of the natural environment and the indiscriminate depletion of its natural resources. To a large part, these consequences are attributable to human activities. They may be justified under the emblems of development, economic progress, or even sovereignty, such that countries may be rationalized in taking an adamant stance that they can exploit what they rightfully own. Nevertheless, whatever the justifications or excuses given, the response of the Earth is indubitable: shape up or ship out. This is the cold reality in today's environmental condition.

The solution to the ecological problem must be found in due time if humanity is serious in continuing and perpetuating the human civilization. It has come to a point that there is an "urgent need for intensified action at national and international level to limit and, where possible, to eliminate the impairment of the human environment."[3]

Certainly, one central factor that plays an important role in dealing with the environment is energy, including its sources, utilization, and resource disposal. Much literature has been written regarding the established fact that traditional methods of exploration and utilization of energy resources have brought about dire environmental and ecological concerns, such as global warming and climate change. Schroeder observes that the increases in temperature caused by the global warming phenomenon leads to unprecedented changes in weather patterns, such as stronger storms and intense flooding. Also, the incremental heat across the Earth results in gradual but crucial changes in ocean levels, which then pose serious threats to coastal countries and cities. These changes in temperature could mean the extinction of certain species of animals and plants, and, if continued unabated, possibly even humankind itself.[4]

Undeniably, global warming and climate change are pressing environmental problems which world leaders, whether politicians, scientists,

---

[3] PATRICIA W. BIRNIE & ALAN E. BOYLE, BASIC DOCUMENTS ON INTERNATIONAL LAW AND THE ENVIRONMENT 1 (1995). (Citation omitted.)

[4] KATHRYN L. SCHROEDER, ENVIRONMENTAL LAW 328-29 (2008).

or academicians, are presently trying to grapple with approaches and solutions. Countless studies, conferences, and other major efforts were conducted in order to attend to these specific environmental concerns. Indeed, their threat and potential to affect human health and security are not only apparent but real, thus:

> The principal reason is that the majority of the world's climate scientists now believe global warming is a real and significant threat[.] [T]he planet is heading for unprecedented environmental stresses if our current energy, industrial, and agricultural processes continue to put greenhouse gases—principally carbon dioxide, methane, chlorofluorocarbons (CFCs), and nitrous oxide—into the atmosphere at anything like the present rates[.] [I]f our world persists with business-as-usual practices, both global average temperatures and sea level will increase much faster than at any time in the history of human civilization.[5]

With respect to climate change, its concept must be understood completely in order to find a solution for its mitigation or, if possible, even eradicate it considering its pernicious effects. As defined, climate change can be viewed as "the response of the planet's climate system to altered concentrations of 'greenhouse gases' in the atmosphere [...] allow[ing] sunlight to pass through the atmosphere while trapping heat, or infra-red radiation, close to the earth's surface."[6] Climate change "looms as the defining ecological issue of the 21st century."[7] Put another way, "[c]limate change represents the most serious, most pervasive international threat that the world faces."[8]

At present, the environmental crisis as described above has caused pervasive impacts on different fronts. The same crisis entails a human, economic, and social and psychological impact: (1) the human impact consists of significant human sufferings such as illness, injury, and even death; (2) the economic impact comprises an enormous financial burden on the state and the society at large, such as those caused by pollution and the

---

[5] LAKSHMAN D. GURUSWAMY, GEOFFREY W. R. PALMER & BURNS H. WESTON, INTERNATIONAL ENVIRONMENT LAW AND WORLD ORDER: A PROBLEM-ORIENTED COURSEBOOK 1000 (1994). (Citation omitted.) As major contributors to global warming, greenhouse gases cause infrared radiation to be retained in the atmosphere which then increases global average temperatures.

[6] DAVID HUNTER, JAMES SALZMAN & DURWOOD ZAELKE, INTERNATIONAL ENVIRONMENTAL LAW AND POLICY 631 (3rd ed. 2007).

[7] *Id.*

[8] OSWALDO AGCAOILI, LAW ON NATURAL RESOURCES AND ENVIRONMENTAL LAW DEVELOPMENTS 2 (2012 ed.). (Citation omitted.)

costs of rehabilitating the natural environment; and (3) the social and psychological impact is felt through the experience of distress because of the disruption in human occupation and living, as well as the fact that losses resulting from environmental issues are not easily restored.[9]

One way or another, the adverse effects on the environment impact the quality of life, including "the full enjoyment of human rights, as well as the achievement of sustainable levels of development respectful of economic, social, and cultural rights" such as "the right to life, health, habitation, culture, equality before the law, and the right to property."[10] These rudimentary human rights are considered "extremely sensitive to environmental threats."[11] Protecting the environment, hence, is imperative in order to safeguard human rights in view of the fact that the natural environment is closely linked to the human condition. Needless to state, it is not just the Philippines which faces this problem; it is rather ubiquitous and universal. Any measures aimed to counteract the adverse effects of environmental ruin automatically take on an international element.

As if the environmental quandary is not enough, the Philippines is similarly baffled on how to deal with its current energy security situation. Naturally, energy and the environment are closely linked. While the Philippines may boast of a rich reservoir of green energy sources, it is rather ironic that energy is not commonly available in industrial and residential sectors. In other words, energy security and independence remains unresolved.

As expected from a fast developing country, the country's demand for energy has been steadily increasing. A study conducted in 2011 by the Department of Energy (DOE)[12] shows that Luzon as a major region must meet a 1,200 megawatt (MW) capacity by 2015 in order to avoid high power rates and widespread power outages. With significant demand arising from the deluge of economic activity in the country, the construction and operation of new energy sources are critical to avoid an impending energy crisis.

---

[9] YINGYI SITU & DAVID EMMONS, ENVIRONMENTAL CRIME: THE CRIMINAL JUSTICE SYSTEM'S ROLE IN PROTECTING THE ENVIRONMENT 7-9 (2000).

[10] HUNTER ET AL., *supra* note 6, at 1365-66.

[11] *Id.*

[12] The Department of Energy (DOE) is mandated by law (Rep. Act No. 7638 (1992). Department of Energy Act of 1992) to "prepare, integrate, coordinate, supervise and control all plans, programs, projects and activities of the Government relative to energy exploration, development, utilization, distribution and conservation."

The looming power crisis was expected to hit the country tremendously, so much so that various emergency measures have already been proposed to address this expected deficit in power supply. The Secretary of the DOE even suggested that President Benigno Aquino III should invoke the Electric Power Industry Reform Act of 2001 (EPIRA)[13] which grants emergency powers to the President in order to ensure a steady supply of energy. Invoking the EPIRA was perceived to accelerate the efforts of the government to provide additional power supply to the grid and evade possible power shortages or blackouts. Previously, President Aquino has declared that emergency powers from Congress were necessary to cover the shortfall. The President then sought a joint congressional resolution to allow the government to enter into energy supply contracts for additional generating capacity in order to avert the imminent power shortage, mainly by means of renting mobile diesel generators and requiring some companies to use their generators instead.[14]

In humanity's quest for a response to environmental degradation and energy security, one promising solution may lie in renewable energy, which is also known as "non-conventional," "clean," or "green" energy. By definition, the term "Renewable Energy Resources":

> [R]efers to energy resources that do not have an upper limit on the total quantity to be used. Such resources are renewable on a regular basis, and whose renewal rate relatively rapid to consider availability over an indefinite period of time. These include, among others, biomass, solar, wind, geothermal, ocean energy, and hydropower conforming with internationally accepted norms and standards on dams, and other emerging renewable energy technologies.[15]

Nowadays, green energy is indeed *in*; it is the emerging trend globally. In fact, the United Nations recognizes its importance in today's discourse on energy and the environment, to the effect that "the capacity of the earth to produce vital renewable resources must be maintained and,

---

[13] Rep. Act No. 9136 (2001). Electric Power Industry Reform Act (EPIRA) of 2001. Under § 2 of the EPIRA, it is the declared policy of the State to "assure socially and environmentally compatible energy sources and infrastructure" and to "promote the utilization of indigenous and new and renewable energy resources in power generation in order to reduce dependence on imported energy."

[14] *Id.*

[15] Rep. Act. No. 9513 (2008), § 4(uu). Renewable Energy Act of 2008; Dep't of Energy (DOE) Circular No. DC2009-05-0008 (2009); Rules and Regulations Implementing Rep. Act. No. 9513 [hereinafter "IRR"], § 3(zz).

wherever practicable, restored or improved."[16] As a result, "state schemes to promote renewable and low-emissions energy sources have proliferated since the turn of the century."[17]

In a nutshell, this Article attempts to (1) analyze the salient features of Philippine laws and regulations and how they interact with the current situation of renewable energy in the country; (2) examine how renewable energy benefits the natural environment and stabilizes the supply of electricity in the country; and (3) explore the legal considerations in renewable energy project development in the Philippines, such as the legal and regulatory requirements, as well as the fiscal and non-fiscal incentives for participation in a renewable energy project. While this Article does not promise to provide the panacea to issues concerning renewable energy, it nonetheless endeavors to add to the growing discourse on renewable energy in the Philippines by providing another perspective toward finding the right balance between development and the environment. In the end, the ultimate objective of this Article remains to be the full realization of the renewable energy potential of a resource-abundant country such as the Philippines—all in the interest of protecting the natural environment and promoting its energy security and independence.

II. RENEWABLE ENERGY: THE GREEN SOLUTION

Renewable energy promises a viable alternative to energy based on fossil fuels (such as coal and petroleum) which, despite the cognizable harmful effects to the environment and humans in the long run, are still considered the conventional sources of energy since as far back as the advent of the elementary steam engine. Now, with the emergence of renewable energy, the trend has been less dependence on coal, oil, and other fossil fuels, and more toward harnessing and utilizing renewables. This direction, insofar as what recent history suggests, appears to be perennial and will continue to be so for the foreseeable future. As observed by Ferrey, we have "embarked on a significant and ultimately inevitable transition from fossil fuels to renewable energy resources [.]"[18]

---

[16] Report of the United Nations Conference on the Human Environment, *supra* note 1.

[17] Jacqueline Peel, *Climate Change Law: The Emergence of a New Legal Discipline,* 32 MELB. U. L. REV. 922, 946-47 (2008). (Citations omitted.)

[18] Steven Ferrey, *Sustainable Energy, Environmental Policy, and States' Rights: Discerning the Energy Future through the Eye of the Dormant Commerce Clause*, 12 N.Y.U. ENVTL L.J. 507, 507-508 (2004). (Citations omitted.)

A better understanding of "green" and "clean" energy sources will help in assessing whether a developing country (like the Philippines) should focus on developing its renewable energy sector. The more common types of renewable energy that are used as alternatives to fossil fuels are hydropower, solar power, wind energy, biomass, and biofuels.[19] In addition, being a non-conventional fuel source, geothermal energy may be included.

1. Hydropower

> Renewable energy derived from running water is called hydropower. Philippine law refers to "Hydroelectric Power Resources" or "Hydropower Resources" as "water resources found technically feasible for the development of hydropower projects which include rivers, lakes, waterfalls, irrigation canals, springs, ponds, and other water bodies."[20]
>
> As a popular source of renewables, hydropower generates electricity from the turning of turbines in running water. Compared to other renewable energy sources, hydropower is inexpensive. Another advantage of hydropower is that there is no air pollution caused by its operation.[21] On the other hand, hydropower naturally depends on the availability of bodies of water that must contain adequate force to turn the turbines and provide electricity.

2. Solar Energy

> Republic Act No. 9513 (R.A. 9513) defines solar energy as "the energy derived from solar radiation that can be converted into useful thermal or electrical energy."[22] Simply put, solar energy, or the energy generated from sunshine, offers an unlimited green energy source. This feature of solar energy makes it an attractive alternative to fossil fuels which for their availability would be dependent on the finite quantity explored and harnessed for use. Ferrey discerned that

---

[19] NANCY K. KUBASEK, ENVIRONMENTAL LAW 283 (4th ed. 2002).
[20] Rep. Act. No. 9513, § 4(z); IRR, § 3(aa).
[21] KUBASEK, *supra* note 19.
[22] Rep. Act. No. 9513, § 4(xx); IRR, § 3(ddd).

> Tomorrow, the earth will have exactly as much solar energy as it has today, regardless of how much solar energy is used and consumed each day. By contrast, burning a barrel of oil or a cubic meter of natural gas diminishes permanently that quantity of fossil fuels for the next day and for future generations.[23]

One noted disadvantage of this type of energy, though, is that "[b]ecause solar energy requires sunshine, it is obviously not a source that could satisfy anyone's energy needs completely."[24] For example, the solar energy produced and stored during daytime would have to power the activities and locations requiring energy during nighttime where there is no sunshine and, thus, no replenishment in the meantime. Nonetheless, owing to the popularity of solar energy, the cost of developing and producing technology used to harness solar energy today has become very competitive to the point that it matches that of traditional fossil fuels.[25]

3. Wind Energy

Philippine law defines wind energy as "energy that can be derived from wind that is converted into useful electrical or mechanical energy."[26] Wind energy is essentially a type of non-polluting green energy. Due to its geography-specific nature, however, it can be used only in particular climates and locations where gusts of wind are sufficient to produce power.[27]

In producing wind energy, wind farms utilize powerful turbines to generate electricity. Such wind farms are becoming more popular due to their impact on the environment; they are "increasing in number and size—an encouraging sign for environmentalists [...]. As more wind farms come into production, the cost of the energy

---

[23] Steven Ferrey, *The New Climate Metric: The Sustainable Corporation and Energy,* 46 WAKE FOREST L. REV. 383, 394 (2011).

[24] KUBASEK, *supra* note 19, at 284.

[25] SCHROEDER, *supra* note 4, at 327.

[26] Rep. Act. No. 9513, § 4(ccc); IRR, § 3(ii).

[27] KUBASEK, *supra* note 19, at 286.

produced from these farms continues to drop, making this energy source economical as well as appropriate from an environmental perspective."[28]

4. Biomass/Biofuels

Under Philippine law, "biomass resources" generally refer to:

> [N]on-fossilized, biodegradable organic materials originating from naturally-occurring or cultured plants or parts thereof, animals and micro-organisms, including agricultural products, by-products and residues such as, but not limited to, biofuels except corn, soya beans and rice but including sugarcane and coconut, rice hulls, rice straws, coconut husks and shells, wood chips/residues, forest residues, corn cobs, corn stovers, bagasse, biodegradable organic fractions of industrial and municipal wastes that can be used in bioconversion process and other processes, as well as gases and liquids recovered from the decomposition and/or extraction of non-fossilized and biodegradable organic materials.[29]

On the other hand, under the Biofuels Act of 2006,[30] the term "biofuels" refers to bioethanol[31] and biodiesel[32] and other fuels made from biomass and primarily used for motive, thermal, and power generation. Biofuels must also comply with quality specifications that are consistent with the Philippine National Standards (PNS).[33]

---

[28] SCHROEDER, *supra* note 4, at 326.

[29] Rep. Act. No. 9513, § 4(b); IRR, § 3(c).

[30] Rep. Act No. 9367 (2006). Biofuels Act of 2006.

[31] "Bioethanol" is defined as "ethanol (C2H5OH) produced from feedstock and other biomass." *Id.* at § 3(c).

[32] "Biodiesel" refers to "Fatty Acid Methyl Ester (FAME) or mono-alkyl esters derived from vegetable oils or animal fats and other biomass-derived oils that shall be technically proven and approved by the DOE for use in diesel engines, with quality specifications in accordance with the Philippine National Standards (PNS)." *Id.* at § 3(d).

[33] "PNS" shall refer to "the Philippine National Standards; consistent with Section 26 of R.A. No. 8749, otherwise known as the 'Philippine Clean Air Act of 1999'." *Id.* at § 3(x).

In essence, biomass resources are organic materials can be put to good use (which otherwise may not have been useful from an economic perspective) by means of further processing and conversion into a renewable energy resource. In this type of non-conventional energy, organic matter such as agricultural waste, municipal garbage, grains, animal manure, and wood can be burned and converted to generate energy.[34] By using new techniques, biomass conversion results in the extraction of energy from plant materials, which are then converted into heat and electricity.[35] Biomass energy conversion and technology are primarily motivated by "the desire to mitigate the effects of fossil fuel use on global climate change."[36]

5. Geothermal Energy

The law defines geothermal energy as "a mineral resource" which is produced through:

> (1) natural recharge, where the water is replenished by rainfall and the heat is continuously produced inside the earth; and/or (2) enhanced recharge, where hot water used in the geothermal process is re-injected into the ground to produce more steam as well as to provide additional recharge to the convection system.[37]

Geothermal energy is produced from tapping the heat inside the earth, and drawing thermal energy from its surface. Although from a technical standpoint, geothermal resources are not "renewables", such fuel offers a very rich potential source which parallels other clean energy sources like solar or wind. The most common form of geothermal energy is hydrothermal energy, or energy derived from hot

---

[34] KUBASEK, *supra* note 19, at 286.

[35] SCHROEDER, *supra* note 4, at 328.

[36] Chris Wold, Don Gourlie, & Amelia Schlusser, *Climate Change, International Trade, And Response Measures: Options For Mitigating Climate Change Without Harming Developing Country Economies,* 46 GEO. WASH. INT'L L. REV. 531, 548 (2014). (Citations omitted.)

[37] Rep. Act. No. 9513, § 4(q); IRR, § 3(r). Regarding exploration of Philippine geothermal resources, *see also* RUBEN E. AGPALO, THE LAW ON NATURAL RESOURCES 706 (2006), which contains a discussion on Presidential Decree No. 1442 or "An Act to Promote the Exploration and Development of Geothermal Resources."

> water reservoirs.[38] One distinct advantage of geothermal energy is its vast availability in contrast to other sources like solar energy.[39]

The above-listed green energy fuels are becoming more popular due to their commendable effects on the environment and the ecology, unlike traditional fossil fuels which, undeniably, were largely to blame for the human ordeals caused by global warming and climate change that continue to this day. As a matter of fact, recent studies show that "63% of all historic carbon emissions comes from 90 fossil fuel companies, including Shell, Chevron, ExxonMobil and BP."[40] Among others, environmentalists are at the forefront in supporting the development and use of renewables. They have been advocating renewable energy "not only to expand the types of clean, renewable energy sources that are available for public use but also to find ways to use more efficiently the methods that are presently available."[41]

A. Limitations of Renewable Energy

It may have been established that renewable energy is attractive nowadays precisely because of its positive impact on the natural environment and human ecology. Ferrey opines that, against conventional energy fuels, clean energy sources offer many advantages, including energy reliability and resiliency:

> They are more predictable and reliable than conventional fossil fuels. Because renewable energy sources are not under the control of any nation or cartel, but are for the most part equally distributed across the earth, they are not subject to embargo or manipulation. Developed in relatively small modules, renewable energy systems are also more reliable and resilient.[42]

However, while green energy sources are encouraged and efforts are undertaken to adopt their use and development, certain risks may still attach from adopting a specific renewable energy portfolio. As discussed above, the variability of certain renewable energy sources may be considered as one

---

[38] KUBASEK, *supra* note 19, at 286.

[39] SCHROEDER, *supra* note 4, at 327-28.

[40] Pia Ranada, *The problem with renewable energy,* RAPPLER, Dec. 21, 2013, *at* http://www.rappler.com/move-ph/ispeak/46355-problemrenewableenergy?cp_rap_source=yml#cxrecs_s.

[41] SCHROEDER, *supra* note 4, at 326.

[42] Steven Ferrey, *Exit Strategy: State Legal Discretion to Environmentally Sculpt the Deregulating Electric Environment,* 26 HARV. ENVTL L. REV. 109, 117 (2002). (Citations omitted.)

disadvantage in supplying baseload power for the required minimum level of power in an industrially-driven economy:

> There is an inescapable drawback to a switch to green energy: most (although by no means all) renewable sources of energy such as wind, solar photovoltaic and wave power are variable, with some being predictable (such as the sun not shining at night) and others less so. They stop and start. Those who oppose renewable energy use this variability as a counter argument, and this is not a problem renewable energy proponents can afford to ignore. [O]ur infrastructure and way of life cannot have constant power outages.[43]

While renewable energy offers many advantages to the environment, to energy stability, and even to the economy in the long run, there is also an apparent risk, from a regulatory standpoint, that

> [T]he new industry never becomes self-supporting and that it dies after the subsidies expire, or that the government is forced to continue to subsidize it for the foreseeable future. While mandates have successfully increased the amount of electricity generated from alternative energy sources, it is a safe bet that any increased costs are being passed on to the consumer[.][44]

In other words, renewable energy projects must be developed and rationalized such that the energy sector becomes self-reliant and cost-effective. Otherwise, consumers may possibly get the bad end of the energy deal, paying more than what is typically paid under conventional fossil-fuel sources.

In addition, green fuels are often not distributed by choice but by nature. There may be some locations which have powerful gusts of wind but little sunshine, or the reverse. Watson comments that "[w]ith renewables, we cannot choose where we locate our electricity generation as we can with conventional power stations."[45] Although issues in relation to distribution and/or transmission of power may be resolved by the fact that the locations of the green energy fuels are accessible in a particular jurisdiction, such a setup may also require further provision (and, concomitantly, regulation) of an open network access to the users of the electricity grid. As one observer

---

[43] Graham Watson, *Large-Scale Electricity Supergrids and the Transition to Electricity from Renewable Sources*, 3 RENEWABLE ENERGY L. & POL'Y REV. 87, 89 (2012). (Citations omitted.)

[44] Justice Rick Strange, *Weaving a Tangled Web: The Intersection of Energy Policy and Broader Governmental Policies,* 5 TEX. J. OIL GAS & ENERGY L. 1, 22 (2010).

[45] Watson, *supra* note 43, at 90.

succinctly states, an "open access principle will likely be necessary, but the timing of such regulation is of critical importance. [...] [R]egulatory establishment of an open access principle will eventually be necessary."[46]

To counteract the inherent and attendant risks that may be posed by adopting a renewable energy regime, the State's power of lawmaking, regulation, and policymaking plays a vital role in ensuring that the advantages of renewable energy are availed of, the cognizable interests of the various stakeholders within environmental and energy sectors are balanced, and the perceived disadvantages are minimized.

B. Regulatory Mechanisms

Lawmakers and policymakers, complemented by enforcement by administrative agencies and legitimation by courts, mold the legal framework governing renewables in any given jurisdiction. State policies, statutes, and regulations provide the legal bedrock for harnessing renewable energy sources as well as the incentives for participating in their development, after due consideration of the various competing factors such as the economy, business, politics, and of course, the environment or ecology itself. Surely, environmental law "imperfectly regulates environmental consequences caused by the energy sector."[47] Ultimately, the laws and regulations on renewable energy, with respect to their favorable environmental bearing, seek "to produce a rational decision—one that collects available data, presents alternative choices, and assesses the consequences of proposed actions in light of statutory goals."[48]

Challenges to governance are also recognized in the discourse of environmental legislation and energy regulation. Global energy governance, which refers to the rules and actors related to energy that cross national borders,[49] may result in long-term governance challenges presented by the energy factor. As posited by Meyer, such governance challenges may be identified as follows:

> First, energy security involves efforts by energy-consuming states seeking to ensure stable and secure access to energy resources[.]

---

[46] Joel B. Eisen, *An Open Access Distribution Tariff: Removing Barriers to Innovation on the Smart Grid,* 61 UCLA L. REV. 1712, 1712 (2014).

[47] Bruce, *supra* note 2, at 322-23. (Citations omitted.)

[48] FREDERICK R. ANDERSON, DANIEL R. MANDELKER & A. DAN TARLOCK, ENVIRONMENTAL PROTECTION: LAW AND POLICY 71 (1990).

[49] Benjamin K. Sovacool, *Examining the Complications of Global Energy Governance*, 30(3) J. ENERGY & NAT. RESOURCES L. 235, 237 (2012).

> Second, there are energy poverty issues. There are about 1.4 billion people in the world who lack access to electricity[.]
>
> Third, the production and consumption of energy creates a variety of environmental externalities such as climate change or oil pollution.[50]

With such issues prevalent within the realm of governance, it behooves states to live up to the task despite circumstantial difficulties, and still come up with a regulatory solution that project toward environmental protection and energy stability.

Such regulatory mechanisms, however, do not exist in a vacuum; the laws must be sufficiently enforced and their compliance properly implemented. "If regulation is to achieve its goals, it must induce compliance. Thus it is critical that [...] environmental laws include enforcement provisions that create incentives for compliance."[51] In the same vein, there is a danger to "uncoordinated regulation": when it comes to the energy sector, it translates "good intentions into bad safety and environmental policies."[52] In other words, environmental laws and regulations, especially those that pertain to renewable energy, require enforcement and proper regulatory coordination in order to be effective.

For example, in the United States, to be able to induce compliance, claims based on common law have "increasingly taken on environmental implications. Liability may stem from personal injuries and property damage caused by environmental conditions under common-law theories of negligence, nuisance, trespass, and strict liability for abnormally dangerous activities. [...] Except for negligence, common-law liability for environmental conditions is imposed *without regard to fault.*"[53] Thus, using this example, by categorizing environmental claims under common-law liability (which may impose a more stringent standard), actions by regulators present a stronger deterrent against environmental non-compliance and, in effect, encourage compliance and promote enforcement. Applied to the Philippine

---

[50] Timothy Meyer, *The Architecture of International Energy Governance,* 106 AM. SOC'Y INT'L L. PROC. 389, 391 (2013). (Citation omitted.)

[51] ROBERT V. PERCIVAL, CHRISTOPHER H. SCHROEDER, ALAN S. MILLER & JAMES P. LEAPE, ENVIRONMENTAL REGULATION: LAW, SCIENCE, AND POLICY 937 (5th ed. 2006).

[52] Peter Huber, *Electricity and the Environment: In Search of Regulatory Authority*, 100 HARV. L. REV. 1002, 1003 (1987).

[53] JAMES F. BERRY & MARK S. DENNISON, THE ENVIRONMENTAL LAW AND COMPLIANCE HANDBOOK 15 (2000).

scenario, the government needs to explore ways and means to ensure that environmental regulations (especially those involving renewables) are strictly implemented and enforced. This is because from a practical viewpoint, a law is only as good as its execution.

III. THE PHILIPPINE CASE

The Philippines is arguably one of the countries in the world which are most endowed with natural resources. With more than 7,100 islands, the Philippine archipelago is a natural wonder which can pride itself for having a very long coastline, rich biodiversity in water and on land, and abundant mineral resources.[54] Its share of renewable energy sources is no exception:

> The potential renewable energy capacity of the Philippines is estimated to be 2,600 MW of geothermal, 13,097 MW of hydroelectric, 70,000 MW of wind, 170,000 MW of ocean energy, 323 MMBFOE[55] of biomass, and 5.1 kilowatt-hour (kWh)/m^2/day of solar energy.
>
> The Philippines is second to the US in geothermal energy generation and leads Southeast Asia in wind energy generation. As of 2010, total installed renewable energy capacity was 5,438 MW or 33% of total installed generating capacity.
>
> The need to continue to reduce dependence on imported energy and the impetus to reduce greenhouse gas emissions of the energy sector have prompted the government to enact laws and regulations to hasten the development and utilization of the country's untapped renewable energy potential.[56]

To rationalize the Philippine energy sector, Republic Act No. 9136 was enacted to institute reforms in the electric power industry of the Philippines. Also known as the Electric Power Industry Reform Act of 2001 or EPIRA, it seeks to ensure the quality, reliability, security, and affordability of electric power supply, as well as to ensure socially and environmentally compatible energy sources and infrastructure, among other policy thrusts.

---

[54] ANTONIO G.M. LA VIÑA, I PHILIPPINE LAW AND ECOLOGY: NATIONAL LAWS AND POLICIES 1-3 (2012).

[55] MMBFOE stands for "million barrels of fuel oil equivalent." It is used as a standard unit of measurement for quantifying energy demand, supply, and usage.

[56] Linda C. Katz, *Promoting Renewable Energies in the Philippines: Policies and Challenges,* 3 RENEWABLE ENERGY L. & POL'Y REV. 140 (2012). (Citations omitted.)

Considering the looming power crisis that became accentuated in 2014, the EPIRA, as it seems, was not able to stave off the ill effects of having insufficient energy sources to fill in the rising demand. While the EPIRA seeks to ensure energy security[57], the law as implemented was not able to prevent the threat of energy crisis in 2014. In the event that the steps taken by the government are not adequate to resolve the problem on energy security, massive power outages will surely disrupt the momentum of the Philippine economy in addition to the inconvenience to be caused to industries and homes.

The response of the Philippine government to issues on energy security and independence lies in renewable energy as an alternative to fossil fuel-based energy. With the passage of R.A. 9513 in December 2008, and the subsequent signing of its Implementing Rules and Regulations in May 2009, the Philippines set in motion an accelerated pace in the development of clean energy resources. This shows "a discernible trend in [the Philippine] legal system toward more environmental sensitivity. The intent to take environmental concerns more seriously is defined."[58]

In its thrust to create a viable and sustainable renewable energy program, the Philippine government continues to enable an investment climate that is favorable to the private sector and conducive for technology transfer and research development. Under the National Renewable Energy Program or NREP,[59] between 2011 and 2030, there will be milestones which will guide the development of the Philippine renewable energy industry. Additional capacity targets for geothermal, hydro, wind, solar, biomass, and even ocean energy have been set. By year 2030, the Philippines aims to have an increase in renewable energy-based capacity by 200%. To achieve these ends, the implementation of sectoral sub-programs as well as policy and program support components will be important factors.

Considering the country's installed capacity based on renewable energy existing across various sectors existing in the country, by 2030, the

---

[57] Section 2 of the EPIRA states that one of the policies of the State is "to ensure the quality, reliability, security and affordability of the supply of electric power."

[58] JORGE A. EMMANUEL, MARVIC F. LEONEN & DELFIN J. GANAPIN, PHILIPPINE AND AMERICAN ENVIRONMENTAL LEGISLATION AND JURISPRUDENCE: A COMPARATIVE PERSPECTIVE (A ROUNDTABLE DISCUSSION) 3 (1993 ed.).

[59] The National Renewable Energy Program, as a government initiative, seeks to address the high cost of electricity in the country as well as the instability in the supply of electricity, particularly in rural regions. In sum, the NREP's main goal is to achieve "national energy independence." *See* BERNARDO M. VILLEGAS, STRATEGIES FOR CRISIS: THE STORY OF THE PHILIPPINE NATIONAL OIL COMPANY 72 (1983).

country aspires to be the number one geothermal energy producer in the world. The Philippines likewise aspires to be the number one wind energy producer in Southeast Asia. Also, its wind renewable energy facilities are envisioned to develop significantly. Biomass and solar power will continue to maintain a decent share of renewable energy-based installed capacity. Ocean energy, a green field opportunity whose potential awaits to be unlocked, will also gradually develop during the period leading to 2030.

With R.A. 9513, the Philippine government has already declared its policy thrusts in relation to renewable energy. The Philippines must then maintain, if not improve, its ability to harness and produce its own energy. The country's energy systems, crucial as they are, must be protected from volatile climate changes, which can be tested through a proper vulnerability assessment. This is partly because of the unique geographical location and topographical setup of the Philippine islands:

> The urgent necessity to regulate human activities is all the more glaring in the Philippines due to its relation to nature which make[s] it more vulnerable to natural calamities or catastrophes. For one, the Philippines is situated right in the typhoon belt of the Pacific. As such the Philippines encounters an average of 20 typhoons yearly which claim hundreds or even thousands of lives, and [cause damage] to properties and food crops amounting to millions or even billions of pesos.[60]

Accordingly, the Philippine government is committed to continue pushing for a low-carbon environment by expanding the standardization of its energy labeling program, the use of electronic vehicles, and the promotion of alternative fuels, targeted to comprise 30% of the energy mix by the year 2030. Smart green technologies are similarly promoted. Strategic infrastructures are facilitated. Energy plans which factor in the country's unique geography will be formulated and implemented as planned. All in all, these thrusts and policy objectives can pave the way toward the country's growing reputation as a preferred destination for foreign investment, specifically in the renewable energy sector.

With respect to the region to which the Philippines belongs, Southeast Asia is also considered as a reservoir of vast renewable energy sources compared to other regions. Due to fast-growing economies and the accompanying increase in demand for energy, the challenge then is to tap the renewable energy resource potential of Southeast Asia:

---

[60] RODRIGO V. COSICO, PHILIPPINE ENVIRONMENTAL LAWS: AN OVERVIEW AND ASSESSMENT 1 (2012).

> The region of Southeast Asia, consisting of Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam, saw total energy consumption increase 4.2% per year from 1999 to 2009, coal consumption grow by 10.5%, natural gas by 7.5%, and electricity by 5.5%. Looking forward from 2005 to 2030, energy consumption is expected to grow 2.6 times and carbon dioxide emissions are expected to quadruple due to greater reliance on coal. For some of the smaller Southeast Asian countries, electricity use is expected to grow 23 times current rates of consumption between now and 2030. In response to this burgeoning demand for energy, the use of renewable electricity sources has grown in the past few years. The Philippines ranks second in the world for total geothermal electricity generation[.] [T]he Philippines is second for total biomass power[.] Yet using data available from 2007, renewable electricity accounted for slightly less than 17% of total supply, and this share was dominated by large-scale hydroelectric facilities. Geothermal facilities produced less than 3% of the region's power, biomass less than 2%, wind and solar less than one half of a percent.[61]

Developing countries in Southeast Asia are considered fertile markets for renewable energy. This is possibly due to the fact that around two billion people have no access to electricity, and, based on World Bank estimates, 24% of the urban population and 67% of the rural population are without electricity.[62]

The apparent lack of energy security and independence in the Southeast Asian region may be attributed to certain region-specific barriers. Duncan and Sovacool determined that the development of the renewable energy sector in Southeast Asia is impeded by (1) technical barriers, (2) economic barriers, (3) political barriers, and (4) social barriers, described in detail as follows:

1. *Technical barriers* – The most significant technical barrier is the lack of high quality equipment for renewable energy

---

[61] Dermot Duncan & Benjamin K. Sovacool, *The Barriers to the Successful Development of Commercial Grid Connected Renewable Electricity Projects in Australia, Southeast Asia, the United Kingdom and the United States of America*, 4 RENEWABLE ENERGY L. & POL'Y REV. 283, 292 (2011). (Citations omitted.)

[62] Richard L. Ottinger & Mindy Jayne, *Global Climate Change Kyoto Protocol Implementation: Legal Frameworks for Implementing Clean Energy Solutions*,18 PACE ENVTL L. REV. 19, 37-38 (2000). (Citations omitted.)

development. This may be attributable to the lack of available funding for such equipment, or the unavailability of technical experts who can operate and maintain the equipment. Due to the fact that there is a limited understanding for the operation of quality equipment, some people tend to underestimate the value of such equipment in producing electricity from green sources. For example, in the Philippines, certain wind farms were disabled and dismantled in order for specific components (*e.g.*, copper and aluminum) to be sold.[63]

2. *Economic barriers* – High levels of capital are required for renewable energy project investments. Investors in Southeast Asia, however, tend to have investment horizons only for the short term, which leads them to make decisions preferring low capital outlays and quick returns. Financing for solar and wind energy projects in particular may be too capital-intensive such that without any government support, investors may rather opt for other more conventional business opportunities instead of venturing into renewables.[64]

3. *Political barriers* – In order to attract investments in the energy sector, incentives typically for the development of coal-based conventional energy sources, such as energy subsidies, may be offered by the government. Such energy subsidies, however, may create an "unfair market advantage" in favor of fossil fuels, projects, and technologies—to the detriment of clean energy alternatives. In many Southeast Asian countries (*e.g.*, Indonesia), coal producers continue to receive from the government certain incentives for the purposes of mining, exploration, development, and research.[65]

4. *Social barriers* – Individuals and corporations in the Southeast Asian region may be limited in their ability to use and analyze information relating to renewables, which are of relatively recent import. This is because basic and valuable information about options for development of renewable

[63] Duncan & Sovacool, *supra* note 61, at 292.
[64] *Id.* at 292-93.
[65] *Id.* at 293.

> energy in Southeast Asia is "usually unavailable, expensive, incomplete, difficult to obtain, or [even] nonexistent."[66] Such social and cultural barriers may result in non-acceptance of renewable energy options because of an incomplete or inaccurate understanding of the advantages and features of non-conventional energy sources.

Thus, a full understanding of the nature and ramifications of developing the renewable energy sector is required in order to pave the way for the Philippines (and for other Southeast Asian countries, for that matter) to attain the supposed environmental benefits, as well as energy independence. To achieve this, the legal and regulatory foundations underpinning green energy in the Philippines must be set out, analyzed, and assessed as to whether or not the country can deal with and effectively address the challenges posed by contemporary interests, such as government, business, and the public *en masse*. One specific aspect which is worthy of further evaluation is the legal and regulatory requirements which investors and financiers have to contend with, considering that their involvement in the green energy industry potentially has a major impact on developing the Philippine renewable energy sector.

IV. LEGAL AND REGULATORY FRAMEWORK

To address the issues concerning renewable energy in the Philippines, the theoretical framework based on current laws and regulations applicable to renewable energy development must be analyzed. Renewables and generally the natural environment are governed by the Philippine Constitution, RA 9513, and other statutes and regulations which have an impact on renewable energy project development or are triggered by the operationalization of new renewable energy projects.

1. The Constitution

The 1987 Philippine Constitution, Article II, Section 16, reads: "The State shall protect and advance the right of the people to a balanced and healthful ecology in accord with the rhythm and harmony of nature."

In his treatise, Bernas noted that the Philippine Constitution was drafted keeping in mind "a growing concern about the preservation of a healthy environment. The discussions manifested a clear desire to make

---

[66] Duncan & Sovacool, *supra* note 61, at 294.

environmental protection and ecological balance conscious objects of police power."[67] Considering the strong link to prioritizing the environment, the rationale for renewable energy can derive its legal foundation from the same provision enshrined in no less than the Philippine Constitution.

Under Philippine case law, there are certain instances when the cited declaration of environmentalism under the Constitution was considered and ruled upon. In the case of *Oposa v. Factoran*,[68] the Philippine Supreme Court had the occasion to discuss Section 16, Article II of the Philippine Constitution. In this case, minors (represented by their parents, as led by Atty. Antonio A. Oposa, Jr., a creative litigator and staunch environmental advocate) sued to prevent the impairment of Philippine rainforests and "arrest the unabated hemorrhage of the country's vital life-support systems and continued rape of Mother Earth."[69] In particular, the petitioners asked the High Court to cancel all existing timber license agreements in the Philippines, as well as to order the DENR to cease and desist from issuing new timber license agreements.

Penned by Justice (later Chief Justice) Hilario G. Davide, Jr., the Supreme Court's ruling held that with regard to *locus standi*, the case was considered as a class suit. Justice Davide, Jr. further elaborated on this point:

> This case, however, has a special and novel element. Petitioners minors assert that they represent their generation as well as generations yet unborn. We find no difficulty in ruling that they can, for themselves, for others of their generation and for the succeeding generations, file a class suit. *Their personality to sue in behalf of the succeeding generations can only be based on the concept of intergenerational responsibility insofar as the right to a balanced and healthful ecology is concerned. Such a right, as hereinafter expounded, considers the "rhythm and harmony of nature."* Nature means the created world in its entirety. Such rhythm and harmony indispensably include, *inter alia*, the judicious disposition, utilization, management, renewal and conservation of the country's forest, mineral, land, waters, fisheries, wildlife, off-shore areas and other natural resources to the end that their exploration, development and utilization be equitably accessible to the present as well as future generations. *Needless to say, every generation has a responsibility to the next to preserve that rhythm and harmony for the full enjoyment of a balanced and healthful ecology. Put a little differently, the minors' assertion of their right to a sound*

---

[67] JOAQUIN BERNAS, THE 1987 CONSTITUTION OF THE REPUBLIC OF THE PHILIPPINES: A COMMENTARY 91 (2003 ed.). (Citation omitted.)

[68] G.R. No. 101083, 224 SCRA 792, July 30, 1993.

[69] *Id.*

> *environment constitutes, at the same time, the performance of their obligation to ensure the protection of that right for the generations to come.*[70]

It is interesting to note that in the *Oposa* case, the minors-petitioners assert that they "represent their generation as well as generations yet unborn."[71] In the same vein, the notion of "intergenerational responsibility" can apply to Philippine renewable energy insofar as the principle of environmentalism and the promotion of balanced and healthful ecology is concerned. In other words, renewable energy, which also seeks to promote the environment that according to *Oposa*, is a responsibility owed to present and even future generations, can be amply supported by legal and jurisprudential justifications in order to advance its development. Should any opposition to the use and development of green energy arise, such legal bases can be invoked insofar as they culminate in protecting the natural environment for the Filipino people now and in the future.

Moreover, in the later case of *Laguna Lake Development Authority v. Court of Appeals*,[72] the Supreme Court again invoked Section 16, Article II of the Philippine Constitution. Here, the Court ruled that the Laguna Lake Development Authority (LLDA) has the power to issue a cease and desist order enjoining the dumping of garbage in the area of Laguna Lake, on the ground that the right to health is a fundamental right under Section 16, Article II.

Justice Flerida Ruth P. Romero, as the *ponente*, wrote:

> The immediate response to the *demands of "the necessities of protecting vital public interests" gives vitality to the statement on ecology embodied in the Declaration of Principles and State Policies or the 1987 Constitution. Article II, Section 16*[.] As a constitutionally guaranteed right of every person, it carries the correlative duty of non-impairment. This is but in consonance with the declared policy of the state "to protect and promote the right to health of the people and instill health consciousness among them." It is to be borne in mind that the Philippines is party to the Universal Declaration of Human Rights and the Alma Conference Declaration of 1978 which recognize *health as a fundamental human right.*
>
> The issuance, therefore, of the cease and desist order by the LLDA, as a practical matter of procedure under the circumstances

---

[70] Oposa v. Factoran, G.R. No. 101083, 224 SCRA 792, 803, July 30, 1993. (Citations omitted, emphasis supplied.)

[71] *Id.*

[72] G.R. No. 110120, 231 SCRA 292, Mar. 16, 1994.

> of the case, is a proper exercise of its power and authority under its charter and its amendatory laws.[73]

In view of the foregoing doctrines laid down by the Supreme Court, the right to protect the natural environment is supported by the Philippine Constitution and confirmed by jurisprudence. Such pronouncements can be used as further support for the environmental aims of renewable energy as an alternative to fossil fuels.

It also bears noting that similar to the U.S., the Philippines adopts as state policy the protection of its natural environment. In the U.S., its National Environment Policy states that the purposes of the law are "[t]o declare a national policy which will encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the Nation."[74]

A perusal of the Philippine Constitution and the U.S. National Environment Policy will reveal the similarities between the two laws. As the renewable energy industry in the U.S. is much more developed compared to the Philippines', it can be argued that the Philippine government may adopt the U.S. model *in pari materia*, enact statutory legislation akin to U.S. environmental law, and thus apply global best practices in green energy in its own jurisdiction.

2. Renewable Energy Act of 2008

To achieve the aims of environmentalism and energy security and independence, Philippine law plays an essential role in supporting and developing the country's renewable energy program. Foremost of the country's policies is the landmark R.A. 9513 which was signed on December 16, 2008.[75]

R.A. 9513 is the primary statute governing the renewable energy sector in the Philippines. The law affirms the government's commitment to accelerating the exploration and development of Philippine renewable energy resources. It declares the policy of the State to increase the utilization

---

[73] Laguna Lake Dev. Authority v. Ct. of Appeals, G.R. No. 110120, 231 SCRA 292, 308, Mar. 16, 1994. (Citations omitted; emphasis supplied.)

[74] ERIC PEARSON, ENVIRONMENTAL AND NATURAL RESOURCES LAW: SELECTED STATUTES AND REGULATIONS 328 (2008).

[75] Rep. Act. No. 9513 (2008). Renewable Energy Act of 2008.

of renewable energy resources, such as, but not limited to, solar, wind, hydropower, geothermal, and ocean energy sources (including hybrid systems) by institutionalizing the development of national and local capabilities in the use of renewable energy systems and promoting its efficient and cost-effective commercial application by providing both fiscal and non-fiscal incentives.

The law also seeks to achieve energy self-reliance by (1) reducing dependence on fossil fuels, and (2) minimizing exposure to price fluctuations. Likewise, it seeks to promote clean energy to mitigate the adverse effects of climate change. Socio-economic development in our countryside and the utilization of renewable energy by providing incentives are also some of its salient features.

A closer look into the congressional deliberations will reveal the legislative intent behind R.A. 9513. The objectives of the lawmakers in the bicameral conference on the conflicting provisions of the House and Senate bills (which later on were enacted into R.A. 9513) can be gleaned in the following statements:[76]

> CHAIRPERSON E. J. ANGARA:
>
> Mr. Chairman, I think we are meeting at another memorable moment because the bill that we will soon hope to become law is a landmark law, and this is a product of the study that both our Committees, yours and ours, did. And it extracted the best practices from practically all the countries with renewable energy laws.
>
> I understand, Mr. Chairman, that there are about 50 countries with renewable energy policy, and this is one industry, new industry, that can become a huge generator of jobs and incomes for the future[.]
>
> Also, this is a good occasion for us also to present the Philippine policy and share in the flow of foreign investments into this area. It is estimated, Mr. Chairman, that, in the next six (6) years, up to 2014, almost half a billion [...] no[,] half a trillion dollars will flow into this industry as *a clear-cut response, number 1, to the concern over*

[76] Bicameral Conference Committee Meeting, 14th Cong., 2nd Sess. (2008) dated 7 October 2008 on the disagreeing provisions of House Bill No. 4193 and Senate Bill No. 2046 re: Renewable Energy Act of 2008. The House Committee on Energy was chaired by Rep. Mikey Macapagal Arroyo and the Senate Committee on Energy was chaired by Sen. Juan Edgardo J. Angara.

> *climate change, response to people wanting clean technology, and as a response to our drive to be less dependent on fossil fuels. And we, in the Philippines, are quite fortunate because we are blessed, according to my studies, including the US Department of Energy, we are blessed with many of these sources of renewable energy whether it's wind, solar, water, geothermal, tidal and biomass.*
>
> So, to repeat, Mr. Chairman, we are meeting here for a very important and vital piece of legislation.[77]

Based on the statements from the congressional deliberations cited above, the intent to combat climate change, adopt clean energy technology, and foster less dependence on traditional fossil fuels is very clear. The thrust for environmental protection provides the overriding rationale why R.A. 9513 was passed to law.

With respect to the underlying policies of R.A. 9513, the following excerpts from the congressional deliberations indicate the common agreement among the lawmakers regarding the development of renewal energy resources, reduction of dependence on coal and other fossil fuels, and the promotion of sustainable development:

> REP. VILLAFUERTE:
>
> [B]ut in the Declaration of Policies, I think our House version is much broader and captures the essence of the policies. The Senate version, Declaration of Policies, refers merely to the reduction of [the] country's reliance on generation systems provided by imported fuels. What we are saying is *that the policy is to accelerate the exploration and development of renewable energy resources* such as, but not limited to, biomass, solar, et cetera, et cetera but inserting the Senate provision which says that *we should adopt a sustainable energy development strategy to reduce the country's dependence of fossil fuels.* If the Senate would like to add, "and thereby *lessen dependence of fossil fuels to minimize exposure of the economy to price fluctuation in the international market*", we can add that after the words "fossil fuels".
>
> * * *
>
> CHAIRPERSON E. J. ANGARA:
>
> Okay, *accepted iyan* [that is accepted].

---

[77] Bicameral Conference Committee Meeting, 14th Cong., 2nd Sess. (2008).

> REP. VILLAFUERTE:
>
> Okay. Now this letter (b) I think I also propose that the House version be adopted. Because we are not only institutionalizing its use as provided in the Senate version but *we are institutionalizing the development of national and local capabilities in the use of renewable energy. And we also added, "promoting its efficient and cost-effective commercial application by providing fiscal and non-fiscal incentives."*
>
> CHAIRPERSON E. J. ANGARA:
>
> Accepted.
>
> REP. VILLAFUERTE:
>
> Accepted? Letter (c), the Senate version does not have this provision, "*to encourage the development and utilization of renewable energy resources as tools to effectively prevent or reduce harmful emissions and thereby balance the goals of economic growth and development with the protection of health and the environment.*
>
> CHAIRPERSON E. J. ANGARA:
>
> Accepted.[78]

Aside from R.A. 9513, there are other statutes which impact on the establishment and development of a renewable energy project. Industry players in the green energy sector such as government agencies, investors, lenders, operators, contractors, distributors, suppliers, and insurers, must be aware of the Philippines' legal and regulatory framework of renewable energy for purposes of compliance and availment of incentives, both fiscal and non-fiscal.

C. Implementing Government Agencies

There are various government agencies and offices which are mandated to implement the laws and regulations on renewable energy, including the DOE, the National Renewable Energy Board (NREB), the Energy Regulatory Commission (ERC), and the Board of Investments (BOI):

---

[78] Bicameral Conference Committee Meeting, 14th Cong., 2nd Sess. (2008). (Emphasis supplied.)

1. DOE – the government agency created pursuant to Republic Act No. 7638[79] whose functions are expanded in Republic Act No. 9136[80] and further expanded in RA 9513;[81] it is the lead agency tasked with formulating the NREP, promulgating RPS[82] rules, awarding service contracts, and supervising the establishment and operation of a renewable energy registrar;

2. NREB – collegial body representing stakeholders in both government and industry; it is tasked with making recommendations on the RPS, the FiT,[83] net metering, and green energy option guidelines;

---

[79] The Department of Energy Act of 1992.

[80] The Electric Power Industry Reform Act of 2001 or the EPIRA. This law mandates the restructuring of the electric power sector as well as the privatization of the National Power Corporation (NPC).

[81] Rep. Act. No. 9513, § 4(e); IRR, § 3(f).

[82] Renewable Portfolio Standards. Under the IRR of R.A. 9513, Section 3, subparagraph (bbb) thereof, RPS refers to "a market-based policy that requires electric power industry participants, including suppliers, to source an agreed portion of their energy supply from eligible RE Resources." IRR, § 3(bbb).

[83] Feed-in Tariffs. The FiT are an essential component of the incentives granted under Philippine renewable energy law. Section 5 of the IRR of R.A. 9513 provides:

> The Feed-in Tariff system is a scheme that involves the obligation on the part of electric power industry participants to source electricity from RE generation at a guaranteed fixed price applicable for a given period of time, which shall in no case be less than twelve (12) years, to be determined by the ERC.
>
> (a) Purpose: This system shall be adopted to accelerate the development of emerging RE Resources through a fixed tariff mechanism.
>
> (b) Mandate: A FiT system shall be mandated for wind, solar, ocean, run-of-river hydropower, and biomass energy resources.
>
> (c) Guidelines Governing the FiT System:
>
> (1) Priority connections to the grid for electricity generated from emerging RE Resources such as wind, solar, ocean, run-of-river, hydropower, and biomass power plants within the territory of the Philippines;
>
> (2) The priority purchase, transmission of, and payment for such electricity by the grid system operators;
>
> (3) Determination of the fixed tariff to be paid for electricity produced from each type of emerging RE Resources and the mandated number of years for the application of such tariff, which shall in no case be less than twelve (12) years;

3. ERC – an independent quasi-judicial regulatory agency mandated with approving FiT rates and the net metering pricing methodology; and

4. BOI – an attached agency of the Department of Trade and Industry (DTI) created under Republic Act No. 5186, as amended;[84] it is responsible for administering fiscal incentives provided in RA 9513.[85]

On the matter of FiT, which the NREB and ERC are both tasked to administer, government agencies in principle have the power to shift from avoided costs to feed-in tariffs as a legal solution, such that "with careful construction of a renewable energy mandate (or binding RPS), a state can essentially create a feed-in tariff for the renewable sources that they require."[86] This approach toward implementing FiT as a mechanism to attract renewable energy developers is also being in undertaken in the Philippines.[87]

Due to the ramifications of green energy on the environment, the Department of Environment and Natural Resources (DENR) is another adjunct government office which advocates for the adoption, use, and development of renewable energy.

After a consideration of the legal and regulatory theoretical framework for renewable energy in the Philippines, the next question would involve the practical terms: how can a prospective participant involve itself in a renewable energy project? What are the concrete steps to be done?

---

(4) Application of the FiT to the emerging RE Resources to be used in compliance with the RPS. Only electricity generated from wind, solar, ocean, run-of-river hydropower, and biomass power plants covered under the RPS, shall enjoy the FiT; and

(5) Other rules and mechanisms that are deemed appropriate and necessary by the ERC, in consultation with the NREB, for the full implementation of the FiT system. IRR, § 5.

[84] Rep. Act. No. 9513, § 4(c); IRR, § 3(d).

[85] Katz, *supra* note 56, at 143.

[86] Kaylie E. Klein, *Bypassing Roadblocks to Renewable Energy: Understanding Electricity Law and the Legal Tools Available to Advance Clean Energy*, 92 OR. L. REV. 235, 256 (2013).

[87] The issues on the sufficiency, effectiveness, and commercial rationale of the FiT, as implemented in the Philippine renewable energy sector, can be discussed in another paper which is worthy of further academic discourse.

What are the requirements for setting up a renewable energy project? Who are the government agencies to deal with? These queries point toward a discussion on the legal considerations to be made in relation to renewable energy project development in the Philippines. The answers to these queries should provide a better understanding of the development of renewable energy projects in the country, particularly with respect to its legal and regulatory aspects.

V. LEGAL CONSIDERATIONS ON RENEWABLE ENERGY PROJECTS[88]

The regulatory requirements in establishing a renewable energy project can be divided into three major steps: (1) the pre-development stage, (2) the construction or development stage, and (3) the pre-operation stage. In each stage, the project company needs to deal with various government agencies which have varying regulatory requirements. Salient requirements for renewable energy project development are discussed below.

(1) Pre-development stage

In the pre-development stage, regulatory requirements include the service contract, which must be entered into with the DOE. After obtaining the service contract, a Certificate of Registration as a renewable energy developer[89] must be obtained. To avail of the incentives offered by RA 9513, an applicant must also register as a renewable energy developer with the BOI. For renewable energy projects that utilize vast tracts of lands, such as biomass and solar power, the developer should also obtain from the Department of Agrarian Reform (DAR) a Conversion Certificate of Land Use from agricultural to industrial land.

---

[88] The discussions on this chapter are primarily based on the presentation entitled "Legal Considerations for Renewable Energy Project Development in the Philippines" delivered by the author as a resource speaker in the United Kingdom Renewable Energy Systems and Solutions Business Seminar, organized by the UK Trade and Investment (UKTI), British Embassy, Manila. The presentation was delivered by the author on behalf of Quisumbing Torres/Baker & McKenzie (Manila Office) in February 2013.

[89] IRR, § 3(uu). "'Renewable Energy (Systems) Developers' or 'RE Developers' refers to individual/s or juridical [entities] created, registered and/or authorized to operate in the Philippines in accordance with existing Philippine laws and engaged in the exploration, development and utilization of RE resources and actual operation of RE systems/facilities. [They] shall include existing entities engaged in the exploration, development and/or utilization of RE resources, or the generation of electricity from RE resources, or both[.]"

(2) Construction or Development Stage

During the construction or development stage, the renewable energy project company must ensure that the contractor is licensed by the Philippine Contractors Accreditation Board (PCAB)[90] as regards the contractor who will provide construction services in building the green power plant. Special permits are also required to be obtained from the DENR for the construction of the renewable energy project, such as (1) a discharge permit, (2) a permit to install/operate air pollution source and control installations, and (3) registration for use and disposal of chemical substances and mixtures.

(3) Pre-operation Stage

After construction is completed but prior to operation, pursuant to the EPIRA law, the ERC is the lead agency tasked to regulate the electric power industry. The renewable energy project company is required at this point to obtain permits such as (1) Certificate of Compliance, (2) Approval of Power Purchase Agreement between the renewable energy project company and a distribution utility, and (3) Interconnection Agreement, among other permits.

To entice potential renewable energy developers, financiers, and investors, RA 9513 and its IRR provide for incentives and privileges aimed at promoting and encouraging the development of the industry. In brief, the mechanisms adopted under RA 9513 include FiT, RPS, renewable energy market, green energy option, priority dispatch, and exemption from universal charge. Similar to other jurisdictions, "'[s]ustainable' energy

---

[90] With respect to contractor's licensing and registration, "R.A. 4566 as amended by P.D. No. 1746 provides that no contractor (including sub-contractor and specialty contractor) shall engage in the business of contracting without first having secured a PCAB license to conduct business. It is an offense to engage in contracting business without a license first being obtained. All architects and engineers preparing plans and specifications for work to be contracted in the Philippines shall stipulate in their invitation to bidders, whether a resident of the Philippines or not, and in their specifications that it will be necessary for any bidder, whether contractor, sub-contractor or specialty contractor, to have a license before his bid is considered. The purpose of the Contractors License Law (R.A. 4566) is to ensure, for the safety of the public, that only qualified and reliable contractors are allowed to undertake construction in the country. The law also aims to promote for the benefit of the public and private sectors and for the national interest, the orderly growth of the contracting sector and the upgrading of construction capability." Construction Industry Authority of the Philippines, *Contractor's Licensing and Registration,* CONSTRUCTION INDUSTRY AUTHORITY OF THE PHILIPPINES WEBSITE, *at* http://www.ciap.dti.gov.ph/content/contractors-licensing-and-registration (last visited Mar. 30, 2015).

resources, in the form of renewable energy, are promoted by a variety of regulatory and tax incentives. There are direct tax incentive and stimulus funding for sustainable renewable energy investments by corporations."[91]

In addition to these mechanisms, RA 9513 grants specific fiscal incentives and privileges for renewable energy development, including:

1. *Income Tax Holiday* (ITH) for the first seven (7) years of commercial operations or a reduced corporate tax rate at 10% after the ITH period; additional investments in the green energy project, under certain conditions, may also be entitled to additional income tax exemption;[92]

2. *Duty-free importation* of renewable machinery, equipment, and materials including control and communication equipment used;[93]

3. *Special realty tax rates* not exceeding 1.5% of their original cost less accumulated normal depreciation or net book value on civil works, equipment, machinery and other improvements actually and exclusively used for clean energy facilities;[94]

4. *Net Operating Loss Carry-over* (NOLCO) during the first three (3) years of commercial operations not previously deducted from gross income may be carried over as a deduction;[95]

5. *Corporate tax rate* of ten percent (10%) on their net taxable income after availment of the ITH, given that all registered renewable energy developers should pass on the savings to the end users in the form of lower power rates;[96]

6. *Accelerated depreciation* of plant, machinery, and equipment may be applied if the renewable energy project fails to receive an ITH before full operation;[97]

---

[91] Ferrey, *supra* note 23, at 394.
[92] IRR, § 13(A).
[93] IRR, § 13(B).
[94] IRR, § 13(C).
[95] IRR, § 13(D).
[96] IRR, § 13(E).
[97] IRR, § 13(F).

7. *Zero per cent (0%) VAT*[98] *rate* on (a) the sale of fuel or power generated from renewables, and (ii) purchases of local supply of goods, properties and services needed by renewable energy developers, and (iii) the exploration and development of renewables up to its conversion into power;[99]

8. *Tax exemption on carbon credits*, such that proceeds from the sale of carbon emission credits are exempt from all taxes;[100] and

9. *Cash incentive* of renewable energy developers for missionary electrification.[101]

In view of the above incentives, the project company may factor in the following considerations in their policy and decision-making:

First, a decision as to the structuring of the project company must be made. Below are the key considerations when structuring the renewable energy project company:

1. As to the choice of *corporate vehicle*: it can either be an individual or entity, a corporation or a partnership;

2. As to *public offering requirement*: as a general rule, the project company is required to sell to the public at least 15% of their common shares of stock;

3. As to *ownership*: there are ownership restrictions under the EPIRA, which provides that the project company cannot own, operate, or control more than 30% of the installed generating capacity of a grid, or 25% of the national installed generating capacity; and

---

[98] Value-added tax, as defined under the Philippine National Internal Revenue Code (NIRC) of 1997 (*i.e.*, the Philippine Tax Code), as amended by Republic Act No. 9337.

[99] IRR, § 13(G).

[100] IRR, § 13(H).

[101] "'Missionary electrification' refers to the provision of basic electricity service in unviable areas with the aim of bringing the operations in these areas to viability levels[.]" Rep. Act. No. 9513, § 4(cc); IRR, § 3(ff).

4. As to *foreign equity*: there are also foreign equity restrictions, such that the project company must be Filipino-owned, or if a corporation, must be a have at least 60% of its capitalization owned and controlled by Filipinos. Note further that the Philippine Anti-Dummy Law[102] imposes a maximum foreign equity ownership of 40%.

Second, on the issue of land to be used for the project, it can be safely assumed that a renewable energy project definitely needs land. Land is accessible through a sale, lease, or land use agreements with the government. In the Philippines, land classification can be either public or private. Land can also be registered or unregistered, agricultural (*i.e.*, alienable) or industrial, commercial, or residential. Under the Comprehensive Agrarian Reform Law (CARL),[103] if the project company will utilize lands which are agricultural, it must apply with the DAR for the conversion of the land into industrial land. With respect to Indigenous Peoples laws, the company must verify if the land is part of an ancestral domain by obtaining the relevant certificate from the National Commission on indigenous Peoples (NCIP).

Third, with regard to the Philippine government's share as well as the benefits to host communities, under RA 9513, the government's share from new clean energy development projects shall be equal to 1% of the gross income of the project company. From the government's share, generally 60% will accrue to the national government, and 40% to the local government. There are also benefits to the LGUs under the EPIRA, such as sharing in gross sales and tax proceeds.

Fourth, with respect to labor considerations, Philippine laws provide for certain statutory rights and mandatory benefits that cannot, as a rule, be reduced by contract such as minimum wage, overtime pay, and non-

---

[102] Commonwealth Act No. 108, as amended. Under Section 1 of the said law, in cases where any constitutional or legal provisions requires Philippine citizenship as a requisite for the exercise or enjoyment of a right, franchise, or privilege, anyone who allows his name or citizenship to be used for the purpose of evading such nationalization provisions will be penalized. Such penalty may also be imposed on any alien or foreigner who profits from these acts. Please note that the Philippine Constitution restricts certain industries such as public utilities, the exploitation of natural resources, and the practice of professions exclusively to Filipinos or Filipino-owned corporations. This is in part due to the belief that as Filipinos, "we look upon our natural resources as our exclusive heritage and we are called upon to preserve them for ourselves and our posterity." NARCISO PEÑA, PHILIPPINE LAW ON NATURAL RESOURCES 3 (1997).

[103] Rep. Act No. 6657, as amended. The CARL implements the Comprehensive Agrarian Reform Program (CARP), which seeks to equitably distribute lands to farmers within a specific period of time.

diminution of employment benefits. As to contracting, there are regulations which impose requirements that mitigate the risk of claims that an employer-employee relationship exists between the employees of the contractor or service provider and the project company.

Finally, as regards environmental standards, the project company must be aware of the country's environmental laws, the Environmental Compliance Certificate (ECC)[104] requirement, the Clean Water Act of 2004,[105] the Pollution Control Law,[106] the Clean Air Act,[107] and the Toxic Substances and Hazardous and Nuclear Wastes Control Act of 1990,[108] among other laws and regulations touching on the environment. A renewable energy project will also most probably entail technology transfer governed by a technology transfer arrangement (TTA). A TTA "refers to a contract or an agreement involving the transfer of systematic knowledge for the manufacture of a product, the application of a process, or the rendering of a service, including management contracts," as well as "the transfer, assignment, or licensing of intellectual property rights."[109]

The foregoing legal considerations should be accounted for in order to participate in developing renewable energy project. A potential industry player will have to comply with the regulatory requirements for establishing and operating a green energy project. Any difficulty in complying with such requirements should be offset against the various incentives and privileges offered by RA 9513. In the end, the actual operation of the green energy plant should lead to maximizing the renewable power potential of the

---

[104] The application for an ECC is granted or denied depending on the results of the review of the Environmental Impact Statements (EIS) which are required under Presidential Decree Nos. 1151 and 1586. An EIS is generally defined as "a process which consists of identifying and predicting the impact of proposed projects and programmes on the biophysical environment and on man's health and well-being and interpreting and communicating information about such impacts in a manner which can be utilized by planners and decision-makers. The importance of this tool is that it measures resource allocation and utilization in terms of costs associated with environmental conservation." ASEAN Law Association. *Legal Systems in ASEAN – Philippines Chapter 11: Environmental Law, at* http://www.aseanlawassociation.org/ papers/phil_chp11.pdf (last visited Mar. 30,2015). For a full discussion on EIS and ECC, *see also* GALAHAD R.A. PE BENITO, ECC BASICS: REASON, PURPOSE AND PROCESSES OF THE ENVIRONMENTAL IMPACT STATEMENT SYSTEM (2008).

[105] Rep. Act No. 9275 (2004).

[106] Pres. Dec. No. 984 (1976).

[107] Rep. Act No. 8749 (1999).

[108] Rep. Act No. 6969 (1990).

[109] Rep. Act No. 8293 (1997), § 4.2. The Intellectual Property Code of the Philippines.

country and, ultimately, realizing the noble objectives and policies of advancing the interest of the environment and energy security.

VI. CHALLENGES AND OPPORTUNITIES

It is widely accepted that the green energy alternative is currently the emerging trend in the Philippines, as is the case globally. As discussed, the development of the renewable energy sector is incentivized by various Philippine statutes and regulations and carried out by collaborating government agencies. Despite government efforts for its promotion, the development of green energy nonetheless faces certain hurdles which are both legal and extra-legal in nature. These obstacles must be overcome in order for the Philippine government to achieve its goals of environmental protection and energy security as promised by the prospects of green energy. Again, the law plays an important role in overcoming obstacles in the way of renewable energy development.[110]

Based on industry experience and observations on Philippine renewable energy project development, certain challenges and market barriers must be taken into account by industry players and stakeholders, to wit:

1. High upfront cost and technologies, considering that green energy technology is relatively novel;

2. Non-competitiveness among market players, which may lead to high costs of investment and participation;

3. Non-viable markets due to risks inherent in volatile and immature markets;

4. Inaccessible financial packages partly because of the lack of clear mechanisms implementing fiscal incentives under the law; and

5. Social acceptability on the part of certain sectors that may be cynical to new and atypical energy sources.

---

[110] David R. Hodas, *The Role of Law in Defining Sustainable Development: NEPA Reconsidered,* 3 WIDENER L. SYMP. J. 1, 24-25 (1998).

In addition, there are other concerns and issues inherent in green energy regulation for which present Philippine laws, rules, and administrative implementation must provide further clarification and guidance, such as:

1. Implementation of FiT rules;

2. Setting of RPS; and

3. Formulation of guidelines on other renewable energy policy mechanisms, such as net metering, green energy option, etc.

In her considered opinion, Katz noted certain policy challenges to renewable energy development and the implementation of clean energy policies in the Philippines, such as problematic power rates, a culture of politics and litigiousness, and the lack of technical capability.[111] On the other hand, Curnow, Tait, and Millar note that "renewable energy projects also face certain sector-specific barriers that can increase the difficulty for project proponents to secure financing and proceed to implementation."[112] These barriers specific to the renewable energy sector are, as follows:

1. *Cost-Competitiveness* – while renewable energy technologies may be more cost-effective than conventional energy technologies "on a life-cycle basis" (given the environmental as well as economic costs), renewable energy technologies cannot be considered yet to have achieved sufficient "commercial maturity, cost reductions and economies of scale of conventional energy technologies."[113]

2. *Project and Technology Performance Risks* – "high project performance and technology risks attached to novel technologies" may hamper the development of clean energy projects. New and unfamiliar technologies are still subject to actual and sustained operations, where there may be discovered "unidentified flaws or weaknesses that create a risk of pervasively defective technology, with the potential to impact a project in its entirety."[114]

---

[111] Katz, *supra* note 56, at 143.

[112] Paul Curnow, Lachlan Tait & Ilona Millar, *Financing Renewable Energy Projects in Asia: Barriers and Solutions*, 1 RENEWABLE ENERGY L. & POL'Y REV. 101, 103 (2010).

[113] *Id.* at 103. (Citations omitted.)

[114] *Id.* at 104.

3. *Lack of Financier Familiarity with Technology* – because of the novelty of these technologies, financiers are still "unfamiliar with [them] and have yet to build a full understanding of the benefits and risks presented by projects employing such technologies." At this point, renewable energy projects that are being financed are still in the early stages of commercial operation, which "have yet to demonstrate their ability to manage any relevant risks and perform in the longer term."[115]

4. *Energy Supply Risks* – since certain green energy fuels are intermittent, renewable energy technologies may not be able to provide a "consistent, predictable supply of energy."[116]

Therefore, given the above challenges and risks inherent in a power project, specifically a renewable energy project, the participants in the project must undertake a workable method of risk allocation that will "reflect the particular needs and situations of the parties."[117] It is imperative for market players (such as investors, developers, financiers, suppliers, etc.) to consider these risks and accordingly come up with a working plan to manage and mitigate such risks. The government, for its part, should be able to assist in ensuring that the risk allocation among industry stakeholders are fair, valid, and legal. Further, the information based on the requirements and approvals obtained from renewable energy project applicants can be used to address those risks by making informed decisions in shaping regulatory policy and implementation.

A. Developed vs. Developing Economies

In the search for a solution to overcoming the challenges posed against the renewable energy sector, one particular dilemma which developing countries, like the Philippines, normally encounter is finding the delicate balance between economic development and environmental protection. Some take the view that there is a tendency among developing countries to choose economic development at the expense of the natural environment, possibly due to the "demand of domestic consumption, excessive military expenditure, politically motivated production quotas, competitive production for temporary international political gains, or export

---

[115] Curnow et al., *supra* note 112, at 104.

[116] *Id.*

[117] PAUL B. ABRAMSON, PROJECT POWER DOCUMENTATION 1 (1999).

goals to maximise hard currency earnings for various economic needs."[118] Oftentimes, developing countries give in to the urge of adopting typical coal-fired power plants for their energy needs and in order to boost their industries and economies. Along the way, the negative outcome on the environment and ecology is ignored.

Energy consumption and economic growth are closely intertwined, regardless of whether the country in question is from the north or the south from the point of view of economics; "[e]nergy developments influence, and are influenced by, general economic developments."[119] This is because efficiency in the energy sector results in economic benefits: "by reducing electricity use and costs, improving productivity of end-use machines, lowering facility maintenance costs and by reinvesting energy savings in other financially beneficial projects. For these reasons, energy efficiency can be particularly important to assist developing countries grow and manage their scarce resources."[120]

Bruce further notes the growing interdependence between energy and the economy:

> Directly related to economic growth is energy security. As the global demand for energy increases, countries will be under increasing pressure to secure a consistent and affordable supply of energy. It is forecasted that by 2030, some 4,800 gigawatts of global power generation will be added, 44 per cent of which will be generated by burning coal -- the highest emitter of GHGs. Yet it is feasible that increased energy efficiency for cars, appliances, buildings and manufacturing could halve energy demand by 2020, particularly in developing countries. By 2020 energy efficiency measures could also reduce end-use consumption by 22 per cent, saving US$1 [trillion] in investments that would otherwise be required to expand energy supply capacity.[121]

As stated, the environmental problems ought to be addressed by the promise of renewable energy transcend national borders. The Philippines, being a developing country, is not the only country that needs to develop its green energy sources, and thus, not the only country that stands to benefit from its positive consequences. "As all states seek to move toward a higher

---

[118] A.F.M. Maniruzzaman, *Environment and Sustainable Energy Development in the Asia-Pacific Region,* 2 INT. ENERGY L. & TAX. REV. 37, 37 (2003). (Citation omitted.)

[119] ASIAN DEVELOPMENT BANK (ADB), ENERGY POLICY EXPERIENCE OF ASIAN COUNTRIES 31 (1987).

[120] Bruce, *supra* note 2, at 320. (Citations omitted.)

[121] *Id.* at 321. (Citations omitted.)

level of protection of the local and global environment, international institutions can seek to redress the great disparities in the capacity of nations at different levels of economic development to share in this effort."[122] Thus, whether a country is an industrialized country or a developing economy, the effort toward realizing the benefits of renewable energy must be shared and collective.

Traditionally, the locus of energy sources rests on developed economies, particularly due to the industrial and commercial factors that drive and sustain their economies. Hence, as an expected aftermath, such developed economies (like the United States, China, and the European Union) also contribute mostly to the continuing degradation of the natural environment and the depletion of natural resources globally. In 1992, the United Nations Framework Convention on Climate Change recognized that global climate change is induced by human behavior, and primary responsibility is attributed to developed countries.[123]

With the emergence of renewable energy, however, the sources of power are decentralized from developed to developing nations. Considering the forecasted increase in demand in developing countries, such as the Philippines, decentralization of energy will continue to influence the dynamics between the environmental agenda of developed nations and the push for economic growth by developing nations. Ferrey writes that "[h]ow states encourage or discourage the creation of decentralized dispersed energy sources through various regulatory, subsidy, and metering initiatives, will sculpt the electric energy future."[124]

Then again, even though energy sources become decentralized under a renewable energy regime, global environmental and energy security issues continue to be the concern of both developed and developing nations. In other words, their interests continue to intersect, especially since the effects of environmental degradation (*i.e.*, global warming and climate change) are not country-selective, and developed nations are expected to pursue their humanitarian advocacy for energy security even outside their national borders.

---

[122] JACOB WERKSMAN, GREENING INTERNATIONAL INSTITUTIONS xiii (1996).

[123] Nicholas J. Cicale, *The Clean Development Mechanism: Renewable Energy Infrastructure for China and an Empty Promise for Africa*, 26 CONN. J. INT'L L. 253, 254 (2010). (Citations omitted.)

[124] Steven Ferrey, *Nothing But Net: Renewable Energy and the Environment, Midamerican Legal Fictions, and Supremacy Doctrine*, 14 DUKE ENVTL L. & POL'Y F. 1, 6 (2003). (Citation omitted.)

> The futures of developed and developing countries are inseparable. Developed countries have tended to be primarily interested in global environmental problems, recognizing that their high level of economic development is responsible for most of these stresses. Developing countries have tended to be primarily interested in development because they see it as a way of escaping poverty.[125]

B. Sustainable Development

To resolve the north-south conundrum, the meeting point for both developed and developing countries may be found in the notion of sustainable development. "Sustainable development is intended to provide a third choice—for both developed and developing countries—that blends environmental protection and equity. [...] [S]ustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs."[126] Notably, the features of sustainable development are akin to the concept of "intergenerational responsibility" which the Supreme Court recognized in the Philippine landmark environmental case of *Oposa*. In other words, the idea of sustainable development is welcome to the Philippine setting.

O'Neill discusses the growing significance of sustainable development as a subtheme of environmental protection:

> In both developing and industrialized nations, any strategy designed to address global environmental problems must at the same time confront the issues of poverty and economic development, which often seem to make environmental protection a luxury that most nations cannot afford. Until recently, these tandem concerns have been compartmentalized and considered separately by agencies and institutions charged with one mission or the other. There is an emerging consensus that recognition of the global nature of environmental problems necessarily entails recognition of the global nature of the problems of poverty and development. While this theoretical consensus is important, international policy has yet to reflect the interrelation between environment and development. The challenge for international cooperative efforts is to put this recognition into practice.

---

[125] John C. Dernbach, *Sustainable Development as a Framework for National Governance*, 49 CASE W. RES. L. REV. 1, 20 (1998).

[126] *Id.*

> The rallying cry of "sustainability" is a shorthand description of the need to integrate considerations of environmental quality and economic development.... It is clear that countries of the Third World must be free to pursue development and improve prospects for economic health and self-determination. In order to reduce poverty and unemployment, and to eliminate the large international debt burden under which many developing countries now operate, new productive arrangements are indispensable. Equally clear, however, is the need for growth to be undertaken in an ecologically prudent manner, that is, in a manner appreciative of the fact that neither economic nor environmental health can be realized in isolation.[127]

The value of sustainable development cannot be overemphasized. In this day and age where environmental issues are serious and urgent and the incentives for economic stability and advancement comprise the regular thrust of Third World economies, sustainable development seems to provide an answer to such competing but reconcilable interests. It is in pursuing sustainable development where renewable or green energy finds its place as an efficient and sustainable alternative: developing countries can pursue their economic agenda of growth, stability, and resiliency, while at the same time, conform to environmental precepts and comply with standards which are at least at par with those of developed countries that in recent years have shifted their focus to preserving the environment.

Developing countries can pattern their energy framework based on those used by developed countries in their own energy systems, provided that such systems are actually geared toward environmental and ecological sustainability. Such approach can be achieved by following a two-pronged strategy:

> [D]eveloping countries can accomplish the change in energy production and consumption patterns toward a more sustainable one by following a two-part strategy: (1) "emphasizing the use of more energy-efficient technologies in everything from industrial processes to consumer products" and (2) by "meeting the remaining need for new energy supplies by developing far less costly and ecologically destructive resources than those they have pursued to date." This strategy can enable developing countries to make maximum use of the advanced technologies being commercialized in developed countries and thus avoid investing in

---

[127] Catherine A. O'Neill, *Economics and the Environment: Trading Debt and Technology for Nature*, 17 COLUM. J. ENVTL L. 93, 95-96 (1992). (Citations omitted.)

> energy-related infrastructure that is increasingly becoming technologically, economically and environmentally obsolete.[128]

In the long run, however, both developed and developing countries must cooperate toward reaching an agreeable neutral ground under the banner of sustainable development, especially with respect to developed or industrialized countries whose assistance for green energy projects will go a long way toward achieving sustainable development of developing countries. Thus, "if it is to be sustainable development, especially at a time when it is clear that climate change is having and will continue to have major impacts in the not so distant future, developed countries will need to provide them with technical and financial assistance."[129]

For sustainable development to be fully achieved, investors in renewable energy projects must be sufficiently incentivized such that they can rationally participate (considering their risk behaviors and appetites relevant to new clean energy projects) in the development of the green energy sector. In this way, business and other commercial stakeholders can take an active part in the promotion of environmental protection and ecological preservation. An "[e]nhanced understanding of the connections between environmental and financial risk is likely to be one of the most salient consequences of regulatory moves to stimulate greater environmental awareness within the financial services sector."[130] However, as noted, such investors must be presented attractive incentives proving that green energy is the way to go—both from an environmental and financial perspective, which prove to be not mutually exclusive. Hence, "it is important that environmental and ethical concerns be translated and presented in a style relevant to prevailing financial institutional analysis."[131]

The incentives to prospective financiers of renewable energy projects must be clear-cut as to what rewards they will get by placing their investment on novel renewable energy technology and resources. At this point, this question is still being debated. "Currently, the world is facing an idea crunch on the right kind of policy levers to enhance green technology

---

[128] Vicente Paolo B. Yu, *Power of the Future: The Nexus Between International Trade Rules and Sustainable Energy Alternatives for the South, in* WORLD BULLETIN: SPECIAL ISSUE ON ENVIRONMENT AND DEVELOPMENT 81 (1997), *citing* NICHOLAS LENSSEN, EMPOWERING DEVELOPMENT: THE NEW ENERGY EQUATION, WORLDWATCH PAPER 111 (1992).

[129] Anita M. Halvorssen, *International Law and Sustainable Development – Tools for Addressing Climate Change,* 39 DENV. J. INT'L L. & POL'Y 397, 420-21 (2011).

[130] Benjamin J. Richardson, *Enlisting Institutional Investors in Environmental Regulation: Some Comparative and Theoretical Perspectives*, 28 N.C. J. INT'L L. & COM. REG. 247, 257 (2002).

[131] *Id.*

investment."[132] Hence, it remains a challenge for regulators to find the right approach in providing a clear outlook on how incentives will be used to promote green energy project development.

In the Philippine experience, the incentives and privileges provided under RA 9513 are indeed commendable. The challenge then is in the implementation on how the incentives will be allocated and granted such that the real contributors to green energy development are incentivized. For this purpose, it is suggested that regulators may find it useful to issue administrative issuances clarifying how fiscal and non-fiscal incentives may be availed of (*e.g.*, for the FiT mechanism). Further, the government (in particular, the DOE and NREB) should give regular interpretive policy guidelines addressed to renewable energy industry stakeholders as to how the NREP will be concretely executed, so that they can plan and strategize ahead in the course of the development of the renewable energy sector. With this approach, the aims of sustainable development brought about by developing renewable energy projects can be approximated.

C. Green Financing

In addition to the ramifications of renewable energy as a form of environmentally sound development from the perspective of the business sector, the financing aspect—known as "green financing"—of renewable energy project investment should also be considered.

Zhang explains the nature of project finance, particularly in the field of energy:

> Project finance is a complex venture. In a typical power project, the participants include project sponsors (usually foreign and/or domestic equity investors), project company (a single purpose company, partnership or other entity created by the project sponsors to develop, own and operate the project), project lender, purchasing utilities, construction contractor, operation contractor, and fuel supplier. Project finance is a technique of non-recourse financing that is 'not primarily dependent on the credit support of the [project] sponsors or the value of the physical assets involved,' but rather depends upon the expected 'performance of the project itself.' 'The credit appraisal of the project lender is therefore based on the underlying cash flow from the revenue-producing contracts of the project,' independent of the project sponsor's credit in a

---

[132] Gideon Parchomovsky & Endre Stavang, *The Green Option*, 99 MINN. L. REV. 967, 968 (2015). (Citations omitted.)

> traditional sense. If the cash flows prove inadequate to service debt, 'the project sponsor has no direct legal obligation to repay the project debt or make interest payments.'[133]

As a general rule, project finance is widely considered the "primary vehicle for financing cross-border investments throughout the world."[134] Even though there may be an issue with the proper valuation of environmental and ecological benefits in monetary terms, given that its effects are inherently intangible,[135] funding environmentally-orientated projects should still proceed provided that prospective financiers and investors can arrive at rational decisions. Such decisions are based on sound estimates while, at the same time, considering environmental elements in the financing equation.

While project financing techniques can be utilized to finance various project developments, it is commonly used to fund power generation facilities because project financing is more appropriate in the energy industry in which revenues are definite and relatively easy to secure. Specifically, as far as green energy is concerned, the relevant community in renewable energy development has evolved between domestic channels (*i.e.*, growth of the renewable energy industry is made possible through independent power producers, as funded by project financing) and international channels (*i.e.*, growth of the renewable energy industry is due to turn-key sales to governments and public utilities).[136]

For example, in the European Union, where the promotion of green energy is also a policy that many of its member-states actively espouse, traditional modes of financing can be used in several ways to invest in

---

[133] Nan Zhang, *Moving Towards a Competitive Electricity Market? The Dilemma of Project Finance in the Wake of the Asian Financial Crisis*, 9 MINN. J. GLOBAL TRADE 715, 717 (2000). (Citations omitted.)

[134] Philippe Benoit, *Project Finance at the World Bank: An Overview of Policies and Instruments*, World Bank Technical Paper No. 312 (1996), at n. 7.

[135] *See* DONNA A. CRAIG, NICHOLAS A. ROBINSON & KOH KHENG-LIAN, CAPACITY BUILDING FOR ENVIRONMENTAL LAW IN THE ASIAN AND PACIFIC REGION 864 (2002). Consider the following scenario illustrating a seeming obstacle to funding environmental projects: "Determining the value to be placed on environmental goods and services is complex and multifaceted. For example, the value of a single forest will be determined by a wide range of factors: its size, composition, location, how people use it and how it relates to economic activity. Beyond that, the ecosystem comprising the forest is itself of value only if it remains intact. In many respects, environmental values can only be understood as actions/equations."

[136] *Id.*

renewable energy infrastructure. The categories of European Union funding are described as follows:

> (1) *Traditional grants and subsidies* – include grants for studies and works, interest rate rebates, guarantee premium subsidies, etc.; this type of funding involves direct support uses funds to cover investment costs;
>
> (2) *Equity/risk capital participation instruments* – through participations in the risk capital of investment funds combined with investments by the private sector; this type of funding helps achieve requirements for minimum capital, mobilization of venture capital, and add levels of comfort to providers of debt; and
>
> (3) *Debt instruments* – include loans, guarantees, and risk sharing to support debt issued by intermediaries; they also include subordinated loans and guarantees in support of senior class debt.[137]

One particular case in point is that of bioenergy projects, where sourcing equity and green financing as well as the reduction of high transaction costs for project finance remain a setback. In spite of the challenges to traditional financing, alternate sources of green financing must nonetheless be tapped. These alternate sources include the following: (1) "government-established public sector lending agencies" to provide financing to private developers; (2) "donor-funded infrastructure companies" to provide development capital; (3) country banks (*e.g.*, the Japan Bank of International Co-operation (JBIC) or the Export-Import Bank of Korea (Korea Eximbank)) to provide investing companies from their home countries; and (4) private funds and companies for clean energy.[138]

In the Philippine experience, one example of alternative green financing is the biomass power plant in Aklan, Philippines. The US$30 million investment required to set up the project was obtained through the Climate Technology Initiative's Private Financing Advisory Network, a public-private partnership (PPP) that facilitates green financing. Here, the principal proponent of the project was able to source the necessary green financing from the Development Bank of the Philippines (DBP) and other

---

[137] Lothar Van Driessche, *A New Legal Framework for EU Energy Infrastructure Development and Finance*, 4 RENEWABLE ENERGY L. & POL'Y REV. 63, 64 (2013).

[138] Andrew Chew, *Development of Bioenergy Projects in Asia – Feedstock Supply and Project Delivery Issues*, 2 RENEWABLE ENERGY L. & POL'Y REV. 233, 235 (2011). (Citations omitted.)

private banks.[139] It is proven that alternate sources of green financing can work especially in the Philippines, considering its track record in the case of the Aklan biomass project.

Another alternative that can be availed of by the Philippine government (or other developing economies interested in green financing for that matter) is the Global Environment Facility or GEF. Essentially, GEF is "a funding mechanism that provides funds for environmental projects in developing nations. The goal of this funding mechanism is to reap global environmental benefits while providing a catalyst for economic development in third world countries."[140]

The GEF may fill in the gaps when the traditional sources of green financing may not be available or for some other reason are inadequate to finance clean energy projects. The point to be made should be driven home: the lack of funding for green energy projects is not an excuse to develop a country's renewable energy sector. Political will and collaboration with industry players and stakeholders, however, are clearly indispensable for purposes of developing the green energy sector. In the Philippines, specifically, green financing has already been done through alternate sources. It goes without saying that the development of the renewable energy sector can actually be financed by tapping the proper parties and exhausting the available avenues (whether local or international) where the funds can be obtained. So long as it is crystal-clear with potential financiers of green energy that such energy systems are the way to go, both from an economic and an ecological perspective, then resistance to provision of fiscal resources can be mitigated.

Considering the advantages of green financing and its ostensible appeal to environmental protection, there is a noticeable trend toward investments in green energy projects. Thomas observes:

> Indeed, some financiers now seek to invest in, and loan to, companies skilled in addressing environmental issues, a strategy that looks increasingly shrewd in light of recent reports establishing a correlation between environmental excellence and profitability. A small number of financiers have even begun to pursue best practices in environmental management, to exact similar commitments from suppliers and sub-contractors with whom they

---

[139] Chew, *supra* note 138, at 236. (Citations omitted.)

[140] Adam M. Walcoff, *The Restructured Global Environment Facility: A Practical Evaluation for Unleashing the Lending Power of GEF*, 3 WIDENER L. SYMP. J. 485 (1998). (Citations omitted.)

> have relations, and to develop products and services designed to promote environmental protection.[141]

Related to the project financing of green energy projects is the concept of microfinancing. Microfinance stands as another alternative source of funding for environmentally sound development, which can function as a stop-gap measure to complement and fully finance the various activities in renewable energy project development—that is, from exploration and construction/development, to operation and maintenance. Although project financing continues to be the main source of renewable energy projects, microfinancing may provide further funding for green energy projects should expected costs exceed budget or additional expenditures crop up along the way.

In particular, microfinance can prove helpful to developing countries that need as much financial support as they can to romp up their economic progress. According to Mohiuddin, microfinance as "a system of providing small loans at favorable interest rates" is "[a]n effective way for the governments of developing countries to reduce these initial costs, as well as offset the costs of renewable energy distribution."[142] In a way, microfinance works in two ways as far as green energy technologies are concerned: it can "facilitate both the 'push' and the 'pull' of renewable energy technologies in developing country markets. It can enable a push mechanism by financing installation costs of renewable energy technologies, as well as generate a pull mechanism by financing energy distribution to consumers and industry."[143]

In the case of the Philippines, microfinancing can be a viable option considering that there is a vast pool of unbanked and underbanked sectors of the community. At present, the field of microfinancing in the Philippines shows great promise because of its potential for high profitability. "They function as a bank for the unbanked—serving segments of the population that are largely unserved or under-served by traditional financial institutions, but a responsible microfinance company can be both profitable and socially relevant."[144] With microfinancing, challenges to green financing can be

---

[141] William L. Thomas, *The Green Nexus: Financiers and Sustainable Development,* 13 GEO. INT'L ENVTL L. REV. 899, 902 (2001). (Citations omitted.)

[142] Shamarukh Mohiuddin, *Expanding the Role of Microfinance in Promoting Renewable Energy Access in Developing Countries,* 11 GEO. PUB. POL'Y REV. 119, 121 (2006).

[143] *Id.*

[144] Ray Butch Gamboa, *Business Leisure: What's social entrepreneurship?*, PHIL. STAR, Dec. 6, 2014, *available at* http://www.philstar.com/business/2014/12/06/1399475/whats-social-entrepreneurship.

resolved provided that the proper mechanisms for microfinancing are carried out, such as reaching specific sectors of the community and giving them adequate incentives that will convince them to release their funds to finance green energy projects.

D. Corporate Involvement

As noted above, in order for the renewable energy sector to develop, all stakeholders in the industry must participate and involve themselves in providing the necessary inputs for initiation and continued development of clean energy. Aside from provision of financial support, businesses and corporates themselves occupy a distinct role in making environment and energy initiatives work after the regulatory framework has been laid down for compliance. Investors, as discussed above, look for incentives. If they are granted the incentives that will make them take the route of renewable energy development, then they can be expected to involve themselves with whatever obligations and requirements the development of the renewable energy sector may necessitate.

In Germany, for example, the concept of socially responsible investment (SRI) is acknowledged as a green option for corporations. SRI can be triggered by environmental laws, which drive businesses and other industry players to choose to invest in green technologies and to take reasonable risks for renewable energy resource exploration and development.

> Environmental legislation can stimulate SRI, for instance by making companies that engage in environmentally harmful developments less profitable for their investors. Conversely, environmental law can financially reward green firms. Germany's renewable energy legislation guarantees high fixed prices to suppliers of electricity from clean, renewable sources; thereby, the legislation has made investments in wind energy so attractive that they have reputedly become one of the largest beneficiaries of the German SRI market.[145]

The foregoing example of Germany can be used as a model to guide Philippine legislation to the effect that businesses opting for SRIs are accordingly rewarded. This is because the Philippines is like-minded when it comes to the environment: it is interested in conserving its natural environment not only for the current generation but also for future ones. As

---

[145] Friederike Johanna Preu & Benjamin J. Richardson, *German Socially Responsible Investment: Barriers and Opportunities*, 12 GERMAN L.J. 865, 883-84 (2011). (Citations omitted.)

such, the ultimate goal of countries which offer SRIs to businesses is inevitably sustainable development, may it be for developing countries or even industrialized ones in their pursuit of continued or maintained economic progress. "Therefore, the ultimate goal of SRI, as a potential new arm of environmental law, must be to achieve sustainability."[146]

Although there are specific hurdles to the development of the Philippine renewable energy sector, finding the right approaches, solutions, and opportunities lies within the legal and regulatory ambit of the government as well as its implementation and execution of its green energy policy objectives. Thus, with suitable environmental legislation and energy regulation supported by both developed and developing countries, coupled with the financial support and coordination with other key industry players such as corporates and businesses and even microfinance participants, the full development of the Philippine renewable energy industry can soon be realized. All in all, this can be another step on the road toward unlocking the Philippines' potential in renewable energy and, ultimately, the aspired protection of its natural environment and the promotion of its energy security.

VII. CONCLUSION: PROSPECTS FOR RENEWABLE ENERGY IN THE PHILIPPINES

In this Article, the environmental and energy situation in the Philippines was evaluated, and it was shown that urgent and coordinated action is required. The promise of renewable energy, as "the green solution," appears to be the answer to environmental and energy crises currently besetting the country. In response, the features of Philippine laws and regulations (primarily RA 9513) were set out, including the incentives offered for renewable energy project development. Through legal and regulatory requirements, the Philippine government is able to drive its thrust to promote renewable energy. For industry stakeholders, the relevant legal considerations were discussed and examined in order to provide a clear picture of how a green energy project is developed from the lens of Philippine legal and regulatory framework.

Then the challenges to renewable energy project development were tackled, including issues on the north-south divide when it comes to environmental protection vis-à-vis economic progress, sustainable

---

[146] Benjamin J. Richardson, *Putting Ethics into Environmental Law: Fiduciary Duties for Ethical Investment,* 46 OSGOODE HALL L.J. 243, 245 (2008).

development, financing of clean energy, and participation by corporate and businesses. Specifically, the delicate balance between sustainable development and the protection of the environment is evaluated to bring the challenge to both the state and industry players. Regardless of these apparent hindrances, there appears to be opportunities and solutions to these problems, whereby in the Philippine case, such opportunities can be taken provided the right regulatory approach and the appropriate government actions are taken.

Finally, this Article brings to the fore its main objective: to shed further light on the renewable energy potential of the Philippines and pave the way for its full actualization and enjoyment by way of protecting the environment and advancing energy security. At the end of the day, the prospects of renewable energy in the Philippines seem to be bright.

In his speech at the launch of the National Renewable Energy Program last June 2011, President Benigno Aquino III reiterated his government's pursuit of harnessing the country's green energy potential while ensuring that the people's energy needs are met. Although the path toward an increased renewable energy-based capacity may be strewn with burdensome hurdles, our government, along with the investors and developers, multi-lateral agencies, and other industry players, charge on to seek ways and means toward affordable and clean power for the Philippines.[147]

Despite the myriad challenges and issues in renewable energy development, the Philippine government remains steadfast in adopting and promoting green energy, not only for the present but also for the future. Considering the encouraging effects of renewable energy on the environment and energy, the trend toward harnessing green energy sources and developing the renewable energy sector will definitely continue in the future.

As aptly said by no less than the Philippine President, the prospect of actualizing the Philippine renewable energy sector can be best summed up in his statement: "Renewable energy will fuel our future."[148]

---

[147] Aurea Calica, *P-Noy launches National Renewable Energy Program,* PHIL. STAR, June 15, 2011, *available at* http://www.philstar.com/headlines/695943/p-noy-launches-national-renewable-energy-program.

[148] President Benigno S. Aquino III, Speech delivered at the launch of the National Renewable Energy Program, Makati Shangri-La Hotel (June 14, 2011), *available at* http://www.gov.ph/2011/06/14/speech-of-president-aquino-at-the-launch-of-the-national-renewable-energy-program-june-14-2011/.