REVISITING FOREIGN INVESTMENT LIMITS ON RENEWABLE ENERGY CONTRACTS IN LIGHT OF THE TEXT AND CONTEXT OF THE 1987 CONSTITUTION*

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I. INTRODUCTION

When the 1935 Constitution was drafted, the Commissioners framed the debate in nationalist terms and restricted foreign investment and management in various sectors.[1] These provisions were retained in the 1973 and 1987 Constitution,[2] hindering foreign investment,[3] promoting import substitution and protectionism, and penalizing the Filipino consumer with high prices and poor service.[4] Professor Gerardo Sicat traces the Philippines' economic lethargy to these investment limits.[5]

The economic provisions of the 1987 Constitution are being revisited to undo this self-inflicted economic stultification. While long overdue, other potential reforms may likewise be explored. One such regulation is a 2009 Department of Energy circular that restricts the award of renewable energy ("RE") service/operating contracts to Filipino citizens or corporations at least 60% of whose capital is owned by Filipinos. This article revisits the propriety of this circular in light of the text and context of the 1987 Constitution.

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[1] Gerardo Sicat, *Philippine Economic Nationalism*, 45 PHIL. REV. ECON. 1, 3 (2008).

[2] *Id.* at 4.

[3] *Id.* at 10.

[4] *Id.* at 10, 12 & 15.

[5] *Id.* at 21.

II. THE REGALIAN DOCTRINE AND THE 1987 CONSTITUTION

The Regalian doctrine (*jura regalia*) is based on the concept of *dominium*, or the "capacity of the state to own or acquire property,"[6] and extends not only to land but also to "all natural wealth that may be found in the bowels of the earth."[7] Introduced to the Philippines by Spain, it was founded on the theory that "the King was regarded as the original proprietor of all lands, and the true and only source of title."[8] This doctrine was later purged of its royal underpinnings and incorporated into Article XII, Section 1 of the 1935 Constitution:[9]

> ARTICLE XII
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> *Conservation and Utilization of Natural Resources*
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> Section 1. All agricultural timber, and mineral lands of the public domain, waters, minerals, coal, petroleum, and other mineral oils, all forces of potential energy and other *natural resources of the Philippines belong to the State*, and their disposition, exploitation, development, or utilization shall be limited to citizens of the Philippines or to corporations or associations at least sixty per centum of the capital of which is owned by such citizens, subject to any existing right, grant, lease, or concession at the time of the inauguration of the Government established under this Constitution. Natural resources, with the exception of public agricultural land, shall not be alienated, and no license, concession, or lease for the exploitation, development, or utilization of any of the natural resources shall be granted for a period exceeding twenty-five years, renewable for another twenty-five years, except as to water rights for irrigation, water supply, fisheries, or industrial uses other than the development of water power, in which cases beneficial use may be the measure and limit of the grant.[10]

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[6] JOAQUIN BERNAS, THE 1987 CONSTITUTION OF THE REPUBLIC OF THE PHILIPPINES: A COMMENTARY 1178 (2009 ed.); La Bugal-B'laan Tribal Ass'n. v. Ramos [hereinafter "La Bugal-B'laan"], G.R. No. 127882, 421 SCRA 148, 185, Jan. 27, 2004.

[7] *Id.* at 185.

[8] Bernas, *supra* note 6, at 1178; *La Bugal-B'laan*, 421 SCRA 148, 185.

[9] *Id.* at 190; Cruz v. Sec'y of Env't & Nat. Resources [hereinafter "Cruz"], G.R. No. 135385, 347 SCRA 128, 321 n. 11, Dec. 6, 2000.

[10] CONST. (1935), art. XII, § 1. (Emphasis supplied.)

Delegate Jose Aruego expounded on the rationale for the Regalian doctrine, thus:

> *[N]atural resources*, particularly the mineral resources which constituted a great source of wealth, *belonged not only to the generation then but also to the succeeding generations and consequently should be conserved for them.* They expressed the fear that, if the freehold system was adopted, some of the mineral lands after they had become private property through the grant of a patent might eventually get into the ownership or control of foreigners to the prejudice of Filipino posterity; for there was no prohibition in the draft against the transfer or assignment to aliens of private mineral lands.[11]

This conservation *animus* was self-evident in Article XII of the 1935 Constitution, which was entitled "Conservation and Utilization of *Natural Resources*." That *animus* was further underscored in *Cruz v. Secretary of Environment and Natural Resources*, which declared that one of the objectives of the 1935 Constitutional Convention was the nationalization and conservation of the natural resources of the country, and that the basis for control of the disposition, exploitation, development, or utilization of national resources was state ownership of natural resources and the Regalian doctrine.[12]

The deliberations of the 1986 Constitutional Commission reprised these well-worn debates. Commissioner Hilario Davide claimed that no natural resources would remain for future generations if aliens were allowed to exploit the natural resources of the country.[13] Commissioner Bennagen added that ownership of natural resources should be reserved for Filipinos as these are scarce and nonrenewable.[14] It was therefore unsurprising that Article XII, Section 2 of the 1987 Constitution would largely replicate the text of its counterpart in the 1935 Constitution:

> Section 2. All lands of the public domain, waters, minerals, coal, petroleum, and other mineral oils, *all* forces of potential energy, fisheries, forests or timber, wildlife, flora and fauna, and other *natural resources are owned by the State.* With the exception of agricultural lands, all other natural resources shall not be alienated. The exploration, development, and utilization of natural resources shall be under the full control and supervision of the State. The

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[11] Bernas, *supra* note 6, at 1180, *citing* II ARUEGO, THE FRAMING OF THE PHILIPPINE CONSTITUTION 603 (1936). (Emphasis supplied.)

[12] *Cruz*, 347 SCRA 128, 171-72, *citing* II ARUEGO, THE FRAMING OF THE PHILIPPINE CONSTITUTION 592 (1936).

[13] JOURNAL CONST. COMM'N 63 (Aug. 23, 1986).

[14] JOURNAL CONST. COMM'N 57 (Aug. 16, 1986).

> State may directly undertake such activities, or it may enter into co-production, joint venture, or production-sharing agreements with Filipino citizens, or corporations or associations at least sixty per centum of whose capital is owned by such citizens. Such agreements may be for a period not exceeding twenty-five years, renewable for not more than twenty-five years, and under such terms and conditions as may be provided by law. In cases of water rights for irrigation, water supply, fisheries, or industrial uses other than the development of water power, beneficial use may be the measure and limit of the grant.[15]

III. DISSONANCE OF THE TEXT AND CONTEXT OF THE 1987 CONSTITUTION VIS-À-VIS RENEWABLE ENERGY POLICY

The implementing rules of the Renewable Energy Act of 2008 ("REA-IRR") limit the award of renewable energy service/operating contracts to Filipino citizens or corporations at least 60% of whose capital is owned by Filipinos:[16]

> Section 19. Renewable Energy Service/Operating Contract.—
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> A. State Ownership of All Forces of Potential Energy
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> All forces of potential energy and other natural resources are owned by the State and shall not be alienated. These include *potential energy sources such as kinetic energy from water, marine current and wind; thermal energy from solar, ocean, geothermal and biomass.*
>
> B. Parties to a Service/Operating Contract
>
> The exploration, development, production, and utilization of natural resources shall be under the full control and supervision of the State.
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> The State may directly undertake such activities, or it may enter into co-production, joint venture or co-production sharing agreements with Filipino citizens or corporations or associations at least sixty percent (60%) of whose capital is owned by Filipinos. *Foreign RE Developers may also be allowed to undertake RE development through an RE*

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[15] JOURNAL CONST. COMM'N 57 (Aug. 16, 1986). (Emphasis supplied.)

[16] *See* Rep. Act No. 9513 (2008), § 33. Renewable Energy Act of 2008. Implementing Rules and Regulations (IRR). — Within six (6) months from the effectivity of this Act, the DOE shall, in consultation with the Senate and House of Representatives Committees on Energy, relevant government agencies and RE stakeholders, promulgate the IRR of this Act.

Service/Operating Contract with the government, subject to Article XII, Section 2 of the Philippine Constitution.[17]

As these foreign equity limitations are grounded on Article XII, Section 2 of the 1987 Constitution, the rule implicitly draws parallels between "renewable energy" in the RE-IRR, and "natural resources" as constitutionally defined. This analogy is inconsistent with the Constitution's text and context.

The *noscitur a sociis* rule states that legislative intent may be ascertained by reference to their relationship with other associated words and phrases. Thus, when two or more words are grouped together, and ordinarily have a similar meaning, but are not equally comprehensive, the general word will be limited and qualified by the special word.[18] Article XII, Section 2 of the 1987 Constitution states that "land of the public domain, waters, minerals, coal, petroleum, and other mineral oils, all forces of potential energy, fisheries, forests or timber, wildlife, flora and fauna, and *other natural resources* are owned by the State."[19] All of these items are exhaustible resources which are present in fixed amounts in the environment.[20]

Following *noscitur a sociis*, the term "natural resources" does not encompass renewable energy because it is inexhaustible.[21] This is also consistent with the legislature's interpretation in Republic Act No. 9513, which considers "renewable energy" to be "renewable on a regular basis, and

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[17] Rep. Act. No. 9513 Rules & Regs., §19. (Emphasis supplied.)

[18] JABEZ SUTHERLAND, STATUTES AND STATUTORY CONSTRUCTION § 47:16 (Norman Singer ed., 6th ed. 2004); RUBEN AGPALO, STATUTORY CONSTRUCTION 302-303 (2009).

[19] CONST. art. XII, § 2. *All lands of the public domain, waters, minerals, coal, petroleum, and other mineral oils, all forces of potential energy, fisheries, forests or timber, wildlife, flora and fauna, and other natural resources are owned by the State.* With the exception of agricultural lands, all other natural resources shall not be alienated. The exploration, development, and utilization of natural resources shall be under the full control and supervision of the State. The State may directly undertake such activities, or it may enter into co-production, joint venture, or production-sharing agreements with Filipino citizens, or corporations or associations at least sixty per centum of whose capital is owned by such citizens. Such agreements may be for a period not exceeding twenty-five years, renewable for not more than twenty-five years, and under such terms and conditions as may be provided by law. In cases of water rights for irrigation, water supply, fisheries, or industrial uses other than the development of water power, beneficial use may be the measure and limit of the grant. (Emphasis supplied.)

[20] WILLIAM CUNNINGHAM & BARBARA WOODWORTH SAIGO, ENVIRONMENTAL SCIENCE - A GLOBAL CONCERN 134-35 (2018.)

[21] FUNK & WAGNALLS NEW WORLD ENCYCLOPEDIA, *Renewable Energy*, 1 (2018), *at* http://search.ebscohost.com/login.aspx?direct=true&db=funk&AN=re031050&site=ehost-live.

whose renewal rate is relatively rapid to consider availability over an indefinite period of time."[22]

Similarly, the phrase "forces of potential energy" does not comprehend renewable energy sources. Potential energy refers to "stored energy that depends upon the relative position of various parts of a system."[23] Kinetic energy, on the other hand, is "associated with motion"[24] and is defined as "the energy possessed by an object, resulting from the motion of that object."[25] Therefore, it is associated with physical objects, given that the "magnitude of the kinetic energy depends on both the mass and the speed of the object according to the equation."[26]

Solar energy is radiant energy produced in the sun as a result of nuclear fusion reactions and transmitted to the earth through space in quanta of energy called photons, which interact with the earth's atmosphere and surface.[27] As photons are in a state of perpetual motion, solar energy is kinetic and not potential energy.[28] Similarly, wind energy is harnessed by turbine generators, with wind acting on oblique blades or sails radiating from a shaft

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[22] Rep. Act No. 9513 (2008), § 4(uu). Renewable Energy Act of 2008. Renewable Energy Resources (RE Resources) "refers 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 is 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." (Emphasis supplied.)

[23] THE NEW ENCYCLOPEDIA BRITANNICA, *Potential Energy* [hereinafter "Potential Energy"], 642 (2010); FUNK & WAGNALLS NEW WORLD ENCYCLOPEDIA *Energy* [hereinafter "Energy"], 1 (2018), *at* http://search.ebscohost.com/login.aspx?direct=true&db=funk &AN=en042600&site=ehost-live; DALE EWEN, NEILL SCHURTER & P. ERIK GUNDERSEN, APPLIED PHYSICS 214 (2012); PAUL TIPPENS, PHYSICS 161, 164-65 (2007).

[24] *Energy*, *supra* note 23; Ewen, Schurter, & Gundersen, *supra* note 23, at 214; Tippens, *supra* note 23, at 161.

[25] FUNK & WAGNALLS NEW WORLD ENCYCLOPEDIA, *Kinetic Energy* [hereinafter "Kinetic Energy"], 1 (2018), *at* http://search.ebscohost.com/login.aspx?direct=true&db= funk&AN=ki034100&site=ehost-live; Ewen, Schurter & Gundersen, supra note 23; Tippens, supra note 23, at 161.

[26] *Kinetic Energy*, *supra* note 25; Tippens, *supra* note 23, at 162-63.

[27] FUNK & WAGNALLS NEW WORLD ENCYCLOPEDIA, *Solar Energy*, 1 (2018), *at* http://search.ebscohost.com/login.aspx?direct=true&db=funk&AN=so142300&site=ehost -live.

[28] FUNK & WAGNALLS NEW WORLD ENCYCLOPEDIA, *Light*, 1 (2018), *at* http://search.ebscohost.com/login.aspx?direct=true&db=funk&AN=li059000&site=ehost-live.

connected to machinery used to generate electricity.[29] Likewise, hydroelectric power is electric energy generated using the motion of falling or flowing water to spin a water turbine which drives an electric generator.[30] As each of these renewable energy sources is derived from the motion rather than the relative position of objects, they are considered kinetic energy rather than "potential energy."[31]

It is also fundamental that constitutions should be interpreted as a whole.[32] Article II, Section 2 of the 1987 Constitution declares that customary international law is part of the law of the land.[33] To reiterate, the Regalian doctrine is based on the concept of *dominium*, or the "capacity of the state to own or acquire property."[34] As regards outer space, the *res communis* principle of international law applies, and no portion thereof may be appropriated by individual states.[35] To consider that solar energy and the sun are renewable energy—sources which are made subject to Article XII, Section 2 of the 1987 Constitution—implicitly asserts that celestial bodies are subject to appropriation, and is opposed to the Regalian doctrine's *dominium* roots and the *res communis* principle in international law.

The constitutional rights to a balanced and healthful ecology[36] and to health[37] are also squarely implicated by renewable energy policies. *Oposa v. Factoran* eloquently describes the importance of the right to a balanced and healthful ecology and the State' correlative duty:

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[29] FUNK & WAGNALLS NEW WORLD ENCYCLOPEDIA, *Windmill*, 1 (2018), *at* http://search.ebscohost.com/login.aspx?direct=true&db=funk&AN=wi057000&site=ehost-live.

[30] FUNK & WAGNALLS NEW WORLD ENCYCLOPEDIA, *Hydroelectric Power*, 1 (2018), *at* http://search.ebscohost.com/login.aspx?direct=true&db=funk&AN=hy115950&site=ehost-live.

[31] *Energy*, *supra* note 23; *Potential Energy*, *supra* note 23.

[32] Agpalo, *supra* note 18, at 602.

[33] CONST. art. II, § 2.

[34] Bernas, *supra* note 6, at 1178; *La Bugal-B'laan*, 421 SCRA 148, 184.

[35] MALCOLM SHAW, INTERNATIONAL LAW 544 (6th ed. 2008); Bin Cheng, *United Nations Resolutions on Outer Space: "Instant" International Customary Law?*, 5 INDIAN J. INT. LAW 23 (1965). *See also* United Nations General Assembly [hereinafter "UNGA"], Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space, U.N. Doc. A/RES/1962(XVIII) (1963); UNGA, International co-operation in the peaceful uses of outer space, U.N. Doc. A/RES/1721(XVI)[B] (1961); UNGA, U.N. Doc. A/RES/1884(XVIII) (1963).

[36] CONST. art. II, § 16. 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.

[37] CONST. art. II, § 15. The State shall protect and promote the right to health of the people and instill health consciousness among them.

> While the right to balanced and healthful ecology is to be found under the Declaration of Principles the State Policies and not under the Bill of Rights, it does not follow that it is less important than any of the civil and political rights enumerated in the latter. Such a right belongs to a different category of rights altogether for it concerns nothing less than self-preservation and self-perpetuation - aptly and fittingly stressed by the petitioners - the advancement of which may even be said to predate all governments and constitutions. As a matter of fact, these basic rights need not even be written in the Constitution for they are assumed to exist from the inception of humankind. *If they are now explicitly mentioned in the fundamental charter, it is because of the well-founded fear of its framers that unless the rights to a balanced and healthful ecology and to health are mandated as state policies by the Constitution itself, thereby highlighting their continuing importance and imposing upon the state a solemn obligation to preserve the first and protect and advance the second, the day would not be too far when all else would be lost not only for the present generation, but also for those to come* - generations which stand to inherit nothing but parched earth incapable of sustaining life.
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> *The right to a balanced and healthful ecology carries with it a correlative duty to refrain from impairing the environment*[.][38]

The specter of climate change is unquestioned, with experts predicting an increase in intensity and frequency of droughts, precipitation, temperature,[39] and the incidence of disease.[40] Reductions in food availability due to lower crop and livestock yields are expected.[41] With direct exposure to multiple climate-related hazards such as typhoons and floods, and considering its urban poor population, the Philippines is among the most vulnerable countries in the world to weather-related extreme events, earthquakes, and sea

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[38] Oposa v. Factoran, G.R. No. 101083, 224 SCRA 792, 804-805, July 30, 1993. (Emphasis supplied.)

[39] IPCC, *Summary for Policymakers, in* GLOBAL WARMING OF 1.5°C. AN IPCC SPECIAL REPORT ON THE IMPACTS OF GLOBAL WARMING OF 1.5°C ABOVE PRE-INDUSTRIAL LEVELS AND RELATED GLOBAL GREENHOUSE GAS EMISSION PATHWAYS, IN THE CONTEXT OF STRENGTHENING THE GLOBAL RESPONSE TO THE THREAT OF CLIMATE CHANGE, SUSTAINABLE DEVELOPMENT, AND EFFORTS TO ERADICATE POVERTY [hereinafter "SR15"] 9 (Valerie Masson-Delmotte, et al. eds., 2019); JONATHAN WOETZEL ET AL., CLIMATE RISK AND RESPONSE: PHYSICAL HAZARDS AND SOCIOECONOMIC IMPACTS, 10, 13, 15 (2020).

[40] IPCC, *supra* note 39; THE WORLD BANK, TURN DOWN THE HEAT: CLIMATE EXTREMES, REGIONAL IMPACTS, AND THE CASE FOR RESILIENCE xxiv-xxv (2013); Woetzel et al., *supra* note 39 at 10, 13, 15.

[41] IPCC, *supra* note 39.

level rise.[42] Annual damage to agriculture from typhoons, droughts, and floods was estimated at PHP 12 billion as of 2013.[43]

Assuming the regional sea level rises at the global average rate, about 14% of the Philippines' total population and 42% of its total coastal population will be affected by intensifying storm surges resulting from more intense typhoons by the year 2100.[44] Rice yields will be reduced by up to 75% by 2100 as compared to 1990.[45] Maximum catch potential will also decrease by 50% around the southern Philippines and 6-16% around the northern Philippines with an increase in temperature of 4°C above pre-industrial levels.[46] To head off the worst of these catastrophic effects, 197 countries have signed the Paris Agreement[47] as of May 21, 2020, with the Philippine Senate ratifying the same on March 23, 2017.[48] Given the Paris Agreement's ambitious target of 1.5°C above pre-industrial levels,[49] decarbonizing the economy and investments in renewable energy will be essential.[50] As McKinsey's article explains:

> Replacing thermal assets with renewable energy would require a dramatic ramp-up in manufacturing capacity of wind turbines and solar panels. By 2030, yearly build-outs of solar and wind capacity would need to be eight and five times larger, respectively, than today's levels.

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[42] THE WORLD BANK, GETTING A GRIP ON CLIMATE CHANGE IN THE PHILIPPINES - EXECUTIVE REPORT 23-24 (2013); ARIEF ANSHORY YUSUF & HERMINIA FRANCISCO, CLIMATE CHANGE VULNERABILITY MAPPING FOR SOUTHEAST ASIA 12-13 (2009).

[43] The World Bank, *supra* note 42, at 24.

[44] Henrike Brecht et al., *Sea-Level Rise and Storm Surges: High Stakes for a Small Number of Developing Countries*, 21 J. ENV'T. DEV. 120, 130 (2012). Our results assign the highest rank in both absolute and percent terms to Philippines, with projected exposure of 16 million people to storm- surge risk by 2100. This is 41.7% of the projected population in coastal cities over 100,000. The projected change in population-at-risk from 2000 to 2100 is 5.4 million, or 14% of projected population in 2100; The World Bank, *supra* note 42.

[45] *Id.*.

[46] *Id.*

[47] Adoption of the Paris Agreement ("Paris Agreement"), U.N. Doc. FCCC/CP/2015/L.9/REV.1 (Dec. 12, 2015).

[48] *United Nations Treaty Collection (Status of Treaties)*, UNTC WEBSITE, *available at* https://treaties.un.org/pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-7-d&chapter=27&clang=_en.

[49] Paris Agreement, art. 2.

[50] The World Bank, *supra* note 42, at 26; Kimberly Henderson et al., Climate Math: What a 1.5-Degree Pathway Would Take, at 15-16 (Apr. 2020), *available at* https://www.mckinsey.com/~/media/McKinsey/Business%20Functions/Sustainability/Our%20Insights/Climate%20math%20What%20a%201%20point%205%20degree%20pathway%20would%20take/Climate-math-What-a-1-point-5-degree-pathway-would-take-final.pdf.

> It would also entail a massive reduction in coal- and gas-fired power generation. Indeed, to remain on a 1.5-degree pathway, coal-powered electricity generation would need to decrease by nearly 80 percent by 2030 in our rapid fossil-fuel-reduction scenario. Even in the scenario where coal and gas generate power for longer, the reduction would need to be about two-thirds by 2030. The sheer scope of this shift cannot be overstated. Coal today accounts for about 40 percent of global power generation. What's more, by 2030 the amount of electricity generated by natural gas would have to decrease by somewhere between 20 and 35 percent. As it stands, nearly one-quarter of the world's power is generated using natural gas.[51]

Beyond the text of the 1987 Constitution, its context provides ample evidence that the restrictions imposed on ownership, exploration, development, and utilization of natural resources are inapplicable to renewable energy sources. The framers of 1935 Constitution and jurisprudence state that the *raison d'etre* for foreign investment limitations is to preserve scarce resources for the benefit of future generations of Filipinos. Since renewable energy sources are inexhaustible, the mischief sought to be remedied by the provision is nonexistent.[52] A broad, all-encompassing interpretation of the natural resources provision is, therefore, inconsistent with axioms dictating that the object sought to be accomplished by its adoption and the evils sought to be prevented or remedied should be considered in interpreting the Constitution.[53]

Statutes should also be interpreted to avoid absurd results.[54] An expansive reading of "natural resources" proscribing the ownership, exploration, development, and utilization of renewable energy sources and other similarly inexhaustible natural resources by foreign nationals would also sanction a multitude of absurd results, for sunlight and oxygen are considered natural resources in the broad sense. The phrase "I can't breathe" may yet take on new meaning for our foreign tourists. Similarly, in *Initiatives for Dialogue and Empowerment through Alternative Legal Services v. Power Sector Assets and Liabilities*

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[51] *Id.* (Citations omitted.)

[52] Sutherland, *supra* note 18, at § 54:4. [W]here there is doubt about how inclusively a statute should be applied, it will be construed to apply only so far as is needed to remedy the perceived mischief.

[53] *See, e.g.* Civil Liberties Union v. Executive Secretary, G.R. No. 83815, 194 SCRA 317, Jan. 22, 1991.

[54] Agpalo, *supra* note 18, at 601; Marcelino v. Cruz, G.R. No. 42428, 121 SCRA 51, 58, Mar. 18, 1983.

Management Corporation,[55] the Court noted the consistency of Department of Justice (DOJ) opinions that permit foreign investment as regards the utilization of natural resources after extraction from the source by qualified entities, as these resources are no longer considered as "natural resources."[56]

These DOJ opinions concluded that the nationality requirement for exploitation and development of natural resources applies to extraction from the natural source,[57] and once removed from its natural source, natural resources may be the subject of ordinary commerce and hence, may be acquired by foreigners. The DOJ opinions reasoned that a contrary interpretation would lead to the absurd consequence that any extracted natural resources could not be acquired by foreign nationals within or outside the country. In like manner, an interpretation which classifies solar energy as a natural resource, even if already removed from its natural source, would lead to similarly absurd consequences. The utilization of solar energy by a foreigner by sunbathing on our Philippine beaches would be proscribed—not quite the warm welcome they envisioned.

The 1987 Constitution also lists industrialization and full employment through competitiveness in domestic and foreign markets as state goals and policies:

> Section 1. The goals of the national economy are a *more equitable distribution of opportunities, income, and wealth*; a sustained increase in the amount of goods and services produced by the nation for the benefit of the people; and an *expanding productivity as the key raising the quality of life for all*, especially the underprivileged.
>
> The State shall promote *industrialization and full employment* based on sound agricultural development and agrarian reform, *through industries* that make full and efficient use of human and natural resources, and which are *competitive in both domestic and foreign markets.* However, the State shall protect Filipino enterprises against unfair foreign competition and trade practices.

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[55] Initiatives for Dialogue & Empowerment through Alternative Legal Services, Inc. (IDEALS) v. Power Sector Assets & Liabilities Mgt. Corp. (PSALM) [hereinafter "IDEALS v. PSALM"], G.R. 192088, 682 SCRA 602, Oct. 9, 2012.

[56] *IDEALS v. PSALM*, 682 SCRA 602, 658-60.

[57] *See, e.g.* Sec'y of Justice Op. No. 52 (Nov. 22, 2005); Sec'y of Justice Op. No. 122 (Sept. 30, 1998); Sec'y of Justice Op. No. 100 (July 13, 1994); Sec'y of Justice Op. No. 173 (Dec. 3, 1984); *See also* Sec'y of Justice Op. No. 116 (April 29, 1948); Sec'y of Justice Op. (June 13, 1946) on commercial fishing using vessels of over three tons. Therefore, if not for commercial fishing, and would not deplete appreciably; Sec'y of Justice Op. No. 55 (Apr. 14, 1939). *But see* Sec'y of Justice Op. No. 165 (Nov. 10, 1961) on hunting licenses and foreigners, classifying game as natural resources though they are "renewable."

> In the pursuit of these goals, all sectors of the economy and all regions of the country shall be given optimum opportunity to develop. Private enterprises, including corporations, cooperatives, and similar collective organizations, shall be encouraged to broaden the base of their ownership.[58]

Infrastructure is among the primary pillars of economic development identified by the World Economic Forum Global Competitiveness Index ("GCI") and is critical for ensuring the effective functioning of the economy.[59] Among others, economies depend on electricity supplies that are free from interruptions and shortages so that businesses and factories can work unimpeded.[60] Despite its fundamental role in economic development, various studies find Philippine infrastructure to be subpar, with the Philippines ranked 92nd out of 140 countries.[61]

The Philippines is also a net energy importer that is vulnerable to oil supply disruptions, oil price fluctuations, and geopolitical dynamics affecting energy-exporting countries.[62] As such, the increased use of renewable energy can improve energy security.[63] The heightened impact of climate change, environmental degradation, and pollution on the Philippines as an archipelagic state are also the impetus for promoting the use of renewable energy.[64] For these reasons, the Philippine government launched a National Renewable Energy Program with ambitious RE installed capacity targets.[65]

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[58] CONST. art. XII, § 1.

[59] KLAUS SCHWAB & WORLD ECONOMIC FORUM, THE GLOBAL COMPETITIVENESS REPORT (2017-2018) 12 (2017).

[60] *Id*; *See also* Charles Hall, Jessica Lambert & Stephen Balogh, *EROI of Different Fuels and the Implications for Society*, 64 ENERGY POL'Y 141, 141-42 (2014).

[61] KLAUS SCHWAB & WORLD ECONOMIC FORUM, THE GLOBAL COMPETITIVENESS REPORT (2018) 463-65 (2018); *See* CAYETANO PADERANGA JR., PRIVATE SECTOR ASSESSMENT: PHILIPPINES 28, 52 (2011).

[62] Sahara Piang Brahim, *Renewable Energy and Energy Security in the Philippines*, 52 ENERGY PROCEDIA 480, 481 (2014); *See also* Hugh Rudnick & Constantin Velasquez, Learning from Developing Country Power Market Experiences: The Case of the Philippines, at 5 (Mar. 2019), *available at* http://documents.worldbank.org/curated/en/122241552317273992/Learning-from-Developing-Country-Power-Market-Experiences-The-Case-of-Peru.

[63] Brahim, *supra* note 62, at 481.

[64] *Id.* at 481. *But see* Atte Harjanne & Janne Korhonen, *Abandoning the Concept of Renewable Energy*, 127 ENERGY POL'Y 330, 333-37 (2019).

[65] Brahim, *supra* note 62, at 482.

Sector	Installed Capacity, MW as of 2010	Target Capacity Addition By				Total Capacity Addition, MW 2011-2030	Total Installed Capacity by 2030
		2015	2020	2025	2030		
Geothermal	1,972	220	1,100	95	80	1,495	3,467
Hydro	3,333	343.3	3,161	1,891.8	0	5,396.1	8,729.1
Biomass	30	276.7	0	0	0	2,767	306.7
Wind	33	1,048	855	442	0	2,345	2,378
Solar	1	269	5	5	5	284	285
Ocean	0	0	35.5	35	0	705	70.5
Total	5,369	2,157	5,156.5	24,688	85	9,855.4	15,236.3

TABLE 1. RE-based On-grid Capacity Installation Targets[66]

However, RE adoption is not straightforward. The physics of electricity impose the following constraints:

1. Electricity is electromagnetic energy. Losses and capital costs make storage very expensive. Hence, arbitrage over time is limited. The storage constraint makes electricity heterogeneous over time.

2. Electricity is transmitted on power lines which have limited thermal capacity, and give rise to losses. Moreover, Kirchhoff's circuit laws further constrain transmission capacity, and transmission distances are limited by reactance. The transmission constraint makes arbitrage limited between locations and electricity becomes heterogeneous across space.

3. In alternating power systems, demand and supply have to be balanced at every moment in time. Imbalances cause frequency deviations, which can destroy machinery and become very costly. However, thermal power generators are limited in their ability to quickly adjust output as there are limits on temperature gradients in boilers and turbines. Hence, arbitrage is limited across different lead-times between contract and delivery. The flexibility constraint makes electricity heterogeneous along lead-time.[67]

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[66] *Id.*

[67] Lion Hirth, Falko Ueckerdt, & Ottmar Edenhofer, *Why Wind Is Not Coal: On the Economics of Electricity Generation*, 37 ENERGY J. 1, 5 (2016).

These constraints apply with greater force to RE, with intermittency causing mismatches between demand and supply.[68] Economical large-scale energy storage will be necessary to overcome these impediments.[69] Patent applications for any inventions in this field would likely be filed by the researcher's respective universities since inventions are owned by the employer if they are the result of the employee's regularly assigned duties.[70] However, a database search of patents granted and pending for these critical technologies reveals that none were associated with any of the top world-ranked Philippine universities.[71]

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[68] *See* Suhas Pandurang Sukhatme, *Can India's future needs of electricity be met by renewable energy sources? A revised assessment*, 103 CURRENT SCI. 1153, 1159-60 (2012); *See also* Steven Chu & Arun Majumdar, *Opportunities and Challenges for a Sustainable Energy Future*, 488 NATURE 294, 302 (2012); *See also* JAMES MANYIKA ET AL., DISRUPTIVE TECHNOLOGIES: ADVANCES THAT WILL TRANSFORM LIFE, BUSINESS, AND THE GLOBAL ECONOMY 137, 140 (2013); *See also* Gauthier Limpens & Hervé Jeanmart, *Electricity Storage Needs for the Energy Transition: An EROI Based Analysis Illustrated by the Case of Belgium*, 152 ENERGY 960, 960-61 (2018).

[69] *See* Sukhatme, *supra* note 68, at 1160; *See also* OECD, OECD SCIENCE, TECHNOLOGY AND INNOVATION OUTLOOK 2016: THE FUTURE OF SCIENCE SYSTEMS 101-104 (2016); Manyika et al., *supra* note 68, at 95-104; *See also* Limpens and Jeanmart, *supra* note 68, at 960-61.

[70] *See* Rep. Act No. 8293 (1997), § 30.2(b).

[71] Derwent Innovation Login, DERWENT INNOVATION WEBSITE, *at* https://www.derwentinnovation.com/login/. Enter email and password; click log in; click patent; click "Smart Search-Topic" select "Application Country/Region"; type "PH"; for the "Title/Abstract/Claims search "Energy Storage" select "AND"; select "+"; for the "Title/Abstract/Claims search "Thermochemical" select "OR"; select "+"; for the "Title/Abstract/Claims search "Synthetic natural gas" select "OR"; select "+"; for the "Title/Abstract/Claims search "Adiabatic CAES" select "OR"; select "+"; for the "Title/Abstract/Claims search "Supercapacitor" select "OR"; select "+"; for the "Title/Abstract/Claims search "Molten salt" select "OR"; select "+"; for the "Title/Abstract/Claims search "Ice storage" select "OR"; select "+"; for the "Title/Abstract/Claims search "Residential hot water heaters with storage" select "OR"; select "+"; for the "Title/Abstract/Claims search "Cold water storage" select "OR"; select "+"; for the "Title/Abstract/Claims search "Cold water storage" select "OR"; select "+"; for the "Title/Abstract/Claims search "Pumped storage hydropower" select "OR"; select "+"; for the "Title/Abstract/Claims search "Pit storage" select "OR"; select "+"; for the "Title/Abstract/Claims search "Underground thermal energy storage" select "OR"; select "+"; for the "Title/Abstract/Claims search "Compressed air energy storage" select "OR"; select ,"+";for the "Title/Abstract/Claims search "Sodium-sulphur batteries" select "OR"; select "+";for the "Title/Abstract/Claims search "Flywheel" select "OR"; select "+";for the "Title/Abstract/Claims search "Lithium-based batteries" select "OR"; select "+";for the "Title/Abstract/Claims search "Flow batteries" select "OR"; select "+";for the "Title/Abstract/Claims search "Superconducting magnetic energy storage" select "OR"; select "+";for the "Title/Abstract/Claims search "Hydrogen"; select AND; for the Assignee/Applicant search "University of the Philippines"; select OR; for the Assignee/Applicant search "Ateneo de Manila University"; select OR; for the Assignee/Applicant search "University of Santo Tomas"; select OR; for the Assignee/Applicant search "De La Salle University"; click "Search".

Given the paucity of locally developed technology to address these vital energy storage issues, lifting foreign investment limits will be essential for the Philippines to achieve its RE targets, as foreign equity restrictions are one of the constraints in improving Philippine infrastructure and competitiveness.[72] Reducing or eliminating foreign equity restrictions is also consistent with good economic policy, as increased infrastructure investment will lead to improved competitiveness and higher consumer surplus.[73] Moreover, it is clearly aligned with the constitutional dictate of industrialization and full employment through competitiveness in domestic and foreign markets.[74] This stance is also consistent with *Espina v. Zamora*[75] which declared:

> [T]he 1987 Constitution does not rule out the entry of foreign investments, goods, and services. While it does not encourage their unlimited entry into the country, it does not prohibit them either. In fact, it allows an exchange on the basis of equality and reciprocity, frowning only on foreign competition that is unfair. The key, as in all economies in the world, is to strike a balance between protecting local businesses and allowing the entry of foreign investments and services[.][76]

With the Constitution's text and context as polestars, it is evident that the terms "natural resources" and "forces of potential energy" exclude renewable energy sources, and that the foreign equity limitations imposed by Article XII, Section 2 of the 1987 Constitution are inapplicable to renewable energy.

Cynics may claim that the REA-IRR is a case of contemporaneous construction by an administrative body that should be given great weight by the courts.[77] Great weight should not be equated with conclusiveness. Courts are not obligated to adhere to contemporaneous construction where that interpretation is clearly erroneous.[78] In this case, the legislative history

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[72] *See* Gerardo Sicat, *Legal and Constitutional Disputes and the Philippine Economy*, 82 PHIL. L. J. 1, 3-4 (2007); *See also* THE WORLD BANK GROUP, *Fostering Competition in the Philippines: The Challenge of Restrictive Regulations* 9 (2018).

[73] *See* Sicat, *supra* note 2 at 4, 21-22; *See generally* JEFFREY CHURCH & ROGER WARE, INDUSTRIAL ORGANIZATION: A STRATEGIC APPROACH 428-29 (2000), *available at* http://works.bepress.com/jeffrey_church/23/; *See also* JEAN TIROLE, THE THEORY OF INDUSTRIAL ORGANIZATION 222 n. 18 (1988).

[74] CONST. art. XII, § 1.

[75] Espina v. Zamora, G.R. No. 143855, 631 SCRA 17, Sept. 21, 2010.

[76] *Id.* at 27-28.

[77] Agpalo, *supra* note 18, at 192.

[78] *See* Sutherland, *supra* note 18, at § 49:4; Agpalo, *supra* note 18, at 192.

undermines the foundations which undergird REA-IRR's characterization of renewable energy as natural resources. The above-cited intrinsic and extrinsic aids attest that renewable energy sources should not be considered natural resources subject to the nationality requirement in the 1987 Constitution.

Moreover, the conclusiveness of a contemporaneous interpretation depends on the following elements: (1) that the interpretation originated from a reliable source; (2) that the interpretation was made at or near the time of the enactment of the statute; and (3) that the interpretation has continued for a long period of time and received wide acceptance and following.[79] The nationality requirement for exploitation and development of natural resources dates back to the 1935 Constitution. As stated earlier, the Court noted the consistency of DOJ opinions no longer considering extracted resources as "natural resources" from as early as 1939.[80] The elements of persuasiveness and contemporaneous construction clearly favor these DOJ opinions over the REA-IRR.

Naysayers may argue that this divination of intent constitutes an unsanctioned constitutional amendment, citing Article XVII of the 1987 Constitution which provides the exclusive modes of amendment and revision. This is a misleading argument. As explained by Justice Frankfurter, statutes are rarely free of ambiguity:

> [U]nlike mathematical symbols, the phrasing of a document, especially a complicated enactment, seldom attains more than approximate precision. If individual words are inexact symbols, with shifting variables, their configuration can hardly achieve invariant meaning or assured definiteness. Apart from the ambiguity inherent in its symbols, a statute suffers from dubieties. It is not an equation or a formula representing a clearly marked process, nor is it an expression of an individual thought to which is imparted the definiteness a single authorship can give. A statute is an instrument of government partaking of its practical purposes but also of its infirmities and limitations, of its awkward and groping efforts.[81]

To search for legislative intent, and to choose the most faithful reading of a statutory text among several plausible interpretations, is to merely

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[79] *See* Sutherland, *supra* note 18, at § 49:4.

[80] *IDEALS v. PSALM*, 682 SCRA 602, 658-660.

[81] Felix Frankfurter, *Some Reflections on the Reading of Statutes*, 47 COLUM. L. REV. 527, 528 (1947).

engage in statutory construction.[82] If the proffered interpretation is challenged in court, the judge would merely exercise judicial power to interpret what the law means.[83] To argue that this search for intent is constitutionally circumscribed overlooks that Article VIII of the 1987 Constitution vests the judicial power to interpret laws in the Supreme Court, and such lower courts as may be provided by law.[84]

We hasten to add that regulation of investments in renewable energy would be permissible as an exercise of police power which is regarded as "the most essential, insistent and the least limitable of powers, extending as it does 'to all the great public needs.'"[85] Statutes are generally entitled to a presumption of constitutionality and the burden of proof is on the petitioner to clearly demonstrate that the assailed statute is unconstitutional where economic regulation is involved.[86] This strong predilection for constitutionality is due to judicial deference to the legislature as a co-equal branch.[87] This would likewise be sanctioned by Article XII, Section 10 of the 1987 Constitution which declares that "[t]he State shall regulate and exercise authority over foreign investments within its national jurisdiction and in accordance with its national goals and priorities."[88]

IV. CONCLUSION

The goals of our Constitution and our international obligations will be met by promoting investments and competition in renewable energy. However, these initiatives have been stultified by the misguided RE-IRR. This regulation should be corrected in light of the text and context of Article XII, Section 2 of the 1987 Constitution.

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[82] *See* Sutherland, *supra* note 18, at § 45:5; *See also* Agpalo, *supra* note 18, at 104.

[83] Marbury v. Madison, 5 U.S. (1 Cranch) 137 (1803).

[84] CONST. art. VIII, § 1.

[85] Ermita-Malate Hotel & Motel Operators Ass'n, Inc. v. City Mayor of Manila, G.R. No. L-24693, 20 SCRA 849, 857-858, July 31, 1967.

[86] VICENTE V. MENDOZA, JUDICIAL REVIEW OF CONSTITUTIONAL QUESTIONS: CASES & MATERIALS 83-85 (2004); British Am. Tobacco v. Camacho, G.R. No. 163583, 562 SCRA 511, Apr. 20, 2008.

[87] Estrada v. Sandiganbayan, G.R. No. 148560, 369 SCRA 394, 430, Nov. 19, 2001.

[88] CONST. art. XII, § 10.