

RENEWABLE ENERGY INITIATIVES FOR PUERTO RICO

ARTICLE

SEBASTIÁN J. SÁNCHEZ RIVERA *

Introduction	1184
I. Why Develop Clean Energy and Clean Energy Technologies?	1184
II. A Recent History of Renewable Energy in Puerto Rico.....	1186
A. Law 325 of September 16, 2004 (Law 325/2004) – Renewable Energy Development Act exempting Renewable Technologies from taxation. This exemption was effectively annulled on November 15, 2006 by Law 117 of 4 July 2006; it was again reestablished by Law 246 of August 10, 2008.	1186
B. Law 114 of August 16, 2007 (Law 114/2007) – Net Metering	1188
C. Law 246 of August 10, 2008 (Law 246/2008) – Act to Set Forth the Public Policy on Global Warming Mitigation in Puerto Rico.....	1190
D. A word on P.R.E.P.A.’s Green Way Project.....	1191
E. Law 248 of August 10, 2008 (Law 248/2008) – Law establishing tax incentives and exemptions for the development of solar power and renewable energy technologies	1193
F. Governor Fortuño’s Executive Order 2009-23 (E.O. 2009-23) of July 21, 2009- To create the Energy Policy Committee	1195
G. Governor Fortuño’s Executive Order 2010-34 of July 19, 2010 (E.O. 2010-34) to activate the dispositions of Law 76 of May 5, 2000 (Law 76/2000)	1197
H. Law 82 of July 19, 2010 (Law 82/2010) – Public Policy on Energy Diversification by Means of Sustainable and Alternative Renewable Energy in Puerto Rico Act	1200
I. Law 83 of July 19, 2010 (Law 83/2010) – Green Energy Incentives Act of Puerto Rico	1203
III. Overview of the Recommendations on Developing P.R. as a Model for Clean Energy in the Report by the President’s Task Force on Puerto Rico’s Status of March 2011.....	1206
IV. State Initiatives and Measures.....	1210
A. Hawaii.....	1210

* The author has a Juris Doctor from the University of Puerto Rico, a Spanish Law Degree from the University of Barcelona, a Certificate in International and European Law from the University of Antwerp, and a B.A. from Harvard University. The author would like to thank professor David M. Helfeld for his comments and mentorship.

B. California	1211
V. City Initiatives	1212
A. Portland, Oregon	1212
Conclusions and Proposals	1213

Investing in the future's energy, not the past's.

INTRODUCTION

This article explores options Puerto Rico (P.R.) has as a Commonwealth to develop clean energy under the structure of United States' federalism. Its objective is to present workable propositions to set P.R. on a gradual path towards energy independence and in a position to become a renewable energy producer and exporter. Because of P.R.'s unique circumstances and geographical location, I recommend that P.R.'s Legislature concentrate its efforts in promoting legislation that will establish a public policy that incentivizes renewable energy projects significantly more than legislation recently enacted, which touts this goal in a grandiloquent manner, but only timidly supports it fiscally. Since the production of renewable energy does not yet make economic sense for most investors, the Commonwealth must take the lead in creating, through aggressive incentives, an attractive market geared towards the production of renewable energy and renewable energy technologies. This market will have a dual objective: (1) achieve energy independence for P.R. and (2) promote P.R.'s capability to export clean energy as a service in the Caribbean and clean energy technology as a commercial product in world markets.

I. WHY DEVELOP CLEAN ENERGY AND CLEAN ENERGY TECHNOLOGIES?

Many people think that developing clean energy and clean energy technology is a sensible decision. I agree. Yet they are not being developed at the speed and pace needed to reduce P.R.'s dependence on fossil fuels, minimize greenhouse gases, and lessen the effects of climate change. Thus, we must first answer why P.R. should establish legal measures to develop clean energy and clean energy technologies.

Because of its ideal geographical location and of its geological formation as an island within an archipelago, lying between the equator and the tropic of cancer, P.R. has a competitive advantage in producing great amounts of renewable energy from its yearlong supply of wind, solar, and ocean resources. In addition to this geographic boon, the University of Puerto Rico has an extremely capable sciences and engineering faculty and student body in Mayagüez that is world-renowned. In fact, every year, research universities in the sciences, N.A.S.A., the Department of Defense, among others, actively recruit students

who graduate from the Mayagüez campus for further higher education study and employment. Since P.R. is blessed both with an ample supply of renewable resources and highly skilled science faculties, along with up-and-coming science students and young professionals, P.R. should work to produce clean energy and clean energy technology on the island.

Every day that P.R. does not use these enviable and highly coveted natural and human resources, P.R.'s leaders pass up the opportunity to gradually make the island more energy independent and retain a knowledge base produced at its universities and increasingly lost to the brain drain phenomenon.¹ For this reason, the Legislature should establish fiscal benefits that attract highly skilled scientists who will develop the renewable energy technologies of the future in P.R.² At the same time, these scientists will harness and enhance P.R.'s human capital, reducing or averting the continuous flight of professionally skilled graduates.

Combining well thought-out policies could potentially create a virtuous circle that catapults P.R. as a knowledge base hub for renewable energy and for the production of renewable energy technologies. As a Commonwealth part of the U.S.'s federal structure, P.R. has the legal, political, and economic means to start up such an initiative. All that is needed is the government's will to establish a concerted effort among various actors – civil society, clean energy investors, and politicians – to achieve the dual goal of reaching energy independence and creating a clean energy industry.

Besides these, there are a myriad reasons – political, economic, social, environmental, and, arguably, even moral – why P.R. should actively pursue developing renewable energy projects. For example, the United States currently lacks a well-thought, comprehensive federal policy to counter the effects of climate change. Instead of seeing this passive, hands-off, wait-and-see approach from the federal government as a disadvantage, governmental actors, both at the Commonwealth and municipal level, must view it as a political opportunity to adopt legislation and regulations that encourage the production of renewable energy initiatives.

Economically, it is known that energy is a scarce product in world markets and that the price of fossil fuels greatly affects the cost of life in any society. Being one of the areas of the United States that most depends on fossil fuels, pro-

¹ See Idem Osorio, *Hablan de la fuga de cerebros [They talk of the brain drain]*, PRENSA RUM, <http://www.uprm.edu/news/articles/as2006156.html> (“The flight of talent in Puerto Rico takes place principally in specialized fields such as engineering”) (translation provided); Braulio Quintero, *Op-Ed, Fuga de cerebros [Brain Drain]*, EL NUEVO DÍA, May 18, 2011, at 64; José A. Delgado, *Cogen vuelo los puertorriqueños [Puerto Ricans take flight]*, EL NUEVO DÍA, May 27, 2011, <http://www.elnuevodia.com/cogenvuelo-976787.html> (“The experts coincide that the increase in the Puerto Rican population in the United States reflects also that the migratory wave from Puerto Rico – which has been estimated close to 500,000 persons during the last decade – has intensified in the last two years”) (translation provided).

² See Carlos R. Baralt Suárez, *Promoting Knowledge-Based Economy Activities Through Personal Income Tax Incentives*, 80 REV. JUR. UPR 583 (2011).

ducing over 99% of its energy from them, Puerto Rico is highly sensitive and vulnerable to the volatility of fossil fuel prices. Even if fossil fuel reserves do not subside in the future, and with all probability they will, it will not be viable to consume them at the current levels when the adverse effects they have on the environment are taken in consideration as an externality and factored into the costs of energy generation.

Socially, producing clean energy and clean energy technologies would create jobs, reduce unemployment, develop a new export industry, foster academic and research cooperation, increase tourism, and boost Puerto Ricans sense of national pride. One can imagine the promotion of P.R. as a green island, as it advances towards the path of energy independence.

Environmentally, P.R. will be working to reduce greenhouse gases, improving the quality of its air, and protecting the purity of its water sources.

Last, morally, it becomes ever harder to justify continuing to import and depend on environmentally hazardous fossil fuels when P.R. can produce its own clean energy locally. Furthermore, when one considers that the countries from which P.R. imports its fossil fuels operate under an uncompetitive cartel – the Oil Producing and Exporting Countries, commonly known as O.P.E.C. – which helps maintain autocratic and abusive governments in power, it becomes morally questionable to continue economically sponsoring such undemocratic institutions.

These are just a few reasons why P.R. must remedy its current fossil fuel dependence and seize it as an opportunity to initiate a steady and committed effort toward clean energy independence and the establishment of an energy industry on our island. Thus, first, I will examine what P.R.'s Government has done in regard to renewable energy; then, I will examine the White House's Task Force Report Recommendations on renewable energy; and, finally, I will discuss renewable energy initiatives and environmental policies from U.S. states and cities, which P.R. should implement.

II. A RECENT HISTORY OF RENEWABLE ENERGY IN PUERTO RICO

A. Law 325 of September 16, 2004 (Law 325/2004)³ – Renewable Energy Development Act exempting Renewable Technologies from taxation. This exemption was effectively annulled on November 15, 2006 by Law 117 of 4 July 2006; it was again reestablished by Law 246 of August 10, 2008.

Law 325/2004, entitled *Renewable Energy Development Act*, added section 2048-A to P.R.'s Internal Revenue Code of 1994.⁴ Its purpose was to create a tax

³ Renewable Energy Development Act, Law 325 of September 16, 2004, 2004 P.R. Laws 2295, (codified at P.R. LAWS ANN. tit. 12, §§ 416-417 (2007 & Supp. 2011) & P.R. LAWS ANN. tit. 13, § 9048 (2007 & Supp. 2011) (repealed 2006)).

⁴ P.R.'s Internal Revenue Code of 1994, P.R. LAWS ANN. tit. 13, § 8001 (2007 & Supp. 2011) (repealed 2011).

exemption on all movable property that served as equipment to capture, store, generate, distribute and use renewable energy.⁵ In Law 325/2004's Statement of Motives, the Legislature explains that in the past decades it has created public agencies and assigned funds for the protection of the environment.⁶ For instance, through funds directed towards the University of Puerto Rico and other research centers, the Legislature looked to promote the development of new technologies that take advantage of energies that are derived from inexhaustible and non-polluting sources, such as the sun, wind, and ocean.⁷ Recognizing that P.R. is in an ideal position to place itself at the forefront in the use of renewable energy sources, the Legislature extols the ample sources of sun, wind, and sea available in our island as well as the expertise of our engineers and the developments already obtained by research centers and institutions of higher study.⁸

The Legislature acknowledges, however, that since these equipments are expensive, new renewable energy technologies require a considerable investment of capital.⁹ In order to mitigate these high front-end costs, the Legislature eliminates the tax on renewable energy equipments and incentivizes their acquisition.¹⁰

Law 325/2004's second article establishes the Commonwealth's public policy:

- (1) to stimulate the development of renewable energy and exploit clean and inexhaustible energy sources.
- (2) to ensure property tax exemption of equipment for the capture, accumulation, generation, distribution and application of renewable energy for local commercial, industrial or domestic use.
- (3) to promote fiscal incentives such as deductions and/or credits for the development, manufacture and marketing of renewable energy equipment.¹¹

Subsection (b) of the Law's third article defines which energies will be considered renewable energies: "solar energy; eolic energy; hydraulic energy; biomass energy; the energy from the difference in oceanic temperatures; ocean energy, wave energy and tidal energy, among others, whose use is clean, reliable, safe and sustainable."¹² In addition, subsections (c) through (g) of the same article define the different types of equipment that were exempted from taxation: equipments that capture, store, generate, conduct, and/or exploit renewable energy.¹³

The Law's fourth article adds section 2048-A to P.R.'s Internal Revenue Code of 1994, stating that: "Renewable energy capture, accumulation, generation, dis-

⁵ See 2004 P.R. Laws 2295, Act's Summary.

⁶ 2004 P.R. Laws 2295, Statement of Motives.

⁷ *Id.* at 2295-96.

⁸ *Id.* at 2296.

⁹ *Id.* at 2296-97.

¹⁰ *Id.* at 2297.

¹¹ P.R. LAWS ANN. tit. 12, § 416 (2007 & Supp. 2011).

¹² *Id.* § 417.

¹³ *Id.*

tribution and application equipment that is either imported into or manufactured in Puerto Rico shall be exempted from the excise tax levied by this Act.¹⁴ However, Law 117 of July 4, 2006¹⁵ (Law 117/2006), titled *Taxpayers Justice Act of 2006*, amended subtitle B and established a subtitle BB where tax duties on such products were substituted for a Sales and Use Tax. In Law 248/2008's Statement of Motives, which I discuss *infra*,¹⁶ the Legislature acknowledges that it overlooked this tax substitution and failed to exempt such equipments from the Sales and Use Tax. Through Law 248/2008, the Legislature exempts them again, correcting the lapse.

Early in 2011, the Legislature adopted a new Internal Revenue Code of 2011 and established transitory dispositions for the gradual repeal of the Internal Revenue Code of 1994.¹⁷ The new Code maintains a similar, although much more limited, tax exemption for renewable technologies in section 4030.17. It states that solar electric equipment used to produce electric energy, including accessories and parts necessary to comply with such purpose, shall be exempt from the Sales and Use Tax.¹⁸ Nonetheless, Law 83/2011¹⁹ establishes special tax benefits for renewable energy and renewable energy technology that override the dispositions of the new Internal Revenue Code of 2011.²⁰

B. Law 114 of August 16, 2007²¹ (Law 114/2007) – Net Metering

Law 114/2007 orders and authorizes the Puerto Rico Electric Power Authority (P.R.E.P.A.) to establish a Net Metering Program that allows customers who have installed solar power systems, wind turbines, or any equipment that produces renewable energy to interconnect to P.R.E.P.A.'s system of electric transmission and distribution and resupply it with electricity.²² Furthermore, it grants credits on customers' bills for the electricity generated by these equipments and compensates, to a certain extent, any excess energy they generate.²³

In Law 114/2007's Statement of Motives, the Legislature explains its reasons for adopting this legislation, which I here summarize. Net metering Programs similar to this one have already been established in over forty states and in the

¹⁴ P.R. LAWS ANN. tit. 13, § 9048, *repealed by* Taxpayers Justice Act of 2006, Law 117 of July 4, 2006, 2006 P.R. Laws 538, P.R. LAWS ANN. tit. 13, § 9048 (2007 & Supp. 2011).

¹⁵ Taxpayers Justice Act of 2006, 2006 P.R. Laws 538, 641.

¹⁶ *Infra* Part **Error! Reference source not found.**.o.

¹⁷ P.R.'s New Internal Revenue Code, Law 1 of January 31, 2011, Ch. 9, *available at* <http://www.oslpr.org/2009-2012/leyes/pdf/ley-1-31-Ene-2011.pdf>.

¹⁸ *Id.* § 4030.17.

¹⁹ Green Energy Incentives Act of Puerto Rico of July 19, 2010 (codified at P.R. LAWS ANN. tit. 13, §§ 10421-10446 (2007 & Supp. 2011)); *see infra* Part **Error! Reference source not found.**.o.

²⁰ Ley para el Desarrollo de Energía Renovable, Law 325 of September 16, 2004, 2004 P.R. Laws 2295, § 2.21.

²¹ Act ordering and authorizing P.R.E.P.A. to establish a Net metering program, Law 114 of July 4, 2007, 2007 P.R. Laws 482; P.R. LAWS ANN. tit. 22, §§ 1011-1018 (2009 & Supp. 2011).

²² 2007 P.R. Laws 482, Act's Summary.

²³ *Id.*

District of Colombia, as well as in countries such as Canada, Japan, and Germany.²⁴ There are three reasons for establishing a net metering program: (1) “customers instantly receive an economic benefit for the electricity produced by consuming this energy or eventually by means of a credit or payment for the excess feedback to the electricity company;”²⁵ (2) “net metering reduces customers costs by eliminating the need for a second meter;”²⁶ and (3) “net metering provides a simple, inexpensive, and easily administered mechanism for encouraging the use of solar electric equipment and windmills which at the same time benefit the environment and the economy in general.”²⁷ A net metering programs works also as an incentive for energy efficiency by rewarding customers who save energy: the less energy they use, the greater the impact of the credit or the larger the payment they receive from P.R.E.P.A.²⁸

P.R.E.P.A. also benefits from a net metering program.²⁹ As customers produce electricity at peak demand periods, they alleviate the burden on P.R.E.P.A.’s transmission and distribution system.³⁰ Moreover, P.R.E.P.A. reduces its operational costs by receiving energy at a lower cost than it would spend to produce it and by increasing its power reserve.³¹

This Net Metering Program established by Law 114/2007 is available either for residential or commercial customers who install equipment that generate renewable energy not exceeding a capacity of 25 kilowatts (25 W) and 1 megawatt (1 MW).³² If a customer does not use the credits earned within a year, 25% of these are reserved for credits or rebates to public school’s electricity bills.³³ This works as a tax on a customer’s energy generation. The remaining 75% is paid out to the customer at a reasonable rate of compensation.³⁴ The law states that this rate of compensation shall be the greater of either (1) 10 cents per kilowatt-hour or (2) the amount resulting from the subtraction of the adjusted fuel fee based on the variable costs incurred by the public corporation exclusively for the purchase of fuel and energy, from the total price charged by the public utility to its customers, converted into kilowatt-hours.³⁵ Later on, I will discuss how establishing feed-in-tariffs incentivizes a faster adoption of renewable energy projects.

On April 13, 2011, P.R.E.P.A. announced that forty-one families in the Community of Villas del Turabo in Caguas benefitted from the Net Metering Pro-

24 2007 P.R. Laws 483, Statement of Motives.

25 *Id.*

26 *Id.*

27 *Id.*

28 *Id.* at 483-84.

29 *Id.* at 484.

30 *Id.*

31 *Id.*

32 *Id.* at 485, art. 2(a), P.R. LAWS ANN. tit. 22, § 1012(a) (2009 & Supp. 2011).

33 *Id.* at 488, art. 5(e)(2), P.R. LAWS ANN. tit. 22, § 1015(e)(2).

34 *Id.* art. 5(e)(1), P.R. LAWS ANN. tit. 22, § 1015(e)(1).

35 *Id.*

gram, being the largest such contract yet realized by P.R.E.P.A.³⁶ It thus needs to improve, promote, and implement further this new and promising initiative.

C. Law 246 of August 10, 2008 (Law 246/2008)³⁷ – Act to Set Forth the Public Policy on Global Warming Mitigation in Puerto Rico

Before its repeal, Law 246/2008 intended to set Puerto Rico's public policy to mitigate global warming. It created, under the Governor's Office, the Global Warming Board and established guides and duties for agencies, public corporations and municipalities.

In the following three paragraphs, I will summarize Law 246/2008's Statement of Motives, in which the Legislature describes global warming, explains its causes and effects, and relates what the Government of Puerto Rico had done, up to that point, to contain it. Since 1997, Governor Pedro Rosselló conducted studies with the object of mitigating the effects of global warming.³⁸ These studies, however, were never completed, and P.R. lagged in addressing global warming.³⁹ As a consequence, the adverse effects of global warming became noticeable. In the last 30 years, the number of type 4 and 5 hurricanes doubled;⁴⁰ birds that used to visit only for certain seasons or short periods remained longer, endangering native species;⁴¹ and coral reefs decolorized.⁴²

In 2004, a Report by the Quality Air Board found that the main air pollutants in P.R., carbon monoxide and carbon dioxide, were emitted by motor vehicles and industries.⁴³ Albeit, P.R.'s air quality was within the United States' national guideline of 50 µg/m³.⁴⁴ Nonetheless, due to major power plants, industries, and high concentration of motor vehicles, the Ponce region and the metropolitan area had the island's poorest air quality.⁴⁵ In 2008, the Department of Transportation and Public Works registered 2.2 million motor vehicles;⁴⁶ by

³⁶ Carlos H. Monroig Acevedo, *AEE beneficia a 41 familias de Caguas con el Programa de Medición Neta* [P.R.E.P.A. Benefits 41 Families from Caguas with the Net Metering Program], April 13, 2011, <http://www.aeepr.com/noticiasread.asp?r=BXGTIIMDLT&tab> (last visited Apr. 14, 2012).

³⁷ Public Policy on Mitigating Global Warming in Puerto Rico Act, Law 246 of August 10, 2008, 2008 P.R. Laws 1397, previously found in P.R. LAWS ANN. tit. 12, §§ 8051-8071 (2007), *repealed by* Public Policy on Energy Diversification by Means of Sustainable and Alternative Renewable Energy in Puerto Rico Act, Law 82 of July 19, 2010, P.R. LAWS ANN. tit. 12, §§ 8121-8136 (2007 & Supp. 2011).

³⁸ Public Policy on Mitigating Global Warming in Puerto Rico Act, 2008 P.R. Laws 1398, Statement of Motives, ¶ 3.

³⁹ *Id.*

⁴⁰ *Id.* at 1400.

⁴¹ *Id.* at 1398.

⁴² *Id.*

⁴³ *Id.* at 1401.

⁴⁴ *Id.* at 1402.

⁴⁵ *Id.*

⁴⁶ Though in the last decade P.R.'s population has decreased by a significant number, due to Puerto Ricans migrating to the United States, *see supra* note 1, the most recent quote for the number of motor vehicles registered in the Department of Transportation has increased to 3,020,455, De-

2020, that number was projected to increase to 4.4 million and government spending on gas consumption by an additional \$40 million.⁴⁷

As only logical from these facts, the Legislature recognizes that the consumption level of non-renewable resources was extremely high for P.R.'s population and territory.⁴⁸ Therefore, "important, decisive, and necessary steps"⁴⁹ needed to be taken to deal with P.R.'s oil dependence and with the absence of coherent legislation to regulate gas emissions. Ever since October 2006, the *Government's Transformation and Economic Development Plan for P.R.* set the objective of diversifying energy sources and reducing oil dependence in half.⁵⁰ It stipulated a quantitative goal, along with a timeline: reduce P.R.'s oil consumption from 73% to 52% in a four year period and from 52% to 33% in ten years.⁵¹

Law 246/2008 was repealed by Law 82 of 19 July 2010,⁵² which established a Renewable Portfolio Standard discussed below.⁵³

D. A word on P.R.E.P.A.'s Green Way Project

Five years later, P.R. still finds itself producing nearly 70% of its energy from oil. Nevertheless, the current administration is pushing hard to convert P.R.E.P.A.'s power plants to operate with natural gas. This by itself, however, will not reduce P.R.'s dependence on fossil fuels. It only substitutes one fossil fuel, oil, for another, natural gas.

In this regard, it must be noted that the Fortuño Administration's attempt to modify P.R.'s energy generation from oil to natural gas – arguably referred to as *Vía Verde (Green Way)*⁵⁴ – has met with strong opposition from important media, communities, politicians, and environmental groups, such as *El Nuevo Día*,⁵⁵ the *Utuaedo Committee against the Pipeline*,⁵⁶ Congressman Luis V. Gutierrez,⁵⁷

partment of Transportation and Public Works, Motor Vehicle Registry by Municipality and by Category for Fiscal Year 2009-2010.

⁴⁷ 2008 P.R. Laws 1397, 1402.

⁴⁸ *Id.* at 1403.

⁴⁹ *Id.*

⁵⁰ *Id.* at 1403-04.

⁵¹ *Id.* at 1404.

⁵² Public Policy on Energy Diversification by Means of Sustainable and Alternative Renewable Energy in Puerto Rico Act, Law 82 of July 19, 2010, § 2.13; P.R. LAWS ANN. tit. 12, §§ 8121-8136; see discussion *infra* Part **Error! Reference source not found..o.**

⁵³ P.R. LAWS ANN. tit 12, §§ 8051-8070 (repealed 2010).

⁵⁴ *Vía Verde: Una nueva era energética [Green Way: A New Energy Era]*, P.R.E.P.A., <http://www.aeepr.com/viaverde.asp> (last visited Apr. 14, 2012).

⁵⁵ EL NUEVO DÍA, <http://www.elnuevodia.com/> (last visited Apr. 14, 2012).

⁵⁶ *Comité Utuaedoño contra el Gaseoducto Denuncia Acoso de la AEE [The Utuaedo Committee against the Pipeline denounces P.R.E.P.A.'s harassment]*, EL NUEVO DÍA, Oct. 10, 2011, available at <http://www.elnuevodia.com/comiteutuadenoencontraelgasoductodenunciaacosodelaaee-1088995.html>.

⁵⁷ Congressman Luis V. Gutierrez spoke forcefully against the construction of *Vía Verde* at the House of Representatives on April 14, 2011, punning the name "Green Way" to "Green away" and the "Wrong way." See http://www.gutierrez.house.gov/index.php?option=com_content&view=article&id=663:rep-gutierrez-on-puerto-rico-qvia-verdeq-natural-gas-pipeline-project-qi-am-trying-to

and *Casa Pueblo de Adjuntas*.⁵⁸ In broad terms, they object to a gas pipeline that is to run for over 90 miles in an island roughly 110 miles wide by 35 miles long.⁵⁹ At present, the pipeline is planned to go from the southwest to the northwest of the island, passing through P.R.'s Central Mountain Chain.⁶⁰ From there, it is to run to the northeast of P.R.⁶¹ They argue that such a pipeline, which is to lie proximate to numerous communities, in an island tremor and hurricane prone,⁶² is, first and foremost, a dangerous enterprise.⁶³ Second, regardless of the savings the Fortuño Administration estimates the gas pipeline could bring electricity consumers, they protest that a 92-mile pipeline, as designed, does not make economic sense and shall cause an unjustified amount of environmental damage.⁶⁴

Nonetheless, the Fortuño administration's pro *Vía Verde* campaign has continued doggedly on. P.R.E.P.A. states on customers' electricity bills, for instance, the amount they could be saving if *Vía Verde* were operating. It does not mention on their bills, however, the amount of costs, both fiscal and environmental, P.R. and Puerto Ricans will incur to transform P.R.E.P.A.'s power plants from operating with oil to natural gas.⁶⁵ Only of late, after a poll recording a strong negative sentiment toward the project and an inquiry from the Environmental Protection Agency,⁶⁶ has the Fortuño administration shown signs of relenting on its adamant propaganda in favor of the pipeline.⁶⁷

shine-a-light-where-there-has-been-too-much-secrecy&catid=50:2011-press-releases (last visited Apr. 14, 2012).

⁵⁸ CASA PUEBLO, <http://www.casapueblo.org/> (last visited APR. 14, 2012); For more detailed information on Casa Pueblo's opposition to the construction of the gas pipeline see also CASA PUEBLO DE ADJUNTAS, *Evaluación del Gasoducto del Norte Propuesto por la Autoridad de Energía de Puerto Rico (AEE): Respuesta Comunitaria a la Crisis Energética [Evaluation of the Proposed Gas Pipeline of the North by the Puerto Rico Electric Power Authority (P.R.E.P.A.): Community Response to the Energy Crisis]*, August 17, 2010 (Part I) & September 14, 2010 (Part II), <http://www.casapueblo.org/> (follow "Casa Pueblo Gasoducto Parte I" & "Casa Pueblo Gasoducto Parte II").

⁵⁹ *Id.*

⁶⁰ Lizette Alvarez, *Puerto Rico's Plan for a Gas Pipeline has Many Critics*, N.Y. TIMES (OCT. 21, 2011), <http://www.nytimes.com/2011/10/22/us/puerto-ricos-plan-for-gas-pipeline-has-many-critics.html?scp=2&sq=puertorico&st=cse>.

⁶¹ *Id.*

⁶² *Id.*

⁶³ *Id.*

⁶⁴ *Id.*

⁶⁵ On P.R.E.P.A.'s website, the gas pipeline *Vía Verde* is estimated to cost \$450 Million and to take 12 months of construction work, *previously available at* <http://www.aeepr.com/viaverde.asp> (Last visited April 14, 2012).

⁶⁶ Gerardo E. Alvarado León, *La E.P.A. insiste en los daños a humedales: Insta al gobierno a considerar el sentir de la ciudadanía [The E.P.A. insists on the damages to wetlands: Urges government to consider the citizenships' sentiment]*, EL NUEVO DÍA (Nov. 15, 2011), <http://www.elnuevodia.com/laepainsistenlosdanosahumedales-112055.html>.

⁶⁷ Gloria Ruiz Kuilan, *Baja el fervor por el gasoducto en la AEE: Decide la Junta no gastar más dinero en su publicidad [Fervor for the Pipeline Subsidies in P.R.E.P.A.: Board decides not to spend more money on its publicity]*, EL NUEVO DÍA (Nov. 17, 2011), <http://www.elnuevodia.com/bajaelfervororelgasoductoenlaee-1122296.html>.

Albeit that the increasing abundance of cheap natural gas resources, which the International Energy Agency (I.E.A.) believes is enough to sustain current production levels for more than 250 years, is widely dispersed geographically and may bring a “golden age of gas,”⁶⁸ there are considerable concerns about its possible environmental impact.⁶⁹ In fact, the Wall Street Journal, a pro-business newspaper, recently reported that a “study, conducted by professors at Cornell University, found that natural gas obtained from shale formations using a process known as ‘hydraulic fracturing’ releases large amounts of methane [that when taken into account produce] more greenhouse gases than coal and coal-fired electricity generation over a 20-year time horizon.”⁷⁰ Likewise, the Guardian newspaper commented that: “Shale gas represents a potential problem for governments trying to reduce CO₂ emissions, as there are significant emissions when it is burned.”⁷¹ Moreover, there are serious concerns that the process of hydraulic fracturing contaminates water supplies⁷² and causes minor earthquakes.⁷³

Thus, regardless whether the Fortuño Administration achieves its objective of substituting natural gas for oil in the next few years, to reduce greenhouse gases and the effects of climate change, it will be necessary for P.R. to move away from fossil fuels and make a clear and determined commitment towards producing energy from renewable energy sources. Luckily, P.R. has enviable inexhaustible renewable energy resources throughout the whole year – sun, wind, and ocean – to generate clean energy.

E. Law 248 of August 10, 2008 (Law 248/2008)⁷⁴ – Law establishing tax incentives and exemptions for the development of solar power and renewable energy technologies

Law 248/2008 added section 1040J to Subtitle A, and section 2514 to Subtitle BB of P.R.’s Internal Revenue Code of 1994, granting tax incentives for the devel-

⁶⁸ International Energy Agency, *Are We Entering a Golden Age fo Gas?*, Special Report 2011, available at http://www.iea.org/weo/docs/weo2011/WEO2011_GoldenAgeofGasReport.pdf (last visited Apr. 14, 2012).

⁶⁹ Guy Chazan, *Natural Gas Entering ‘Golden Age’*, THE WALL STREET JOURNAL (June 7, 2011), <http://online.wsj.com/article/SB10001424052702304432304576369051577701960.html>.

⁷⁰ Tennille Tracy, *Study: Some Natural Gas Threatens Climate More than Coal*, THE WALL STREET JOURNAL (April 11, 2011, 8:04 PM), <http://online.wsj.com/article/SB10001424052748704662604576257511559025764.html>.

⁷¹ Macalister, Terry, *Vast Reserves of Shale Gas Revealed in UK*, THE GUARDIAN (Sept. 21, 2011), <http://www.guardian.co.uk/business/2011/sep/21/gas-field-blackpool-dallas-sea/print>.

⁷² *Id.*

⁷³ Sylvia Pfeifer & Andrew Bounds, *Shale gas fracking blamed for Blackpool quake*, THE FINANCIAL TIMES (Nov. 2, 2011, 9:03 PM), <http://www.ft.com/intl/cms/s/o/df3cbco8-053c-11e1-a3d1-00144feabdco.html#axzzicChLdQBG>.

⁷⁴ Act establishing tax incentives and exemptions for the development of solar power and renewable energy technologies, Law 248 of August 10 2008, 2008 P.R. Laws 1467, P.R. LAWS ANN. tit. 13, § 8190 (2007 & Supp. 2011).

opment of solar energy. It also amended article 5.01(s) of Law 83 of August 30, 1991, the *Municipal Property Tax Act of 1991*, to add the use of solar energy, as well as all equipment to capture, store, generate, distribute, or use renewable energy introduced or manufactured in P.R., as a tax exemption.

In Law 248/2008's Statement of Motives, which I here summarize in the next few paragraphs, the Legislature states that 68% of P.R.'s electricity is generated exclusively through oil consumption.⁷⁵ P.R.'s oil dependence for power generation is much higher than most of P.R.'s economic competitors: Ireland has a dependence of 20%, Costa Rica 1%, Latin American and Caribbean countries, on average, 18%, and the continental United States 3%.⁷⁶ P.R.'s oil dependence is even greater than Saudi Arabia's – 63% – a top producer and exporter of oil.⁷⁷

Hence, P.R.'s economic development is vulnerable to the high cost of electricity.⁷⁸ On average, in 2008, industries in P.R. paid thirteen cents per kilowatt-hours,⁷⁹ whereas those in the continental U.S. paid only three.⁸⁰ The high cost of petroleum has a severe impact on P.R.'s economy: the capital used to buy oil, instead of remaining on the island to generate economic activity, is transferred out to the economies of petroleum exporting countries.⁸¹ A report prepared by Banco Bilbao Vizcaya Argentaria (BBVA) estimates that for every increase of \$10 per barrel of imported oil, P.R.'s economy loses \$750,000,000.⁸²

Law 325/2004⁸³ was a commendable attempt to stimulate renewable energy. However, because it lacked adequate and stable incentives, it failed to produce

⁷⁵ *Id.*, Statement of Motives, ¶ 1.

⁷⁶ *Id.* at 1468 (Legislature cites a 2004 report titled *Puerto Rico 2025*, produced by A.T. Kearny consultants).

⁷⁷ *Id.*

⁷⁸ *Id.*

⁷⁹ *Id.* at 1468; See, AUTORIDAD DE ENERGÍA ELÉCTRICA, COSTO PROMEDIO DE LA ELECTRICIDAD [PUERTO RICO POWER AUTHORITY, AVERAGE COST OF ELECTRICITY], <http://www.prepa.com/spanish.asp?url=http://www.aeepr.com/costoenergiapr.asp> (last visited April 14, 2012) (For August 2011 the cost of electricity for industries has ballooned to 25 cents per kilowatt-hour, <https://webapps.prepa.com/pls/web/f?p=124:14:483818273152554>).

⁸⁰ 2008 P.R. Laws 1467, 1469.

⁸¹ *Id.*

⁸² At the time, P.R.'s Legislature stated that the price of oil for 2006 was expected to fluctuate around \$60 per barrel of oil. However, in July 2008, the price of oil peaked to \$147.30 per barrel of oil. On June 12, 2011, the price of a barrel of WTI crude oil stood at \$97.92 and of Brent crude oil at \$120.10. See OIL-PRICE.NET, <http://www.oil-price.net/> (last visited May 15, 2012). See also 2008 P.R. Laws 1467, 1467-68; PUERTO RICO POWER AUTHORITY, AVERAGE COST OF ELECTRICITY, *supra* note 79 (Only three years later, the industrial, residential, and commercial cost of electricity in P.R. are respectively 25, 28, and 29 cents per kilowatt-hour.); See also Pedro Bosque Pérez, *Drástico aumento en la factura de la luz: AEE dice que se debe al aumento en precio del petróleo* [Drastic increase in the electricity bill: P.R.E.P.A. says that its due to the increase in the price of oil], EL NUEVO DÍA (May 14, 2011), <https://www.adendi.com/archivo.asp?Xnum=965903&year=2011&mon=5>; Alba Muñiz Gracia, *La electricidad de la Isla es la segunda más cara en EE.UU.: El costo por kilovatio hora solo lo supera Hawaii* [The electricity on the Island is the second most expensive in the U.S.: The cost per kilowatt hour is only exceeded by Hawaii], EL NUEVO DÍA (Sept. 8, 2011), <http://www.elnuevodia.com/laelectricidaddelaislaeslasegundamascaraenee.uu.-1061140.html>.

⁸³ See discussion *supra* Part Error! Reference source not found..o.

its objective of promoting the adoption and development of renewable energy technologies.⁸⁴ Law 248/2008 improves these incentives by granting, during fiscal years 2007-08 and 2008-09, a 75% tax credit on the cost of purchasing and installing solar power systems in a primary residence or business.⁸⁵ For fiscal years 2009-10 and 2010-11, the credit is lowered to 50%.⁸⁶ Thereafter it stays at 25%.⁸⁷ The Government budgets \$5,000,000 per fiscal year for the residential credit;⁸⁸ whereas, for businesses, it budgets \$15,000,000 per fiscal year.⁸⁹ Any excess tax credits that remain unused, up to \$10,000,000, are rolled over for future fiscal year budgets.⁹⁰

The Law also creates the possibility of the credits being ceded, sold or in any other way transferred in their totality or partiality by a taxpayer to any other person, thus creating a market for such credits.⁹¹ Once they have been so transferred, however, they cannot be ceded, sold or transferred again.⁹² Nevertheless, they may be carried over for a period of 10 years.⁹³

Law 83 of 19 July 2010,⁹⁴ however, phases out these tax credit incentives by fiscal year 2010-11.⁹⁵

*F. Governor Fortuño's Executive Order 2009-23 (E.O. 2009-23) of July 21, 2009- To create the Energy Policy Committee*⁹⁶

On July 21, 2009, the Honorable Governor Luis Fortuño approved E.O. 2009-23 to create the Energy Policy Committee (E.P.C.).⁹⁷ I here summarize Governor Fortuño's main statements therein.

Instituting a modern energy policy is essential for P.R.'s economic development.⁹⁸ P.R.'s must look to provide clean energy at reasonable and stable costs.⁹⁹ But P.R.'s electric infrastructure, now over 60 years old, will not suffice.¹⁰⁰ Be-

⁸⁴ See 2008 P.R. Laws 1467, 1470.

⁸⁵ *Id.* at 1472, art. 1, § 1040(b) (repealed by P.R.'s New Internal Revenue Code 2011, Law 1 of January 31, 2011)).

⁸⁶ *Id.*

⁸⁷ *Id.*

⁸⁸ *Id.* at 1473, § 1040(c).

⁸⁹ *Id.*

⁹⁰ *Id.* § 1040(d).

⁹¹ *Id.* at 1474-75, § 1040(i)(1).

⁹² *Id.*

⁹³ *Id.* at 1474, § 1040(h).

⁹⁴ See discussion *infra* Part **Error! Reference source not found.**.

⁹⁵ Green Energy Incentives Act of Puerto Rico, Law 83 of July 19, 2010 (codified at P.R. LAWS ANN. tit. 13, §10421-10446 (2007& Supp. 2011)), available at <http://www.oslpr.org/download/en/2010/A-0083-2010.pdf>.

⁹⁶ Boletín Administrativo Núm. OE-2009-23 [Administrative Bulletin No. E.O. 2009-23], available at http://app.estado.gobierno.pr/Ordenes_Ejecutivas/2009/OE-2009-23.pdf.

⁹⁷ *Id.*

⁹⁸ *Id.* Whereas 1.

⁹⁹ *Id.*

¹⁰⁰ *Id.* Whereas 2.

cause of it, P.R. predominantly depends on fossil fuel imports derived from oil and, in a minor scale, from natural gas and coal.¹⁰¹ Not having control over fossil fuel prices, P.R.'s economy is slave to continuous price fluctuations and to local capital flight when acquiring these fuels in world markets.¹⁰²

The actual cost of P.R.'s electric energy is approximately twice the average cost of the rest of the U.S.¹⁰³ This high cost of energy adversely affects our quality of life and our economic competitiveness by increasing the cost of life and the cost of doing business in P.R.¹⁰⁴ Likewise, pollution and greenhouse gases, generated when burning oil and other fossil fuels, lower our quality of life.¹⁰⁵ In light of this, P.R. must immediately reduce its dependence on fuels derived from oil and diversify its energy sources to generate energy in a more cost-effective and environmentally sustainable way.¹⁰⁶

P.R. counts with sufficient renewable energy resources – solar, wind, biomass, marine, hydropower, and the possibility to transform waste-to-energy – to establish a public policy of diversified energy.¹⁰⁷ Such a policy would strengthen P.R.'s economy and protect its environment.¹⁰⁸ For this reason, the energy policy adopted by Governor Pedro Rosselló in Executive Order 1993-57¹⁰⁹ needs to be revised and updated to the new possibilities of energy generation.¹¹⁰

Promoting projects based on alternate sources and renewable energy will achieve the following objectives: diversify P.R.'s energy sources and the infrastructure of energy technology; reduce P.R.'s dependence on fuels derived from oil and other fossil fuels; reduce and stabilize P.R.'s energy costs; stimulate and develop P.R.'s economy to create green businesses and green jobs; and improve P.R.'s environment and quality of life.¹¹¹

Governor Fortuño identifies public-private partnerships, authorized by Law 29 of 9 June 2009, and economic incentives, established by the American Recovery and Reinvestment Act (A.R.R.A.)¹¹² for private investment in infrastructure for the generation of alternate and renewable energy sources, as potential vehicles to support this diversification initiative.¹¹³

101 *Id.*

102 *Id.* Whereas 3.

103 *Id.* Whereas 4.

104 *Id.*

105 *Id.* Whereas 5.

106 *Id.* Whereas 6.

107 *Id.* Whereas 7.

108 *Id.*

109 Boletín Administrativo Núm. OE-1993-57 [Administrative Bulletin No. OE-1993-57], available at http://app.estado.gobierno.pr/Ordenes_Ejecutivas/1993/OE-1993-57.pdf.

110 Boletín Administrativo Núm. OE-2009-23 [Administrative Bulletin No. E.O. 2009-23], Whereas 8.

111 *Id.*

112 Public Law 111-5, American Recovery and Reinvestment Act of 2009, 26 USC 1.

113 Boletín Administrativo Núm. OE-2009-23 [Administrative Bulletin No. E.O. 2009-23], Whereas 9.

Law 73 of May 28, 2008 made the Secretary of the Department of Economic and Commercial Development the official responsible for recommending, developing, and instituting P.R.'s Energy Policy.¹¹⁴ Through E.O. 2009-23, Governor Fortuño establishes the E.P.C., constituting it with five members: (1) the Secretary of the Department of Economic and Commercial Development, who shall act as President; (2) the Executive Director of P.R.E.P.A.; (3) the Executive Director of the Administration of Energetic Affairs; (4) the President of the Government Development Bank for P.R.; and (5) a representative of the Office of the Governor.¹¹⁵

The governor's intention in establishing this Committee is, among other things, to prepare and submit recommendations on: (1) a new public energy policy and an energy portfolio with diversification metrics; (2) the development and installment of new sources of alternate and renewable energy; (3) ways to achieve greater efficiency and accessibility of the systems of generation, distribution and transmission of energy; (4) the development of alternate and renewable energy projects under the incentives of federal programs; (5) ways to expedite government agency processes; and (6) the adoption of laws and regulations to better achieve this new energy policy.¹¹⁶ The E.P.C. must also submit periodic reports of progress and studies to the Governor.¹¹⁷

Various subsequent laws and executive orders regarding alternative and renewable energy, examined below, show the E.P.C. has had a verifiable impact on the Government of P.R.'s energy policy.¹¹⁸

*G. Governor Fortuño's Executive Order 2010-34 of July 19, 2010 (E.O. 2010-34)*¹¹⁹ to activate the dispositions of Law 76 of May 5, 2000 (Law 76/2000)¹²⁰

On July 10, 2010, Governor Fortuño approved E.O. 2010-34¹²¹ to activate the dispositions of Law 76/2000.¹²² I will summarize and comment on his main pronouncements therein.

P.R. confronts an energy crisis: its power generation infrastructure is antiquated, depending mainly on fuels derived from oil to produce almost 70% of electricity.¹²³ P.R.'s oil dependence "threatens the life, health, and security of all

¹¹⁴ *Id.* Whereas 11.

¹¹⁵ *Id.* § 1.

¹¹⁶ *Id.* § 3.

¹¹⁷ *Id.* § 3.7.

¹¹⁸ See discussion *infra* Part Error! Reference source not found..o.

¹¹⁹ Boletín Administrativo Núm. OE-2010-34 [Administrative Bulletin No. OE-2010-34], available at http://app.estado.gobierno.pr/Ordenes_Ejecutivas/2010/OE-2010-034.pdf.

¹²⁰ Law 76 of May 5, 2000, 2000 P.R. Laws 649, P.R. LAWS ANN. tit. 3, §§ 1931-1945 (2007 & Supp. 2011).

¹²¹ Boletín Administrativo Núm. OE-2010-34 [Administrative Bulletin No. OE-2010-34].

¹²² P.R. LAWS ANN. tit. 3, §§ 1931-1945.

¹²³ Boletín Administrativo Núm. OE-2010-34 [Administrative Bulletin No. OE-2010-34], Whereas 1.

Puerto Ricans¹²⁴ since it affects the environment and forces the government to spend valuable resources in the payment of energy that instead could be invested in education, health, housing, and other social needs.¹²⁵

To avert this dire threat, this old and archaic infrastructure must be modernized and diversified to allow the use of sources other than those derived from oil.¹²⁶ The first alternate source Governor Fortuño identifies is natural gas.¹²⁷ Yet he always takes care to mention it married to or in conjunction with clean and sustainable renewable energies, such as wind, solar, biomass, marine, and hydraulic energy.¹²⁸

It is important to keep in mind that, although it produces less average air emissions when burned than coal or oil, natural gas is a nonrenewable fossil fuel.¹²⁹ We cannot say with certainty whether generating energy through natural gas will remain for long more cost-effective than other sources of energy – for instance, renewable energies– in the next half century and beyond, particularly when the U.S. Congress has considered bills to tax carbon dioxide and when generating renewable energy becomes ever more affordable.¹³⁰ Pondering such uncertainties and the Fortuño administration's agenda, however, may easily give cause for speculation.¹³¹

Nonetheless, in E.O. 2010-34, Governor Fortuño explains that Law 76/2000 provides him with the ability to activate expedited processes – in the concession of permits, completion of consultations, endorsements, comments, recommendations, certifications, and the like¹³² – for the execution of necessary works and projects to deal with critical situations in infrastructure that are key in the provi-

124 *Id.* (translation provided).

125 *Id.*

126 *Id.* Whereas 4-5.

127 *Id.* Whereas 6.

128 *Id.* Whereas 6.

129 E.P.A., *Electricity from Natural Gas*, <http://www.epa.gov/cleanenergy/energy-and-you/affect/natural-gas.html> (last visited April 14, 2012).

130 America's Energy Security Trust Fund Act of 2009, H.R. 1337, 111th Cong. § 2 (2009); American Clean Energy and Security Act of 2009, H.R. 2454, 111th Cong. (2009).

131 See CASA PUEBLO DE ADJUNTAS, EVALUACIÓN DEL GASODUCTO DEL NORTE PROPUESTO POR LA AUTORIDAD DE ENERGÍA DE PUERTO RICO (AEE): RESPUESTA COMUNITARIA A LA CRISIS ENERGÉTICA [*Evaluation of Puerto Rico Energy Power Authority's (P.R.E.P.A.) Proposed Gas Pipeline of the North: Community Response to the Energy Crisis*], September 14, 2010 (Part II) (page 2 where the gas pipeline project is compared to the construction of the Teodoro Moscoso bridge, which was later transformed into a public private partnership that ceded the toll's administration and fee to a private enterprise; page 4, where it questions constructing forty-five (45) miles of pipeline to convert a power plant that merely produces 2 percent of P.R.'s electric energy; page 5, where it questions Governor Fortuño's E.O. 2010-34 declaring an energy crisis when the installed capacity of 4,500 MW exceeds the daily energy demand during peak hours of 3,200-3,400 MW. With these comments, Casa Pueblo de Adjuntas implicitly suggests that Fortuño wants the pipeline energy project to become a reality quickly for other unstated reasons).

132 Boletín Administrativo Núm. OE-2010-34 [Administrative Bulletin No. OE-2010-34], § 2.

sion of essential public services to the citizenship and in situations that put at risk the life, health, and security of the population.¹³³

In virtue of Law 76/2000, Governor Fortuño declares that P.R.'s infrastructure of electrical power generation is in a state of emergency and orders the use of Law 76/2000's expedited processes to develop projects that promote a new infrastructure, ones that use alternate sources to those derived from oil.¹³⁴ He groups natural gas, sustainable renewable energy, and alternate renewable energy projects, conveniently snuggled into one legal term: "Energy Projects."¹³⁵

His executive order creates also a Sub-committee of Accelerated Environmental Compliance, which is composed of one official from the Environmental Quality Board, one from the Urban Planning Board, one from the Natural Resources Department, and any other official the Governor designates.¹³⁶ It is not clear from the wording if the Governor can designate more than one official to this Sub-committee. Nevertheless, considering that at this time his political party, the New Progressive Party, virtually controls the three branches of government, the Fortuño Administration should find no local legal difficulty in the approval of the *Energy Projects* it sees fit.¹³⁷ Still, it may continue to face federal hurdles and public opposition.

Be that as it may, to demonstrate its approval to the Governor's emergency declaration, the Legislature passed Law 32 of March 15, 2011¹³⁸ to amend the six-month limit imposed by Law 76/2000 to any emergency declaration¹³⁹ and to grant Governor Fortuño the option of extending it to his entire term of office.

¹³³ *Id.* Whereas 7.

¹³⁴ *Id.* § 1.

¹³⁵ *Id.*

¹³⁶ *Id.* § 3.

¹³⁷ However, it may face federal and public opposition. See Gerardo E. Alvarado León, *La EPA insiste en los daños a humedales: Insta al gobierno a considerar el sentir de la ciudadanía* [The EPA insists on the damages to wetlands: Urges government to consider the citizenships' sentiment], EL NUEVO DÍA (Nov. 15, 2011), <http://www.elnuevodia.com/laepainsistenlosdanosahumedales-112055.html>; Lymaris Suárez Torres, *Retornan los Massol tras su protesta en Washington: Aseguran que continuarán la lucha contra el gasoducto* [The Massol's return after they protest in Washington: They assure they will continue their fight against the pipeline], EL NUEVO DÍA (Sept. 6, 2011), <http://www.elnuevodia.com/retornanlosmassoltrassuprotestaenwashington-1059263.html>; José A. Delgado, *Vía de la discordia: Críticas al gasoducto llegan al Congreso* [Discord Way], EL NUEVO DÍA (Apr. 15, 2011), <https://www.adendi.com/archivo.asp?Xnum=940854&year=2011&mon=4>; Keila López Alicea & Gerardo E. Alvarado León, *Fallo a favor del gasoducto: Comunidades insisten en la desobediencia civil* [Decision in favor of the pipeline: Communities insist on civil disobedience], EL NUEVO DÍA (May 14, 2011), <https://www.adendi.com/archivo.asp?Xnum=965904&year=2011&mon=5>.

¹³⁸ Ley para enmendar el Artículo 12 de la Ley Núm. 76 de 2000; a los fines de disponer que el Gobernador podrá, mediante Orden Ejecutiva, autorizar la continuación de un estado de emergencia [Law to amend article 12 of Law 76 of 2000], Law 32 of March 14, 2011, 2011 P.R. Laws 32 (to be codified at P.R. LAWS ANN. tit. 16), available at <http://www.oslpr.org/2009-2012/leyes/pdf/ley-32-14-Mar-2011.pdf>.

¹³⁹ P.R. LAWS ANN. tit. 3, § 1932.

Through Executive Order 2011-013 of April 12, 2011,¹⁴⁰ Governor Fortuño exercises this option and declares the continuance of the emergency declaration.

H. Law 82 of July 19, 2010 (Law 82/2010)¹⁴¹ – Public Policy on Energy Diversification by Means of Sustainable and Alternative Renewable Energy in Puerto Rico Act

On the same day that Governor Fortuño issued E.O. 2010-34,¹⁴² Law 82/2010, titled “Public Policy on Energy Diversification by Means of Sustainable and Alternative Renewable Energy in Puerto Rico Act,”¹⁴³ was promulgated. This Law complements E.O. 2010-34¹⁴⁴ by establishing a Renewable Portfolio Standards (R.P.S.) to promote the generation of renewable energy pursuant to short, medium, and long-term mandatory goals.¹⁴⁵ In addition, it creates the Puerto Rico Renewable Energy Commission, which is in charge of overseeing compliance with the R.P.S. and with setting forth the duties of the Energy Affairs Administration (E.E.A.) with respect to this Commission and the R.P.S.¹⁴⁶

In Law 82/2010’s Statement of Motives,¹⁴⁷ which I here summarize, the Legislature echoes almost verbatim Governor Fortuño’s statements in E.O. 2010-34¹⁴⁸ by expressing, for instance, that P.R. is undergoing an energy crisis and that its energy production must be diversified in order to stabilize the price of energy.¹⁴⁹ As a constitutional basis for the Act, the Legislature cites article VI, section 19 of the Constitution of Puerto Rico, which reads in part: “It shall be the public policy of the Commonwealth to conserve, develop, and use its natural resources in the most effective manner possible for the general welfare of the community.”¹⁵⁰

Only last year President Barack Obama committed to invest 150 billion dollars in sustainable renewable energy technology during the next decade, which is expected to generate five million direct and indirect jobs for the U.S. economy.¹⁵¹ Similarly, P.R.’s Legislature foresees the creation of a “new, strong renewable

¹⁴⁰ Boletín Administrativo Núm. OE-2011-013 [Administrative Bulletin No. OE-2011-013] (2010), available at http://app.estado.gobierno.pr/Ordenes_Ejecutivas/2011/OE-2011-013.pdf.

¹⁴¹ Public Policy on Energy Diversification by Means of Sustainable and Alternative Renewable Energy in Puerto Rico Act, Law 82 of July 19, 2010, P.R. LAWS ANN. tit. 12, §§ 8121-8136 (2007 & Supp. 2011).

¹⁴² *Id.*

¹⁴³ *Id.* § 8121.

¹⁴⁴ Boletín Administrativo Núm. OE-2011-013 [Administrative Bulletin No. OE-2011-013].

¹⁴⁵ Public Policy on Energy Diversification by Means of Sustainable and Alternative Renewable Energy in Puerto Rico Act, Act’s summary.

¹⁴⁶ P.R. LAWS ANN. tit. 12, § 8123.

¹⁴⁷ Public Policy on Energy Diversification by Means of Sustainable and Alternative Renewable Energy in Puerto Rico Act, Statement of Motives.

¹⁴⁸ Boletín Administrativo Núm. OE-2011-013 [Administrative Bulletin No. OE-2011-013].

¹⁴⁹ Public Policy on Energy Diversification by Means of Sustainable and Alternative Renewable Energy in Puerto Rico Act, Statement of Motives, ¶ 1.

¹⁵⁰ *Id.*

¹⁵¹ *Id.* ¶ 5.

energy industry and thousands of new direct and indirect jobs.”¹⁵² Showing it is completely in sync with the Fortuño Administration’s efforts, the Legislature states and follows the recommendations of the E.P.C.:

The members of the Energy Policy Committee (E.P.C.) created by the Governor of Puerto Rico, the Hon. Luis G. Fortuño, through Executive Order of July 21, 2009, (Administrative Bulletin No. OE-2009-23) reached a unanimous agreement as to a renewable portfolio standard proposal and defined the minimum percentage of renewable energy to be produced in Puerto Rico over the next decades.¹⁵³

Establishing a R.P.S. has become a popular idea. Prior to P.R., over 30 states adopted a R.P.S. or a renewable energy goal.¹⁵⁴ Even the U.S. Congress evaluated establishing a nationwide R.P.S.¹⁵⁵ Through Law 82/2010 the Legislature joins these states and sets a twenty-five year mandatory timetable for retail electricity suppliers in P.R. to generate 20% of their energy from sustainable or alternative renewable sources, defined as follows:¹⁵⁶

“Sustainable Renewable Energy” means the energy derived from the following sources:

- a. Solar energy;
- b. Wind energy;
- c. Geothermal energy;
- d. Renewable Biomass Combustion;
- e. Renewable Biomass Gas Combustion;
- f. Combustion of biofuel derived solely from renewable biomass;
- g. Qualified hydropower;
- h. Marine and hydrokinetic renewable energy, as defined in section 632 of the Energy Independence and Security Act of 2007 (Public Law 110-140, 42, U.S.C. § 17211);
- i. Ocean thermal energy;
- j. Any other clean and/or renewable energy that the Administration may define in the future through regulation or order as sustainable renewable energy.¹⁵⁷

“Alternative Renewable Energy” means energy derived from the following sources:

- a. Conversion of municipal solid waste;
- b. Landfill gas combustion;
- c. Anaerobic digestion;

¹⁵² *Id.*

¹⁵³ *Id.* ¶ 8; *See discussion supra* Part **Error! Reference source not found.**.o.

¹⁵⁴ Public Policy on Energy Diversification by Means of Sustainable and Alternative Renewable Energy in Puerto Rico Act, Statement of Motives, ¶ 6.

¹⁵⁵ *Id.* ¶ 6.

¹⁵⁶ *Id.* ¶ 7.

¹⁵⁷ P.R. LAWS ANN. tit. 12, § 8121(16).

- d. Fuel Cells;
- e. Any other energy that the Administration may define in the future as alternative renewable energy.¹⁵⁸

The twenty-five year R.P.S. timetable is set up as follows:

Table 1. P.R.'s twenty-five year R.P.S. timetable

Years	Mandatory Renewable Energy Percentage	Percentage Increase
2010 to 2014	0%	-
2015 to 2019	12%	12% (P.R.E.P.A. currently produces 1-2% of its energy from renewable energy)
2020 to 2027	15%	3%
2027 to 2034	Suppliers shall establish a progressive plan stating the annual percentages for such periods that reaches 20% by 2035	0%
2035 and beyond	20%	5%

Law 82/2010 stipulates that “retail electricity supplier” means P.R.E.P.A. and “any other electricity supplier that sold more than fifty thousand megawatt-hours (50,000 MWh) of electric power to electric power consumers in Puerto Rico during the preceding calendar year.”¹⁵⁹

The idea behind this new energy policy, explains the Legislature, is to move towards energy source diversification and conservation, to ensure that the generation of electricity is “affordable, feasible, reliable, stable, and sustainable, while ‘green jobs’ are created and the environment is preserved.”¹⁶⁰ Yet P.R. still finds itself far from achieving the R.P.S. targets set in Law 82/2010: only between one to two percent (1-2%) of P.R.’s energy is currently generated from renewable sources.¹⁶¹ By 2015, however, retail electricity suppliers must reach the first and

¹⁵⁸ P.R. LAWS ANN. tit. 12, § 8121(14).

¹⁵⁹ P.R. LAWS ANN. tit. 12, § 8121(28).

¹⁶⁰ Public Policy on Energy Diversification by Means of Sustainable and Alternative Renewable Energy in Puerto Rico Act, Statement of Motives, ¶ 7.

¹⁶¹ See URS CORPORATION, THIRTY-SEVENTH ANNUAL REPORT ON THE ELECTRIC PROPERTY OF THE PUERTO RICO ELECTRIC POWER AUTHORITY 26, 53 (2010), http://www.aeepr.com/INVESTORS/Financial%20Information/Annual%20Reports/ConsEng_36th_Rpt_2009%20Annual%20Report%20Final.pdf (Total hydropower generating capacity of 100 MW of a total installed power system capacity of

largest targeted increase in renewable energy production, twelve percent (12%), either by generating it or by purchasing Renewable Energy Certificates. Law 82/2010 defines a Renewable Energy Certificate (R.E.C.) as:

A personal property that constitutes a tradeable and negotiable asset or commodity that may be purchased, sold, assigned, and transferred between persons for any lawful purpose, which is equal to one (1) megawatt-hour of electricity generated from a sustainable renewable energy source or alternative renewable energy source (issued and registered pursuant to this Act) and represents all environmental and social attributes, as defined in this Act.¹⁶²

In addition, connecting with Law 114/2007, the Net Metering Act, discussed above, Law 82/2010 allows Retail Electricity Providers to purchase Distributed Renewable Energy, defined as: “sustainable renewable energy or alternative renewable energy supplying electric power to a retail electricity supplier through a net metering program with a capacity of up to one (1) megawatt.”¹⁶³ This is a commendable disposition to promote individuals and businesses to invest in renewable energy technology.

As a criticism, however, to sustain the adoption of renewable energy technology, instead of lowering the percentage increase in Table 1 above, the government should increase it as time progresses, particularly when it is well documented that renewable energy technology becomes ever more affordable, efficient, and necessary.¹⁶⁴

I. Law 83 of July 19, 2010¹⁶⁵ (Law 83/2010) – Green Energy Incentives Act of Puerto Rico

In tandem with Law 82/2010, the Legislature promulgated Law 83/2010, titled the “Green Energy Incentives Act of Puerto Rico.”¹⁶⁶ Law 83/2010 creates the

5839MW. Also, the report states that: “The Authority has entered into Power Purchase Agreements (PPA) with developers to purchase electric energy from three different wind energy projects and a waste-to-energy project. The wind projects, while not yet permitted, are 39 MW, 40 MW and 50 MW each. The largest 50 MW farm is to be located in Guayanilla on the southern side of the island.”

¹⁶² P.R. LAWS ANN. tit. 12, § 8121(8).

¹⁶³ *Id.* § 8121(15).

¹⁶⁴ See for example: INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE [I.P.C.C.], SPECIAL REPORT RENEWABLE ENERGY SOURCES, SUMMARY FOR POLICYMAKERS, 11th Session of Working Group III of the I.P.C.C., Abu Dhabi, United Arab Emirates, 5-8 May 2011, at 11, (“The cost of most [renewable energy] technologies has declined and additional expected technical advances would result in further cost reductions”) (hereinafter *IPCC Summary for Policymakers*), available at http://srren.ipcc-wg3.de/report/IPCC_SRREN_SPM.pdf; Paul Krugman, *Here Comes the Sun*, N.Y. TIMES (November 6, 2011), <http://www.nytimes.com/2011/11/07/opinion/krugman-here-comes-solar-energy.html?nl=today%20headlines&emc=th212>. (“as a blog post at Scientific American put it, ‘there’s now frequent talk of a ‘Moore’s law’ in solar energy,’ with prices adjusted for inflation falling around 7 percent a year.”).

¹⁶⁵ Green Energy Incentives Act of Puerto Rico, Law 83 of July 19, 2010, P.R. LAWS ANN. tit. 13, §§ 10421-10446 (2007 & Supp. 2011).

¹⁶⁶ *Id.* § 10421.

“Green Energy Fund of Puerto Rico”¹⁶⁷ to jump-start renewable energy projects that shall aid retail electricity suppliers to comply with the R.P.S. established in Law 82/2010. I here summarize the Legislature’s Statement of Motives for instituting R.E.C.’s, this Green Energy Fund, Green Energy Incentives, and renewable energy tax benefits.

First, to provide residents of Puerto Rico with the opportunity to join the new R.E.C. and renewable energy source markets existing in the United States, the Legislature stipulates that R.E.C.’s, defined exactly as in Law 82/2010,¹⁶⁸ are tradable and negotiable assets within and outside of Puerto Rico.¹⁶⁹ Thus, from the moment of their issue, they constitute an economic value for any person who acquires, trades, or negotiates them.¹⁷⁰

Second, to provide financial incentives that further the establishment of renewable energy projects in Puerto Rico, the Legislature orders the Department of the Treasury to establish a special Green Energy Fund,¹⁷¹ which shall remain separate from other government funds. The fund is to be nourished from different revenue sources, such as taxes, states and federal incentives, donations from private non-governmental entities, and fines.¹⁷² The Legislature designates the Energy Affairs Administration as the fund’s administrator. It instructs it to grant incentives to sustainable and alternative renewable energy projects that promote renewable energy sources at a residential, commercial, and industrial level.¹⁷³

In addition, the Legislature establishes a three member Evaluating Committee –constituted by the Secretary of the Department of Economic Development and Commerce, the President of the Government Development Bank, and the Secretary of the Treasury– to supervise the operation of the fund, certify the quarterly adjudication process for medium-scale green energy projects, and approve R.E.C. purchase agreements for large-scale green energy projects.¹⁷⁴

Third, to standardize Puerto Rico’s green energy incentive scheme, Law 83/2010 combines, reforms, and organizes existing economic benefits, many reviewed here, to create a uniform economic benefit scheme that shall transform Puerto Rico into a highly competitive jurisdiction for the development of sustainable and alternative renewable energy projects.¹⁷⁵

Fourth, to spread its impact, Law 83/2010 establishes tax benefits adjusted for small, medium, and large-scale renewable energy projects. For example, some of these benefits are:

167 *Id.*

168 Public Policy on Energy Diversification by Means of Sustainable and Alternative Renewable Energy in Puerto Rico Act, Law 82 of July 19, 2010, P.R. LAWS ANN. tit. 12, §§ 8121-8136 (2007 & Supp. 2011), available at <http://www.oslpr.org/2009-2012/leyes/pdf/ley-82-19-Jul-2010.pdf>.

169 *Id.* Statement of Motives, ¶ 8 & § 2.4.

170 *See Id.*, Statement of Motives ¶ 8.

171 *Id.* Statement of Motives, ¶ 9.

172 *Id.*

173 *Id.* Statement of Motives, ¶ 10.

174 *Id.* Statement of Motives, ¶ 11.

175 *Id.* Statement of Motives, ¶ 12-13.

- (1) Reimbursements to partially reduce the costs of production unit installation in the case of small and medium-scale green energy projects;
- (2) Deduction of R.E.C. acquisition costs from regular income when retiring or cancelling a R.E.C. to comply with the R.P.S.'s requirements established through Law 82/2010, *supra*;
- (3) Tax exemption decrees for producers who comply with certain requirement in order to obtain preferential rates for income tax, personal and real property tax, and municipal licenses, among others.
- (4) Tax benefits for owners of real property that locate green energy production units in them.¹⁷⁶

As mentioned earlier, Law 83/2010 amends Law 248/2008 to phase out the tax credit for solar power installations by fiscal year 2009-2010.¹⁷⁷ In its place, the Government of P.R. institutes the Green Energy Fund and endows it with the following yearly fiscal budget (Table 2) to develop renewable energy projects on the island.¹⁷⁸

Table 2. Green Energy Fund's Fiscal Year Budgets¹⁷⁹

Fiscal Year	Maximum Amount
2011-2012	\$20,000,000
2012-2013	\$20,000,000
2013-2014	\$25,000,000
2014-2015	\$30,000,000
2015-2016	\$35,000,000
2016-2020	\$40,000,000

Thus, the Green Energy Fund's 10-year budget to promote small, medium, and long-term renewable energy projects adds up to a paltry \$170 million. In contrast, for a project it planned to complete in a year's time – *Green Way*, the natural gas pipeline for P.R.E.P.A.¹⁸⁰ – the Fortuño administration budgeted \$450 million dollars. Even more questionable, it committed \$30 million, including publicity contracts for \$2 and \$2.7 million as recent as October 2011, for a project that has yet to receive approval from the U.S. Army Corps of Engineers.¹⁸¹ This begs the question: Is the Fortuño Administration efficiently allocating the people's money towards a clean and sustainable energy future?

¹⁷⁶ *Id.* Statement of Motives, ¶ 14.

¹⁷⁷ Green Energy Incentives Act of Puerto Rico, Law 83 of July 19, 2010 (codified at P.R. LAWS ANN. tit. 13, §10421-10446 (2007& Supp. 2011)).

¹⁷⁸ P.R. LAWS ANN. tit. 12, §§ 8121*id.*(a)(1).

¹⁷⁹ P.R. LAWS ANN. tit. 13, § 10423(a)(1) (2007 & Supl. 2011).

¹⁸⁰ See *supra* Part Error! Reference source not found..o.

¹⁸¹ See Ruiz Kuilan, *supra* note 67.

III. OVERVIEW OF THE RECOMMENDATIONS ON DEVELOPING P.R. AS A MODEL FOR CLEAN ENERGY IN THE REPORT BY THE PRESIDENT'S TASK FORCE ON PUERTO RICO'S STATUS OF MARCH 2011¹⁸²

The Report by the President's Task Force on Puerto Rico's Status of March 2011 (Task Force Report) goes far beyond discussing P.R.'s political status. To our benefit, it devotes a section to *Recommendations for Building Competitive Industries*, in which the first matter considered is *Developing Puerto Rico as a Model for Clean Energy*.¹⁸³ I here discuss the Task Force's main findings and recommendations pertinent to our discussion.

The Task Force Report reckons that P.R.'s recent commitments to energy efficiency and renewable energy in Laws 82/2010 and 83/2010 are bolstered by the Department of Energy \$125.6 million allocation from the American Recovery and Reinvestment Act (A.R.R.A.) of 2009.¹⁸⁴ With these federal funds, the State Energy Program subsidized various energy projects, such as efficient traffic light replacements across the island and, in the Municipality of Gurabo, photovoltaic panel installations and lighting retrofits.¹⁸⁵ In addition, in Bayamón, the *Energy Efficiency and Conservation Block Grant Program* partly funded a solar array installation of 587 kilowatts.

For the months following the Report's publication, the Task Force recommends, "that the President and Congress work closely with, and support, Puerto Rico's efforts to fundamentally change the Island's approach to energy and the environment."¹⁸⁶ Specifically, the President and Congress should:

1. Assess Puerto Rico/U.S. Virgin Islands Electrical Interconnectivity
2. Help Puerto Rico Transform its Energy Economy
 - Phase I: Work with the government of Puerto Rico to develop improved regulatory and oversight conditions
 - Phase II: Assist Puerto Rico in developing a comprehensive plan for a new energy economy¹⁸⁷

The Task Force's first recommendation, looking into interconnecting P.R.'s and the U.S. Virgin Island's Power Systems, aims to expand the size of the electricity market that a utility can access to support renewable energy projects on a medium and large scale and to improve grid stability and resilience in the event of a hurricane or other natural disaster.¹⁸⁸ Since wind and solar are renewable ener-

¹⁸² PRESIDENT'S TASK FORCE ON PUERTO RICO'S STATUS, REPORT BY THE PRESIDENT'S TASK FORCE ON PUERTO RICO'S STATUS (2011), http://www.whitehouse.gov/sites/default/files/uploads/Puerto_Rico_Task_Force_Report.pdf [hereinafter *White House Task Force Report*].

¹⁸³ See *Id.* at 71.

¹⁸⁴ *Id.* at 72.

¹⁸⁵ *Id.*

¹⁸⁶ *Id.* at 74.

¹⁸⁷ *Id.*

¹⁸⁸ *Id.*

gies of an intermittent nature, the Report recommends that the island back up with thermal generation that can be quickly dispatched.¹⁸⁹ In the long term, Secretary of Energy Steven Chu and Secretary of State Hillary Clinton foresee a Caribbean-wide electricity grid, with P.R. as the region's hub.¹⁹⁰

To this end, the Department of Energy signed a contract with Siemens PTI to conduct a feasibility study for a subsea electrical interconnection between P.R.E.P.A., the U.S. Virgin Islands' Water and Power Authority, and the utility in the British Virgin Islands.¹⁹¹ As a next step, the Department of State should fund a prefeasibility study to interconnect P.R. with St. Kitts and Nevis, which expressed desire to develop its geothermal resources, estimated at 300-megawatt capacity.¹⁹² Being this capacity in excess of St. Kitts and Nevis' electricity demand, which fluctuates around 40 megawatts, the Task Force views P.R. as a prospective market for the extra power.¹⁹³ To advance these initiatives, Puerto Rican officials and the relevant Federal agencies are to conduct environmental impact statements and assessments.¹⁹⁴ A timeline is set for the submittal of interim reports, whose deadlines have passed, and a final report is left for an undetermined date.¹⁹⁵

A potential drawback of electrically interconnecting the islands, however, is that P.R. may compromise its independence to regulate P.R.E.P.A. At the same time, one may counter argue that independence from the Federal Electricity Regulatory Commission has not improved the energy situation in P.R. If anything, the opposite happened: while remaining less regulated by federal authorities, energy prices have dramatically increased and P.R.E.P.A.'s services steadily deteriorated.¹⁹⁶

The Task Force's second recommendation, help P.R. transform its energy economy, is divided into two phases: (1) work with the government of P.R. to develop improved regulatory and oversight conditions, and (2) assist P.R. in developing a comprehensive plan for a new energy economy. As evidenced by the media, scholars, and stakeholders, P.R.E.P.A.'s operations are in dire need of

189 *Id.*

190 *Id.*

191 *Id.* at 75.

192 *Id.*; see also Rebecca Banuchi, *Evalúan traer energía de St. Kitts y Nevis [They evaluate bringing energy from St. Kitts and Nevis]*, EL NUEVO DÍA (May 10, 2011), <https://www.adendi.com/archivo.asp?Xnum=962015&year=2011&mon=5>.

193 *Id.*

194 *Id.*

195 *Id.*

196 See CENTER FOR THE NEW ECONOMY, DARKNESS VISIBLE: A FINANCIAL ANALYSIS OF THE PUERTO RICO ELECTRIC POWER AUTHORITY (2010), http://grupocne.org/wp-content/uploads/2012/01/darkness_visible_june_2010.pdf [hereinafter CNE's *Financial Analysis of P.R.E.P.A.*]; Cynthia López Cabán, *Por las nubes la luz: Aumentó en un 12% entre julio y agosto [Electricity Prices Sky High: Increased 12% between July and August]*, EL NUEVO DÍA (Aug. 18, 2011), <http://www.elnuevodia.com/porlasnubeslaluz-1042651.html>.

improvement.¹⁹⁷ At the moment, P.R.E.P.A., P.R.'s sole power utility, is a public corporation directed by a government board.¹⁹⁸ Since it does not interconnect with any other states or territories, P.R.E.P.A. is not required to abide by federal interstate regulations.¹⁹⁹

The Task Force therefore first recommends that the Federal Government -in collaboration with the Office of the Governor, Energy Affairs Administration, Puerto Rico Industrial Development Company, Government Development Bank, P.R.E.P.A, and key members of the Puerto Rico Legislative Assembly- support efforts to change P.R.'s energy regulatory structure and to establish a public utilities commission with regulatory and enforcement power.²⁰⁰ It sets another timeline to review and provide a model regulatory framework.²⁰¹ Although the Report's timeline passed on April 2011, at the moment of this writing, P.R.E.P.A.'s establishing law has yet to be revised and a public utility commission created.

In regard to the second phase, developing a comprehensive plan for a new energy economy, the Task Force recommends the Department of Energy (D.O.E.) support the development of a Puerto Rico-led plan to:

- Reduce Puerto Rico's dependence on fossil fuels;
- Create "green job" opportunities;
- Reduce greenhouse gas emissions and criteria air pollutants; and
- Attract private capital to Puerto Rico.²⁰²

For this effort, the Task Force exhorts P.R. to use the D.O.E.'s "Integrated Deployment Model," "a comprehensive energy approach that addresses the entire energy system for any given location" with the purpose of "accelerat[ing] market adoption of renewable energy solutions to power homes, businesses, and vehicles."²⁰³ As examples, the Report suggests the Hawaii Clean Energy Initiative (H.C.E.I.) and the U.S. Virgin Island Energy Development in Island Nations (E.D.I.N.) pilot project.²⁰⁴ H.C.E.I. looks to transform Hawaii's economy, based predominantly on oil, to one based on 70% clean energy by 2030.²⁰⁵ In a similar fashion, the E.D.I.N. initiative sets the goal of reducing the U.S. Virgin Island's fossil fuel consumption by 60% by 2025.²⁰⁶ In contrast, the Government of P.R.'s

¹⁹⁷ See, e.g., Autoridad de Energía Eléctrica, *supra* note 79; WHITE HOUSE TASK FORCE REPORT, *supra* note 182, at 77; Joel Ortiz Rivera, *Difícil de fiscalizar la operación de la AEE: Adeudan a sus bonistas sobre \$8,000 millones* [Difficult to maintain fiscal oversight over PREPA's operations: Owe bondholders \$8,000 millions], EL NUEVO DÍA (Aug. 19, 2011), <http://www.elnuevodia.com/difildefiscalizarlaoperaciondelaaee-1043626.html>; See also CNE'S FINANCIAL ANALYSIS OF PREPA, *supra* nota 196.

¹⁹⁸ WHITE HOUSE TASK FORCE REPORT, *supra* note 182, at 76.

¹⁹⁹ *Id.* at 77.

²⁰⁰ *Id.*

²⁰¹ *Id.*

²⁰² *Id.* at 78.

²⁰³ *Id.*

²⁰⁴ *Id.* at 79.

²⁰⁵ *Id.*

²⁰⁶ *Id.*

recent enactment of Law 82/2010 only requires that 20% of retail electricity provider's energy generation come from renewable sources by 2035.²⁰⁷ H.C.E.I. and E.D.I.N. both suggest that P.R. could and should set much higher mandatory requirements for renewable energy generation and energy efficiency.

The Report makes clear however that a commitment for an aggressive, cost-effective goal for energy efficiency and renewable energy implementation must ultimately come from Puerto Rican stakeholders.²⁰⁸ The D.O.E. would assist P.R. with its own Integrated Deployment Plan by providing analysis and technical expertise to inform stakeholders, and the Federal Government would support it by providing funding.²⁰⁹ A third timeline is set for the application of the Integrated Deployment approach, which is to be fully applied by September 2016.²¹⁰

Another area identified for advancing P.R. toward a clean energy future is the production of high value bioproducts.²¹¹ Employing locally available biomass, such as post harvest agricultural end products, to produce biofuels would reduce P.R.'s fossil fuel dependence and open an opportunity for exporting non-fuel products, such as organic feeds and fertilizer.²¹² The Department of Commerce's Minority Business Development Agency (M.B.D.A.) is helping develop a public-private partnership called the Integrated Bio-Refinery Project (I.B.P.) of Puerto Rico, which brings together industry, academia, and government to work under one entity, Sustainable AgroBiotech, LLC (S.A.B.I.).²¹³ S.A.B.I.'s objective is to "build integrated biorefineries . . . at strategic locations in Puerto Rico where sufficient cellulosic waste biomass, primarily sugarcane bagasse, can be locally generated to produce at least 3-4 million gallons of fuel alcohol per year."²¹⁴ The Report informs that a feasibility study is underway and the first phase of the project should begin before 2012.²¹⁵

Last, the Task Force briefly mentions two A.R.R.A. programs that provide grants and tax credits for renewable energy: sections 48C and 1603.²¹⁶ Nevertheless, the \$2.3 billion in tax credits available under section 48C has been fully allocated and, albeit section 1603 grants were extended until 2011, the extension did not include specific language regarding the treatment of energy companies in P.R. and their U.S. subsidiaries.²¹⁷

Thus, from the Task Force Report's comments on "Developing Puerto Rico as a Model for Clean Energy," the Government of P.R. should conclude that: (1) the Federal Government wishes for P.R. to take a significantly more aggressive

207 See discussion *supra* Part II.H.

208 WHITE HOUSE TASK FORCE REPORT, *supra* note 182, at 79.

209 *Id.*

210 *Id.* at 80.

211 *Id.*

212 *Id.*

213 *Id.*

214 *Id.*

215 *Id.* at 81.

216 *Id.* at 82.

217 *Id.*

commitment to a clean energy future; (2) P.R. possesses all the means necessary to do so; (3) a good approach to follow is the Department of Energy's Integrated Deployment Model; (4) the Federal Government is available to provide technical expertise and support; and (5) all Puerto Rican energy stakeholders must take part in these efforts for them to succeed.

IV. STATE INITIATIVES AND MEASURES

A. Hawaii

Since the Task Force Report mentions the State of Hawaii as an example for P.R. to follow, let's take a closer look at what it has done. In 2008, the D.O.E. and the State of Hawaii signed a Memorandum of Understanding establishing the Hawaii Clean Energy Initiative (H.C.E.I.).²¹⁸ Albeit the M.O.U. is not a legally binding document, it spurred Hawaii's legislature into action. In 2009, the Hawaiian Legislature expanded a previously adopted R.P.S and mandated that each electric utility company comply with the following more ambitious R.P.S.:²¹⁹

Table 3. Hawaii's 2009 R.P.S. timetable

Year	Mandatory Renewable Energy Percentage
December 31, 2010	10%
December 31, 2015	15%
December 31, 2020	25%
December 31, 2030	40%

Besides this, in 2009, Hawaii's legislature created a separate Energy Efficiency Portfolio Standards (E.E.P.S.), which set the goal of reducing 4,300 gigawatt-hour in electricity use by 2030.²²⁰ By combining both efforts, the R.P.S. and the E.E.P.S., Hawaii set itself the goal of producing 70% clean energy by 2030 with 30% coming from efficiency measures, and 40% from locally generated renewable sources.

Furthermore, to stabilize the negotiating process of power purchase agreements for clean energy products, on May 6, 2009, Hawaii's legislature enacted Act 050 "to refocus the regulatory standard to a methodology that is just and reasonable by significantly reducing any linkages between the volatile prices of fossil fuels and the rate for nonfossil fuel generated electricity."²²¹ Such decou-

²¹⁸ Memorandum of Understanding, Haw-U.S. Dep't of Energy, January 28, 2008, http://apps1.eere.energy.gov/news/pdfs/hawaii_mou.pdf.

²¹⁹ See HAW. REV. STAT. § 269-92 (2011).

²²⁰ H.B. 1464, 25th Leg., 2009 Reg. Sess. (Haw. 2009), 2009 Haw. Sess. Laws 155.

²²¹ H.B. 1270, 25th Leg., 2009 Reg. Sess. (Haw. 2009), 2009 Haw. Sess. Laws 50, §1.

pling enables “utility customers to share in the benefits of fuel cost savings resulting from the use of nonfossil fuel generated electricity.”²²² Moreover, it paved the way for Hawaii’s Public Utilities Commission to issue a decision establishing feed-in-tariffs (FiTs).²²³

A FiT is a contractual obligation where the electric utility connects the renewable energy generator to the grid and pays the generator a fixed price for the electricity produced.²²⁴ FiT programs reduce capital investment risk by ensuring the rate of return that power producers make for the length of a contract. Under Hawaii’s program, qualified FiT projects receive a fixed rate for twenty (20) years.²²⁵ The creation of the feed-in tariff is well in accordance with the Hawaii Clean Energy Initiative.²²⁶

In fact, on May 26, 2011, Darcy L. Endo-Omotto, Vice President of Government & Community Affairs at the Hawaiian Electric Company, Inc., submitted to the Hawaii Public Utilities Commission the 2010 Renewable Portfolio Standard Status Report. The Status Report states: “Hawaiian Electric Company and its subsidiaries... have achieved a consolidated Renewable Portfolio Standard (RPS) of 20.7 percent in 2010 . . . This report shows that the Hawaiian Electric Companies have exceeded the 2010 RPS compliance percentage of 10% required by Hawaii law.”²²⁷

If the State of Hawaii can achieve these goals by 2030, and it is showing that it can actually surpass them, P.R. can achieve and surpass them too. It is just a matter of (1) setting more ambitious and aggressive legal mandates for renewable energy and energy efficiency, and (2) instituting a FiT program that reduces the risk of investing in renewable energy projects.

B. California

In 2002, California established its R.P.S.²²⁸ It originally set a goal of increasing the percentage of renewable energy in the state’s electricity mix to 20% by 2017. The next year, however, the Energy Commission realized, just as Hawaii,

²²² *Id.* § 2.

²²³ Public Utilities Commission of the State of Hawaii, Decision and Order, Docket 2008-0273, October 13, 2010, available at <http://dms.puc.hawaii.gov/dms/DocketSearch> (Search for 2008-0273, open document dated October 13, 2010).

²²⁴ Julie Taylor, *Feed-in Tariffs (FIT): Frequently Asked Questions for State Utility Commissions*, THE NATIONAL ASSOCIATION OF REGULATORY UTILITY COMMISSIONERS 1 (June 2010), available at www.naruc.org/Publications/NARUC%20Feed%20in%20Tariff%20FAQ.pdf.

²²⁵ See Database of State Incentives for Renewables & Efficiency, *Hawaii: Incentives/Policies for Renewables & Efficiency*, U.S. DEP’T OF ENERGY, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=H129F (incentive no longer available).

²²⁶ *Id.*

²²⁷ HAWAIIAN ELECTRIC COMPANY, INC., 2010 RENEWABLE PORTFOLIO STANDARDS STATUS REPORT FOR THE YEAR ENDED DECEMBER 31, 2010, at 1, http://www.heco.com/vcmcontent/StaticFiles/pdf/2010_rps.pdf.

²²⁸ California Renewables Portfolio Standard Program, 2002 Cal. Legis. Serv. Ch. 516 (S.B. 1078) (West).

that California could do more and recommended accelerating the 20% goal to 2010 and increasing the renewable energy mix to 33% by 2020.²²⁹ On April 2011, the Commission's recommendation became mandatory when Governor Edmund G. Brown, Jr. signed Senate Bill X1-2.

In 2006, California enacted the Global Warming Solutions Act, a law that indirectly promotes the development of renewable energy projects by measuring and limiting greenhouse gases.²³⁰ The legislation establishes aggressive greenhouse gas reduction goals for the state. First, the state must identify the statewide level of greenhouse gas emissions of year 1990 to set it as the emissions limit to be achieved by 2020.²³¹ Then, the state shall develop a scoping plan for achieving the maximum technologically feasible and cost-effective reductions in greenhouse gas emissions by 2020.²³²

As discussed earlier, the Government of P.R., through Law 246/2008, enacted a public policy to mitigate global warming. However, it fell short of establishing a greenhouse gas cap or reduction mandate and ultimately was repealed by Law 82/2010. If the State of California can set and achieve this R.P.S. mandate and limit its greenhouse gases, P.R. can set and achieve a similar R.P.S. and limit its greenhouse gases as well.

V. CITY INITIATIVES

A. Portland, Oregon

In 1993, much earlier than the State of California, the City of Portland adopted a carbon dioxide reduction plan: it set the goal of reducing emissions to 20% below 1990 levels by 2010.²³³ The plan covered a wide range of urban policy areas, including land use planning, transportation, energy efficiency, solid waste and recycling, urban forestry, and renewable energy. Although Portland didn't reach its target reductions due to rapid population growth, it did accomplish a great deal of successes, for instance:

2 new major light rail lines and a 75 percent increase in public transit use since 1990; purchase of more than 10 percent renewable energy for its energy use; a recycling rate of 54 percent; construction of close to 40 high-performance green buildings; planting of over 750,000 trees and shrubs since 1996; weatherization

²²⁹ See CALIFORNIA ENERGY COMMISSION, 2003 INTEGRATED ENERGY POLICY REPORT (2003), <http://www.energy.ca.gov/reports/100-03-019F.PDF>; CALIFORNIA ENERGY COMMISSION, INTEGRATED ENERGY POLICY REPORT 2004 UPDATE (2004), <http://www.energy.ca.gov/reports/CEC-100-2004-006/CEC-100-2004-006CMF.PDF>.

²³⁰ California Global Warming Solutions Act of 2006, 2006 Cal. Legis. Serv. Ch. 488 (A.B. 32) (West).

²³¹ CAL. HEALTH AND SAFETY CODE § 38550.

²³² *Id.* § 38561.

²³³ Hari M. Osofsky & Janet Koven Levit, *The Scale of Networks?: Local Climate Change Coalitions*, 8 CHI. J. INT'L L. 409, 415-26 (2008).

of 10,000 multi-family units and over 800 family homes over a 2-year period; and establishing the Energy Trust of Oregon. It reduced per capita emissions by 12.5 percent over that period, which puts it at the leading edge of urban achievement on climate change in the United States.²³⁴

Portland's efforts demonstrate that "urban areas have the capacity to change their emissions profiles dramatically through comprehensive planning efforts that rely upon partnerships between public, private, and nonprofit entities."²³⁵ If through such multi-sector collaboration a city like Portland can adopt a comprehensive carbon dioxide reduction plan, increase the use of public transit, increase the availability of renewable energy, construct more efficient buildings, plant numerous trees and shrubs, weatherize multi-family units and family homes, and establish an Energy Trust that through efficiency measures have helped lower per capita energy use by 12.5%, cities in Puerto Rico can also adopt such plans and goals.

CONCLUSIONS AND PROPOSALS

After reviewing recent legislation and policies adopted by the Government of P.R. regarding the promotion of renewable energy, in particular, the Net Metering Act, the Renewable Portfolio Standard, and the Green Energy Fund, one must acknowledge that P.R. has made progress to develop renewable energy projects on the island. Nevertheless, the White House Task Force Report and policies from other jurisdictions, both at the state and municipal level, such as in Hawaii, California, and the City of Portland, Oregon, demonstrate that Puerto Rico could and should be doing much more to promote renewable energy, achieve greater energy efficiency, and reduce the effects of climate change.

For instance, considering that renewable energy technology becomes ever more affordable due to continuous advances in technology, P.R. should set a higher mandatory Renewable Portfolio Standard that raises the percentage increase of renewable energy production as time goes by rather than, as it currently is designed, lowering it. P.R.'s renewable energy production target, therefore, should at least be equal and preferably superior to Hawaii's, which mandates Hawaii's utilities to produce 40% of their electric power from renewable sources by 2030.

Yet the Government of P.R. must not only concentrate on developing renewable energy projects. To enhance the effects of forthcoming renewable energy projects, the Government of P.R. should complement recent renewable energy legislation by adopting an Energy Efficiency Portfolio Standard, by improving public transit use, by increasing the percentage of waste that is recycled, by promoting the construction of energy efficient buildings and the weatherization of existing ones, by establishing a greenhouse gas reduction plan, and by insti-

²³⁴ *Id.* at 417.

²³⁵ *Id.* at 421.

tuting a feed in tariff program that lowers the risk of investing in renewable energy projects. All of these policies have been adopted and applied with success in other U.S. jurisdiction examined. There is no legal impediment against P.R. following the lead of these jurisdictions and taking advantage of these tried and proven energy and climate policies.

As the White House Task Force Report evidences, the U.S. Government's Department of Energy is ready and eager to assist P.R. in its effort to develop an Integrated Deployment Model similar to Hawaii's Clean Energy Initiative. Progress on such a model and all other fronts mentioned above, however, depends ultimately on the decisions and commitments Puerto Rican stakeholders are willing to make. It is high time that these stakeholders come together to establish a more resolute plan to ensure P.R.'s energy and sustainable development well into the future.