Alternative Energy Sources: Legislation Interaction with the Development and Implementation of Renewable Energy Sources

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I. Introduction

Energy development has shifted focus to nontraditional sources of energy such as solar, wind, biomass, and hydropower in order to reduce pollution and greenhouse gas emissions.¹ The legislative bodies of the country seek to encourage research and development, in order to strive toward sustainable and affordable alternative energy sources.² Worldwide, the investment into renewable energy is growing drastically; the United States alone invested $56 billion in 2011.³ However, the recent investment has yet to make a substantial increase in the overall percentage of energy from renewable resources.⁴ Compared to fossil fuels, only 10 percent of the electricity used in the United States is sourced from renewable energy.⁵ The existing innovation policies from the U.S. Energy Information Administration assert that by the year 2030, 30 percent of the new energy capabilities developed will come from renewable resources; however that amounts to only 16 percent of the country’s total energy use.⁶ The rate at which the development and implementation of renewable resource capabilities has gained much attention, for instance in recent years the United States has been surpassed by China in the amount of dollars invested into

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⁵ Id.
⁶ Id. at 1681.
renewable resource innovation. 7 This report seeks to examine and discuss the relationship between legislation and the development of alternative energy sources.

There are several ways in which legislation affects the growth of alternative resource development. Laws, regulations, and ordinances aim at encouraging innovation and creating growth among the implementation of such energy sources. However, some of the legislation influencing renewable resource development deters growth and delays implementation.8 The legislative bodies of the country use tools such as tax incentives, permit incentives, and regulations governing existing practices.9 For example, the Pennsylvania Alternative Energy Investment Act provides funding to clean alternative energy projects among businesses, non-profit organizations, and local governments.10 Legislation that hinders development can be divided into two problems: first, laws that do not support alternative energy but instead support fossil fuel sources, and the second involves the lagging development of new law to drive innovation.11 These interactions form a complex relationship between legislation and alternative energy. This relationship is important to examine given the dynamic nature of the alternative energy industry and the relevant law.12

II. Legislation That Supports Alternative Energy development

a. Financial Incentives

Financial incentives are some of the most widely used policies that attempt to aid the development of alternative energy resources. Federal, state, and local governments use financial

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8 Id. at 1567; Outka supra note 4, at 1681.
9 Salkin, supra note 2, at 339, 340.
11 Outka, supra note 4, at 1681.
12 Id.
incentives in order to encourage development of alternative energy resources.\textsuperscript{13} These incentives include rebates, grants, loan programs, and tax credits both for businesses and individuals.\textsuperscript{14} The federal government, for instance, enacted the American Recovery and Reinvestment Act of 2009\textsuperscript{15} and created the Residential Renewable Energy Tax Credit\textsuperscript{16}, and the Better Buildings Initiative.\textsuperscript{17} The Better Buildings Initiative increases tax deductions and loans for those willing to renovate existing buildings.\textsuperscript{18} The Residential Renewable Energy Tax Credit provides tax credits for citizens that source up to certain portions of their energy from alternative sources.\textsuperscript{19} The American Recovery and Reinvestment Act of 2009 granted $36 billion to energy efficiency and renewable energy programs, and tax credits accounted for $20 billion of the total.\textsuperscript{20}

Most states have adopted Renewable Portfolio Standards (RPS) Programs\textsuperscript{21} that drive the alternative energy market. An RPS establishes a goal of sourcing a certain percentage of electric energy from renewable resources.\textsuperscript{22} These standards are expected to raise alternative energy sourcing exponentially, up to 250 percent in the next fifteen years.\textsuperscript{23} Oregon, for instance, seeks to raise its alternatively-sourced generation from five percent to 25 percent by the year 2025.\textsuperscript{24} Many of the most populous states including Michigan, Texas, North Carolina, Washington, and

\textsuperscript{13} Id. at 340.  
\textsuperscript{14} Id. at 341; David Missirian \textit{Let the Sun Shine in: an Examination of Solar Easements and a Proposed Statute}, 41 REAL EST. L.J. 303, 303 (2012); Reiley \textit{supra}, note 12, at 920.  
\textsuperscript{19} Id.  
\textsuperscript{20} Reiley, \textit{supra} note 12, at 919.  
\textsuperscript{21} Salkin, \textit{supra} note 2, at 347; Havemann, \textit{supra} , note 3, at 848 (stating that as of 2012, 29 states have adopted an RPS).  
\textsuperscript{22} Havemann \textit{supra}, note 3, at 849.  
\textsuperscript{23} Id.  
\textsuperscript{24} Salkin, \textit{supra} note 2, at 347.
California utilize RPSs effectively. North Carolina, for instance requires a measurable decrease in consumption from nonrenewable sources in order to count toward RPS requirements.

Legislation from state government represents a direct opportunity to influence alternative energy development and tends to be more effective than federal legislation. The state governments also implement several types of grants, loans, and tax credits. Many states have taken measures to include small scale investments or businesses in their RPS programs. For example, Colorado offers a property tax exempt status to owners of solar-powered generation systems not used for profit. In addition, Washington gives sales tax exemptions in order to increase the purchases of equipment used to manufacture solar power generators. Local governments tend to focus their financial incentives on residents. Most funding creates tax credits or rebates given (or made available to) to residents, many residents who qualify install home equipment that offsets consumption and costs, such as solar water heating systems and geothermal energy generators.

b. Permit Incentives

Financial incentives are one tool used by policymakers to stimulate the growth of alternative energy resources. However, without the necessary permits and provisionary incentives within zoning and permit regulations these financial incentives would not be nearly as

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26 Id. at 151.
28 Salkin, *supra* note 2, at 341.
29 Id. at 342.
30 Id. summary note 2, at 343-44.
31 Id.
32 Id.
effective, as they would not be as utilized.\textsuperscript{33} Permitting incentives make the financial incentives more effective by streamlining permit requirements and applications for projects involving renewable energy,\textsuperscript{34} often creating a “one stop” approach to permitting.\textsuperscript{35} In order to be advantageous to alternative energy development these incentives are only available to projects involving the use or development of renewable resources.\textsuperscript{36} The federal government offers a fast track process in granting renewable energy loans.\textsuperscript{37} However, much of the activities involving permitting incentives do not involve the federal government, but the local and state levels.\textsuperscript{38} For example, cities such as Asheville, North Carolina, Miami, Florida, and Portland, Oregon offer shortened application processes and reduced or waived building application and permit fees.\textsuperscript{39}

c. Net Metering

Net metering is the process by which consumers sell their unused or excess energy generated through renewable means back to traditional electric energy providers.\textsuperscript{40} Net metering also increases involvement by the general population in the implementation and use of renewable resources.\textsuperscript{41} Most states have passed legislation encouraging net metering when residents generate some or all of their electricity; some, including New York, have expanded net metering to include businesses.\textsuperscript{42} This tool allows consumers to store their excess production with their traditional electric energy provider, by allowing consumers to receive backup power when needed given that they had previously sold excess generated energy to their local traditional

\textsuperscript{33} \textit{Id.} at 344.
\textsuperscript{34} Allison & Williams, \textit{supra} note 25, at 143.
\textsuperscript{35} \textit{Id.}
\textsuperscript{36} \textit{Id.}
\textsuperscript{37} Salkin, \textit{supra} note 2, at 343-44.
\textsuperscript{38} \textit{Id.}
\textsuperscript{39} Salkin, \textit{supra} note 2, at 346.
\textsuperscript{40} Allison & Williams, \textit{supra} note 25, at 6.
\textsuperscript{41} \textit{See} Salkin, \textit{supra} note 2 at 348; \textit{see generally} Allison & Williams, \textit{supra} note 27, at 6.
\textsuperscript{42} Allison & Williams, \textit{supra} note 27, at 6.
electric energy provider. 43 These consumers can also receive credits or rebates at the end of their billing periods if they have produced a “net surplus of energy.” 44 Through net metering consumers are only charged for electric energy if they do not produce more energy than they use.

d. Easements

Many states have also implemented easements to maximize the development of consumer generated energy. 45 Easement enabling statutes can either allow a voluntary or mandatory contract or in order to secure the effectiveness of the alternative energy generators which a person may own. 46 However, easements dealing with property rights could create disputes possibly delaying the implementation of small scale alternative energy. These easements could result in planting trees or vegetation in places blocking sunlight 47 or the placing of wind turbines too close together which could interfere and inhibit the energy generated. 48 Many of the same disputes arise with financial and permit incentives, such as when businesses or electricity providers fail to meet the requirements of the incentives after receiving the benefits. 49

III. Legislation That Hinders Alternative Energy development

a. Retail Market Strategies

One way that state and federal legislators attempted to create competitive retail and wholesale energy markets was to “unbundle” the generation, distribution, and transmission of electric energy. 50 This process attempted to make electric energy companies separate the different parts of energy production and delivery to open up lanes and allow alternative energy

43 Id.
44 Salkin, supra note 2, at 348.
46 Id. at 98; Missirian, supra note 16, at 319.
47 Missirian, supra note 16, at 310.
48 Id., supra note 16, at 317; Klass, supra note 48, at 104.
49 Outka, supra note 4, at 1689
50 Allison & Williams, supra note 27, at 6.
providers into the market.\textsuperscript{51} At the commencement of the retail market policy, many of the electric companies were not able to meet the unbundling requirements.\textsuperscript{52} Thus some energy providers were given exception to use the previous customary practices, and were able to cover the gap in energy production for consumers at a discounted rate.\textsuperscript{53} These discounted rates set prices below those of the retail market entities and discouraged new competition,\textsuperscript{54} thus leading to a less competitive market for alternative energy producers. Other legal barriers to alternative energy development can be broken down into two categories: existing law that conflicts with development policies and new ineffective laws that do not offer a unified approach.\textsuperscript{55}

\textbf{b. Legislation Intended to Aid Development}

Legislation intended to aid alternative energy development can sometimes act as a hindrance to implementation.\textsuperscript{56} Environmental law has primarily developed as an accumulation on top of existing legislation which regulates energy production as a whole.\textsuperscript{57} This system of simply adding to the existing statutes and regulations leads to a lag in the development of law supporting alternative energy.\textsuperscript{58} This accumulation of laws is ineffective, as the preexisting laws regulating energy rarely address renewable resources.\textsuperscript{59} The laws in support of renewable energy development rarely set the same standards for multiple states in a region, and thus lead to many regional companies having to adapt to the requirements of each state, creating an inconvenient

\textsuperscript{51} Id.
\textsuperscript{52} Id.
\textsuperscript{53} Id.
\textsuperscript{54} Id.
\textsuperscript{55} Outka, \textit{supra} note 4, at 1682.
\textsuperscript{56} Id. at 1683.
\textsuperscript{57} Id. at 1686.
\textsuperscript{58} Chacon, \textit{supra} note 7, at 1567.
\textsuperscript{59} Outka, \textit{supra} note 4, at 1695-96.
complexity for investors.\textsuperscript{60} Tax incentives, for example, expire at different times depending on the technology being implemented.\textsuperscript{61}

Tax incentives present a primary barrier to alternative energy development,\textsuperscript{62} particularly the Renewable Energy Production Tax Credit (PTC).\textsuperscript{63} PTCs were created by the Energy Policy Act of 1992 and extended in the American Recovery and Reinvestment Act of 2009.\textsuperscript{64} These tax credits were intended to stimulate the renewable resource market by providing a tax credit for producers of wind, biomass, and geothermal energy.\textsuperscript{65} There are many disconcerting problems with tax incentives in regards to their effectiveness.\textsuperscript{66} While tax credits such as PTC certainly stimulate investment, they also “distort market prices and behavior because they encourage investments based on the tax savings rather than on the activity’s merit.”\textsuperscript{67} In addition to distorting prices, tax credits also exasperate financial inequality among energy producers.\textsuperscript{68} This inequality is partly because larger corporations are able to get more tax credits because they have a higher income.\textsuperscript{69} Corporation with substantial investment capital are better suited to take advantage of tax, while smaller investors have much less capital to invest.\textsuperscript{70}

c. Preexisting Legislation

Preexisting law often forms a barrier to the development of alternative sources of energy by conflicting with the new legislation\textsuperscript{71} or by requiring a daunting and complex process to

\textsuperscript{60} Chacon, \textit{supra} note 7, at 1575.
\textsuperscript{61} \textit{Id.} at 1580.
\textsuperscript{62} Outka, \textit{supra} note 4, at 1691.
\textsuperscript{63} \textit{Id.}
\textsuperscript{65} \textit{Id.}
\textsuperscript{66} \textit{Id.}
\textsuperscript{67} Chacon, \textit{supra} note 7, at 1581.
\textsuperscript{68} \textit{Id.} at 1582.
\textsuperscript{69} \textit{Id.}
\textsuperscript{70} \textit{Id.}
implement the renewable resource technology available.\textsuperscript{72} Laws that have recently presented a hindrance to the development of alternative energy sources include, but are not limited to, the Clean Air Act (CAA), the Clean Water Act (CWA), the National Environmental Policy Act (NEPA), the Endangered Species Act (ESA), and the Public Utility Regulatory Policy Act (PURPA).\textsuperscript{73} The CAA and CWA, in some instances, create an unequal footing for competition between traditional and alternative energy producers. For example, in 1970 the older fossil fuel energy producers were “grandfathered” into the act to ease the transition.\textsuperscript{74} This exemption allows fossil fuel facilities commissioned prior to 1970 to operate outside of the requirements of CAA and CWA, while any new alternative energy developments must comply with those Acts.\textsuperscript{75} Preexisting energy production facilities were given more lenient emissions standards than new ones; even in 1990, when Congress amended the CAA in order to address this issue, the older facilities were still allowed a more lenient standard.\textsuperscript{76} Also, alternative energy projects often have an extraneous site certification process because the developments must receive an environmental assessment from the Army Corps of Engineers\textsuperscript{77} and have “no significant impact” on endangered species.\textsuperscript{78} This proves difficult when many of the areas where renewable resources are most available contain endangered species protected by the ESA.\textsuperscript{79}

PURPA once stimulated investment in alternative energy resources, but like many other Acts, it now inhibits growth.\textsuperscript{80} PURPA was meant to break the monopoly that traditional fuel

\textsuperscript{72} Anthony Bova What’s the Holdup? How Bureaucratic Obstacles are Undercutting the True Potential of American Wind Power, 46 SUFFOLK U. L. REV. 571, 576.
\textsuperscript{73} Id., at 580; Chacon supra, note 7, at 1575; Dinnel & Russ supra, note 76, at 545, 559, 561; Outka supra, note 4, at 1701, 1705, 1708; Bertsch supra, note 1, at 74.
\textsuperscript{74} Outka, supra note 4, at 1705, 1708.
\textsuperscript{75} Id.
\textsuperscript{76} Id.
\textsuperscript{77} Dinnel & Russ, supra note 76, at 551.
\textsuperscript{78} Id.; Bova, supra note 77, at 580; Bertsch, supra note 1, at 74.
\textsuperscript{79} Bertsch, supra note 1, at 74.
\textsuperscript{80} Chacon, supra note 7, at 1577; Bova, supra note 77, at 576.
sources providers held on the energy market by creating exemptions for facilities producing alternative energy and requiring electric utilities to purchase energy from these facilities at a price favorable to the generator. However the exemptions became a major point of contention with the opposition to alternative energy facilities. Those opposing the PURPA exemptions cite the intermittent nature of renewable resources prevents alternative energy providers from consistently providing energy to the public, and therefore should not be given an advantageous position over traditional fuel sources.

**d. Examples of Legal Conflicts**

There are many instances in which regulations conflict with existing law such as the Commerce Clause and the Endangered Species Act. State Renewable Portfolio Standards are great examples of how legislation intended to encourage development can act as an obstruction. There is no established national RPS, and the ability of each state to create its own RPS, presents a patchwork of standards which can wildly differ. This in turn leads to an ineffectual implementation of the RPSs. Electric energy providers that serve more than one state often have to ensure that the electricity they provide meets the differing requirements of all of the states. American Energy Power, for example, serves eleven states, and must comply with three RPS requirements. By creating more complex requirements and compliance costs, the

81 Bova, *supra* note 77, at 577.
82 Id. at 578.
83 Id. at 578.
85 See Bertsch, *supra* note 1, at 76.
86 Chacon, *supra* note 7, at 1585.
87 Id. at 1594.
88 Id.
89 Chacon, *supra* note 7, at 1586.
90 Id.
individual RPSs create higher prices. RPSs often create conflicts with existing law, and therefore can be changed or even partially struck as a result of lawsuits.

These lawsuits generally concern the Commerce Clause of the U.S. Constitution. The current trend involves plaintiffs claiming that RPSs are unconstitutional, in part or wholly based upon the Commerce Clause. These cases have risen out of such states as Colorado, Massachusetts, Minnesota, Oklahoma, and Missouri. In *Trans Canada v. Bowles*, a developer and wholesaler of renewable energy challenged §83 and §32 of the Green Communities Act, a part of the Massachusetts RPS. Those sections of the Act required energy providers to enter into long-term contracts to generate renewable energy and barred energy providers from using out-of-state generating capabilities to meet the required RPS standards. The case ultimately settled, and Massachusetts amended its RPS provisions. However, the Massachusetts case and the Colorado litigation represent the possibility of more conflicts with the Commerce Clause.

**IV. Conclusion**

The conflicts discussed above may be indicative of coming difficulties in alternative energy development. Many authors believe that the RPSs could survive, given proactive involvement by the states to preemptively revisit their policies in preparation of judicial

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91 *Id.*
92 *Id.*; *Havemann, supra* note 3, at 850.
93 *Havemann, supra* note 3, at 849.
96 *Havemann, supra* note 3, at 861.
97 *Id.*
98 *Id.*
100 *Havemann, supra* note 3, at 861.
Legislation has developed in an attempt to drive innovation and the implementation of alternative energy facilities. This legislation has been successful at times. However, the laws in support of alternative energy can act as a hindrance to development by creating unstable grounds to implement alternative energy projects. Preexisting legislation may hinder development as well. There are many ways in which legislation affects development, and states can revise legislation to more effectively drive development while avoiding constitutional challenges.

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101 *Id.* at 885; Lee & Duane, *supra* note 97, at 364.