

# STRUCTURING BETTER CAPS FOR SUSTAINABILITY INCENTIVE PROGRAMS

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## ABSTRACT

*Policymakers who are eager to promote the development and adoption of environmentally sustainable technologies too often ignore certain important regulatory principles when crafting incentive programs. Some approaches to limiting and winding down sustainability incentive programs have proven to be inefficient and unjust. Too often, the winding down process only begins when lawmakers face unpredicted budgetary constraints. This article argues that state and federal lawmakers could better promote economic efficiency and equity in sustainability-oriented policy design by more consistently adhering to the principles of gradualism, adequate notice, and respect for investment-backed expectations. Using examples of deficiencies in certain net metering program caps, tax credit program sunsets, and High Occupancy Vehicle (HOV) lane access rules for electric cars, this article illustrates the importance of these core regulatory principles and advocates for a greater focus on them in the structuring of limits on sustainability incentive policies.*

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## I. INTRODUCTION

In 2015, Todd and Sylvia Alfortish purchased a rooftop solar energy system in Louisiana, expecting to receive tax credits from the state to reduce the system's overall price.<sup>1</sup> To cover the up-front costs of installation until they received their tax credit, Todd and Sylvia obtained an eighteen-month "interest free" bridge loan.<sup>2</sup> As part of the sales pitch to Todd and Sylvia, the company that sold the solar panels to the couple allegedly guaranteed they would receive the state income tax credits.<sup>3</sup> Unfortunately, the legislature abruptly placed a cap on the tax credits that limited the credit's availability far below the expected demand.<sup>4</sup>

When Todd and Sylvia ultimately applied for the tax credit, their application was denied because the state's new cap on the program had already been met.<sup>5</sup> Then the couple learned that their "interest free" bridge loan was actually an "interest waivable" loan, and that the interest was waivable only if they received the income tax credit.<sup>6</sup> Soon, Todd and Sylvia faced large payments on their bridge loan, with no hope of receiving help from the tax credit program.<sup>7</sup>

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1. Class Action Complaint at 2, *Alfortish v. GreenSky, LLC*, No. CV 16-15084 (E.D. La. Sept. 30, 2016).

2. *Id.*

3. *Id.*

4. *Lawmakers Curtail Louisiana's Generous Solar Tax Break*, KATC.COM (June 23, 2015), <http://www.katc.com/story/29391294/lawmakers-curtail-louisianas-generous-solar-tax-break> [hereinafter *Lawmakers*].

5. Class Action Complaint, *supra* note 1, at 7.

6. *Id.* at 2.

7. *Id.*

Louisiana's swift suspension of its solar energy tax credit program caught hundreds of Louisiana households off guard. Many of these families are now part of a class action lawsuit against solar installation and financing companies, claiming, among other things, that the companies misled them about the large tax credits when selling them solar panels.<sup>8</sup> However, the Louisiana state legislature is arguably at least partially to blame for so quickly ending the state's solar energy tax credit.<sup>9</sup>

Policymakers who are eager to promote the development and adoption of environmentally sustainable technologies too often ignore some important regulatory principles. Programs without effective caps or sunset provisions can quickly turn from being a boon to the renewables industry into a hindrance. A poorly-crafted incentive program quickly runs up against budgetary and political concerns, and tends to evoke drastic measures to curtail the program.<sup>10</sup> This article focuses on the need for careful planning at the front-end of incentive programs and advocates for adherence to basic regulatory principles that policymakers often overlook in their zeal to provide subsidies for renewable energy projects.

Part I of this article highlights three essential and often-overlooked principles associated with the formation of effective government-funded incentive programs: gradualism, respecting investment-backed expectations, and providing adequate notice of program changes. Part II focuses on two specific examples of incentive programs for sustainability-oriented investment—net metering and tax credits—and explains how inadequate adherence to the principles listed above unjustifiably constrained their effectiveness. Part II also examines some recent smaller incentive programs facing similar challenges. Finally, Part II proposes some specific ways that policymakers can avoid repeating these mistakes when designing future sustainability policy incentives.

#### A. Environmental Subsidies and Important Regulatory Principles

Over the past decade, subsidies and incentive programs helped unleash unprecedented growth in renewable energy and other sustainability-oriented development.<sup>11</sup> Subsidies increase demand for a product, which leads to more research

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8. See Michael Abella, *Kenner Couple Alleges GreenSky, SunTrust Misrepresented Loans*, LOUISIANA RECORD (Nov. 8, 2016), <http://louisianarecord.com/stories/511018723-kenner-couple-alleges-greensky-suntrust-misrepresented-loans>.

9. Not surprisingly, solar system owners have also formed a class action, suing the Louisiana Department of Revenue, claiming they are entitled to tax credits that were supposed to be guaranteed. See *Solar Panel Customers Sue State Over Tax Credits*, THE TIMES-PICAYUNE (Sept. 14, 2016), [http://www.nola.com/crime/index.ssf/2016/09/solar\\_panel\\_customers\\_sue\\_stat.html](http://www.nola.com/crime/index.ssf/2016/09/solar_panel_customers_sue_stat.html).

10. See *infra* Part II.

11. Matt Weiser, *Here Comes the Sun: US Solar Power Market Hits All-Time High*, THE GUARDIAN (June 28, 2016), <https://www.theguardian.com/sustainable-business/2016/jun/28/solar-power-energy-utilities-environment-climate-change>.

and development, ultimately lowering the cost to produce the product.<sup>12</sup> If subsidies are implemented correctly, market forces should allow a new technology to slowly wean off the subsidy and become competitive against established technology.

In the mid-2000s, U.S. lawmakers enacted several bipartisan programs to incentivize a gradual transition to renewable energies.<sup>13</sup> Congress enacted the Energy Policy Act of 2005 and the Energy Independence and Security Act of 2007 because of high oil prices and serious concerns that the U.S. was too dependent on foreign supplies.<sup>14</sup> Global climate change concerns also spurred efforts to move the U.S. from its dependence on cheap fossil fuels to more environmentally friendly sources of energy. These efforts included federal tax credits for wind and solar, the Environmental Protection Agency's crackdown on coal-fired power plants,<sup>15</sup> and the U.S. commitment to the Paris Agreement.<sup>16</sup>

Unfortunately, some poorly-designed sustainability incentive policies recently generated political backlash, angered citizens, spurred unnecessary litigation, and created severe budgetary problems for the governments enacting them.<sup>17</sup> In many cases, governments brought these problems upon themselves by ignoring three basic principles: gradualism, respecting investment-backed expectations, and providing adequate notice before materially changing incentive policies.

Why, then, have many policymakers overlooked them in recent years in their crafting of sustainability-oriented incentive programs? Also, how can governments better avoid making similar mistakes in the future? This section describes the role that incentive programs played in promoting environmentally sustainable development over the past decade, explains the importance of the three aforementioned principles in the crafting of these policies, and highlights some specific examples of instances when governments have ignored these principles to their peril.

#### i. Basic Overview of Subsidies and Incentive Programs for Environmental Sustainability

Many recent renewable energy subsidies were created, at least in part, to curb the effects of climate change. Climate change is a growing and daunting concern that calls for not only a local response, but also a global response.<sup>18</sup> The leading

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12. Camilo Patrignani, *The Solar Industry Needs to Let Its Federal Tax Credit Die, Says This CEO*, GREENTECH MEDIA (Jan. 13, 2015), <https://www.greentechmedia.com/articles/read/the-solar-industry-needs-to-let-its-federal-tax-credit-die-says-this-ceo#gs.Gmb3lg8>.

13. Guri Bang, *Energy Security and Climate Change Concerns: Triggers for Energy Policy Change in the United States?*, 38 ENERGY POL'Y 1645, 1649 (2010).

14. *Id.* at 1651–52.

15. *See* Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 80 Fed. Reg. 64,661, 64,667 (Dec. 22, 2015) (to be codified at 40 C.F.R. pt. 60).

16. William Yardley & Vera Haller, *At U.N., 175 Nations Sign Landmark Accord on Global Warming. 'We Are in a Race Against Time'*, L.A. TIMES (Apr. 22, 2016), <http://www.latimes.com/world/la-fg-sej-climate-change-20160422-story.html>.

17. *See infra* Part II.

18. "Climate change refers to any significant change in the measures of climate lasting for an extended period of time . . . climate change includes major changes in temperature, precipitation, or wind patterns, among others, that occur over several decades or longer." *Glossary of Climate Change Terms*, U.S. ENVTL. PROTECTION AGENCY, <http://www3.epa.gov/climatechange/glossary.html> (last updated Aug. 9, 2016).

cause of climate change is greenhouse gases, such as carbon dioxide and methane, produced by the consumption of fossil fuels.<sup>19</sup> If climate change remains unchecked, it can reduce crop production, affect human health, and contribute to a rise in sea levels.<sup>20</sup>

Renewable energy sources emit fewer greenhouse gases than fossil fuels.<sup>21</sup> Over the last decade, renewable energy production in the United States grew steadily, with significant increases in the solar and wind industries.<sup>22</sup> Hybrid and electric vehicles continue to grow in popularity—enough that states are developing new taxes to replace the antiquated gasoline tax.<sup>23</sup> What is driving this investment in clean, renewable energy sources? In a word, subsidies.

Subsidies are broadly defined as government-provided benefits to businesses or individuals who satisfy certain specified requirements.<sup>24</sup> Development subsidies are generally justified as means of helping recipients capture more societal benefits from their development activities.<sup>25</sup> These captured social benefits are also commonly referred to as positive externalities. Subsidies take many forms, including tax credits, grants, in-kind subsidies, and cross-subsidies.<sup>26</sup> Subsidies in the renewable energy industry encourage consumers and businesses to invest in sustainable energy projects that might otherwise be more expensive than non-renewable sources of energy.<sup>27</sup> For example, under the Energy Policy Act of 2005, citizens and businesses that invested in nonresidential or residential solar energy installations were eligible for federal tax credits ranging from 10–30% of the project cost.<sup>28</sup>

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19. Alexandra B. Klass, *Property Rights on the New Frontier: Climate Change, Natural Resource Development, and Renewable Energy*, 38 *ECOLOGY L.Q.* 63, 66 (2011); INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, *CLIMATE CHANGE 2014 SYNTHESIS REPORT FOR POLICYMAKERS 4* (Cambridge University Press 2014), [http://ipcc.ch/pdf/assessment-report/ar5/syr/AR5\\_SYR\\_FINAL\\_SPM.pdf](http://ipcc.ch/pdf/assessment-report/ar5/syr/AR5_SYR_FINAL_SPM.pdf).

20. Klass, *supra* note 19.

21. Jaron L. Hudgins, *Alternative Energy in the U.S. Energy Supply: Current Trends and Recommendations for the Future*, 8 *TEX. J. OIL GAS & ENERGY L.* 383, 384–85 (2013).

22. Adam Wilson, *The Future Looks Bright, or Does It? An Analysis of Solar Energy Law and Policy in the United States*, 22 *J. ENVTL. & SUSTAINABILITY L.* 333, 335 (2016) (“Solar electricity production has seen stunning growth rates in the past five years: 2011 saw a 67% increase in generation over 2010, 2012 saw a 42% increase, 2013 saw a 47% increase, and 2014 saw a 104% increase.”). *See also* Dep’t of Energy, *20% Wind Energy by 2030: Increasing Wind Energy’s Contribution to U.S. Electricity Supply*, ENERGY.GOV, <https://energy.gov/eere/wind/20-wind-energy-2030-increasing-wind-energys-contribution-us-electricity-supply> (last visited Nov. 27, 2017) (Additionally, wind energy is expected to supply 20% of the United States’ electricity in 2030 and 35% in 2050.).

23. *See, e.g.*, Courtney Moran & Casey Ball, *Penny Lane, Literally: Funding Roads One Vehicle Mile at a Time*, 5 *WILLAMETTE ENVTL. L.J.* 1, 21 (2016).

24. RONALD STEENBLIK, *A SUBSIDY PRIMER* 8 (Int’l Inst. for Sustainable Dev., n.d.) <http://www.iisd.org/gsi/sites/default/files/primer.pdf>.

25. Return-on-Investment for Select State Economic Development Incentive Programs, Off. of Econ. & Demographic Res. 6 (Jan. 1, 2014), [http://edr.state.fl.us/Content/returnoninvestment/EDR\\_ROI.pdf](http://edr.state.fl.us/Content/returnoninvestment/EDR_ROI.pdf).

26. STEENBLIK, *supra* note 24, at 18.

27. Nancy J. King & Brian J. King, *Creating Incentives for Sustainable Buildings: A Comparative Law Approach Featuring the United States and the European Union*, 23 *VA. ENVTL. L.J.* 397, 419–20 (2005).

28. Kyle Weismantle, *Building a Better Solar Energy Framework*, 26 *ST. THOMAS L. REV.* 221, 232 (2014) (The Emergency Economic Stabilization Act of 2008 has extended this federal tax credit through to 2016.).

Incentive programs should not be permanent fixtures in the energy industry. By their very nature, subsidies should taper as new technologies develop a foothold in the market.<sup>29</sup> Thus, when lawmakers develop a subsidy, they must consider the endgame. A subsidy without a cap or sunset provision may prove disastrous for a government's budget, as evidenced by Louisiana's Solar Energy Tax Credit.<sup>30</sup> The next sections discuss three regulatory principles that, if applied at the formation of a subsidy, will lead to greater success.

## ii. The Principle of Gradualism

A well-designed incentive program requires the predictability that comes from gradual changes to the benefits it provides. While the term "gradualism" encompasses many definitions across a variety of fields,<sup>31</sup> for purposes of this article, "gradualism" represents the principle that, when possible, policy changes "should be implemented without creating dramatic shifts in cost and benefits to individuals or groups."<sup>32</sup> All else equal, lawmakers should seek to implement new policies and end existing policies in ways that provide sufficient time for citizens and businesses to efficiently adapt.<sup>33</sup> Because the renewable energy industry is subject to complex market dynamics,<sup>34</sup> lawmakers must first understand how policy influences the market, and then monitor the market to allow for a gradual response to policy changes.<sup>35</sup>

The virtues of gradualism have been understood for centuries. Even Aesop's ancient fable of The Tortoise and the Hare highlights the value of gradualism in ways that would benefit modern incentive programs. In the fable, a tortoise and a hare agree to a race. The hare, excited and confident that he can win, starts the race at a sprint, while the tortoise moves at a slower, but consistent pace. Ultimately, the hare becomes over-confident and stops running before reaching the finish line. In

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29. R. Haas et al., *How to Promote Renewable Energy Systems Successfully and Effectively*, 32 ENERGY POL'Y 833, 838 (2004) ("In later market stages, [subsidies] should be reduced. At the same time excessive (windfall) profits should be avoided.").

30. See *infra* Part II.B.i.

31. Other names for gradualism include incrementalism, rate shock, and rate stability.

32. Memorandum from Roger Gray et al. to Comm'rs Simpson, Brown, Helgeson, Manning & Mital 6 (Feb. 25, 2013), [http://web.archive.org/web/20140717042712/http://www.eweb.org/public/commissioners/meetings/2013/130305/M8\\_BackgroundWhitepaperonEWERateMakingPrinciples.pdf](http://web.archive.org/web/20140717042712/http://www.eweb.org/public/commissioners/meetings/2013/130305/M8_BackgroundWhitepaperonEWERateMakingPrinciples.pdf).

33. See N.Y. DEP'T OF PUB. SERV. COMM'N, STAFF WHITE PAPER ON RATEMAKING AND UTILITY BUSINESS MODELS 79 (N.Y. Pub. Serv. Comm'n, 2015) [hereinafter N.Y. STAFF WHITE PAPER], [https://www.energymarketers.com/Documents/NY\\_REV\\_Track\\_2\\_paper.pdf](https://www.energymarketers.com/Documents/NY_REV_Track_2_paper.pdf); William Opalka & Rich Heidorn, Jr., *NYPSC Outlines Reforming the Energy Vision Changes*, RTO INSIDER (Aug. 3, 2015), <https://www.rtoinsider.com/nypsc-reforming-the-energy-vision-16910/>.

34. See generally Scott Victor Valentine, *Wind Power Policy in Complex Adaptive Markets*, 19 RENEWABLE & SUSTAINABLE ENERGY REV. 1 (2013).

35. Scott Victor Valentine, *Gradualist Best Practice in Wind Power Policy*, 22 ENERGY FOR SUSTAINABLE DEV. 74, 75 (2014). *But see* Direct Testimony and Exhibits of Ali Al-Jabir, Application of the Naragansett Electric Company d/b/a National Grid for Approval of a Change in Electric and Gas Distribution Rates Pursuant to R.I.G.L. Sections 39-3-10 and 39-1-3-11, No. 4323, at 5 (Aug. 30, 2012) [http://www.ripsc.org/eventsactions/docket/4323-Navy-AlJabir\(8-30-12\).pdf](http://www.ripsc.org/eventsactions/docket/4323-Navy-AlJabir(8-30-12).pdf) ("Although factors such as . . . , gradualism, . . . can also be taken into consideration when determining the final spread of the revenue requirement among classes, the fundamental starting point and guideline should be the cost of serving each customer class . . .").

contrast, the tortoise slowly trudges along and eventually overtakes the hare to win the race. The familiar moral of this fable is that “slow and steady wins the race.” In the context of designing policy incentives, Sir Rodger L’Estrange’s moral, published in 1692, is an even better fit: “A [p]lodd[ing] [d]iligence brings us sooner to our [j]ourney’s [e]nd than a [f]luttering [w]ay of [a]dvancing by [s]tarts and by [s]tops; for ‘tis [p]erseverance alone that can carry us [all the way].”<sup>36</sup>

Lawmakers often approach efforts to incentivize renewable energy technology like Aesop’s infamous hare. In many cases, the subsidies and incentive programs they design are generous in the first few years but then abruptly end and destroy much of the momentum they generate. This “fluttering way of advancing” unnecessarily dampens the effectiveness of policies aimed at promoting environmental sustainability and renewable energy technologies.<sup>37</sup> “Boom and bust” government policies, as some critics have labeled them, create regulatory uncertainty and reduce investor confidence.<sup>38</sup> Intermittent and haphazard energy policies also have a chilling effect on the market for new and improved products.<sup>39</sup>

The principle of gradualism is often cited in rate cases before public utility commissions (PUCs).<sup>40</sup> In the context of rate design, gradualism refers to “phasing in rates . . . over a longer period of time allowing consumers to gradually make the adjustments in the ‘elastic’ part of their spending so as to pay for increased . . . costs. . . .”<sup>41</sup> While on occasion PUCs have modified or rejected rate changes based on concerns over abrupt changes affecting consumers,<sup>42</sup> some states do not even

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36. Sir Rodger L’Estrange, *Fables, of Æsop and other Eminent Mythologists: with Morals and Reflexions, A Hare and a Tortoise* 123–24 (London, R. Sare et al. 1692).

37. *Id.*

38. N.Y. STAFF WHITE PAPER, *supra* note 33, at 89 n.90 (quoting Richard Schmalensee & Robert N. Stavins, *The SO<sub>2</sub> Allowance Trading System: The Ironic History of a Grand Policy Experiment*, 27 J. ECON. PERSP. 103, 117 (2013)).

39. JESSE JENKINS ET AL., *BEYOND BOOM AND BUST: PUTTING CLEAN TECH ON A PATH TO SUBSIDY INDEPENDENCE* 37 (Brookings Inst., 2012), [https://www.brookings.edu/wp-content/uploads/2016/06/0418\\_clean\\_investments\\_final-paper\\_PDF.pdf](https://www.brookings.edu/wp-content/uploads/2016/06/0418_clean_investments_final-paper_PDF.pdf).

40. *See, e.g.*, City of Indianapolis Dep’t of Pub. Utilities, 39066, 1991 WL 531202, at \*72 (Nov. 1, 1991) (“[U]tility rates should be designed to the maximum extent practicable to reflect the cost of providing service, while avoiding abrupt changes in rate structures and undue hardship.”); Commissions Investigation of Value & Cost of Distributed Generation, 334 P.U.R.4th 29, at 125 (Jan 3, 2017) (Adopting two new solar valuation methodologies to replace net metering that will “provide a path for a gradual transition away from the current net metering model to one that better reflects the value of [distributed generation].”); Nev. Power Co., 15-07041 & 15-07042, 2016 WL 693150, at \*68 ¶ 273 (Feb. 12, 2016) (“Gradualism is the concept used by utility regulatory commissions to manage change associated with moving utility prices to reflect new or changing rate structures of costs of service.”).

41. *Lloyd v. Pa. Pub. Util. Comm’n*, 904 A.2d 1010, 1018 n.14 (Pa. Commw. Ct. 2006).

42. *See, e.g.*, *Rocky Mountain Power*, 279 P.U.R.4th 1 (Feb. 18, 2010) (approving rate increase, but staggering its implementation to conform with gradualism); *Portland Gen. Elec. Co.*, 213 P.U.R.4th 376, at 5 (Nov. 20, 2001) (“When allocating a utility’s revenue requirement among customer classes, the Commission has pursued—where possible—a policy of gradualism by avoiding substantial rate increases for any particular customer class.”).

require their PUCs to consider gradualism.<sup>43</sup> In addition to rate change cases, references to gradualism also appear in international trade agreements,<sup>44</sup> the Federal Reserve interest rate policies,<sup>45</sup> and case law.<sup>46</sup>

Of course, the principle of gradualism does not exist in a vacuum. Lawmakers often face multiple goals when setting caps for tax credits or other incentive programs. Protecting consumers from dramatic shifts in costs is only one of those goals.<sup>47</sup> A few utility rate cases have even emphasized the potential danger of focusing only on gradualism at the expense of other important considerations.<sup>48</sup> Moreover, governing statutes for PUCs rarely require the commissions to specifically consider gradualism when setting rates and crafting policies.<sup>49</sup>

Nonetheless, policymakers in environmental sustainability have too often ignored gradualism to their peril. Two contrasting examples help to illustrate this point. A first example is an electric utility rate case in Iowa in 2015.<sup>50</sup> The Iowa Utilities Board encouraged electric utilities to develop pilot programs to “expand renewable [distributed generation] in Iowa.”<sup>51</sup> Two utilities, MidAmerican Energy and

43. See, e.g., *Ohio Consumers’ Counsel v. Pub. Util. Comm’n. of Ohio*, 926 N.E.2d 261 (Ohio 2010).

44. Richard Chisik, *Gradualism in Free Trade Agreements: A Theoretical Justification*, 59 J. INT’L ECON. 367, 367 (2003); see also Richard M. Bird, *A View From the North*, 49 TAX L. REV. 745, 756 (1994) (“When dealing with complex, uncertain and changing problems, both practice and theory suggest an incremental ‘problem-solving’ approach – ‘muddling through’ as it sometimes has been disrespectfully called – is not only all that can be done, it is generally the best fallible humans can do.”); see Barbara A. Cherry, *Institutional Governance for Essential Industries Under Complexity: Providing Resilience Within the Rule of Law*, 17 COMM’LAW CONSPECTUS 1, 30 n. 191 (2008).

45. Jeremy C. Stein & Adi Sunderam, *Gradualism in Monetary Policy: A Time-Consistency Problem?*, 1 (Nat’l Bureau Econ. Research, Working Paper No. 21569, 2015); Ben S. Bernanke, Member, Bd. of Governors of the Fed. Reserve Sys., Remarks at an Economics Luncheon Co-Sponsored by the Federal Reserve Bank of San Francisco & the Univ. of Wash. (May 20, 2004) (“As a general rule, the Federal Reserve tends to adjust interest rates incrementally, in a series of small or moderate steps in the same direction.”).

46. Alfred C. Aman, Jr., *Administrative Law in A Global Era: Progress, Deregulatory Change, and the Rise of the Administrative Presidency*, 73 CORNELL L. REV. 1101, 1122 (1988) (“The traditional judicial discourse, with its penchant for precedent, reasoning by analogy, and reliance upon the past, is essentially a conservative one. . . . The most successful arguments, therefore, . . . advocate the kind of gradualism that common law judges understand best. Such arguments result in incremental, rather than radical, change and adapt easily to the preexisting regulatory scheme.”).

47. Perhaps the most prominent factor facing lawmakers is the budget. When Louisiana lowered its cap on solar tax credits, the motivating factor was a budget deficit and inflated subsidy payments. Other factors include guaranteeing a rate of return to utilities, competing economic interests, and of course, political agendas. See *infra* Part II.B.i.

48. *Ohio Consumers’ Counsel*, 926 N.E.2d at 266 (finding “no authority that gradualism is a factor that the [public utilities] commission is required to apply in every rate-design case.”); *Watergate E., Inc. v. Pub. Serv. Comm’n of D.C.*, 665 A.2d 943, 950 (D.C. 1995) (“We also observe . . . that in addition to its policy of gradualism, the Commission was also required to consider the very large revenue deficit . . .”); *Lloyd v. Pennsylvania Pub. Util. Comm’n*, 904 A.2d 1010, 1020 (Pa. Commw. Ct. 2006) (“[W]hile permitted, gradualism is but one of many factors to be considered and weighed by the Commission in determining rate designs, and principles of gradualism cannot be allowed to trump all other valid ratemaking concerns . . .”).

49. New Hampshire, for example, only requires that the commission consider whether the rates are “unreasonable.” N.H. REV. STAT. ANN. § 378:7 (West 2017). Nevada comes the closest by requiring the commission to “[p]rovide for stability in rates and for the availability and reliability of electric service,” as one of five factors. NEV. REV. STAT. ANN. § 703.151 (2009);

50. Distributed Generation, NOI-2014-001, 2015 WL 6758412, (Oct. 30, 2015), <https://efs.iowa.gov/cs/groups/external/documents/docket/mdax/mtqx/~edispl141884.pdf>.

51. *Id.* at \*5.

Alliant Energy, responded to this call by proposing steep new fees for customers who participated in their pilot programs.<sup>52</sup> These proposed fees drew the attention of solar advocates, who warned that the proposed fees would stifle the solar industry in Iowa.<sup>53</sup> The utilities argued that solar customers do not pay a fair share for “grid-related services” and that this difference should be recovered through a demand charge.<sup>54</sup> However, at the end of 2015, MidAmerican had less than 300 solar customers out of a total of 667,000 customer accounts, so any impact on other customers was extremely small.<sup>55</sup> The utilities acknowledged that solar energy-using customers were a small percentage of the total customers, but nonetheless claimed that it was best to address these cost shift issues early before they became more significant.<sup>56</sup>

The Iowa utilities’ proposed fees on solar energy users undesirably violated the principle of gradualism in at least two ways. First, it was apparent that the proposed solar fees were exorbitant in size and would undoubtedly induce a rate shock that would prevent more consumers from installing solar.<sup>57</sup> Second, the utilities’ proposal came at a time when the solar industry in the State was still in its infancy.<sup>58</sup> Rather than allowing solar to grow in a moderated, partially subsidized environment, the utilities proposed fees would eliminate any cost-saving incentives for homeowners to install solar, and effectively stop the installation of rooftop solar systems within the state.<sup>59</sup> Ultimately, the Iowa Utilities Board elected to keep net metering, but modified the program to prevent solar customers from rolling over excess credits from year to year.<sup>60</sup>

In contrast, New York’s response to the growth of distributed renewable energy is an example of effective adherence to gradualism. The regulatory scheme for utilities has changed very little over the last century,<sup>61</sup> and some suggest that the scheme is ill-equipped to deal with a rapid increase in distributed generation systems like rooftop solar.<sup>62</sup> In 2014, the Governor of New York asked the public state

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52. Robert Walton, *Iowa Utilities Mull New Solar Fees*, UTIL. DIVE (Mar. 24, 2016), <http://www.utilitydive.com/news/iowa-utilities-mull-new-solar-fees/416244/>.

53. Karen Uhlenhuth, *Iowa Utilities Propose to ‘Pilot’ a Rate Hike for Solar Customers*, MIDWEST ENERGY NEWS (Mar. 30, 2016), <http://midwestenergynews.com/2016/03/30/iowa-utilities-propose-to-pilot-a-rate-hike-for-solar-customers/> (see public comments in docket expressing concern).

54. Walton, *supra* note 52.

55. *Id.*

56. *Id.*

57. Mitchell Schmidt, *There Goes the Sun? New Net Metering Rules Receive Mixed Reviews*, THE GAZETTE (July 24, 2016), <http://www.thegazette.com/subject/news/business/there-goes-the-sun-new-net-metering-rules-receive-mixed-reviews-20160724>.

58. *See id.*

59. *See id.*

60. *Id.*

61. See Mark Chediak & Ken Wells, *Why the U.S. Power Grid’s Days Are Numbered*, BLOOMBERG (Aug. 22, 2013), <https://www.bloomberg.com/news/articles/2013-08-22/why-the-u-dot-s-dot-power-grids-days-are-numbered> (“Regulators set rates; utilities get guaranteed returns; investors get sure-thing dividends. It’s a model that hasn’t changed much since Thomas Edison invented the light bulb. And it’s doomed to obsolescence.”).

62. *See id.* (“[S]ome utilities will get trapped in an economic death spiral as distributed generation eats into their regulated revenue stream and forces them to raise rates, thereby driving more customers off the grid.”); PETER KIND, DISRUPTIVE CHALLENGES: FINANCIAL IMPLICATIONS AND STRATEGIC RESPONSES TO A

commission to begin fundamental shifts in utility regulation to prepare for more distributed generation sources.<sup>63</sup> In July 2015, Staff for the New York Department of Public Service (“Staff”) published a white paper detailing its proposed new regulatory model.<sup>64</sup> Without delving too deeply into the details of the new model, it is worth noting how the proposal expressly incorporated gradualism into its design.<sup>65</sup>

Because Staff’s proposed regulatory changes were so fundamental, Staff wanted to ensure that they would not prevent the state from maintaining a “sound electric industry,” and secure grid.<sup>66</sup> Staff discussed the need to protect consumers from rate shocks during the transition.<sup>67</sup> Importantly, Staff acknowledged that the principle of gradualism should not just apply to rate design:

The principle of gradualism should apply not only for customers but also for whole industries, such as solar and energy efficiency providers, that have responded to state policies and developed businesses in the state. Any changes affecting these industries should provide ample time for businesses to adapt and plan for new forms of opportunity.<sup>68</sup>

As Staff recognized, this broad perspective requiring special consideration of “any changes affecting [renewable energy] industries,” provides a valuable lens when reviewing proposed policy changes.<sup>69</sup> This article argues that more policy-makers should similarly consider such broader impacts when crafting incentive policies within the environmental sustainability realm.<sup>70</sup>

### iii. The Principle of Respecting Investment-Backed Expectations

Incentive policies are also more efficient, and equitable when changes to such policies respect citizens’ investment-backed expectations. Stemming from the Fifth Amendment,<sup>71</sup> the principle of respecting investment-backed expectations first appeared in the United States Supreme Court takings analysis in *Pennsylvania Central Transportation Co. v. New York City*.<sup>72</sup> When a governmental action compromises a

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CHANGING RETAIL ELECTRIC BUSINESS 11–12 (Edison Electric Institute 2013), <http://www.ourenergypolicy.org/wp-content/uploads/2013/09/disruptivechallenges-1.pdf>.

63. Katherine Tweed, *New York Launches Major Regulatory Reform for Utilities*, GREENTECH MEDIA (Apr. 28, 2014), <https://www.greentechmedia.com/articles/read/new-york-launches-major-regulatory-reform-for-utilities>.

64. See generally N.Y. STAFF WHITE PAPER, *supra* note 33.

65. *Id.* at 89 (“Applying Gradualism on Multiple Dimensions”).

66. *Id.* at 8.

67. *Id.* at 11 (“Rate design reform should be carefully phased, taking into account two types of timing concerns: the time needed to assess potential bill impacts and foster customer acceptance; and the time needed to develop information and infrastructure capabilities to implement an improved rate design.”).

68. *Id.* at 89.

69. *Id.*

70. See generally N.Y. STAFF WHITE PAPER, *supra* note 33, at 4.

71. U.S. CONST. amend. V (“...nor shall private property be taken for public use, without just compensation.”).

72. *Penn. Cent. Transp. Co. v. N.Y.C.*, 438 U.S. 104, 124 (1978). Justice Brennan’s majority opinion recognized that, among other factors, the extent to which a law interferes with reasonable investment-backed expectations is relevant in determining if a regulatory taking has occurred. *Id.* Although this phrase has no clear definition, Justice Brennan noted that investment-backed expectations are those expectations by an investor that are distinct and “involve[] a financial venture [in the investment] with a view toward a

citizen's ability to earn a reasonable return on an investment made in reasonable reliance on an existing government policy, then a court is slightly more likely to find a compensable regulatory taking.<sup>73</sup> For example, in *Penn Central*, the primary expectation was the continued use of the Grand Central Terminal as it had been for the sixty-five years prior to the case.<sup>74</sup> Because the law being challenged in *Penn Central* did not materially disrupt that expectation, the Court ultimately found no regulatory taking.<sup>75</sup>

The concept of protecting citizens' and businesses' investment-backed expectations also relates to what some academics call "deregulatory takings."<sup>76</sup> Deregulatory takings occur when there is a deregulation of previously regulated property that causes a taking.<sup>77</sup> Professors J. Gregory and Daniel F. Spulber assert that these types of takings can arise in electricity rate cases, during the phasing-out of incentive programs, and should give rise to breach of contract or takings claims.<sup>78</sup> They explain, "[a]s regulators dismantle entry barriers and other regulatory restrictions, they must honor their past commitments and avoid actions that threaten to confiscate or destroy the property of [] investors . . . ."<sup>79</sup>

One example of a potential deregulatory taking is the recent attempts to eliminate net metering policies. Net metering is a billing and credit system that allows retail electricity customers with solar panels to sell any excess electricity that their panels generate to their utility at retail electricity prices.<sup>80</sup> Net metering programs greatly enhance the financial appeal of purchasing or leasing a rooftop solar array.<sup>81</sup> Major reductions to these programs diminishes the value of the solar systems, far below the customers' investment-backed expectations. Customers reasonably assume the incentive programs and the primary benefits they provided would remain

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specific future use." Robert M. Washburn, "Reasonable Investment-Backed Expectations" As a Factor in Determining Property Interests, 49 WASH. U. URB. & CONTEMP. L. 63, 67 (1996).

73. See *id.* at 121.

74. *Id.* at 115–16.

75. Thomas Ruppert, Reasonable Investment-Backed Expectations: Should Notice of Rising Seas Lead to Falling Expectations for Coastal Property Purchasers?, 26 J. LAND USE 239, 247 (2011).

76. See generally Susan Rose-Ackerman & Jim Rossi, *Disentangling Deregulatory Takings*, 86 VA. L. REV. 1435, 1435–40 (2000).

77. J. Gregory Sidak & Daniel F. Spulber, *Deregulatory Takings and Breach of the Regulatory Contract*, 71 N.Y.U. L. REV. 851, 855 (1996).

78. Jim Rossi, *The Irony of Deregulatory Takings*, 77 Tex. L. Rev. 297, 299 (1998) (reviewing J. Gregory Sidak & Daniel F. Spulber, *Deregulatory Takings and Breach of the Regulatory Contract*, 71 N.Y.U. L. REV. 851 (1996)).

79. Sidak & Spulber, *supra* note 77.

80. EDISON ELEC. INST., SOLAR ENERGY AND NET METERING (2016), <http://www.eei.org/issuesand-policy/generation/NetMetering/Documents/Straight%20Talk%20About%20Net%20Metering.pdf>.

81. *Id.*

available for the life of the system.<sup>82</sup> Similar unjust impacts occur when a government abruptly discontinues a renewable energy-related tax credit after consumers have made major investments based on its continued availability.<sup>83</sup>

Amortization periods are one potential means of better respecting investment-backed expectations in connection with policy changes. Historically, amortization periods were primarily tools to protect landowners' investment-backed expectations in the context of rezoning and other major changes to land use ordinances.<sup>84</sup> In those settings, amortization periods ensure that a property owner does not bear a greater cost under new governmental restrictions than others without the same property interest.<sup>85</sup> Amortization periods are intended to allow a property owner to recoup real estate development investments made in reliance on land use laws applicable prior to a substantial change.<sup>86</sup> To that end, amortization periods permit the property owner to continue to use the property in a manner that does not conform to the new government restrictions for a particular time period. The length of years that an amortization period's non-conforming land use is permitted to continue is determined on the amount of the owner's investment, the fair market value of the affected property, or potential replacement costs.<sup>87</sup> Depending on the jurisdictions, amortization periods are either for a fixed duration, or are determined on a case-by-case basis.<sup>88</sup>

Grandfathering provisions are an even simpler means of honoring investment-backed expectations in connection with a change in law. Like amortization periods, laws allowing for the grandfathering of certain policies are common in the context of land use law and rezoning.<sup>89</sup> Grandfathering provisions also appear in contracts, in legislation such as the Patient Protection and Affordable Care Act,<sup>90</sup> the Clean Air

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82. E.g., Julia Pyper, *Hawaii Regulators Shut Down HECO's Net Metering Program*, GREENTECH MEDIA (Oct. 14, 2015), <https://www.greentechmedia.com/articles/read/hawaii-regulators-shutdown-hecos-net-metering-program>; Ryan Randazzo, *Some Solar Firms Oppose Net Metering Changes*, ARIZ. CENT. (Dec. 21, 2016), <http://www.azcentral.com/story/money/business/energy/2016/12/21/rooftop-solar-changes-appease-many-but-not-leasing-firms-arizona-net-metering/95699370/> (Arizona cut the rate of return for solar panel owners).

83. See Pyper, *supra* note 82.

84. See Margaret Collins, *Methods of Determining Amortization Periods for Non-Conforming Uses*, 3 WASH. U. J.L. & POL'Y 215, 216 (2000) ("The beginnings of amortization can be traced from the birth of zoning ordinance in 1916, but it was not until the early 1950's that amortization began to be more widely adopted.").

85. Comment, *The Cost of Amortizing Non-Conforming Uses*, 26 U. CHI. L. REV. 442, 443 (1959).

86. Collins, *supra* note 84, at 217.

87. *Id.* at 218.

88. Julie R. Shank, *A Taking Without Just Compensation? The Constitutionality of Amortization Provisions for Nonconforming Uses*, 109 W. VA. L. REV. 225, 252–53 (2006).

89. Carol M. Rose, *Property and Expropriation: Themes and Variations in American Law*, 2000 UTAH L. REV. 1, 21–22 (2000).

90. See Patient Protection and Affordable Care Act, Pub. L. No. 111-148, 124 Stat. 119 (2010).

Act,<sup>91</sup> and in connection with various other changes in public programs.<sup>92</sup> Grandfathering principles originate from the rule of first possession in property,<sup>93</sup> and are optimal when applied only “to those who previously had access to the resource and substantially in proportion to the extent to, or rate at, which they previously enjoyed depleting it.”<sup>94</sup> Grandfathering provisions take the approach of exempting parties from legal and policy reforms, and thereby preserving their property’s value rather than compensating them for their losses.<sup>95</sup>

Respecting investment-backed expectations is not only a consumer issue; it is of significant concern for utility companies. Utility rates are regulated by the government, and are traditionally justified by the concept that the generation and distribution of electricity is a natural monopoly.<sup>96</sup> Consumers are better served by having only one utility servicing an area, and having governmental limitations on that utility to guard against monopolistic pricing.<sup>97</sup> Thus, the government grants the utility a protected monopoly over a particular area, and in return the utility promises to supply energy to all persons in the area at a price that would cover all operating costs, plus a reasonable rate of return on the amount invested. This implicit agreement under state utility laws is often referred to as the utility [regulatory] compact.<sup>98</sup> Thus, utilities also have an investment-backed expectation in the reasonable rate of return on investments made for infrastructure and operational costs. Stranded costs are a major concern for utilities.<sup>99</sup> Stranded costs are seemingly prudent investments that become unsuccessful due to changes in technology, regulatory policy, or demand,<sup>100</sup> and have been generally permitted to be recovered through the utility’s rates.<sup>101</sup> Typically, PUCs that set the rates have judicial discretion to allow for full recovery of such investments.<sup>102</sup>

Increases in the total generating capacity of renewable energy generating systems, such as rooftop solar, within a utility’s exclusive territory cut into the utility’s

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91. See Clean Air Act, 42 U.S.C. § 7429(b) (1990).

92. See e.g., Austin Smith, *Social Security Changes: Are You Grandfathered In?*, USA TODAY (May 24, 2016), <http://www.usatoday.com/story/sponsor-story/motley-fool/2016/05/24/motley-fool-social-security-changes/84777406/>.

93. Jonathan Remy Nash, Allocation and Uncertainty: Strategic Responses to Environmental Grandfathering, 36 *ECOLOGY L.Q.* 809, 811 (2009).

94. *Id.* at 817.

95. Steven Shavell, On Optimal Legal Change, Past Behavior, and Grandfathering, 37 *J. LEGAL STUD.* 37, 56 (2008).

96. Brandon Hofmeister, Electric Vehicle Charging Infrastructure: Navigating Choices Regarding Regulation, Subsidy, and Competition in a Complex Regulatory Environment, 5 *J. ENERGY & ENVTL. L.* 42, 47 (2014).

97. *Id.*

98. Michael W. McConnell, Public Utilities’ Private Rights Paying for Failed Nuclear Power Projects, 12 *REGULAR* 35, 36 (1988).

99. James Boyd, The “Regulatory Compact” and Implicit Contracts: Should Stranded Costs be Recoverable?, 19 *ENERGY J.* 69, 70 (1998).

100. Megan McLean, *Throwing Shade: The Case Against Judicial Interference with Solar Net Metering Policies*, 46 *ENVTL. L. REP.* 10,873, 10,874 (2016). A good example of a stranded cost would be a new coal-fired power plant built when coal was considered a cheap source of energy, but has now become costly under new emission regulations.

101. Hofmeister, *supra* note 96, at 62–63.

102. Megan McLean, *supra* note 100, at 10,876–77.

expected rate of return by reducing the aggregate quantity of grid-supplied power demanded.<sup>103</sup> Electricity rate increases aimed at correcting such effects encourage even more of the utility's customers to invest in distributed renewable energy facilities. This effect is known as the utility death spiral,<sup>104</sup> and is a real, growing concern for utilities as they try to respond to the growth of distributed energy generation within their territories. Ironically, this death spiral argument persists only because of a presumption among utilities that they are entitled to rates and policies that honor their reasonable investment-backed expectations.

iv. The Principle of Providing Notice before Significantly Changing Incentive Policies

The final regulatory principle that this article addresses is that of providing adequate notice before materially changing the benefits available under sustainability incentive programs. A practice of providing adequate notice ensures greater equity and justice for those affected by policy changes because it gives consumers time to respond and avoid adverse financial consequences. Providing adequate notice also invites greater public participation in the policymaking process.

Adequate notice operates as a procedural safeguard against government action.<sup>105</sup> The significance of notice is most prominent in the context of laws related to procedural and substantive due process. The Constitution specifically provides that "[n]o person shall . . . be deprived of life, liberty, or property, without due process of law,"<sup>106</sup> and that no "State [shall] deprive any person of life, liberty, or property, without due process of law."<sup>107</sup> Procedural due process jurisprudence centers on the principle of fairness.<sup>108</sup> Adequate notice operates as a procedural safeguard against government action.<sup>109</sup> If a person's rights will be affected in a substantial way, then that person is entitled to be heard regarding that right.<sup>110</sup> However, a person can only be heard if they know they need to speak.<sup>111</sup> Thus, notice is an essential component of due process, and ensures that a person's opportunity to be heard regarding his or her right is meaningful.<sup>112</sup>

Courts usually take a formulaic approach when determining whether due process has been violated.<sup>113</sup> Courts ask whether the person suffered a deprivation of liberty or property without due process of law.<sup>114</sup> There can be no violation of due process without a liberty or property interest being deprived.<sup>115</sup> For the purposes

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103. *Id.* at 10,881–82.

104. See Troy A. Rule, *Solar Energy, Utilities, and Fairness*, 6 SAN DIEGO J. CLIMATE & ENERGY L. 115, 119 (2015); Stephen Lacey, *This is What the Utility Death Spiral Looks Like*, GREENTECH MEDIA (Mar. 04, 2014), <https://www.greentechmedia.com/articles/read/this-is-what-the-utility-death-spiral-looks-like>.

105. Sara B. Tosdal, Note, *Preserving Dignity in Due Process*, 62 HASTINGS L.J. 1003, 1005 (2011).

106. U.S. CONST. amend. V.

107. U.S. CONST. amend. XIV, § 1.

108. Tosdal, *supra* note 105.

109. *Id.*

110. 16B AM. JUR. 2D *Constitutional Law* § 983 (2009).

111. *Id.*

112. *Id.*

113. Cynthia R. Farina, *Conceiving Due Process*, 3 YALE J.L. & FEMINISM 189, 191 (1991).

114. *Id.*

115. *Id.* at 191–92.

of due process, a sufficient property interest that requires such protection must be a “legitimate claim of entitlement.”<sup>116</sup> A liberty interest is broader and focuses on whether the individual is being constrained not only physically but also socially.<sup>117</sup> The courts will then determine whether there was sufficient notice as procedural due process “grants a right to notice and a hearing whenever government action threatens a loss” to either of these interests.<sup>118</sup>

Notice captures what people view as fair.<sup>119</sup> When the government makes a sudden policy change without adequate notice, the public tends to react negatively.<sup>120</sup> Individuals and the public respond in such a manner because there is a psychological significance to notice and information sharing.<sup>121</sup> A deprivation of a property interest without notice will influence a person’s decision to engage in a particular market. That person will remember his or her experiences when evaluating the costs and benefits of engaging in a similar market.

In the energy law context, each state has statutes governing notice requirements within the PUC’s ratemaking process.<sup>122</sup> Utility commissions must provide adequate notice so that consumers have time to respond to proposed changes. However, even with adequate notice from government officials, many consumers rely on third-party vendors for updates. For example, a person who purchases a rooftop solar system is unlikely to have a thorough or up-to-date understanding of

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116. *Id.* at 192 (quoting *Bd. of Regents of State Colleges v. Roth*, 408 U.S. 564, 577 (1972)).

117. *Id.* (“Without doubt, [liberty] denotes not merely freedom from bodily restraint but also the right of the individual to contract, to engage in any of the common occupations of life, to acquire useful knowledge, to marry, establish a home and bring up children, to worship God according to the dictates of his own conscience, and generally to enjoy those privileges long recognized . . . as essential to the orderly pursuit of happiness by free men. In a Constitution for a free people, there can be no doubt that the meaning of ‘liberty’ must be broad indeed.”) (alteration in original) (quoting *Bd. of Regents*, 408 U.S. at 572).

118. Niki Kuckes, *Civil Due Process, Criminal Due Process*, 25 *YALE L. & POL’Y REV.* 1, 3 (2006).

119. For example, employees are encouraged to provide their employers two weeks’ notice before leaving their job so that the employer has some time to fill the vacancy. The law does not require notice before leaving a job, but society accepts it as standard practice.

120. One need look no further than the first travel ban issued by the Trump administration in January 2017. The administration provided no notice of the executive order to travelers or airlines, causing major disruptions and protests at U.S. airports and other major airports around the world. See John Ainger & Deena Kamel, *Confusion Grips Airports as Courts Limit Trump Travel Curbs*, *BLOOMBERG* (Jan. 29, 2017), <https://www.bloomberg.com/news/articles/2017-01-29/airports-gripped-by-confusion-as-courts-limit-trump-travel-curbs>. The travel ban was quickly quashed in federal courts, and so the administration spent more time crafting a new travel ban. Alexander Burns, *How Washington State Upended Trump’s Travel Ban*, *N.Y. TIMES* (Feb. 4, 2017), <https://www.nytimes.com/2017/02/04/us/trump-travel-ban-washington-seattle-ferguson.html?mcubz=3>. One of the changes to the ban was that it provided ten days’ notice to travelers and airlines. See Maya Rhodan, *President Trump Argued His Travel Ban Should Surprise ‘Bad Dudes.’ His New Version Gives 10 Days’ Notice*, *TIME* (Mar. 6, 2017), <http://time.com/4692165/revised-travel-ban-advance-notice/>.

121. See Margaret Jane Radin, *Taking Notice Seriously: Information Delivery and Consumer Contract Formation*, 17 *THEORETICAL INQUIRIES L.* 515, 532 (2016).

122. For example, Colorado law requires thirty days’ notice to the public by keeping a proposed rate change available to the public at the commission, posting specifically sized advertisements in each newspaper in the utility’s jurisdiction, mailing letters to customers, and including a description of the proposed changes in the bill sent to customers. *COLO. REV. STAT. ANN.* § 40-3-104 (West 2016).

the incentive programs.<sup>123</sup> Instead, the consumer relies on the company selling the solar panels to be knowledgeable about the current state of the subsidies. The danger in relying on a third-party vendor is that the vendor may oversell an incentive to induce a purchase.<sup>124</sup> This was the case for the Afortish family in Louisiana.<sup>125</sup> Fortunately, there are remedies in contract case law, like the lawsuit the Afortish family filed against the third-party vendor.<sup>126</sup> In drafting or revising notice provisions for these incentives, state legislatures will not only need to establish guidelines on providing consumers adequate notice, but will also need to consider how to limit the incentives third parties may have for abusing the notice system.

## II. ANALYSIS

The remaining sections of this Article examine some specific, well-intentioned incentive programs that ultimately encountered difficulties or controversy when lawmakers overlooked one or more of the principles outlined above. Section A discusses the recent Nevada net metering debate in which Nevada's PUC made drastic cuts to incentives for solar customers but was later compelled to reverse that decision. Section B discusses overly generous tax credits in Oklahoma and Louisiana that wreaked havoc on the states' respective budgets. Section C discusses three other sustainable energy-related incentive programs suffering from similar problems.

### A. Net Metering in Nevada

Nevada's 2015 net metering dispute is one of the most widely publicized controversies in the solar energy policy arena.<sup>127</sup> The dispute highlights failures to adhere to each of the principles outlined in Part I above. Nevada, like many states, had a net metering incentive program for rooftop solar.<sup>128</sup> In 2015, as rooftop solar installations started booming in Nevada, the state's PUC made national headlines by swiftly eliminating the net metering program and applying the changes retroactively to roughly 32,000 existing owners of rooftop solar.<sup>129</sup> Overnight, solar installation companies shut down and moved out of Nevada and the state's rooftop solar

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123. Rebekah Fitzgerald, *Consumer Protection for Third-Party Solar Leases*, COUNCIL OF ST. GOV'TS (Feb. 2, 2015), <http://knowledgecenter.csg.org/kc/content/consumer-protection-third-party-solar-leases>.

124. *Id.*

125. Class Action Complaint at 2, *Alfortish v. GreenSky, LLC*, No. CV 16-15084 (E.D. La. Sept. 30, 2016).

126. *Id.*

127. See, e.g., Liz Edmondson, *States Explore Net Metering Reforms for Solar Customers*, COUNCIL OF ST. GOV'TS, [http://www.csg.org/pubs/capitolideas/enews/cs81\\_1.aspx](http://www.csg.org/pubs/capitolideas/enews/cs81_1.aspx) (last visited Dec. 13, 2017) (noting that Nevada is "ground zero" for rooftop solar); Julia Pyper, *Does Nevada's Controversial Net Metering Decision Set a Precedent for the Nation?*, GREENTECH MEDIA (Feb. 4, 2016), <https://www.greentechmedia.com/articles/read/nevada-net-metering-decision>.

128. Edmondson, *supra* note 127.

129. See, e.g., Mark Chediak & Noah Buhayar, *Buffett's Utility Gets Win Over Musk's SolarCity on Credits*, BLOOMBERG (Dec. 22, 2015), <https://www.bloomberg.com/news/articles/2015-12-22/buffett-s-utility-scores-win-against-musk-s-solarcity-on-credits>; Peter Maloney & Gavin Bade, *Nevada Task Force Recommends Restoring Net Metering as PUC Welcomes 2 New Regulators*, UTIL. DIVE (Oct. 3, 2016), <http://www.utilitydive.com/news/nevada-task-force-recommends-restoring-net-metering-as-puc-welcomes-2-new-r/427400/>; William Pentland, *Nevada Overhauls Net Metering Rules Despite Objections from*

industry came crashing down.<sup>130</sup> Months later, the commission reconsidered its decision and upheld most of its earlier decision, but amended its new fee structure so that it was implemented more gradually.<sup>131</sup> Nevada's initial decision is now the go-to example of "what not to do" when state utility commissions hear proposals to modify net metering policies.<sup>132</sup> The following materials explain where the commission went wrong and what other states can do to avoid similar pitfalls.

#### i. The Basics of Net Metering Programs

At the end of 2016, forty-one states had net metering programs of some kind.<sup>133</sup> Recently, a few states eliminated net metering policies, and more than twenty states are considering eliminating or modifying their current net metering policies.<sup>134</sup> Net metering programs allow rooftop solar owners to sell their excess electricity to their utility.<sup>135</sup> If a retail customer with rooftop solar panels uses less power than what the solar panels produce, then the excess electricity is transferred onto the grid and the owner is paid in the form of a credit, most commonly at the customer's retail electricity rate.<sup>136</sup> When the customer is using more power than the panels are producing, these credits offset the final electric bill.<sup>137</sup>

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*Distributed Solar Industry*, FORBES: ENERGY (Dec. 23, 2015), <https://www.forbes.com/sites/williampentland/2015/12/23/nevada-overhauls-net-metering-rules-despite-objections-from-distributed-solar-industry/#2adbcd0a7a8e>; Robert Walton, *Nevada Regulators Deny 'Grandfathering' Provision For Existing Rooftop Solar Users*, UTIL. DIVE (Feb. 17, 2016), <http://www.utilitydive.com/news/nevada-regulators-deny-grandfathering-provision-for-existing-rooftop-sola/413980/> (noting public disapproval by presidential candidates Bernie Sanders and Hillary Clinton, as well as Nevada Governor Brian Sandoval).

130. Press Release, SolarCity, Following Nevada PUC's Decision to Punish Rooftop Solar Customers, SolarCity Forced to Eliminate More than 550 Jobs in Nevada (Jan. 6, 2016), <http://www.solarcity.com/newsroom/press/following-nevada-pucs-decision-punish-rooftop-solar-customers-solarcity-forced>; Coley Girouard, *As Ground Zero in Net Metering Debate, Nevada Stands Out*, ADVANCED ENERGY ECON.: ADVANCED ENERGY PERSP. (Mar. 31, 2016), <http://blog.aee.net/as-ground-zero-in-net-metering-debate-nevada-stands-out> (noting that new applications for solar systems fell 93% in NV Energy's southern Nevada service territory after the decision).

131. Walton, *supra* note 129.

132. See, e.g., Krysti Shallenberger, *Arizona Draft Order Seeks Shorter-Term Value of Solar Calculation*, UTIL. DIVE (Oct. 11, 2016), <http://www.utilitydive.com/news/arizona-draft-order-seeks-shorter-term-value-of-solar-calculation/428039/> (noting that an Arizona Recommended Order and Opinion included a grandfathering clause "to avoid a similar situation to Nevada.").

133. NAT'L CONF. OF ST. LEGISLATURES, STATE NET METERING POLICIES (Nov. 20, 2017), <http://www.ncsl.org/research/energy/net-metering-policy-overview-and-state-legislative-updates.aspx>. However, ten states offer compensation at some level lower than the retail rate. Lincoln L. Davies & Sanya Carley, *Emerging Shadows in National Solar Policy? Nevada's Net Metering Transition in Context*, 30 THE ELECTRICITY J. 35 (Jan.-Feb. 2017), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2875878](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2875878).

134. Jon Frandsen, *Battles Over Popular Solar Energy Buyback Plans Spread*, PEW CHARITABLE TRUSTS: STATELINE (June 2, 2016), <http://www.pewtrusts.org/en/research-and-analysis/blogs/state-line/2016/06/02/battles-over-popular-solar-energy-buyback-plans-spread>; NAT'L CONF. OF ST. LEGISLATURES, *supra* note 133.

135. Nat'l Conf. of St. Legislatures, *supra* note 133.

136. *Id.*

137. *Id.*

In Nevada's case, the legislature enacted its first net metering program in 1997.<sup>138</sup> The legislature placed a cap on the program, making the incentive available to only one hundred solar customers.<sup>139</sup> However, over the years that followed, the legislature made five changes to the statute and implemented various caps on its net metering program.<sup>140</sup> The final change to the net metering statute occurred in 2015, when the legislature moved from a percentage-based metric to a mega-watt (MW) metric.<sup>141</sup> Once distributed, renewable energy systems within the state produced 235 MW of electricity in aggregate, utilities were no longer required to continue purchasing electricity at retail rates from new rooftop solar owners.<sup>142</sup> The legislature based the cap on projections that suggested the cap would be met sometime in 2016, long enough for the public utilities commission to resolve any disputes over the net metering program.<sup>143</sup>

Nevada's 2015 cap change was short-lived. The solar market in Nevada started booming in 2014, and by August of 2015, rooftop solar systems produced more than the 235 MW cap.<sup>144</sup> Initially, the PUC refused to increase the cap through the end of the year to cover those customers who purchased solar panels within that time.<sup>145</sup> However, the commission later reversed its decision and allowed net metering for any systems sold for the remainder of the year.<sup>146</sup> Once the cap was reached, the utility NV Energy filed with the PUC to modify the current regime.<sup>147</sup> Solar advocates and utilities argued vigorously over the rate at which utilities should pay for excess distributed generation power.<sup>148</sup> On December 23, 2015, the PUC significantly reduced the net metering credit from the retail rate of \$0.11 per kWh to the wholesale rate of about \$0.026 per kWh, roughly a quarter of the retail rate.<sup>149</sup> The PUC also approved a roughly \$40 fixed fee for solar customers.<sup>150</sup> These

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138. Snuller Price et al., *Nevada Net Energy Metering Impacts Evaluation* 29 (Energy & Envtl. Econs., Inc., 2014).

139. NEV. REV. STAT. ANN. § 704.773 (West 1997).

140. In 2001, the legislature removed the cap, but reintroduced a percentage based cap in 2005. See 2001 Nev. Stat. 604 (removing the 1997 cap); 2005 Nev. Stat. 1816 (adding a cap measured as 1% of a utility's peak generating capacity). In 2011, the legislature increased the cap to 2% for all utilities' peak generating capacity statewide. See 2011 Nev. Stat. 986. In 2013, the legislature raised the cap to 3%. See 2013 Nev. Stat. Ch. 3341.

141. See NEV. REV. STAT. ANN. § 704.773 (Supp. 2017); Davide Savenije, *NV Energy Hits Net Metering Cap Ahead of Schedule, Adding Fuel to Solar Debate*, UTIL. DIVE (Aug. 24, 2015), <http://www.utilitydive.com/news/nv-energy-hits-net-metering-cap-ahead-of-schedule-adding-fuel-to-solar-deb/404468/>.

142. Savenije, *supra* note 141.

143. *Id.*

144. Robert Walton, *Nevada Regulators Vote to Keep Retail Rate Net Metering Through End of Year*, UTIL. DIVE (Aug. 27, 2015), <http://www.utilitydive.com/news/nevada-regulators-vote-to-keep-retail-rate-net-metering-through-end-of-year/404680/>.

145. *Id.*

146. *Id.*

147. Sanya Carley & Lincoln L. Davies, *Nevada's Net Energy Metering Experience: The Making of a Policy Eclipse?*, BROOKINGS MOUNTAIN W. REP. 1, 13 (Nov. 2016).

148. *Id.*

149. Richard L. Revesz & Burcin Unel, *Managing the Future of the Electricity Grid: Distributed Generation and Net Metering* 25 (Inst. Pub. Integrity, Working Paper No. 2016/1, 2016), <http://policyintegrity.org/files/publications/ManagingFutureElectricityGrid.pdf>.

150. *Id.*

changes wiped out any cost-savings benefit for owning a solar system, and new applications for rooftop solar installations in Nevada evaporated overnight.<sup>151</sup>

ii. Absence of Gradualism in the PUC Process

Nevada's PUC arguably violated the principle of gradualism in at least two ways with its 2015 changes to net metering in Nevada. First, the PUC drastically reduced the compensation rate for net metering, and secondly, it raised the fixed fee for solar customers four-fold over the span of only four years.<sup>152</sup> Before the PUC decision, net metering customers received a credit at the retail rate of \$.11 per kWh.<sup>153</sup> After the PUC decision, the net metering compensation rate immediately fell to \$.09 per kWh, and within four years it was scheduled to be at only \$.026 per kWh.<sup>154</sup> The final price was roughly a quarter of the original rate. Not only would net metering customers see major declines in the cost-savings of their systems; the decrease would occur over a relatively short period of four years. The average life span of a solar system is anywhere between twenty to thirty years, and most of the net metering customers affected were still in the first few years of ownership or leases.<sup>155</sup>

The Nevada PUC added to its drastic cuts to net metering by simultaneously increasing a fixed monthly fee for solar customers from \$12.75 to \$38.51 within five years.<sup>156</sup> Not only would customers see less cost-savings from net metering, but now they would be penalized for owning the systems by an exorbitant monthly fee. To be sure, the PUC purported to follow the principle of gradualism in its final order. The PUC stated that it was "in the public interest . . . to gradually move the revised rate structure in order to prevent rate shock and allow current and future NEM ratepayers ample time and opportunity to adjust their current usage patterns."<sup>157</sup> Further, the PUC cited other gradually declining subsidies and suggested that the rate revisions provided a similar glide path to self-sustainability.<sup>158</sup>

Despite the PUC's flirtation with gradualism in its final order, the resulting policy can only be viewed as a radical change over a short period of time. In addition to the terms of the policy, the aftermath of the decision confirms that the policy did not adhere to the principle of gradualism. In the month before the PUC's order, 1,311 applications were filed to install rooftop solar systems.<sup>159</sup> In the month after the order, SolarCity, SunRun, and Vivint pulled operations out of Nevada, and the

151. Davies & Carley, *supra* note 133, at 2.

152. Walton, *supra* note 129.

153. Krysti Shallenberger, *Nevada PUC Denies Request to Stay Solar Net Metering Reforms*, UTIL. DIVE (Jan. 14, 2016), <http://www.utilitydive.com/news/nevada-puc-denies-request-to-stay-solar-net-metering-reforms/412140/>.

154. *Id.*

155. Lena Hansen et al., *A Review of Solar PV Benefit & Cost Studies* 55 (Rocky Mountain Inst., 2d ed. 2013).

156. Shallenberger, *supra* note 153.

157. Nev. Power Co., 15-07041 & 15-07042, 326 P.U.R.4th 199, ¶ 196, (Dec. 23, 2015).

158. *Id.* at ¶¶ 54–55.

159. Chris Kudialis, *Fireman Is Off NV Energy's Grid*, LAS VEGAS SUN (May 30, 2016), <https://lasvegassun.com/news/2016/may/30/nv-energy-solar-rates-puc/>.

number of applications dropped to ninety.<sup>160</sup> This represented a 93% reduction in a single month.<sup>161</sup>

iii. The PUC's Order Did Not Respect Investment-Backed Expectations

The Nevada PUC's decision to not grandfather existing solar owners into the state's existing net metering program is arguably the most controversial aspect of the order.<sup>162</sup> Under that initial version of the PUC's order, existing customers were to be paid at the wholesale rate and charged the fixed fee, just like any new solar owner.<sup>163</sup> The PUC's decision not to grandfather existing customers took many stakeholders in Nevada off-guard because not even the utility requested this measure, and the topic was not discussed during the notice-and-comment period.<sup>164</sup>

The PUC's arguments for not grandfathering existing solar owners centered on the difficulties of tracking different generations of solar owners. The PUC Staff argued that it was impractical to track different generations of ratepayers, especially if the account holder moved, added more solar panels, or the solar system failed early.<sup>165</sup> The PUC also noted that antitrust lawsuits had been filed in other jurisdictions for differential treatment of net metering ratepayers.<sup>166</sup> Finally, the PUC suggested that "most ratepayers understand the fundamental principle that utility rates are all subject to change over time," and therefore should have anticipated that the net metering rates were subject to cancellation.<sup>167</sup>

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160. *Id.*

161. *Id.*

162. Davies & Carley, *supra* note 133.

163. *Id.* at 14.

164. Nev. Power Co., 15-07041 & 15-07042, 326 P.U.R.4th 199, ¶¶ 192–96, (Dec. 23, 2015).

165. *Id.* at ¶¶ 97–99.

166. *Id.*

167. *Id.* at ¶¶ 99–101. This logic flies in the face of the original purpose of net metering. Net metering was established to help defray the costs of installing solar panels over the lifespan of the system. Owners paid the upfront costs to install the panels with the expectation that they could sell their power on the grid and recuperate the expenses over time. PUC Staff's characterization of these customers ignored the unique investment considerations for purchasing rooftop solar, and instead compared the net metering customers to traditional ratepayers.

Fortunately, when NV Energy filed with the PUC and sought to modify the net metering program in 2015, all parties, including the utility, agreed that existing customers should be grandfathered.<sup>168</sup> However, it took almost a year of intense political pressure,<sup>169</sup> a lawsuit,<sup>170</sup> a failed ballot measure,<sup>171</sup> and a special task force,<sup>172</sup> all together, before the PUC ultimately reversed its decision and agreed to grandfather existing customers into the old net metering program.<sup>173</sup>

#### iv. The PUC's Failure to Provide Adequate Notice

When solar advocates sued the PUC, one of the strongest arguments against the order was the PUC's failure to provide adequate notice to existing customers that their rates might be affected by the order. The court agreed, and in *Vote Solar v. Public Utilities Commission of Nevada*, the court noted that neither the utility filings, nor the notices published by the PUC, contained sufficient notice that existing net metering customers would be subject to changes by the PUC.<sup>174</sup> Accordingly, the court held that the notices "[did not] accurately reflect [the] subject matter" that would be addressed, and the notices were "not specific enough to alert all interested persons."<sup>175</sup> Thus, the rate design changes that affected existing net metering customers violated the consumers' rights to due process, and the court set aside the PUC order for existing net metering customers.<sup>176</sup>

#### v. How Can Other Commissions Prevent Similar Situations?

Failures to fully follow the three regulatory principles highlighted above—gradualism, respecting investment-backed expectations, and notice—are readily visible in the Nevada PUC's initial 2015 decision. Many of the state's woes could have been avoided with more thoughtfully-crafted enabling statutes. In 2015,

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168. Davies & Carley, *supra* note 133, at 11–12.

169. The political pressure was so intense that the governor decided not to reappoint one PUC commissioner. See Gavin Bade, *Nevada PUC Commissioner David Noble Lifts Lid on Net Metering Fight*, UTIL. DIVE (July 27, 2016), <http://www.utilitydive.com/news/updated-headed-for-the-exits-nevada-puc-commissioner-david-noble-lifts-li/423366/>.

170. Peter Maloney, *Nevada Court Overturns Fixed Charges, Lower Net Metering Rates for Existing Customers*, UTIL. DIVE (Sept. 15, 2016), <http://www.utilitydive.com/news/nevada-court-overturns-fixed-charges-lower-net-metering-rates-for-existing/426302/>; Robert Walton, *Greens, Solar Advocates Appeal Nevada Net Metering Decision*, UTIL. DIVE (Nov. 7, 2016), <http://www.utilitydive.com/news/greens-solar-advocates-appeal-nevada-net-metering-decision/429806/>.

171. Krysti Shallenberger, *Nevada Supreme Court Rejects Net Metering Ballot Proposal*, UTIL. DIVE (Aug. 5, 2016), <http://www.utilitydive.com/news/nevada-supreme-court-rejects-net-metering-ballot-proposal/423941/>.

172. Maloney & Bade, *supra* note 129.

173. Jason Hidalgo, *Nevada Regulators Unanimously Approve Rooftop Solar Grandfathering Deal*, RENO GAZETTE J. (Sept. 16, 2016), <http://www.rgj.com/story/money/business/2016/09/13/nv-energy-solar-city-deal-grandfather-residential-rooftop-solar-customers/90306788/>.

174. *Vote Solar v. Pub. Util. Comm'n of Nev.*, No. 16 OC 00052 1B, at 8 (Nev. Dist. Ct. 2016) (order granting in part and denying in part petition for judicial reviews) [http://earthjustice.org/sites/default/files/files/NEM%20Appeal%20Decision\\_0.pdf](http://earthjustice.org/sites/default/files/files/NEM%20Appeal%20Decision_0.pdf).

175. *Id.* at 8 (citing *Pub. Serv. Comm'n v. Sw. Gas Corp.*, 662 P.2d 624, 626 (1983)).

176. *Id.* at 15.

shortly before Nevada exceeded its net metering cap, the legislature gave the PUC broad discretion to change the net metering program, including authority to apply any new net metering policies to existing customers.<sup>177</sup> The legislature also failed to provide sufficient guidance on what factors the PUC should consider when modifying the net metering policy.<sup>178</sup>

The legislature should have included a provision requiring the PUC to consider the effects of any policy change for all interested parties and to avoid major changes in rates. Additionally, the legislature should have included language prohibiting the PUC from changing net metering compensation rates for existing customers. The statutes governing the notice requirement were sufficient. The problem was not ambiguity in the notice provisions, but rather a failure to adhere to the provisions. One lesson learned from Nevada's net metering dispute is that ideally the enabling statutes for renewable energy incentives would emphasize these principles and better ensure that PUC's follow them.<sup>179</sup>

#### B. Runaway Tax Credits

Renewable energy tax credits, if not designed around the principles discussed above, can wreak havoc on a state's budget. Renewable energy tax credits help sustainable energy investors reduce their tax liability as a reward for investing in specific types of renewable energy technologies.<sup>180</sup> The purpose of the tax credits is to reward investment in expensive sustainable energy generation.<sup>181</sup> Renewable energy tax credits ultimately seek to influence consumer behavior towards investing in wind, solar, and other renewable energy strategies.<sup>182</sup> Tax credits can be an effective tool for this purpose. However, these tax credits must be designed to limit the impact on governmental budgets and must have a carefully-crafted cap in place prior to its implementation. As noted below, two renewable energy tax credits in Louisiana and Oklahoma are prime examples of a runaway tax credit.

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177. NEV. REV. STAT. ANN. § 704.7735 (Supp. 2017) (repealed 2017); *see also* *No Solar Tax Pac v. Citizens For Solar & Energy Fairness*, No. 70146, 2016 WL 4182739, at \*1 n.1 (Nev. Aug. 4, 2016) (“[T]he new law gives discretion to the PUCN to act in the public interest, authorizing it to establish different rate classes for net metering customers . . . and to determine whether the tariff should be applied to existing net metering customers.”).

178. The statute merely states that the PUC should “further the public interest.” NEV. REV. STAT. ANN. § 704.7735 (Supp. 2017) (repealed 2017) (replaced by 2017 Nevada Laws Ch. 589 (A.B. 405)).

179. Rather than wait for the PUC to adhere to the statutes, the Nevada legislature simply took the decision out of the hands of the PUC and amended the net metering statute to restore much of the net metering program. *See* Julia Pyper, *Nevada's New Solar Law Is About Much More Than Net Metering*, GREENTECH MEDIA (June 16, 2017), <https://www.greentechmedia.com/articles/read/nevadas-new-solar-law-is-about-much-more-than-net-metering>. Fortunately, the legislature drafted a bill that slowly decreases the value of the incentive as the rooftop solar market expands. *Id.*

180. Felix Mormann, *Beyond Tax Credits: Smarter Tax Policy for a Cleaner, More Democratic Energy Future*, 31 YALE J. ON REG. 303, 311 (2014).

181. *Id.* at 313 (These tax credits “seek to promote the deployment of renewable energy technologies by rewarding either the generation of electricity from renewables or the investment in equipment for renewable power generation.”).

182. *See* Ryan Leagre, *Community-Based Tax Credits: Tax Credits That Reduce Consumer-Driven Pollution by Encouraging Collective Action*, 47 IND. L. REV. 791, 805 (2014).

## i. Louisiana and Solar Energy

Just a few years ago, Louisiana offered some of the most competitive and generous tax credits for rooftop solar systems.<sup>183</sup> Implemented in 2008, Louisiana's solar tax credit program covered up to \$12,500 for new solar energy installations, which can be as much as half the cost of these systems.<sup>184</sup> In 2009, state lawmakers wanted to make solar more affordable for the poor,<sup>185</sup> so they expanded the tax credit to also cover leased solar panel systems.<sup>186</sup> The lawmakers believed that leased systems were one way for the less affluent to access solar energy.<sup>187</sup> To encourage solar leasing companies to develop business in the state, the legislature expanded the cap so that the leasing companies could also access the same tax credit.<sup>188</sup>

The Louisiana legislature admirably sought to generate investment in the solar industry, but severely underestimated demand for its tax credits and failed to impose a cap on the benefit until it was too late. Originally, Louisiana state analysts estimated that the state would need to fund approximately \$500,000 per year worth of tax credits.<sup>189</sup> However, like a runaway train, the legislature soon lost control of the incentive program as the number of claims grew with each passing year. In 2008, Louisiana residents claimed almost \$1.5 million in credits.<sup>190</sup> The next year, residents claimed \$8.3 million.<sup>191</sup> Each year the claims climbed higher. In 2014, residents and businesses claimed \$61.1 million in tax credits.<sup>192</sup> In the first five years of the program, Louisiana spent approximately \$147–151 million in tax credits, instead of the estimated \$2.5 million.<sup>193</sup>

Budget constraints ultimately pressured the legislature to reign in the program far before its scheduled expiration date.<sup>194</sup> In 2015, facing a \$1.6 billion budget deficit, the Louisiana legislature reduced the maximum available credit by approximately 20% and capped future solar tax credits at \$25 million.<sup>195</sup> The legislature implemented a phase-out program in which \$10 million would be distributed

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183. PACE, *Louisiana Lawmakers Pass Solar Subsidy Rollback Bill*, ENERGYFAIRNESS.ORG (Jun. 15, 2015), <http://energyfairness.org/louisiana-lawmakers-pass-solar-subsidy-rollback-bill/>.

184. *Lawmakers*, *supra* note 4; *See also* 2007 La. Sess. Law Serv. Act 371 (WEST).

185. *Lawmakers*, *supra* note 4; *See also* 2009 La. Sess. Law Serv. Act 467 (WEST).

186. *Lawmakers*, *supra* note 4.

187. *Id.*

188. *See* 2009 La. Sess. Law Serv. Act 467 (WEST).

189. N. Gautreaux, La. Legis. Fiscal Office, Note on SB 90 (Jul. 16, 2007) ("Annual revenue losses from this component of the bill are likely to be less than \$500,000.") (on file with authors).

190. Jeff Adelson, *Giving Away Louisiana: Solar energy Tax Credit*, THE ADVOCATE (Dec. 6, 2014), [http://www.theadvocate.com/baton\\_rouge/news/article\\_bdc02b75-0f1a-577d-92a4-31d04280c912.html](http://www.theadvocate.com/baton_rouge/news/article_bdc02b75-0f1a-577d-92a4-31d04280c912.html).

191. *Id.*

192. *Id.*

193. *Id.*; PACE, *supra* note 183.

194. *Lawmakers*, *supra* note 4.

195. *See* 2015 La. Sess. Law Serv. Act 131 (WEST)

in 2015 and 2016, and another \$5 million would be distributed in 2017.<sup>196</sup> Normally, a phase-out program is a good solution to avoid harming investors.<sup>197</sup> However, Louisiana's attempted phaseout program did more harm than good because the caps were set below already-existing claims for the tax credits. In the end, many investors did not receive the tax credit they were promised.<sup>198</sup>

a. Failure to End the Incentive Program Gradually

When faced with a budget crisis, lawmakers tend to treat the principle of gradualism as a low priority. So, when Louisiana faced a \$1.6 billion budget shortfall, many of the state's subsidy programs faced the chopping block.<sup>199</sup> Louisiana's tax incentives led to a much larger state payout than originally expected,<sup>200</sup> and the program certainly needed to be reined in. However, after receiving applications for over \$60 million in 2014, the legislature set the next year's cap at only \$10 million, far below the value of systems already purchased by the time the cap was implemented.<sup>201</sup>

The cap forced many Louisiana families into financial crisis because they had relied upon receiving the tax incentives in order to help fund the solar panels but ultimately did not receive them.<sup>202</sup> Without question, some families had so depended upon these tax credits that they would not have bought solar panels had they known lawmakers would change the rules midstream.<sup>203</sup> Louisiana lawmakers had the right idea with the phase-out program, but it should have been implemented when the tax credit was first created.

b. Failure to Respect Investment-Backed Expectations

Louisiana's solar tax credit cap also highlights how abruptly imposing more stringent caps on tax credits can violate the principle of respecting investment-backed expectations. Prior to the caps, many Louisiana consumers took out a short 18-month bridge loan to cover the costs of installation until they could get the solar tax credit.<sup>204</sup> Because the legislature failed to place a cap on the program until 2015,

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196. Jennifer Larino, *'It's Just Wrong': Thousands in Limbo as Louisiana's Solar Tax Credits Dwindle*, TIMES-PICAYUNE (Aug. 3, 2016), [http://www.nola.com/business/index.ssf/2016/08/louisiana\\_solar\\_credit\\_cap\\_met.html](http://www.nola.com/business/index.ssf/2016/08/louisiana_solar_credit_cap_met.html).

197. As discussed later, a phase-out program is the ideal solution for Oklahoma's pending budget crisis for wind tax credits. See *infra* Part II.B.ii.

198. Larino, *supra* note 196.

199. Press Release, Office of Governor of La., Gov. Edwards Details Government Spending Cuts to Fill Budget Shortfall (Feb. 18, 2016), <http://gov.louisiana.gov/news/gov-edwards-details-government-spending-cuts-to-fill-budget-shortfall>.

200. PACE, *supra* note 183.

201. Larino, *supra* note 196.

202. *Id.*

203. *Id.*

204. David Hammer, *Bill Sponsor Defends Solar Credit Cap that Has Upset Homeowners*, WWLTV (July 28, 2016), <http://www.wwltv.com/news/local/investigations/david-hammer/bill-sponsor-defends-solar-credit-cap-that-has-upset-homeowners/283592577>.

both the consumers and third-party leasing companies reasonably relied on receiving the tax credits.<sup>205</sup> When the legislature placed the cap below the level of purchases, it knowingly allocated less money than what would certainly be requested from consumers.<sup>206</sup> Consumers operated under an existing subsidy regime at the time of their purchase, but were not grandfathered in when the legislature implemented the cap.<sup>207</sup>

#### c. Failure to Providing Adequate Notice

Not only were the caps on the tax credit imposed with little to no adequate notice to Louisiana solar owners, but the “first-come, first-serve[]” system removed any predictability for consumers.<sup>208</sup> Because the credits were distributed based on the application date, and not the date of purchase, the credits turned into a race to file tax returns.<sup>209</sup> Thus, a person who purchased a system in January, when funds were still available, might lose their tax credit to someone who purchased a system in November—long after available funding had run out.<sup>210</sup> This is hardly an equitable way to distribute the credits.

Perhaps the most egregious consequence of this system was the way third-party vendors took advantage of the situation. Because a person purchasing a system late in the year had an equal chance of receiving a tax credit, leasing companies did not stop selling systems once the cap was reached in estimated sales.<sup>211</sup> Nor did the companies stop suggesting that customers could receive the tax credit.<sup>212</sup> The first-come, first-serve system created a perverse incentive for leasing companies to sell as many systems as possible, knowing they risked nothing by selling systems late in the year. Thus, many Louisiana residents who purchased solar systems did not get the tax credit that they were promised.<sup>213</sup>

#### d. Retrospective Solutions to Louisiana’s Woes

States must understand the importance of placing a carefully-crafted cap on incentive programs *before* implementing the program. A proper cap acts as a gentle restraint and prevents the incentive from growing disproportionate to the allocated budget. In Louisiana’s case, the cap should have been around \$500,000 for 2008.

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205. *Id.*

206. *Id.*

207. *Id.*

208. *Id.*

209. *Id.*

210. See 2015 La. Sess. Law Serv. H.B. 779 (West).

211. *Louisiana to Pay \$15 Million for Solar Tax Credits Stalled Since 2015*, THE TIMES-PICAYUNE (June 29, 2017), [http://www.nola.com/politics/index.ssf/2017/06/solar\\_tax\\_credits\\_louisiana.html](http://www.nola.com/politics/index.ssf/2017/06/solar_tax_credits_louisiana.html) [hereinafter *Louisiana*].

212. The class action lawsuit against vendors is based in part on the alleged false promises made by the vendors that the customers would definitely receive tax credits. See *Class Action Complaint*, *supra* note 1.

213. David Hammer, *State Rejects \$30M in Solar Tax Credits*, WWLTV (July 19, 2016), <http://www.wwltv.com/news/local/state-rejects-30m-in-solar-tax-credits/277215470>; *Solar Panel Customers Sue State Over Tax Credits*, *supra* note 9.

Then, when the legislature received applications for \$1.5 million in credits,<sup>214</sup> lawmakers would have realized they underestimated demand. At that point, the legislature could have either increased the cap for following years, or reduced the generosity of the credits to lower demand.

In conjunction with a specific cap, the tax credits should have been distributed based on the date purchased rather than the tax credit application date. The best system to manage this process would have been a rolling application system. As part of the purchase and installation process, owners should have been required to report the cost and purchase date of the system to the Louisiana Department of Revenue. The Department of Revenue could then keep a running total online to notify potential purchasers and vendors how many tax credits remained for the year. Thus, if the cap was reached in July, anyone purchasing a system in August would know that the tax credit was unavailable. Any customer purchasing a system after the cap was met would be on notice that the funds were unavailable and could wait until the new year to purchase a system.

Unfortunately, this system was not envisioned or implemented when the legislature launched the program. However, the legislature's worst mistake came when it failed to grandfather all 2015 customers who had purchased systems before the cap was implemented. Data suggests that at the time the ten-million-dollar cap was created in July 2015, twenty-three million dollars' worth of tax credits had already been invested in solar systems.<sup>215</sup> The legislature should have placed the 2015 cap at least at \$23 million to cover every consumer who had relied on the availability of the tax credits at the time they purchased the system. Even better than a fixed dollar amount, the language for the cap could have read: the cap for tax credits in 2015 shall be all funds necessary to cover purchases of distributed generation systems up until the effective date of September 1, 2015. The delayed date of implementation would have helped the state avoid notice complaints by providing consumers a months' notice to adjust accordingly.

However, this alternative approach is not without its own problems. A fixed end date would likely create a rush to sell solar systems by the specified date. Third party vendors would likely engage in high-pressured sales pitches to capitalize on the deadline. A fixed deadline might also exacerbate budgetary pressures because the amount of purchased solar panels might be more than what the legislature anticipated. However, these concerns would only apply to the 2015 year. Caps for the 2016 and 2017 year could be set at a fixed dollar amount without violating notice or investment-backed expectations, so long as the credits were distributed by date of purchase.

Despite the poor response to the budget crisis, it appears the Louisiana Legislature recognized its mistakes. The legislature recently agreed to pay upwards of \$15 million in tax credits to consumers who can verify they purchased solar systems before the end of 2015.<sup>216</sup>

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214. Adelson, *supra* note 190.

215. Hammer, *supra* note 204.

216. Louisiana, *supra* note 211.

## ii. Oklahoma and Wind Energy

Oklahoma's recent experience with renewable energy tax credits provides yet another example of the importance of gradualism, respecting investment-backed expectations, and adequate notice in adjusting renewable energy incentive programs. Wind power provides more electricity to the United States than any other renewable energy source except hydropower.<sup>217</sup> In 2014, wind power produced almost 182,000 gigawatt hours of electricity totaling to 4.4% of the United States' total electricity generation.<sup>218</sup>

Oklahoma is no stranger to wind. Oklahoma has the eighth-best wind resources in the country, and the potential of generating nearly 10% of the United States' electricity needs.<sup>219</sup> Additionally, as of 2012, Oklahoma ranked eighth in the United States with installed wind energy capacity.<sup>220</sup>

Oklahoma encouraged wind energy development within its borders by implementing three wind tax credits and a sales tax exemption.<sup>221</sup> The three tax credits include: a ten-year zero emission tax credit of 0.50 cents per kilowatt hour generated, which can be refunded in cash for 85% of its value and ends in 2020; a five-year ad valorem tax exemption for wind energy infrastructure that ends in 2017; and a fifteen-year investment tax credit of up to 2% of the cost of qualified property that ends in 2017.<sup>222</sup> Additionally, Oklahoma wind facilities qualify for a manufacturer's sales tax exemption.<sup>223</sup>

The wind energy tax credits create a significant problem for the Oklahoma state government for the same reasons that plagued Louisiana. The legislature failed to place a cap on the credits.<sup>224</sup> From 2008–2011, applications for the zero emissions tax credit averaged \$2.5 million per year.<sup>225</sup> In 2012, Oklahoma gave out \$18.1 million in the zero emissions tax credit; in 2013, it gave out \$27.2 million in the tax credits; and in 2014, it gave out \$58.7 million in the tax credit.<sup>226</sup> Much like Louisiana, Oklahoma lawmakers severely underestimated the demand for these

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217. Jennifer Oldham, *Wind Is the New Corn for Struggling Farmers*, BLOOMBERG BUSINESSWEEK (Oct. 6, 2016), <https://www.bloomberg.com/news/articles/2016-10-06/wind-is-the-new-corn-for-struggling-farmers>.

218. *Id.*

219. *Quick Facts-Wind*, OKLA. RENEWABLE ENERGY COUNCIL (2012), <http://www.okrenewables.org/quick-facts>.

220. *Id.*

221. *The History of the Wind Tax Credit*, THE WINDFALL COAL., <http://www.thewindfallcoalition.com/facts.html#highlights1> (last visited Nov. 12, 2017).

222. *Id.*

223. *Id.*

224. Melinda Stotts, *Bergstrom Bills Seek Cap on Wind Credit to Fund Teacher Raises*, MIAMI NEWS-RECORD (Jan. 11, 2017), <http://www.miamiok.com/news/20170111/bergstrom-bills-seek-cap-on-wind-credit-to-fund-teacher-raises>.

225. Randy Ellis & Paul Monies, *Tax Incentives for Oklahoma Wind Farms Are Getting Scrutiny*, NEWS OK (Apr. 24, 2016), <http://newsok.com/tax-incentives-for-oklahoma-wind-farms-are-getting-scrutiny/article/5493853>.

226. *Id.*

credits.<sup>227</sup> Originally, Oklahoma projected the cost to be less than \$2 million.<sup>228</sup> Thus, the zero emissions tax credit's costs continued to increase and impact Oklahoma's budget with no end in sight.

By 2015, Oklahoma faced a budget gap of \$1.3 billion,<sup>229</sup> and the cost of Oklahoma's wind incentives and tax credits were estimated to increase to \$700 million over a ten-year period.<sup>230</sup> Faced with these projections, lobbyists called for reduced wind tax credits in an effort to allocate more money in the school budget.<sup>231</sup> However, others argue that a sudden, dramatic decrease in the tax credits will significantly affect Oklahoma's domestic investments.<sup>232</sup> Regardless, it is evident that Oklahoma's wind energy tax credits need to have a cap that balances the budget while also respecting the three regulatory principles identified above. In April of 2017, Oklahoma ended its zero-emissions tax credit more than three years before its sunset date.<sup>233</sup> Although Oklahoma will allow previously qualified wind projects to continue to enjoy the incentive for up to ten years,<sup>234</sup> this bill ignores or minimizes the principles of gradualism and respecting investment-backed expectations.<sup>235</sup>

a. Oklahoma Should Have Implemented a Phase-Out Program Rather than Move Up Its Sunset

Oklahoma faced a quandary: its budget suffered from a runaway wind tax credit; however, if it capped the wind tax credits too severely, or altogether as it had done, then it would violate gradualism, respecting investment-backed expectations, and sufficient notice. A more gradual phase out was likely the best solution to Oklahoma's budgetary crisis. Whenever possible, a subsidy should be phased out with a sunset provision.<sup>236</sup> Recent changes to the federal renewable electricity production tax credit (PTC) provide a good example of how a subsidy winds down.

The Federal PTC was first created in 1992, with a sunset provision that ended the subsidy at the end of 1999.<sup>237</sup> Congress let the credits expire, but renewed them a few months later.<sup>238</sup> The subsidy expired twice more between 1999 and 2004, and both times congress renewed the subsidy a short time later.<sup>239</sup> Sunset provisions

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227. Editorial, *Oklahoma Wind Power Tax Credits Merit Careful Review*, NEWS OK (Mar. 13, 2016), <http://newsok.com/article/5484384>. n.

228. *Id.*

229. Ellis & Monies, *supra* note 225.

230. Joe Wertz, *Oklahoma Senate Unanimously Approves Bills Limiting Wind Industry Tax Incentives*, STATE IMPACT (Mar. 11, 2015), <https://stateimpact.npr.org/oklahoma/2015/03/11/oklahoma-senate-unanimously-approves-bill-limiting-wind-industry-tax-incentives/>.

231. Ellis & Monies, *supra* note 225.

232. *Id.*

233. Paul Monies, *Oklahoma Governor Signs Bills to End Wind Incentive, Airfield Loophole*, NEWS OK (Apr. 18, 2017), <http://newsok.com/article/5545841>.

234. *Id.*

235. *Id.*

236. Hisham Zerriffi, *Rural Electrification: Strategies for Distributed Generation* 195 (Springer Science + Business Media, 2010).

237. U.S. Energy Info. Admin, *Wind Energy Tax Credit Set to Expire at the End of 2012* (Nov. 21, 2012), <https://www.eia.gov/todayinenergy/detail.php?id=8870>.

238. *Id.*

239. *Id.*

have a hard cutoff date, which can promote rapid development right before the credit is set to expire.<sup>240</sup> This leads to the boom and bust cycles that plague the renewable energy industry.<sup>241</sup> So, when Congress extended the PTC at the end of 2015, it introduced a phase-out program to avoid the boom and bust cycle.<sup>242</sup>

The Consolidated Appropriations Act of 2016 extends the wind PTC another three years and gradually reduces the wind tax credits available.<sup>243</sup> For projects built after January 1, 2017, the tax credit is reduced by 20%; for projects that begin construction in 2018, the tax credit amount is reduced by 40%; and for those that begin construction in 2019, the tax credit amount is reduced by 60%.<sup>244</sup> Any projects starting in 2020 receive no tax credit.<sup>245</sup> This federal phase-out provision provides an excellent example for states to follow and avoids the boom and bust cycles created by standard sunset provisions.

Phase-out programs implement incremental thresholds, which slowly wean renewable technologies off the subsidies. Thus, phase-out programs permit a slower change in a short-term period as opposed to a quick change that will impose an immediate panic and rush to the tax credits. Additionally, phase-out programs provide adequate notice to sustainable energy purchasers. Investors can expect that delays in starting a wind project will result in a predictable loss of tax credits. Coupled with the adequate notice provisions, sustainable energy purchasers will be able to know where they stand, given the tax credit. Phase-out programs can also respect investment-backed expectations by awarding the tax credits by the date of purchase and not on a first-come, first-served basis as previously discussed.

Admittedly, in Oklahoma's case, phase-out programs may not have been enough. This is because Oklahoma had already offered the wind tax credits without providing a glide path to the sunset date.<sup>246</sup> Wind energy purchasers had already relied on the availability of these credits.<sup>247</sup> Because these wind energy purchasers have not received the benefits owed to them, Oklahoma arguably needed to find a way to honor its commitments and give these purchasers the tax credits. For those

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240. See, e.g., *New LA Tax Laws Require Quick Decisions (Before July 1) to Preserve Favorable Tax Treatment*, MCGLINCHAY STAFFORD (June 15, 2015), <https://www.mcglinchey.com/The-2015-Regular-Session-of-the-Louisiana-Legislature-Has-Come-to-a-Close-Analyze-the-Impact-on-Your-Business-Prior-to-the-Effective-Date-of-712015-to-Save-Tax-Dollars-06-15-2015/> (law firm warning clients to quickly decide whether to install solar panels before the subsidy runs out).

241. Felix Mormann, *Fading into the Sunset: Solar and Wind Energy Get Five More Years of Tax Credits with a Phase-Down*, 47 ABA TRENDS 5 (May-June 2016), [http://www.americanbar.org/publications/trends/2015-2016/may-june-2016/fading\\_into\\_the\\_sunset.html](http://www.americanbar.org/publications/trends/2015-2016/may-june-2016/fading_into_the_sunset.html).

242. *Production Tax Credit*, AM. WIND ENERGY ASS'N, <https://www.awea.org/production-tax-credit> (last visited Dec. 14, 2017).

243. *Renewable Electricity Production Tax Credit (PTC)*, ENERGY.GOV, <https://energy.gov/savings/renewable-electricity-production-tax-credit-ptc> (last visited Dec. 14, 2017).

244. *Id.*

245. *Id.*

246. The PFM Group, *State of Oklahoma Incentive Evaluation Commission Tax Credit for Zero Emission Facilities Draft Report 5–7* (2016).

247. Joe Wertz, *Wind Industry Says Legislature Betraying a Deal and Undermining Investments by Rolling Back Last Major Incentive*, STATE IMPACT (Mar. 30, 2017), <https://stateimpact.npr.org/oklahoma/2017/03/30/wind-industry-says-legislature-betraying-a-deal-and-undermining-investments-by-rolling-back-last-major-incentive/>.

who had not yet made investments, Oklahoma could have provided adequate notice to third party vendors and future wind energy buyers of a gradual and reasonable phase out of the program. Such an approach would have enabled Oklahoma to comply with regulatory principles and preserve equity and efficiency in its program.

### C. Other Examples of Incentive Programs

The three examples of renewable energy policies highlighted above all involved large incentive programs with deficiencies that affected thousands of consumers and impacted state budgets on the scale of hundreds of millions of dollars. However, there are many smaller subsidies and incentive programs that also suffer a failure to fully adhere to the regulatory principles highlighted in this article. This section provides a brief overview of some of these programs to highlight some additional ways that ignorance of these principles adversely impacts sustainability policy.

#### i. Arizona HOV Lanes

Although not a large program, Arizona's "Energy Efficient Plate Program" provides another clear example of the importance of providing adequate prior notice before substantially changing a sustainability incentive policy. State-level policies have the potential to greatly impact the volume of hybrid and electric vehicle purchases.<sup>248</sup> Many states promote the sale of hybrid and electric vehicles through traditional tax credits.<sup>249</sup> Some states offer other creative incentives, such as access to high occupancy vehicle (HOV) lanes.<sup>250</sup> In theory, HOV lanes are meant to be a "dedicated lane for carpoolers to bypass commuting congestion."<sup>251</sup> HOV lanes were developed to reduce pollution, so it made sense to allow low-emission vehicles to join the HOV lane, even if they only carried one occupant.<sup>252</sup> Under current federal law, states may choose to give any low emission vehicle free or discounted access to HOV lanes through 2025.<sup>253</sup> Each state approaches these programs differently. Some states issue decals and license plates, while others require no form of identification.<sup>254</sup>

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248. Elizabeth Robbins, *Cruising Down the HOV Lane: Federal & Local Incentives Steer Drivers to Purchase Hybrid Vehicles*, 20 VILL. ENVTL. L.J. 75, 76–77 (2009).

249. U.S. Dep't of Energy, *Alt. Fuel Vehicles and High Occupancy Vehicle Lanes*, ALT. FUELS DATA CTR., <http://www.afdc.energy.gov/laws/HOV> (last updated May 21, 2017).

250. Robbins, *supra* note 248, at 77; U.S. Dep't of Energy, *supra* note 249.

251. U.S. Dep't of Energy, *supra* note 249.

252. In 2005, Congress authorized states to create incentive programs for fuel-efficient vehicles, including access to HOV lanes. See *Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users*, Pub. L. No. 109-59, 119 Stat. 1144. California implemented its HOV policies in 2005 and lasted for six years. See Tiffany Hsu, *Yellow Hybrid Stickers for Carpool Lanes Set to Expire*, LA TIMES (May 16, 2011), <http://articles.latimes.com/2011/may/16/business/la-fi-hybrid-stickers-20110517>.

253. FAST Act, Pub. L. No. 114-95, 129 Stat. 1312 (2015).

254. U.S. Dep't of Energy, *supra* note 249.

Arizona's program issues participants who own a qualifying vehicle a special "Clean Air Blue Skies" license plate.<sup>255</sup> The state's program launched in 2007 as a pilot initiative and was only available for three vehicle models.<sup>256</sup> Arizona only issued 10,000 license plates, which ran out by 2008.<sup>257</sup> The program then closed for three years until 2011, when approximately 2,500 license plates became available.<sup>258</sup> The state issued those plates in less than fifteen days.<sup>259</sup> In 2014, the Arizona Department of Transportation (ADOT) announced that another 1,800 plates had become available, and within a year those plates were claimed.<sup>260</sup> When the allocated number of plates is gone, the program almost instantly ceases with very little prior notice to potential car buyers.

It is unclear why the demand slowed for HOV plates in Arizona in 2014. By all accounts, demand should have increased. Many more vehicle models were eligible by 2014, and ADOT had a tracking system in place to notify consumers exactly how many plates were left.<sup>261</sup> ADOT continues to update the list of eligible vehicles, but no more plates have become available since 2014.<sup>262</sup> ADOT also removed some models, like the original Prius, from the list as more efficient vehicles emerged.<sup>263</sup> However, all existing cars with HOV plates were grandfathered into the program.<sup>264</sup>

Arizona's license plate program is a well-intended attempt to encourage the purchase of low-emissions vehicles, but unfortunately the program has some drawbacks. Among other problems, opportunities to access the program are unpredictable. The sporadic nature of the plates' availability dilutes the incentive mechanism. A car buyer in 2017 would not have access to the plates, nor would they know when a plate might become available. Even worse, at least some potential buyers who thought they would qualify for the state's special license surely discovered at the last minute, or perhaps too late, that there were no more available. The program could have better served its purpose if it had simply set a date several months into the future at which the plates would no longer be available and made a significant

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255. Angela DeWelles, *Energy Efficient Plate FAQs*, ARIZ. DEP'T OF TRANSP., <https://www.azdot.gov/media/blog/posts/2014/07/31/energy-efficient-plate-faqs> (last visited Dec. 14, 2017).

256. Angela DeWelles, *Understanding the Energy Efficient Plate and Alternative Fuel Vehicle Programs*, ARIZ. DEP'T OF TRANSP., <http://azdot.gov/media/blog/posts/2014/10/09/understanding-the-energy-efficient-plate-and-alternative-fuel-vehicle-programs> (last visited Dec. 14, 2017).

257. *See id.*

258. *See id.* License plates became available because owners failed to renew or canceled their registrations. *See* Matthew Hendley, *ADOT Has 1,800 More Golden Tickets to the HOV Lane for Drivers of Plug-in Cars*, PHX. NEW TIMES (May 20, 2014), <http://www.phoenixnewtimes.com/news/adot-has-1-800-more-golden-tickets-to-the-hov-lane-for-drivers-of-plug-in-cars-6636224>.

259. DeWelles, *supra* note 256.

260. *Id.*

261. *See* Press Release, Ariz. Dep't of Transp., List of Vehicles for the 'Clean Air Blue Skies' Plates Updated (Dec. 22, 2014), <https://azdot.gov/media/News/news-release/2014/12/22/list-of-vehicles-for-the-%27clean-air-blue-skies%27-plates-updated>.

262. *See Energy Efficient Plate Program*, ARIZ. DEP'T OF TRANSP., <http://azdot.gov/mvd/VehicleServices/PlatesandPlacards/energy-efficient-plate-program> (last visited Dec. 14 2017).

263. *Id.*

264. *Id.*

effort to inform citizens of this deadline. Instead, the program has arguably been hindered with an unnecessary amount of uncertainty and citizen frustration.

## ii. Renewable Energy Portfolio Standards

Some states' abrupt modifications of renewable portfolio standards (RPSs) have also potentially created inefficiency and violated citizens' investment-backed expectations. An RPS requires utilities to produce a certain percentage of electricity from renewable energy sources, and the structure is inherently gradual.<sup>265</sup> The state sets a percentage requirement for a future date, such as 30% by 2030, and then sets incremental requirements leading to the final percentage.<sup>266</sup> Twenty-nine states and the District of Columbia have an RPS.<sup>267</sup> Several studies show that an RPS can successfully promote renewable technology adoption without imposing significant costs on utilities and consumers.<sup>268</sup> However, several states have recently attempted to cut or eliminate their RPSs in non-gradual ways.<sup>269</sup>

In 2008, the Ohio legislature enacted an RPS that required utilities to generate or purchase at least 12.5% of their electricity from renewable sources such as wind, solar, and hydroelectric power.<sup>270</sup> However, in 2014, Ohio abruptly froze its RPS mandate, becoming the first state to do so.<sup>271</sup> Soon thereafter, West Virginia repealed its RPS and Kansas converted its mandatory RPS into a voluntary structure that diminished incentives to purchase energy from renewables.<sup>272</sup>

These swift and sudden revisions to RPSs are another example of how a sustainability-related policy can unjustifiably ignore investment-backed expectations, creating controversy and inefficiency. Not all utilities upgrade their infrastructure at an equal pace to meet RPS.<sup>273</sup> Instead, one utility might already be ahead of schedule toward meeting the RPS or have the capability to increase renewable generating capacity at a lower cost than other utilities. Most states allow utilities to trade Renewable Energy Credits which allows the proactive utility to sell its extra

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265. *Renewable Portfolio Standards*, NAT'L RENEWABLE ENERGY LAB., <https://www.nrel.gov/technical-assistance/basics-portfolio-standards.html> (last visited Dec. 14, 2017).

266. Ryan Wisser et al., *A Retrospective Analysis of the Benefits and Impacts of U.S. Renewable Portfolio Standards 1* (Nat'l Renewable Energy Lab., 2016).

267. . *Id.*

268. Thomas P. Lyon, *Drivers and Impacts of Renewable Portfolio Standards*, 8 ANN. REV. RESOURCE ECON. 141, 148 (2016). *But see* Magali A. Delmas & Maria J. Montes-Sancho, *U.S. State Policies for Renewable Energy: Context and Effectiveness*, 39 ENERGY POL'Y 2273, 2281 (2011) (finding that RPS standards have a negative effect on investments in renewable energy).

269. *See* Herman K. Trabish, *As Utilities Build Toward RPS Standards, Costs, Carve-Outs Raise Concerns*, UTIL. DIVE (Apr. 25, 2016), <http://www.utilitydive.com/news/as-utilities-build-toward-rps-standards-costs-carve-outs-raise-concerns/417989/>.

270. J. Heeter et al., *A Survey of State-Level Cost and Benefit Estimates of Renewable Portfolio Standards 94* (Nat'l Renewable Energy Lab., 2014).

271. Jeffrey M. Smith, *The Sun Doesn't Always Shine in Ohio: Reevaluating Renewable Portfolio Standards in Light of Changed Conditions*, 5 MICH. J. ENVTL & ADMIN. L. 289, 295 (2015).

272. Karen Maguire & Abdul Munasib, *The Disparate Influence of State Renewable Portfolio Standards on Renewable Electricity Generation Capacity*, 92 LAND ECON. 468, 487 (2016).

273. *See* David Berry, *The Market for Tradable Renewable Energy Credits*, 42 ECOLOGICAL ECON. 369, 370–71 (2002).

capacity to another utility that falls short of the RPS.<sup>274</sup> This system is relatively effective so long as the RPS requirement remains in place. However, if a utility senses that the RPS will likely be repealed, it might delay upgrading its infrastructure and rely on another utility's extra credits to comply. In addition, when an RPS is abruptly repealed, utilities that have delayed investments in renewable are essentially rewarded for doing so.

Fortunately, most states are strengthening their RPSs,<sup>275</sup> and in that environment, early utility investments in renewables may actually pay off. However, legislatures should carefully consider the utilities' investment-backed expectations when considering loosening or repealing an RPS.

### iii. Wyoming's Wind Tax and "Reverse RPS"

Wyoming's wind tax and reverse RPS program may also violate the principle of respecting investment-backed expectations. Wyoming has long relied primarily on coal-fired power plants and locally-mined coal to produce its electricity.<sup>276</sup> In 2016, an interim joint revenue committee that surely recognized wind energy's adverse impact on the state's declining coal industry made a proposal that almost certainly would have violated the principle of gradualism.<sup>277</sup> The committee proposed tripling the state's tax on wind energy production, increasing it from \$1 per kWh to \$3 per kWh.<sup>278</sup> Faced with a budget deficit of \$200 million, the committee reasoned that the new tax could produce as much as \$40 million in revenue.<sup>279</sup> Wind energy advocates naturally expressed concern that such a drastic increase risked "taxing . . . project[s] out of existence."<sup>280</sup> Fortunately, after five hours of testimony from wind companies, and no testimony from supporters of the bill, the revenue committee rejected the plan by a wide margin.<sup>281</sup>

274. *Id.* at 370.

275. Hawaii has an RPS of 100% by 2045, Vermont just raised its RPS to 90% by 2050, and California and Washington D.C. both require 50% by 2030 and 2032 respectively. Jocelyn Durkay, *State Renewable Portfolio Standards and Goals*, NAT'L CONFERENCE STATE LEGISLATURES (Dec. 28, 2016), <https://web.archive.org/web/20170112002555/http://www.ncsl.org/research/energy/renewable-portfolio-standards.aspx>; Peter Maloney, *Vermont's Newly-Elected GOP Governor Backs 90% RPS*, UTIL. DIVE (Jan. 11, 2017), <http://www.utilitydive.com/news/vermonts-newly-elected-gop-governor-backs-90-rps/433836/>. In Arizona, one proposal seeks to improve the RPS model by requiring utilities to produce a certain percentage of renewable power during peak hours. See LON HUBER & EDWARD BURGESS, *EVOLVING THE RPS: A CLEAN PEAK STANDARD FOR A SMARTER RENEWABLE FUTURE 3* (STRATEGEN, 2016).

276. In 2015, Wyoming mined 42% of all coal in the United States and coal powered 88% of its electricity. See *State Profile and Energy Estimates: Wyoming*, U.S. ENERGY INFO. ADMIN. (Dec. 15, 2016), <http://www.eia.gov/state/?sid=WY>.

277.. William Yardley, *Wyoming Rejects Tax on Wind Energy that Will Likely Be Sold in California*, L.A. TIMES (Sept. 27, 2016), <http://www.latimes.com/nation/la-na-wyoming-wind-tax-20160926-snap-story.html>.

278. *Id.*

279. *Id.*

280. William Yardley, *Who Owns the Wind? We Do, Wyoming Says, and It's Taxing Those Who Use It*, L.A. TIMES (Aug. 14, 2016), <http://www.latimes.com/nation/la-na-sej-wyoming-wind-tax-snap-story.html>.

281. *Id.*

Undeterred, however, the state legislature proposed a new bill in 2017 that would require all utilities serving Wyoming customers to obtain 100% of their electricity from a list of “eligible sources” by 2019.<sup>282</sup> “Eligible sources” were defined as coal, hydroelectric, natural gas, nuclear, net-metered projects, and oil.<sup>283</sup> Solar and wind sources were conspicuously absent from the list. Under the proposed rule, a utility could be fined \$10 for every MW of electricity it purchased from renewables.<sup>284</sup> The structure of the bill is the exact opposite of an RPS and has been called a “reverse RPS.”<sup>285</sup> The bill failed to gain sufficient support to move out of committee, but it is worth considering how the bill fails to respect investment-backed expectations because other coal-dependent states may attempt a similar measure.

Wyoming’s reverse RPS would have significantly affected existing utility-scale renewable projects because it contained no grandfathering clause.<sup>286</sup> Wyoming has abundant wind resources, and will soon be home to the largest onshore wind project in the United States.<sup>287</sup> The project will be able to produce enough electricity to power almost a million homes, nearly double the population of the state.<sup>288</sup> Admittedly, most of the electricity from this project will flow to California.<sup>289</sup> However, that does not justify the swift implementation of policies that would severely undermine initial investments in this and other Wyoming wind farm projects. Such legislative action would chill future investment, breed inefficiency, and would be very difficult to justify as a matter of public policy. Fortunately, recent attempts to prematurely eliminate incentives for wind energy have failed to garner enough support. Both lawmakers and investors still have adequate time to design a responsible phase-out for wind energy incentives that enables the industry to continue a healthy pace of growth for years to come.

### III. CONCLUSION

Lawmakers must achieve a difficult balance when structuring sustainability-related incentive programs. These programs must advance the policy goals that drive them and yet ensure that proper caps and sunset provisions are in place to prevent them from exceeding budgets or disregarding the reasonable expectations of individuals and businesses. Several recent examples of troubled incentive programs serve as a stark reminder that the wind-down strategies for these programs

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282. Mead Gruver, *Wyoming Proposal Would Require Utilities to Use Fossil Fuels*, U.S. NEWS (Jan. 25, 2017), <http://www.usnews.com/news/us/articles/2017-01-25/wyoming-proposal-would-require-utilities-to-use-fossil-fuels>.

283. Steve Hanley, *Wyoming Bill Would Penalize Solar & Wind Energy*, CLEANTECHNICA (Jan. 20, 2017), <https://cleantechnica.com/2017/01/20/wyoming-bill-penalize-solar-wind-energy/>; Robert Walton, *Wyoming Lawmakers Want to Limit Utility Usage of In-State Wind Energy*, UTIL. DIVE (Jan. 17, 2017), <http://www.utilitydive.com/news/wyoming-lawmakers-want-to-limit-utility-usage-of-in-state-wind-energy/434088/>.

284. Gruver, *supra* note 282.

285. See Zahra Hirji, *Wyoming Bill Would All but Outlaw Clean Energy by Preventing Utilities. from Using It*, INSIDE CLIMATE NEWS (Jan. 13, 2017), <https://insideclimatenews.org/news/12012017/wyoming-coal-wind-energy-solar-energy-climate-change-denial>.

286. See S. 64-71, Gen. Sess. (Wyo. 2017).

287. Gruver, *supra* note 282.

288. *Id.*

289. See Yardley, *supra* note 280.

can be just as important as the programs themselves. Stricter adherence to the principles of gradualism, respecting investment-backed expectations, and providing adequate notice can help lawmakers to better keep this important balance.

Although some sustainability-related industries are already beginning to mature, more incentive programs will surely be needed to help unleash the next generation of sustainability technologies. Promising new sustainability innovations frequently appear on the horizon.<sup>290</sup> By adhering to the principles described in this article, policymakers can enable these new, exciting technologies to grow in healthy and optimal ways.

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290. See, e.g., BEN ALLEN ET AL., SUSTAINABILITY CRITERIA FOR BIOFUELS MADE FROM LAND AND NON-LAND BASED FEEDSTOCKS i (Inst. for European Env'tl. Pol'y, May 2016) ("Existing EU energy policy for 2020 foresees an important role for bioenergy as a means of reducing carbon emissions from heating, power and transport . . . ."); Bianca Britton, *Could Waves Become the Next Big Renewable Energy Source?*, CNN (Jan. 3, 2017), <http://www.cnn.com/2016/12/12/africa/ghana-wave-energy/>; Linda Poon, *Las Vegas Gambles on Pedestrian-Powered Streetlights*, CITYLAB (Apr. 1, 2016), <http://www.citylab.com/tech/2016/04/las-vegas-gamble-with-pedestrian-powered-streetlights-solar-kinetic-energy/476292/>; James Temple, *The Biggest Clean Energy Advances in 2016*, MIT TECH. REV. (Dec. 29, 2016), <https://www.technologyreview.com/s/603275/the-biggest-clean-energy-advances-in-2016/>; Robert Walton, *Hawaii Biodiesel Plant Is 1st in U.S. Certified as Sustainable*, UTIL. DIVE (May 15, 2016), <http://www.utilitydive.com/news/hawaii-biodiesel-plant-is-1st-in-us-certified-as-sustainable/419212/>.