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# Carrots and Sticks, from President Obama’s Solyndra and Beyond

Paul Boudreaux\*

## *Abstract*

*The most prominent environmental issue of the 2012 presidential election may have been the Solyndra debacle, in which the Obama Administration lent more than \$500 million to a solar energy company that later went bankrupt. Such financial “carrots” have been a centerpiece of President Obama’s environmental policy. This Essay uses the Solyndra story to expose the fatal flaws of a policy of carrots, including their inherent susceptibility, to politicization and the government’s inaccuracy in making “bets” in the private market. If the environmental community is serious about difficult legal steps, such as combating global warming, it should eschew the allure of carrots in favor more effective “sticks,” such as a cap-and-trade system, which President Obama in effect abandoned after his election, or a straightforward pollution tax.*

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### I. Introduction

The Obama years have been a disappointment to many in the environmentalist legal community. On the most pressing issue—global climate change—President Barack Obama backed off almost completely from his pledge in 2008 to push for tight regulation of climate-changing greenhouse gasses.<sup>1</sup> Instead, in an ironic contrast, the most prominent environmental issue of the 2012 presidential election was the so-called Solyndra scandal.<sup>2</sup> Republican Mitt Romney skewered the Democratic President for federal financial aid to a solar panel company that in 2011 dramatically went bankrupt—potentially costing the taxpayers hundreds of millions of dollars—and that seemingly made a mockery of President Obama's signature pledge to create "green" jobs.<sup>3</sup>

Government intervention in markets, such as offering financial *carrots* to promising corporations, has been a guiding philosophy of the Obama Administration.<sup>4</sup> This Essay highlights the fatal flaws of a system of awarding carrots, using as examples the Solyndra debacle and other vignettes, including electric cars and fuel ethanol. These stories illustrate that the failures of carrots can inflict long-term political harm on the environmental movement. The Essay then explains that a simple regulatory *stick*, such as a pollution tax, can avoid these pitfalls and realize real environmental benefits. The conclusion is that if lawmakers wish to take environmental protection seriously—as opposed to playing a short-term political game—they should eschew carrots in favor of sticks.

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1. See *Cap and Trade*, N.Y. TIMES TOPICS (Mar. 26, 2010), [http://topics.nytimes.com/topics/reference/timestopics/subjects/g/greenhouse\\_gas\\_emissions/cap\\_and\\_trade/index.html](http://topics.nytimes.com/topics/reference/timestopics/subjects/g/greenhouse_gas_emissions/cap_and_trade/index.html) (summarizing the political developments since President Obama's inauguration and the collapse of the Obama's push for comprehensive national global climate change legislation) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment); see also John M. Broder & Clifford Krauss, *Advocates of Climate Bill Scale Down Their Goals*, N.Y. TIMES (Jan. 26, 2010), available at <http://www.nytimes.com/2010/01/27/science/earth/27climate.html?scp=1&sq=lindsey%20graham%20cap%20and%20trade%20broder&st=cse> (explaining the weakening of Democratic support in Congress as an explanation for significant climate change legislation).

2. See John McArdle, *GOP Aims to Taint Bluedog Dems with Solyndra Scandal*, N.Y. TIMES (Oct. 11, 2011), available at <http://www.nytimes.com/gwire/2011/10/03/03greenwire-gop-aims-to-taint-bluedog-dems-with-solyndra-s-35570.html?pagewanted=all> (discussing the impact that the Solyndra scandal has had on the recent election).

3. See *infra* Part IV, notes 82–83, 113–135, and accompanying text.

4. See McArdle, *supra* note 2 (noting Solyndra as an example of a Democratic stimulus).

## II. The Disappearance of Climate Change in American Politics

Barack Obama's election to the presidency in 2008 seemed to be an extraordinarily auspicious moment for the environmental law movement. Just two years after former Vice President Al Gore's successful movie *An Inconvenient Truth* captured the public's attention, the future President touted a legal plan to attack global climate change.<sup>5</sup> Obama's plan was to institute a national legal regime dubbed "cap-and-trade," under which the total amount of greenhouse gases emitted in the United States would be restrained by a legal cap.<sup>6</sup> Such a cap-and-trade system had been instituted internationally through the Montreal Protocol to reduce emissions of chlorofluorocarbons, which the United States had ratified and implemented under Presidents Ronald Reagan,<sup>7</sup> and through the Kyoto Protocol,<sup>8</sup> which the United States Senate had rejected in 1997.<sup>9</sup> Under this cap-and-trade mechanism, polluters would be allowed to buy and trade the authority to pollute.<sup>10</sup> A cap-and-trade system is the centerpiece of a new wave of thinking in environmental law that favors a more flexible, market-oriented approach to regulation, instead of the traditionally rigid system, chastised as "command and control," under which polluters operate under precise and unyielding legal directives.<sup>11</sup> The cap-and-trade idea had proven to be

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5. See Andrew C. Revkin, *Obama: Climate Plan Firm Amid Economic Woes*, N.Y. TIMES (Nov. 18, 2008), <http://dotearth.blogs.nytimes.com/2008/11/18/obama-climate-message-amid-economic-woes/> (discussing President Obama's firm support for combatting climate change) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

6. See *Cap and Trade*, *supra* note 1 (summarizing the cap-and-trade idea, Obama's 2008 pledge, and the changing political atmosphere).

7. See The Montreal Protocol on Substances that Deplete the Ozone Layer, *available at* <http://www.epa.gov/ozone/intpol/> (creating a global cap for chlorofluorocarbons).

8. See Kyoto Protocol to the United Nations Framework Convention on Climate Change, Dec. 11, 1997, U.N. Doc. FCCC/CP/1997/7/Add.1, 37 I.L.M. 22 (1997), [hereinafter *Kyoto Protocol*], *available at* <http://unfccc.int/resource/docs/convkp/kpeng.pdf> (creating a global cap for greenhouse gasses).

9. See James Bennet, *Warm Globe, Hot Politics*, N.Y. TIMES (Dec. 11, 1997), *available at* <http://www.nytimes.com/1997/12/11/world/warm-globe-hot-politics.html> (noting that the U.S. Senate in 1997 voted 95-0 to approve a resolution opposing any proposed treaty that did not impose emissions-cutting measures on developing nations); *Kyoto Protocol*, N.Y. TIMES TOPICS (Dec. 11, 2011), [http://topics.nytimes.com/topics/reference/timestopics/subjects/k/kyoto\\_protocol/index.html](http://topics.nytimes.com/topics/reference/timestopics/subjects/k/kyoto_protocol/index.html) (providing a brief history of the Kyoto Protocol to the United Nations Framework Convention on Climate Change) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

10. See *Cap and Trade*, *supra* note 1 ("It then allows utilities, manufacturers and other emitters to 'trade' pollution permits, or allowances, among themselves.").

11. See Robert N. Stavins, *What Can We Learn From the Grand Policy Experiment? Lessons From SO<sub>2</sub> Allowance*, 12 J. ECON. PERSPECTIVES 69, 69-71 (1998) (explaining the

successful in its first major legal implementation domestically, the Sulfur Dioxide Trading Program set up by the 1990 Clean Air Amendments, which were enacted by a bipartisan Congress and signed into law by President George H. W. Bush.<sup>12</sup>

Four years after 2008, however, the “urgent” topic<sup>13</sup> of climate change was almost extinguished as a national political issue in the United States.<sup>14</sup> President Obama crushed the hopes of the environmental movement by effectively abandoning the issue.<sup>15</sup> Notably, he left out any reference to the topic in his 2012 State of the Union message, and, even more remarkably, omitted it from his 2012 Earth Day address.<sup>16</sup> His official campaign website listed “Energy and the Environment” as an issue, but its content referred primarily to ways of securing more energy, which President Obama calls an “all-of-the above” approach, including “investing in clean coal.”<sup>17</sup> The White House website included a page for “Climate

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switch in thinking from command-and-control to market-oriented regulation, such as a cap-and-trade system); *see also* Bruce A. Ackerman & Richard B. Stewart, *Reforming Environmental Law*, 37 STAN. L. REV. 1333, 1338 (1985) (criticizing the rigidity of command-and-control and arguing for a more flexible system that accounted for differences among regulated parties).

12. Pub. L. 101-549, 104 Stat. 2584, title IV, §§ 401-416, *codified at* 42 U.S.C. §§ 7651-7651(o) (2012).

13. *See* SIERRA CLUB, *Energy Resources Policy* 4, *available at* <http://www.sierraclub.org/policy/conservation/energy.pdf> (last visited Jan. 7, 2013) (“Stabilization of the global climate is an urgent matter requiring an immediate and effective response.”).

14. *See* Bill Becker, *On Climate Change, Nothing Ventured, Nothing Gained*, THINKPROGRESS (Aug. 3, 2012), <http://thinkprogress.org/climate/2012/08/03/629191/on-climate-change-nothing-ventured-nothing-gained/?mobile=nc> (“Among political insiders in Washington, the conventional wisdom is that action on global climate change is a dead issue for the foreseeable future.”) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

15. *See Cap and Trade*, *supra* note 1 (summarizing the political developments since President Obama’s inauguration and the collapse of Obama’s push for comprehensive global climate change legislation); *see also* John M. Broder & Clifford Krauss, *Advocates of Climate Bill Scale Down Their Goals*, N.Y. TIMES (Jan. 26, 2010), *available at* <http://www.nytimes.com/2010/01/27/science/earth/27climate.html?scp=1&sq=lindsey%20graham%20cap%20and%20trade%20broder&st=cse> (explaining the attenuation of Democratic support in Congress for significant climate change legislation).

16. *See* Joe Romm, *President Obama Edits Out Climate Change From His Earth Day 2012 Proclamation*, THINKPROGRESS (Apr. 23, 2012), <http://thinkprogress.org/climate/2012/04/23/469303/obama-edits-out-climate-change-from-earth-day-2012-proclamation> (noting that President Obama omitted a reference to climate change in his 2012 Earth Day Proclamation) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

17. OBAMA FOR AMERICA, *President Obama’s Approach to Energy Independence*, <http://www.barackobama.com/energy-info/> (last visited Nov. 1, 2012) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

Change,” but referred to no plan for combating greenhouse gas emissions, other than touting carrots of “clean energy investments.”<sup>18</sup> Meanwhile, while the Environmental Protection Agency took limited steps to regulate greenhouse gases through auto emissions,<sup>19</sup> the agency did not state any position in favor of broader legal action,<sup>20</sup> such as tight regulation of

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18. See WHITE HOUSE, *Climate Change*, <http://www.whitehouse.gov/energy/climate-change> (last visited Aug. 17, 2012) (referring most prominently to the “milestone” of the Copenhagen Accord of 2009 of the U.N. Framework Convention of Climate Change) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment). Environmentalists, by contrast, were not impressed by this document. See Jon M. Broder, *Remember the Copenhagen Accord?*, N.Y. TIMES (June 8, 2010), <http://green.blogs.nytimes.com/2010/06/08/remember-the-copenhagen-accord> (referring to the “ill-defined goals” of the informal accord) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment). The White House page did not use the words “United Nations” in its discussion. President Obama’s most notable mention of climate change in 2012 was an interview with Rolling Stone magazine. Jann Wenner, *Ready for the Fight: The Rolling Stone Interview with Barack Obama*, ROLLING STONE (Apr. 12, 2012), <http://www.rollingstone.com/politics/news/ready-for-the-fight-rolling-stone-interview-with-barack-obama-20120425> (on file with the Washington and Lee Journal of Energy, Climate, and the Environment). Obama said: “I suspect that over the next six months, [climate change] is going to be a debate that will become part of the campaign, and I will be very clear in voicing my belief that we’re going to have to take further steps to deal with climate change in a serious way.” *Id.* One environmental writer called the interview a break of Obama’s “self-imposed silence on climate change.” Joe Romm, *Obama Stunner: Climate Change Will Be a Campaign Issue, We Need To Do Much More to Combat It*, THINKPROGRESS (Apr. 25, 2012), <http://thinkprogress.org/climate/2012/04/25/470940/obama-stunner-climate-change-will-be-a-campaign-issue-we-need-to-do-much-more-to-combat-it> (on file with the Washington and Lee Journal of Energy, Climate, and the Environment). As for the comment that the issue might become important as the election approached, the writer opined: “I’ll believe it when I see it.” *Id.*

19. See *Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act*, ENVTL. PROTECTION AGENCY 74 Fed. Reg. 66496 (Dec. 15, 2009), available at <http://www.epa.gov/climatechange/endangerment/index.html> (noting that the EPA finalized greenhouse gas emission standards for vehicles in 2010). These findings came in response to the decision of the U.S. Supreme Court in *Massachusetts v. EPA*, 549 U.S. 497, 525 (2007), which held that the EPA was compelled to make a finding about the role of auto emissions on climate change, by virtue of the Clean Air Act’s § 202(a)(1). See 42 U.S.C. § 7521(a)(1) (2007) (providing the text of the Clean Air Act).

20. See *Is It Too Late To Do Anything About Climate Change?* ENVTL. PROTECTION AGENCY (Apr. 17, 2012), <http://climatechange.supportportal.com/ics/support/kbanswer.asp?deptID=23006&task=knowledge&questionID=33355> (stating that “[w]ith appropriate actions by governments, communities, individuals, and businesses, we can reduce the amount of greenhouse gas pollution we release and lower the risk of much greater warming and severe consequences”) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

emissions from electrical power plants, which are the single largest source of climate-warming gases in the United States.<sup>21</sup>

Meanwhile, Republicans, including the 2012 presidential nominee Mitt Romney, ignored the issue. In his campaign website, Romney's list of issues did not include the environment.<sup>22</sup> His 160-page policy statement, entitled "Believe in America," included one offhand, noncommittal reference to climate change (although it made many references to the "business climate").<sup>23</sup> The statement chastised President Obama for his now-abandoned cap-and-trade plan, stating that it "would have been a crippling blow to the U.S. economy" in which the "coal industry would have been hardest hit."<sup>24</sup> By contrast, Romney called for greater production of domestic energy sources, asserting that "[t]he United States is blessed with a cornucopia of carbon-based energy resources" and that "[c]oal is America's most abundant energy source."<sup>25</sup> He said in 2011: "My view is that we don't know what's causing climate change on this planet. And the idea of spending trillions and trillions of dollars to try to reduce CO2 emissions is not the right course for us."<sup>26</sup>

21. See *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2010*, ENVTL. PROTECTION AGENCY EPA 430-R-12-001, ES-4, ES-2 (2012), available at [www.epa.gov/climatechange/Downloads/ghgemissions/US-GHG-Inventory-2012-Main-Text.pdf](http://www.epa.gov/climatechange/Downloads/ghgemissions/US-GHG-Inventory-2012-Main-Text.pdf) (showing that electricity generation is the single larger producer to carbon dioxide emissions).

22. See MITT ROMNEY, [www.mittromney.com/issues](http://www.mittromney.com/issues) (last visited Nov. 1, 2012) (omitting the environment as an issue on his campaign website) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

23. See Mitt Romney, *Believe in America: Mitt Romney's Plan for Jobs and Economic Growth* 88 (Sept. 6, 2011), <http://www.mittromney.com/blogs/mitts-view/2011/09/believe-america-mitt-romneys-plan-jobs-and-economic-growth> (projecting that Canadian oil reserves would be diverted to China) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment). In a criticism of President Obama's delay in approving the proposed Keystone XL pipeline, which would bring Canadian oil through the U.S. Midwest, Romney's plan stated: "The apparent rationale for the Obama administration's policy—concern over global warming—is undercut by the fact that the Canadian oil sands will be developed regardless of what we do." *Id.* at 88. This is the only reference to climate change in the policy document. *Id.*

24. See *id.* at 88 (alleging that President Obama's policies have effectuated a "war on the entire coal industry").

25. See *id.* at 93 (advocating for an aggressive energy policy that prioritized domestic resources). His policy prescriptions, however, referred more often to oil and natural gas than to coal. *Id.* at 91–96.

26. See Coral Davenport, *Mitt Romney's Shifting Views on Climate Change*, CBS NEWS (Oct. 28, 2011), [http://www.cbsnews.com/8301-503544\\_162-20127273-503544/mitt-romneys-shifting-views-on-climate-change](http://www.cbsnews.com/8301-503544_162-20127273-503544/mitt-romneys-shifting-views-on-climate-change) (documenting a change in Romney's statements about the anthropogenic nature of global climate change as he was challenged by conservative Republicans during the presidential primaries) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

Romney did make a political issue, however, of one specific topic of environmental law: the Solyndra debacle. In 2012, he traveled to California—a rare visit to a “blue” state—and spoke before news cameras in front of the headquarters of the Solyndra Corporation in Fremont, on the east side of San Francisco Bay.<sup>27</sup> There, the Republican candidate called the loan guarantees to the company an example of “crony capitalism” that helped only the friends and supporters of President Obama.<sup>28</sup> Meanwhile, Romney’s campaign ran a television ad highlighting Solyndra.<sup>29</sup> Over ominous sounding music and disturbing, flickering images, the ad concluded: “More than 16 billion dollars have gone to companies like Solyndra that are linked to big Obama and Democrat donors . . . Obama is giving money to big donors and then watching them lose it. Good for them. Bad for us.”<sup>30</sup> The YouTube publication of the ad states in the accompanying text: “This is just another example of President Obama's pattern of picking winners and losers and wasting taxpayer money.”<sup>31</sup>

At the Republican National Convention in August 2012, Romney’s running mate, Paul Ryan, uttered the only significant mention of environmental topics.<sup>32</sup> In criticizing President Obama’s spending, Ryan asked rhetorically:

What did the taxpayers get out of the Obama stimulus?  
More debt. That money wasn’t just spent and wasted—it  
was borrowed, spent, and wasted. It went to companies like  
Solyndra, with their gold-plated connections, subsidized  
jobs, and make-believe markets. The stimulus was a case of

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27. See Ben Sarlin, *Romney Puts Solyndra At Center Of Campaign, Democrats Allege Hypocrisy*, TALKING POINTS MEMO (May 21, 2012), <http://2012.talkingpointsmemo.com/2012/05/romney-puts-solyndra-at-center-of-campaign-democrats-allege-hypocrisy.php> (alleging that Solyndra was a particularly good example of a failed alternative energy subsidy) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

28. See Mitt Romney, *Speech in Fremont, Cal.* (May 1, 2012), <http://abcnews.go.com/blogs/politics/2012/05/mitt-romney-visits-solyndra-amid-attack-on-obama-jobs-record> (characterizing the administration’s energy policy as corrupt) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

29. See Romney for President, Inc., *Not Even Half*, YOUTUBE (May 29, 2012), [http://www.youtube.com/watch?feature=player\\_embedded&v=OQUyS9H6ioI](http://www.youtube.com/watch?feature=player_embedded&v=OQUyS9H6ioI) (alleging further that these tax incentives were “steered to family and friends”) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

30. See *id.* (relying upon an unfortunately common political ad strategy of drumming up fear and hostility among the electorate).

31. See *id.* (extending the argument that the administration is squandering American tax dollars).

32. See generally Committee on Arrangements for the 2012 Republican National Convention, *Convention Overview*, available at <http://www.gopconvention2012.com/wp-content/uploads/2012/08/Convention-Backgrounder-FINAL.pdf> (last visited Nov. 7, 2012).



political patronage, corporate welfare, and cronyism at their worst. You, the working men and women of this country, were cut out of the deal.<sup>33</sup>

It is a fair characterization to say that the Solyndra debacle, more than global warming or any other issue, was the most prominent topic of environmental policy during the 2012 presidential campaign—a remarkable turnabout from 2008.

Meanwhile, the overwhelming evidence of global climate change became even more convincing since 2008. President Obama was elected just a year after the Intergovernmental Panel on Climate Change concluded that “[m]ost of the observed increase in global average temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic greenhouse gas concentrations.”<sup>34</sup> Among the most worrying of the disturbances attributable to climate change are likely to be extraordinary disruptions of food supplies in poorer nations that do not have the money to adapt, along with devastating effects on animals and ecosystems.<sup>35</sup>

Since then, scientists have monitored whether the planet’s climate has reached a “tipping point” of enormous changes, such as a disruption of the annual Indian Ocean monsoon, relied upon by hundreds of millions of persons for their livelihood.<sup>36</sup> An IPCC interim report in 2011 warned of the increased likelihood of “unprecedented extreme weather” attributable to the rapidly changing climate.<sup>37</sup> Meanwhile, 2012 was the hottest year ever

33. See Glenn Kessler, *Fact Checking the GOP Convention’s Second Night*, WASH. POST (Aug. 31, 2012), [http://www.washingtonpost.com/blogs/fact-checker/post/fact-checking-the-gop-conventions-second-night/2012/08/30/128cbe9e-f260-11e1-adc6-87dfa8eff430\\_blog.html](http://www.washingtonpost.com/blogs/fact-checker/post/fact-checking-the-gop-conventions-second-night/2012/08/30/128cbe9e-f260-11e1-adc6-87dfa8eff430_blog.html) (evaluating the accuracy of the convention speeches) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

34. See Lenny Bernstein et al., *Summary for Policymakers: Climate Change 2007, Synthesis Report*, INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, 5–6 (Nov. 7, 2012), available at [http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4\\_syr\\_spm.pdf](http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr_spm.pdf) (explaining the increased strength of the scientific conclusion that the increase in temperatures was due to the increase in anthropogenic emissions).

35. See *id.* at 9–14 (summarizing the adverse effects).

36. See Fred Gutere, *Searching for Clues to Calamity*, N.Y. TIMES (July 20, 2012), available at <http://www.nytimes.com/2012/07/21/opinion/the-climate-change-tipping-point.html?ref=globalwarming> (examining data in an effort to forecast and prevent widespread catastrophe stemming from a climate related event).

37. See Simon K. Allen et al., *Summary for Policymakers: Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation*, INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 5 (2011), available at [http://www.ipcc-wg2.gov/SREX/images/uploads/SREX-SPMbrochure\\_FINAL.pdf](http://www.ipcc-wg2.gov/SREX/images/uploads/SREX-SPMbrochure_FINAL.pdf) (outlining the connection between climate change and extreme weather events).

recorded in the contiguous United States.<sup>38</sup> That summer, scientists reported that arctic ice sheet had shrunk to its smallest size ever recorded.<sup>39</sup> Also that summer, a group of Harvard scientists published a paper that for the first time linked a warming climate with more rainstorms to a thinning of the ozone layer in the stratosphere, which protects humans from harmful ultraviolet rays.<sup>40</sup> Meanwhile, one of the most prominent skeptics of the anthropogenic nature of global warming, Berkeley's Richard Muller, announced that he had joined the consensus of scientists who say that humans are the primary cause of the rapidly changing climate.<sup>41</sup>

What happened? How did it come to pass that, four years after the American public elected a president who was dedicated to firm legal action on climate change, the issue in effect disappeared from the public discourse, even while the climate news worsened? And how did "Solyndra" become the most prominent word in the public debate over environmental law? This Essay explores the answers to these perplexing questions.

One obvious part of the answer is the economic crisis that has gripped the United States and much of the world since 2008.<sup>42</sup> It is axiomatic that wealthy nations feel rich enough to tackle expensive fixes to long-term problems, while relatively poorer cultures feel that they cannot

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38. Justin Gillis, *Not Even Close: 2012 Was Hottest Ever in U.S.*, N.Y. TIMES, (Jan. 8, 2013), available at [http://www.nytimes.com/2013/01/09/science/earth/2012-was-hottest-year-ever-in-us.html?\\_r=0](http://www.nytimes.com/2013/01/09/science/earth/2012-was-hottest-year-ever-in-us.html?_r=0).

39. Justin Gillis, *Satellites Show Sea Ice in Arctic Is at a Record Low*, N.Y. TIMES, Aug. 27, 2012, at A4 (noting the dramatic melting of Greenland's ice sheet which, due to its location above sea level, causes the sea level to rise more quickly than the melting of the floating arctic ice sheet); see also Kelly Slivka, *Rare Burst of Melting Seen in Greenland's Ice Sheet*, N.Y. TIMES, July 25, 2012, at A4 (reporting on the same phenomenon).

40. See James G. Anderson, *UV Dosage Levels in Summer: Increased Risk of Ozone Loss from Convectively Injected Water Vapor*, 17 SCIENCE 808-10 (July 2012) (documenting a snowball effect between increased heat and increased humidity leading to ozone reduction).

41. See Neela Banerjee, *Koch-Funded Climate Change Skeptic Reverses Course*, L.A. TIMES (July 29, 2012), available at <http://www.latimes.com/news/politics/la-pn-kochfunded-climate-change-skeptic-reverses-course-20120729,0,7372823.story> (detailing a scientist's shifting opinion from climate skeptic to believer). Koch's Berkeley Earth Surface Temperature project was funded in part by the Charles Koch Charitable Foundation, which supports many libertarian and anti-government projects. *Id.* Mueller's conclusion came two years after the most publicly prominent critic of laws to combat climate change, Bjørn Lomborg (who had argued that the money spent would not be worth it), appeared to change his position and support tougher legal steps. See Juliette Jowit, *Bjørn Lomborg: The Dissenting Climate Change Voice Who Changed His Tune*, GUARDIAN, Aug. 30, 2010, at 6 (explaining the nuances in Lomborg's positions and his changed comments over time).

42. See *Recession*, N.Y. TIMES TOPICS, [http://topics.nytimes.com/top/reference/timestopics/subjects/r/recession\\_and\\_depression/ind ex.html](http://topics.nytimes.com/top/reference/timestopics/subjects/r/recession_and_depression/ind ex.html) (last visited Sept. 6, 2012), (discussing the recession that began in 2008) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

afford to do so. The first age of environmentalism, along with many of the leading federal statutes, was the affluent era of the 1960s and early 1970s.<sup>43</sup> During the consumer-led boom of the first years of the 21st century, the nation was open to a discussion of short-term costs to the economy of penalizing greenhouse gas emissions. But from 2008, a gloomy economic recession sent the unemployment rate above eight percent for more than four years.<sup>44</sup> The sour economy was the dominant political issue throughout President Barack Obama's first term in office. This was not an auspicious time to convince the American people that they would have to suffer the pains of higher energy prices and economic dislocation caused by significant greenhouse gas regulation, even in the short run. Although President Obama had pledged to foster cap-and-trade legislation, he made little effort to push it through Congress during this first term.<sup>45</sup> Republicans also contributed to the death of climate change legislation.<sup>46</sup> They cannily ran a marketing campaign in 2009 and 2010 to refer to the cap-and-trade idea as "cap and tax," thus insinuating into the debate the word "tax" that is so distasteful to American voters.<sup>47</sup>

Another reason for the failed promise is attributable to the professional character of President Barack Obama. To generalize, liberal politicians can be divided into two groups—social welfare liberals and environmental liberals.<sup>48</sup> The two may overlap, of course, but the former

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43. See RICHARD J. LAZARUS, *MAKING ENVIRONMENTAL LAW* 47–97 (2002) (discussing the climate of prosperity and optimism in the 1960s and early 1970s). Among the federal statutes were the Wilderness Act of 1964, the National Environmental Policy Act of 1969, the Clean Air Act of 1970, the Clean Water Act of 1972, and the Endangered Species Act of 1973. See *id.* at 50, 70 (describing an emerging emphasis on conservation by way of environmental legislation).

44. Bureau of Labor Statistics, *Unemployment Rate*, <http://data.bls.gov/pdq/SurveyOutputServlet> [search for 2000–12] (last visited Aug. 23, 2012) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment). The unemployment rate topped 8 % in February 2009 for the first time this century (compared to below 4 % at times in 2000) and remained over 8 % through August 2012. *Id.*

45. See *Cap and Trade*, *supra* note 1, at 1 (summarizing the decline of the legislative idea, from the passage of a limited cap-and-trade bill in the House of Representatives in 2009 to its "languishing" in the Senate with little support from President Obama).

46. See Evan Lehmann, *How Republicans Managed to Rebrand 'Cap and Trade'*, N.Y. TIMES (Sept. 10, 2010), available at <http://www.nytimes.com/cwire/2010/09/30/climatewire-how-republicans-managed-to-rebrand-cap-and-t-95204.html?pagewanted=all> (describing the Republicans' efforts to attack "cap and trade" policy as economically harmful).

47. See *id.* (explaining the Republicans' success in re-branding the phrase "cap and trade" as "cap and tax").

48. See *What is Social Liberalism?*, SOCIALLIBERAL.NET (Feb. 12, 2009), <http://socialliberal.net/2009/02/12/what-is-social-liberalism/> (discussing the tenets of social

are worried most about the day-to-day concerns of the American people, especially disadvantaged persons, while the latter focus on stresses to ecosystems and resources.<sup>49</sup> Of all the American presidents, only Theodore Roosevelt, in the early days of “conservationist” thinking, appeared to place environmentalism at the forefront of his thinking.<sup>50</sup> By contrast, the two most recent Democratic presidents—Bill Clinton and Barack Obama—were social welfare liberals.<sup>51</sup> Although both went to law school during the era of environmentalism,<sup>52</sup> there is no indication that either of them took a course in environmental law. Their careers before seeking elected office were those of social welfare advocates—Clinton taught constitutional law and then quickly went into politics, where he was famous for his ability empathize with people of modest backgrounds,<sup>53</sup> Obama worked as a community organizer for poor neighborhoods in the south side of Chicago and worked in civil rights and community law for a small law firm before election to the state legislature.<sup>54</sup> As politicians, both represented low-

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liberalism) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

49. The former is the older and more prominent strand of thinking, stretching back to Franklin Roosevelt and, perhaps, to William Jennings Bryan, Abraham Lincoln, and Thomas Jefferson.

50. See *Theodore Roosevelt and Conservation*, NAT'L PARK SERV., <http://www.nps.gov/thro/historyculture/theodore-roosevelt-and-conservation.htm> (last visited Jan. 7, 2013) (calling Roosevelt “our country’s ‘Conservationist President’”) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment). Roosevelt, who advocated a “vigorous” lifestyle, including outdoor activity, presided over a great expansion of the national park system and signed into law both the Antiquities Act of 1906, Pub. L. 59-209, 34 Stat. 225, *codified at* 16 U.S.C. §§ 431–43, which gives the president the power to set aside public lands as national monuments, and the Transfer Act of 1905, 33 Stat. 628, *codified at* 16 U.S.C. §§ 472, 524, 554, which established the National Forest Service.

51. See Mark Landler, *A Vindication, With a Legacy Still Unwritten*, N.Y. TIMES (June 28, 2012), [http://www.nytimes.com/2012/06/29/us/health-care-ruling-may-secure-obamas-place-in-history.html?pagewanted=all&\\_r=0](http://www.nytimes.com/2012/06/29/us/health-care-ruling-may-secure-obamas-place-in-history.html?pagewanted=all&_r=0) (explaining the social welfare accomplishments and legacy of Presidents Barack Obama and Bill Clinton) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

52. See Peter Dykstra, *History of Environmental Movement Full of Twists, Turns*, CNN (Dec. 15, 2008), <http://www.cnn.com/2008/TECH/science/12/10/history.environmental.movement/index.html> (detailing an overview of the environmental movement in the United States) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

53. See Julian Zelizer, *Bill Clinton's Lesson for Obama*, CNN (Dec. 19, 2011), <http://www.cnn.com/2011/12/19/opinion/zelizer-bill-clinton/index.html> (“President Clinton displayed a phenomenal ability to show empathy with Americans who were suffering. . .”) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

54. See David Maraniss, *Barack Obama: The Story*, BIOGRAPHY.COM (2011), <http://www.biography.com/people/barack-obama-12782369> (discussing Obama’s pre-

income jurisdictions in which environmental issues, especially global topics, seemed of less pressing priority than day-to-day household struggles.<sup>55</sup> While both mouthed the liberal line on environmental issues, it is fair to assert that Obama, like Clinton before him, did not have his heart in environmentalism the way that he did in social justice issues.<sup>56</sup> This lack of commitment made Obama susceptible to policy choices that were politically appealing, but environmentally feeble, as illustrated by the Solyndra story.

Barack Obama entered the White House in 2009 at a time of economic storms, but also with great “political capital,” having been elected as the first African American president, by a sizeable majority of the nation’s vote, and under banners of “hope” and “change.”<sup>57</sup> This short-term

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political employment) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

55. In the 1980s, the “environmental justice” movement linked environmental law and low-income communities. The most notable first work was ROBERT BULLARD, *DUMPING IN DIXIE* (1990), which explained that polluters often preferred to locate environmental harms near poor communities, often black, in the South, in part because these communities were perceived to have little political clout to stop them. See ROBERT BULLARD, *DUMPING IN DIXIE* 97 (1990). Some mainstream environmentalists later apologized for focusing too much on national and global issues in environmental law, and not enough on local issues. See, e.g., DAVID SCHOENBROD, *SAVING OUR ENVIRONMENT FROM WASHINGTON* 149–54 (2005) (noting the *mea culpa* of Clinton’s EPA administrator Carol Browner). In 1994, President Clinton signed an executive order that instructed all federal agencies to make environmental justice part of their missions. See Exec. Order No. 12,898, 59 Fed. Reg. 7629 (Feb. 11, 1994), available at [http://epa.gov/compliance/ej/resources/policy/exec\\_order\\_12898.pdf](http://epa.gov/compliance/ej/resources/policy/exec_order_12898.pdf) (setting out responsibilities and strategies for enacting a program of environmental justice for minorities). While the movement focused environmentalists’ attention on things such as noise and soot from factories on nearby low-income neighborhoods and galvanized some low-income communities to fight against such harms, the movement lost steam in the early 21st century. See SCHOENBROD, *supra* note 55, at 153–54 (discussing the developments).

56. See Cat Lazaroff, *Sun Sets on President Clinton’s Environmental Legacy*, ENS-NEWSWIRE (Jan. 19, 2001), <http://www.ens-newswire.com/ens/jan2001/2001-01-19-06.asp> (assessing Clinton’s environmental legacy as “mixed,” though “clearly pro-environment”) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment). While Clinton took some small steps that pleased environmentalists, such as the orders that created the Grand Staircase-Escalante National Monument in Utah, he did not foster any new major environmental legislation during his eight years in office. See *id.* (explaining Clinton’s support for important but relatively minor environmental initiatives). Indeed, disaffection among environmentalists in Florida have been cited as a reason for the strong showing of Ralph Nader in the state during the 2000 presidential election, which was famously lost by the environmentally oriented Al Gore, Clinton’s vice president, by a razor-thin margin. See *id.* (describing Nader as the “spoiler” who cost Gore the election).

57. See *Barack Obama*, N.Y. TIMES TOPICS (Sept. 7, 2012), [http://topics.nytimes.com/top/reference/timestopics/people/o/barack\\_obama/index.html](http://topics.nytimes.com/top/reference/timestopics/people/o/barack_obama/index.html) (referring to President Obama’s campaign messages of hope and change) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

political capital allowed him, in effect, to prevail in Congress on one great legislative accomplishment. The two most prominent legislative issues at hand in 2009 were greenhouse gas regulation and health care reform. Pushing either of these highly complex, expensive, and controversial measures through Congress would have been difficult; to accomplish both in a time of economic recession would have been nearly impossible. His political capital allowed him to pursue only one.<sup>58</sup> The choice was no contest. Although his chief of staff, Rahm Emanuel, reportedly begged the President not to push a comprehensive health care act because of the political risks of doing so,<sup>59</sup> the social welfare liberal in President Obama saw an opportunity to achieve what liberals had dreamed of for more than a century<sup>60</sup>—a national system of health care that gives insurance guarantees to nearly all Americans.<sup>61</sup> In comparison, greenhouse gas regulation was not nearly as attractive to a social welfare liberal. By the time that the epic struggle for health care reform in Congress was accomplished, in early 2010,<sup>62</sup> President Obama's political capital was spent, the nation was mired deep in economic doldrums, and there was no stomach for another daunting battle. The lost opportunity to enact a legal regime to discourage greenhouse gas emissions—a regulatory stick—was a crushing blow to environmentalism. To President Obama's policymakers, however, all did not seem lost, because there remained the siren song of carrots for green energy. Here the story turns.

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58. See *id.* (“But Senate Republicans blocked many other items on the president’s agenda, most notably a ‘cap and trade’ energy bill, meant to reduce the growth of carbon emissions.”).

59. See Greg Sargent, *Book: Rahm “begged” Obama for days not to pursue ambitious health reform*, WASH. POST (May 14, 2010), available at [http://voices.washingtonpost.com/plum-line/2010/05/book\\_rahm\\_spent\\_week\\_aggressiv.html](http://voices.washingtonpost.com/plum-line/2010/05/book_rahm_spent_week_aggressiv.html) (citing JONATHAN ALTER, *THE PROMISE* (2012)).

60. See *A Brief History: Universal Health Care Efforts in the US*, PHYSICIANS FOR A NAT’L HEALTH PROGRAM (1999), <http://www.pnhp.org/facts/a-brief-history-universal-health-care-efforts-in-the-us> (outlining the history of the push for a national health system, stretching back to early 20th century and including efforts by both Theodore Roosevelt and Franklin Roosevelt) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

61. The legislation, tendentiously referred to by critics as “Obamacare,” was the Patient Protection and Affordable Care Act, Pub. L. 111-148, 124 Stat. 119 (2010). The U.S. Supreme Court upheld the law, including the mandate that Americans purchase health insurance. *Nat’l Federation of Independent Business v. Sebelius*, 132 S. Ct. 2566, 2608 (2012).

62. See Sheryl Gay Stolberg & Robert Pear, *Obama Signs Health Care Overhaul Bill, With a Flourish*, N.Y. TIMES (Mar. 23, 2010), available at <http://www.nytimes.com/2010/03/24/health/policy/24health.html> (describing the ceremony of President Obama’s signing of the Patient Protection and Affordable Care Act).

### III. Carrots and Sticks in Regulatory Policy

Regulation of markets may be divided into two categories: *carrots* and *sticks*. Whereas a *stick* discourages unwanted conduct by penalizing it, a *carrot* encourages preferred conduct by awarding it.<sup>63</sup> In governmental financial terms, a tax is a stick, while a subsidy is a carrot.<sup>64</sup> Government sometimes does both simultaneously: Consider the policy of encouraging the consumption of healthy beverages, in which the government taxes alcohol and debates banning the sale of big sodas (each a kind of stick),<sup>65</sup> while at the same time subsidizing the production of purportedly healthy milk (a carrot).<sup>66</sup>

As a matter of politics, however, awarding carrots may be far more appealing than applying sticks. Legislative theorists point out that legislative bills that offer *concentrated benefits* (such as a sizeable milk subsidy, paid to a limited number of milk producers) and *distributed costs* (the small amount of taxes paid by each citizen to pay for the milk subsidy) are more likely to be adopted than other types of bills.<sup>67</sup> Such a bill energizes lobbying by the handful of persons who would receive the carrot, while the larger number of taxpayers is not motivated to oppose with any fervor the very small cost to each of them.<sup>68</sup> Moreover, awarding carrots presents to the public a cheery side of regulation—government prominently awarding socially desirable conduct—while concealing the indirect cost to the budget. Thus, politicians have always famously enjoyed publicizing

63. See generally IAN AYRES, *CARROTS AND STICKS* (2010) (discussing the use of incentives and disincentives).

64. See *id.* at 24–37 (describing the use of rewards and penalties in encouraging desired conduct).

65. In the summer of 2012, New York City debated banning the sale of large sodas because of a perceived link to obesity. See Michael M. Grynbaum, *Strong Words From Both Sides at Soda Ban Hearing*, N.Y. TIMES (July 24, 2012), available at <http://www.nytimes.com/2012/07/25/nyregion/at-hearing-on-soda-ban-strong-words-both-sides.html> (discussing the hearing regarding New York’s proposal to restrict sales of sodas).

66. See *Dairy Policy*, U.S. DEP’T OF AGRIC. (Aug. 23, 2012), <http://www.ers.usda.gov/topics/animal-products/dairy/policy.aspx> (explaining milk price support system) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

67. See, e.g., WILLIAM N. ESKRIDGE, PHILIP FRICKEY & ELIZABETH GARRETT, *LEGISLATION: STATUTES AND THE CREATION OF PUBLIC POLICY*, 54–59 (4th ed. 2007) (setting forth a model of concentrated benefits and distributed costs) (citing JAMES WILSON, *POLITICAL ORGANIZATIONS* 316–21 (1973) (arguing that special interest groups sway politicians)); Theodore Lowi, *American Business, Public Policy, Case-Studies, and Political Theory*, 16 WORLD POL. 677, 688 (1964) (highlighting the prominence of interest groups).

68. See WILLIAM N. ESKRIDGE, PHILIP FRICKEY, & ELIZABETH GARRETT, *supra* note 67, at 54–59 (explaining the effects of distributed and concentrated benefits and costs).

putatively “positive” carrots, such as cutting ribbons for new government projects, rather than enforcing with sticks.<sup>69</sup>

Political scientists have also recognized that politicians appeal to voters through policies that appear to generate employment.<sup>70</sup> At the state and local level, governors and mayors use various carrots, including tax breaks, to lure businesses to their jurisdiction.<sup>71</sup> Whether these subsidies truly increase long-term employment is not, of course, as important politically as the short-term perception among voters that the politician is doing something to help the local economy.<sup>72</sup> This explains, in part, the popularity of governmental payments for stadiums that attract sports teams, despite evidence that such expenditure usually does not improve the local economy. The act of awarding the carrot itself is a charismatic political move.<sup>73</sup> At the federal level, the dominant issue of the presidential election of 2012 was employment. While Romney argued that his free-market policies would “create jobs,”<sup>74</sup> President Obama asserted that federal investment in clean energy would generate new employment.<sup>75</sup>

Carrots are politically more popular than sticks. But carrots, as this essay illustrates, have inherent drawbacks. At the outset, it is important to clarify that carrots are not merely the flip side of sticks, at least in environmental regulation. Consider the dilemma of greenhouse gases: While it is a relatively straightforward matter to impose a stick (through a

69. See VITO TANZI & HAMID DAVVODI, *ROADS TO NOWHERE: HOW CORRUPTION IN PUBLIC INVESTMENT HURTS GROWTH* 1 (1998), available at <http://books.google.com/books?hl=en&lr=&id=KikOvxJp5NkC&oi=fnd&pg=PP4&dq=politicians+cutting+ribbons&ots=BLPKzQ6xcW&sig=RIOOJwSRL2eJFMXSx4E97M3mkWk#>.

70. See, e.g., PAUL KANTOR, *THE DEPENDENT CITY REVISITED* 113–19 (1995) (discussing how governments compete to attract businesses).

71. See *id.* (discussing the incentives to local government).

72. Robert Higgs, *Cumulating Policy Consequences, Frightened Overreactions, and the Current Surge of Government's Size, Scope, and Power*, 33 *HARV. J.L. & PUB. POL'Y* 531, 537 (2010) (arguing that government intervention in the economy falsifies market signals by supporting otherwise unsustainable businesses).

73. See generally John Siegfried & Andrew Zimbalist, *The Economics of Sports Facilities and Their Communities*, 14 *J. ECON. PERSPECTIVES* 95 (2000) (scrutinizing the economic arguments for sports stadia).

74. See, e.g., Brian Lambert, *Romney, Promising 3 Million Jobs and \$1 Trillion in New Revenue, Stops Here*, *MINNPOST* (Aug. 23, 2012), <http://www.minnpost.com/glean/2012/08/romney-promising-3-million-jobs-and-1-trillion-new-revenue-stops-here> (explaining Governor Romney's promise of millions of new jobs) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

75. See, e.g., Zach Coleman, *Obama Hypes Clean Energy in Iowa, Colorado Radio Ads*, *THE HILL* (Aug. 20, 2012), <http://thehill.com/blogs/e2-wire/e2-wire/244439-obama-hypes-clean-energy-in-iowa-colorado-radio-ads> (discussing ads that tout employment creation through federal investment in clean energy) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).



tax or cap) on the emission of such pollution,<sup>76</sup> it would be a far more complex task to award a carrot (a subsidy) to all the alternative sources of energy, including solar, wind, hydroelectric, geothermal, nuclear, hydrogen cells, waves, etc. In addition, it would be prohibitively expensive for government to subsidize all alternative energy sources; this dilemma recalls Justice Oliver Wendell Holmes' famous comment that "government could hardly go on" if it were try to compensate all parties subject to government regulation.<sup>77</sup> Accordingly, when awarding carrots, the government tends to pick one or a handful of "winning" private actors, as shown by the Solyndra story.<sup>78</sup>

Moreover, it would be wrong to assert that the handing out of carrots is a harmless exercise in political marketing, similar to an elected official's kissing babies or cutting a ribbon to open a new shopping center. The Solyndra story, to which the Essay now turns, reveals the inherent and profound flaws in carrots that make them a dead end in the environmental policy debate.<sup>79</sup>

#### IV. *Solyndra and Obama's Carrots*

The Obama Administration's award of carrots to the Solyndra Corporation was intended to make the California solar panel manufacturer the "poster child" for the Administration's support of clean energy.<sup>80</sup> The extraordinary irony of this decision is that, by 2012, the story had become an albatross around the necks of both the Obama Administration and the environmental movement.<sup>81</sup>

The fact that the Solyndra debacle arose during the Obama Administration is not surprising. President Obama's environmental policy

76. The stick would be imposed on all emitters of greenhouse gases or, alternatively, all emitters of the most common greenhouse gas, carbon dioxide. The decision to regulate only carbon dioxide, and not less common greenhouses gases, such as methane, admittedly is a policy choice that makes the stick option less than perfect.

77. See *Pa. Coal Co. v. Mahon*, 260 U.S. 393, 413 (1922) ("Government hardly could go on if to some extent values incident to property could not be diminished without paying for every such change in the general law.").

78. See generally MAJ. STAFF REPT. FOR H.R. COMM. ON ENERGY & COMMERCE, 112TH CONG., THE SOLYNDRA FAILURE, at Parts III-X (Aug. 2, 2012), available at <http://energycommerce.house.gov/sites/republicans.energycommerce.house.gov/files/analysis/20120802solyndra.pdf> [hereinafter House Republican Report] (presenting a detailed account of the federal loan and subsequent failure of Solyndra).

79. This Essay's telling of the Solyndra story does not purport to explain every detail, of course, but rather highlights the flaws of a policy of carrots.

80. House Republican Report, *supra* note 78, at 9 (explaining that the Administration tied itself closely to the project to highlight Obama's signature economic policy).

81. See, e.g., Sarlin, *supra* note 27 (explaining how the Solyndra affair has been used against President Obama politically).

has been marked by an effort to “invest in a clean energy future”<sup>82</sup> and “build the foundation for a clean energy economy,” as touted by the Administration.<sup>83</sup> This strategy is consistent with modern political liberalism, which highlights the failures of the private market to achieve desirable social ends.<sup>84</sup> Most significantly, government intervention is justified when the market produces *externalities*—meaning harmful effects that are not reflected in the market transactions.<sup>85</sup> Pollution is the classic example.<sup>86</sup>

This is not to say that carrots are awarded only by Democrats. As noted above, there may be gain for any politician in handing out carrots. Indeed, the seed of the Solyndra debacle arose during the presidency of George W. Bush, who signed the Energy Policy Act of 2005.<sup>87</sup> The preamble asserted that the Act would “ensure jobs for our future with secure, affordable, and reliable energy.”<sup>88</sup> One title authorized “incentives for innovative technologies.”<sup>89</sup> It broadly authorized the Secretary of Energy to make loan guarantees to “projects” that combated greenhouse gas emissions and that employed “new or significantly improved

82. The White House, President Barack Obama, *Energy, Climate Change and Our Environment*, <http://www.whitehouse.gov/energy> (last visited Apr. 8, 2012) (noting the President’s intent to “invest in a clean energy future”) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

83. The White House, President Barack Obama, *Develop and Secure America’s Energy Resources*, <http://www.whitehouse.gov/energy/securing-american-energy#energy-menu> (last visited Jan. 7, 2013) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

84. See Higgs, *supra* note 72, at 531 (recounting ways in which President Obama’s administration has used government to combat market failures associated with the current economic downturn). The word “liberal” is employed throughout this essay in its popular usage—i.e. the political “left”—as opposed to the more traditional meaning of the word to refer to what American politics now calls “libertarianism,” which has become associated with the political “right.” See generally, Johnson Blog, *Liberalism and Libertarianism*, THE ECONOMIST (Oct. 8, 2010), [http://www.economist.com/blogs/johnson/2010/10/ism\\_week](http://www.economist.com/blogs/johnson/2010/10/ism_week) (explaining the usages of the terms) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

85. See Bryan Caplan, *Externalities*, ENCYCLOPEDIA OF ECONOMICS AND LIBERTY (2008), <http://www.econlib.org/library/Enc/Externalities.html> (“Externalities are probably the argument for government intervention that economists most respect.”) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

86. For example, the purchase of gasoline for a gas-guzzling car exacerbates the pollution of the air and the buildup of greenhouse gases in the atmosphere—both of which harm many persons who were not, of course, party to the gasoline purchase. Accordingly, this economic argument goes, it is appropriate for government to act in response to this market flaw. See *id.* (noting the appropriate role of government in addressing externalities).

87. Pub. L. No. 109-58, 199 Stat. 194 (codified in scattered sections of the U.S. Code).

88. *Id.* pmb1.

89. *Id.* tit. XVII, §§ 1701-1706 (codified at 42 U.S.C. §§ 16511-16516).

technologies.”<sup>90</sup> Categories of technology included “renewable energy systems.”<sup>91</sup>

The sun is an attractive source of natural, renewable energy; billions of watts of energy arrive through light photons emanating from nuclear reactions on the nearest star to the Earth.<sup>92</sup> Green plants, of course, power themselves efficiently from solar energy through photosynthesis.<sup>93</sup> Solar energy was first converted directly into electricity in 1954, when scientists discovered that the element silicon, when exposed to sunlight, creates an electric charge.<sup>94</sup> Thin panels, called photovoltaic cells (“PVs”), were used to power spacecraft in the 1960s.<sup>95</sup> By the 1970s, when fossil fuel prices rose, many environmentalists looked to solar as the bright, clean, renewable future of electricity.<sup>96</sup> Nonetheless, the high start-up costs of solar power, including local permitting, have discouraged producers and consumers from relying on solar systems.<sup>97</sup> Despite a plethora of government carrots to use solar energy,<sup>98</sup> in 2010 only one one-hundredth of one percent of U.S. energy came directly from the sun.<sup>99</sup>

In order to carry out its new duties under the Energy Policy Act, the Department of Energy established from scratch a Loan Program Office.<sup>100</sup>

90. *Id.* at §§ 1702(a), 1703(a)(1), (2) (codified at 42 U.S.C. §§ 16512(a), 16513(a)(1), (2)).

91. *Id.* at § 1703(b) (codified at 42 U.S.C. § 16513(b)).

92. See Michael Sobel, *The Sun's Energy*, CUNY-BROOKLYN, <http://academic.brooklyn.cuny.edu/physics/sobel/Nucphys/sun.html> (last visited Sept. 1, 2012) (discussing the physical properties of the sun) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

93. See *id.* (“[L]ight and heat from the sun are the basis of (almost) all life on earth. Sunlight drives plant life via photosynthesis, and animals survive by eating plants.”).

94. See Nat’l Renewable Energy Lab., *Solar Photovoltaic Technology Basics* (May 18, 2012), [http://www.nrel.gov/learning/re\\_photovoltaics.html](http://www.nrel.gov/learning/re_photovoltaics.html) (discussing basic principles of PV technology) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

95. See *id.* (noting uses of PVs).

96. See JOHN J. BERGER, *CHARGING AHEAD: THE BUSINESS OF RENEWABLE ENERGY AND WHAT IT MEANS FOR AMERICA* 5 (1997) (disusing the optimism of the 1970s).

97. See Dep’t of Energy, *Top 6 Things You Didn’t Know About Solar Energy* (June 22, 2012 4:55 PM), <http://energy.gov/articles/top-6-things-you-didnt-know-about-solar-energy> (noting the regulatory burdens on the solar industry) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

98. See, e.g., *Database of State Incentives for Renewable Energy Solar*, <http://www.dsireusa.org/solar/summarymaps> (last visited Sept. 1, 2012) (compiling a variety of carrots for solar technology) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

99. Lawrence Livermore Lab., *Estimated Energy Use in 2010* (Oct. 2011), <https://flowcharts.llnl.gov> (on file with the Washington and Lee Journal of Energy, Climate, and the Environment). By contrast, wind power created eight times more energy. *Id.*

100. See House Republican Report, *supra* note 78, at 9 (noting that the Energy Policy Act of 2005 authorized the Department of Energy to establish a loan office).

As of early 2008, however, the office had only four employees to carry out a potentially multi-million dollar program.<sup>101</sup> As is all too typical with new congressional mandates, however, Congress was more attracted to creating new regulatory programs than to the unpleasant task of funding them under public budget constraints. This phenomenon has been noted in connection with the U.S. Environmental Protection Agency, which is chronically overburdened to the extent that it has been called a “dysfunctional” agency.<sup>102</sup> In 2007 and 2008, both congressional oversight committees and the Government Accountability Office criticized the Energy Department for its slowness in implementing the loan guarantee program.<sup>103</sup>

In response to a solicitation from the Energy Department in 2008, the Solyndra Corporation of Fremont, California, applied for a loan guarantee.<sup>104</sup> Solyndra, which was one of more than 100 companies to apply, manufactured photovoltaic systems using a unique cylindrical design for panels that, the company claimed, were easier to install and more efficient than other panels in the market.<sup>105</sup> The benefits of a cylindrical panel, the company stated, were that they “capture sunlight across a 360-degree photovoltaic surface capable of converting direct, diffuse, and reflected sunlight into electricity.”<sup>106</sup> Moreover, Solyndra’s panels did not

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101. See House Republican Report, *supra* note 78, at 9 (discussing the troubled beginning of the program). Compare this number to the number of employees that a private firm likely would assign to a much smaller task.

102. See, e.g., Sidney Shapiro, Rena Steinzor & Matthew Shultz, *Regulatory Dysfunction: How Insufficient Resources, Outdated Laws, and Political Interference Cripple the ‘Protector Agencies’*, CTR. FOR PROGRESSIVE REFORM (Aug. 2009), available at [http://www.progressivereform.org/articles/RegDysfunction\\_906.pdf](http://www.progressivereform.org/articles/RegDysfunction_906.pdf) (discussing how the lack of funding and other Congressional assistance has hampered important government agencies).

103. See House Republican Report, *supra* note 78, at 10 (citing hearings and GAO reports).

104. See House Republican Report, *supra* note 78, at 9. Many of the citations in the story are to a comprehensive 2012 report by the majority (Republican) staff of the U.S. House Committee on Energy and Commerce. The Republican members of the Committee are of course politically opposed to President Obama. This Essay highlights facts that are in dispute.

105. See House Republican Report, *supra* note 78, at 10 (laying out the facts in dispute).

106. Solyndra Corp., *Solyndra Cylindrical Module*, <http://www.solyndra.com/technology-products/cylindrical-module> (last visited Nov. 7, 2012) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment). The company further explained:

Collecting light around a 360 degree surface allows it to capture more light early and late in the day, with broader shoulders and less peak during the day. This consistent power generation during the day allows the use of a smaller inverter, saving costs and benefits the overall energy yield of a system over time.

use silicon, the most commonly used component, the price of which had risen sharply during 2007 and 2008 due in part to a supply shortage.<sup>107</sup> One significant drawback to Solyndra's panels, however, was that they were effective only on flat, white roofs, but not on slanted roofs.<sup>108</sup> The company planned to use the federal loan to build a production facility known as "Fab 2," the total cost of which was estimated at \$713 million.<sup>109</sup> The requested loan guarantee from the government was for \$535 million.<sup>110</sup>

The Energy Department's Loan Program Office in late 2008 hired an independent engineering expert to examine the application.<sup>111</sup> The Department's chief financial officer at the time later told Congress that the agency pushed the Solyndra application in part because of a "general desire to do something" before the end of the Bush Administration and because the California company's application was "further along" than others.<sup>112</sup> But the Department's Credit Review Board concluded on January 9, 2009, that Solyndra's application was "premature."<sup>113</sup> Among the concerns was the lack of an independent market analysis.<sup>114</sup> Another concern was a news report that the solar panel industry was becoming oversupplied; an e-mail

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*Id.*

107. *See id.* (explaining that Solyndra's panels used copper indium gallium diselenide).

108. *See* House Republican Report, *supra* note 78, at 10 (pointing out a drawback to Solyndra's panels).

109. *See* House Republican Report, *supra* note 78, at 10–11 (describing the plan for building the production facility).

110. *See* House Republican Report, *supra* note 78, at 11 (stating the nominal value of the requested loan).

111. *See* House Republican Report, *supra* note 78, at 11–12 (explaining the application review process).

112. *See* House Republican Report, *supra* note 78, at 13–14 (citing an interview with Chief Financial Officer of the U.S. Department of Energy, Steve Isakowitz).

113. *See* House Republican Report, *supra* note 78, at 15 (laying out the Department's findings).

114. *See* House Republican Report, *supra* note 78, at 15–16 (discussing recommendations made during the Jan. 9, 2009 meeting of the Credit Committee) (citing Memorandum from Chairman of the Loan Guarantee Credit Committee to Director of the Loan Guarantee Program Office, Credit Committee Recommendation re: Solyndra Fab 2 LLC, solar photovoltaic power panel project for a loan guarantee of \$535,000,000). This point was highlighted by Kelly Colyar, Chief of Credit Policy in the Loan Program Office. Interestingly, this was the first of many instances in which a woman warned against the excessive risks in the Solyndra carrot—a phenomenon of gender that echoes the frequently-cited role of women warning against the subprime housing boom of the early 21st century. *See, e.g.,* Keith Chrostowski, *Commentary: Three Female Regulators' Warnings About Financial Crisis Were Ignored*, K.C. STAR (Jan. 30, 2012), available at <http://www.mcclatchydc.com/2012/01/30/137029/commentary-three-female-regulators.html> (discussing the warnings against the housing boom).

message on January 13 cited a *USA Today* story entitled “Glut of Roof Top Solar Systems.”<sup>115</sup>

When President Obama’s Secretary of Energy, Steven Chu, took office in late January 2009, however, he pressed for quicker movement on the loan guarantee program.<sup>116</sup> As one advisor testified before Congress in March, “Secretary Chu has directed us to accelerate the process significantly and deliver the first loans in a matter of months, while maintaining appropriate oversight and due diligence to protect taxpayers’ interests.”<sup>117</sup> The Department’s Chief Financial Officer, Steven Isakowitz, later stated that, although Chu did not impose deadlines, he pressed the Loan Program Office to “move much faster.”<sup>118</sup>

The congressional hearings concerned President Obama’s “stimulus” initiative, the American Recovery and Reinvestment Act (“Recovery Act”), signed into law in February 2009.<sup>119</sup> One provision authorized \$6 billion for spending on loan guarantees for innovative energy, with the stipulation that the projects had to start by 2011; it placed more of the risk of loan defaults on the government.<sup>120</sup> The idea of the Recovery Act was to pump money rapidly into the economy through “shovel-ready” projects in order to pull the nation out of a deep recession.<sup>121</sup> One result was to push the Energy Department to make quicker decisions on loans.<sup>122</sup> Meanwhile, Solyndra hired Steve McGee, a former Democratic Senate aide, to lobby in Washington.<sup>123</sup>

115. E-mail of Lachlan Steward (Jan. 13, 2009), available at [http://www.nytimes.com/interactive/2011/09/23/us/politics/20110923\\_solar\\_document.html?ref=solyndra#annotation/a33571](http://www.nytimes.com/interactive/2011/09/23/us/politics/20110923_solar_document.html?ref=solyndra#annotation/a33571).

116. See House Republican Report, *supra* note 78, at 16 (pointing out the changes associated with Steven Chu taking office).

117. See House Republican Report, *supra* note 78, at 16 (providing a statement of Matthew Rogers, then-Senior Advisor to the Sec’y of Energy for Recovery Act Implementation, U.S. Dep’t of Energy) (citing *Processes for Management and Oversight of ARRA Activities: Hearing Before the Subcomm. on Investigations & Oversight of the H. Comm. on Sci. & Tech.*, 111th Cong. 7 (2009)).

118. House Republican Report, *supra* note 78, at 16.

119. American Recovery and Reinvestment Act of 2009, Pub. L. No.111-5, 123 Stat. 1115 (codified at scattered sections of 26 U.S.C.).

120. *Id.* tit. 17, 123 Stat. 140.

121. See House Republican Report, *supra* note 78, at 16 (describing the idea behind the Recovery Act).

122. See House Republican Report, *supra* note 78, at 16 (providing testimony that the Recovery Act pushed the Department to “reduce the time cycle” for loan reviews).

123. N.Y. TIMES, *Blinding Officials to a Solar Energy Company’s Condition*, 5, available at [http://www.nytimes.com/interactive/2011/09/23/us/politics/20110923\\_solar\\_document.html?ref=Solyndra](http://www.nytimes.com/interactive/2011/09/23/us/politics/20110923_solar_document.html?ref=Solyndra) (last visited Nov. 7, 2012) (providing a special report of documents about Solyndra).

A rapid decision on the Solyndra application was spurred by Matthew Rogers, advisor to Secretary Chu on expenditures under the Recovery Act.<sup>124</sup> A loan office staff member sent an e-mail message on March 5 stating: “Hot off the press. Dates were reviewed with Matt Rogers. The wish is to have Solyndra through the [Department’s credit review board] in time for the President’s speech in California on the 18th.”<sup>125</sup> Another e-mail from an Office of Management and Budget employee on March 6 stated that “DOE staff just told me that there’s a 99 percent certainty that President Obama, on March 19th in California for other reasons will announce that DOE is offering a loan guarantee to Solyndra. As far as I can tell, the obligation won’t be entered into until May, but once the president endorses it, I doubt seriously that the secretary will withdraw for any reason.”<sup>126</sup> Rogers himself later testified, however, that the speech was not the impetus for quick action; rather, that they were “two different events.”<sup>127</sup>

Solyndra and the Department reached an agreement on essential terms of the proposed loan guarantee on March 10.<sup>128</sup> Steven Isakowitz, chief of the Loan Program Office, wrote to Secretary Chu’s chief of staff that the Office Credit Review Board meeting would be moved up to March 13, instead of March 19, after learning that the White House had “great interest” in the Solyndra guarantee.<sup>129</sup> There was a problem, however, with the President’s highlighting of Solyndra in his speech in California on March 19, 2009.<sup>130</sup> The speech was planned for Los Angeles, far from the corporation’s headquarters near the San Francisco Bay; it appears that Ronald Klain, chief of staff to Vice President Biden, had misunderstood the

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124. See House Republican Report, *supra* note 78, at 18 (discussing “Swat teams [sic] on Solyndra, Beacon And [Redacted]”) (citing E-mail from Matt Rogers to Steve Isakowitz and David Frantz (Feb. 21, 2009, 2:07 AM)).

125. See House Republican Report, *supra* note 78, at 18 (discussing “Project Processing Timelines” and attaching an Excel spreadsheet entitled “Project Processing Accelerated Timelines-Shaded”) (citing E-mail from Dir., U.S. Dep’t Energy Loan Programs Office, to Program Manager, U.S. Dep’t of Energy Loan Programs Office et al. (Mar. 5, 2009, 5:10 PM)).

126. See House Republican Report, *supra* note 78, at 30–31 (citing E-mail from Program Analyst, OMB, to Kevin Carroll, Energy Branch Chief, OMB et al. (Mar. 6, 2009, 10:56 AM)).

127. See House Republican Report, *supra* note 78, at 19 (explaining that the President’s speech and the Committee meetings were separate events).

128. See House Republican Report, *supra* note 78, at 20 (stating the date on which the agreement was reached).

129. See House Republican Report, *supra* note 78, at 20 (relating the reason behind the change in the date of the meeting).

130. See House Republican Report, *supra* note 78, at 20 (highlighting a problem with the allotted time slot for the Committee meeting).

location of the company.<sup>131</sup> Klain discussed the option of having Solyndra officials travel to Southern California, or, with the option eventually chosen, having the President discuss another clean energy project.<sup>132</sup>

On March 17, 2009, the Energy Department's Credit Review Board, which only two months earlier had held off a decision, approved Solyndra's application.<sup>133</sup> The approval was subject to conditions that would be hashed out over the next few months.<sup>134</sup> Chief among the concerns was a desire for proof of how Solyndra's product would fare against competitors in the solar panel market.<sup>135</sup> Although the Credit Review Board did not appear to discuss it, the price of silicon, used in competitors' panels, was falling during 2009 as the result of increased production.<sup>136</sup> This market change cut away at the supposed advantage for Solyndra's non-silicon panels.<sup>137</sup>

Meanwhile, the Energy Department was required by the Energy Policy Act to consult with the Department of the Treasury before making the loan guarantee.<sup>138</sup> Treasury employees later testified that their consultation was "rushed" into a few days.<sup>139</sup> In particular, Treasury official

131. See House Republican Report, *supra* note 78, at 20 (asking to confirm that Solyndra was in Los Angeles) (citing E-mail from Ron Klain to Matt Rogers and Rod O'Connor (Mar. 10, 2009, 10:06 AM)); E-mail from Ron Klain to Matt Rogers and Rod O'Connor (Mar. 10, 2009, 10:30 AM) (pointing out that the President's speech was scheduled for Los Angeles).

132. See House Republican Report, *supra* note 78, at 21 (citing various e-mail discussions).

133. See House Republican Report, *supra* note 78, at 21, 23 ("Less than two months after it had remanded the Solyndra application during the Bush Administration . . . the CRB meeting went forward on March 17, 2009. . . . After just over one hour of discussion, the CRB unanimously approved the offer to Solyndra of a \$535 million loan guarantee.").

134. See House Republican Report, *supra* note 78, at 23–24 ("Title XVII provides that the 'Secretary shall make guarantees . . . for projects on such terms and conditions as the . . . Secretary determines . . .').

135. See House Republican Report, *supra* note 78, at 23 (noting "the March Credit Committee's request for additional information about Solyndra's market competitors").

136. See House Republican Report, *supra* note 78, at 12 ("By the time DOE decided to award a conditional commitment to Solyndra in March 2009, the price for polysilicon was dropping sharply, dramatically affecting the viability of Solyndra's business model.") (citing Philip Brown, Cong. Research Serv., R42058, *Market Dynamics That May have Contributed to Solyndra's Bankruptcy*, at 1–3 (Oct. 25, 2011), available at <http://www.crs.gov/Products/R/PDF/R42058.pdf>).

137. See House Republican Report, *supra* note 78, at 12 ("At the time DOE began its due diligence of the Solyndra application in 2008, the solar market was a much different place than it is today.").

138. 42 U.S.C. § 16512(a).

139. See House Republican Report, *supra* note 78, at 24 ("Although Treasury officials told the Treasury IG that there was 'enough time' to review the terms and conditions of the Solyndra guarantee, the Treasury IG nonetheless concluded that the consultation was 'rushed.'") (citing Office of the Inspector General, U.S. Dep't of Treasury, *Audit Rep't*:



Paula Farrell complained on March 17 that Treasury wanted “not to be brought in at the tail end when the terms of the deal had already been negotiated.”<sup>140</sup> In particular, Treasury staff expressed concern over the large ratio of debt in the debt-to-equity split proposed by the Energy Department.<sup>141</sup> Two days later, however, Treasury informed Energy of its “clearance” to approve the loan guarantee deal.<sup>142</sup>

The Office of Management and Budget (“OMB”), which is the executive branch’s financial watchdog, also reviewed the proposed Solyndra loan.<sup>143</sup> Although OMB official Sally Ericsson wrote on March 10 that “[t]his deal is NOT ready for prime time,” referring to the plan to have President Obama tout the Solyndra loan on March 19, OMB did not endeavor to stop the deal.<sup>144</sup> The Energy Department granted to Solyndra a conditional loan guarantee on March 19, 2009.<sup>145</sup> This was the first such loan guarantee under the Energy Policy Act.<sup>146</sup>

From March through August 2009, Solyndra and the Energy Department each took steps toward finalizing the deal. The company raised

*Consultation on Solyndra Loan Guarantee Was Rushed* [hereinafter TREASURY IG REPORT], OIG-12-048, at 5–7 (Aug. 2, 2012), available at <http://energycommerce.house.gov/sites/republicans.energycommerce.house.gov/files/analysis/20120802solyndra.pdf>).

140. House Republican Report, *supra* note 78, at 26 (quoting E-mail from Paula Farrell, Dir., U.S. Dep’t of Treasury Office of Policy & Legislative Review, to Ken Carfine, Fiscal Assistant Sec’y, U.S. Dep’t of Treasury et al. (Mar. 17, 2009, 4:27 PM)). Note that it was a woman who expressed a desire for caution.

141. See House Republican Report, *supra* note 78, at 28 (“The concerns listed in the Treasury IG’s Audit Report were the same as those identified by Mr. Burner, mainly, the debt-to-equity split, Treasury’s ‘preference for a partial guarantee versus 100 percent guarantee,’ and DOE’s rights to Solyndra’s intellectual property in the event of a default.”) (citing TREASURY IG REPORT, *supra* note 139, at 5).

142. See House Republican Report, *supra* note 78, at 29 (“Mr. Carfine emailed Secretary Geithner’s Chief of Staff, Mr. Patterson, on March 19, 2009, and informed him that Treasury was giving DOE ‘clearance to announce the program and sign the term sheet.’”) (citing E-mail from Ken Carfine to Mark Patterson et al. (Mar. 19, 2009, 4:00 PM)).

143. See House Republican Report, *supra* note 78, at 30 (explaining OMB’s role and authority).

144. House Republican Report, *supra* note 78, at 31 (quoting E-mail from Sally Ericsson to Robert Nabors (Mar. 10, 2009, 11:59 AM)). Note that it was a woman who expressed a desire for caution.

145. See House Republican Report, *supra* note 78, at 31 (“As discussed above, DOE stimulus advisor, Mr. Rogers, emailed Mr. Klain to inform him of this event, and stated that the agreement was ‘setting us up for the first loan guarantee conditional commitment for the president’s visit to California on the 19th.’”).

146. See House Republican Report, *supra* note 78, at 31 (“Drafting these agreements was made more difficult by the fact that Solyndra was the first loan guarantee; the DOE Loan Programs Office was not able to work from a template or refer to past agreements.”).

\$198 million from private investors, supplementing the federal loan.<sup>147</sup> The largest private investor was Argonaut, the investment arm of the George Kaiser Family Foundation.<sup>148</sup> Since the Solyndra bankruptcy, some critics have speculated that the Administration chose Solyndra or took excessive risks in order to please George Kaiser, an Oklahoma oilman, who was an important Obama fundraiser.<sup>149</sup>

Meanwhile, the Energy Department obtained a final credit rating and a marketing report on Solyndra's prospects.<sup>150</sup> In August 2009, Fitch Ratings assigned the Solyndra loan a double-B-minus rating for "speculative," which it defines as indicating an "elevated vulnerability to default risk."<sup>151</sup> This rating should not be surprising. After all, a business with an apparently surefire profit-making plan does not need to seek out a government carrot; it can obtain financing easily from private sources. Only risky ventures need the government's help. In any event, Fitch also estimated that there was an 89 % chance that the government could recover its investment in the case of default.<sup>152</sup>

Fitch noted that the price of solar panels was under "extreme competitive pressures" and that this would be the largest challenge to the success of the Solyndra's Fab 2 plan.<sup>153</sup> The Energy Department's credit

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147. See House Republican Report, *supra* note 78, at 32 ("For Solyndra, the period between the conditional commitment and the loan closing in September 2009 was spent fulfilling the conditions precedent to closing—mainly, raising the \$198 million in equity from investors.").

148. See House Republican Report, *supra* note 78, at 32 ("Argonaut, the primary investment arm of the George Kaiser Family Foundation (GKFF), contributed \$130 million of the \$286 million Solyndra raised, becoming the company's largest shareholder.").

149. See, e.g., Matthew Mosk and Ronnie Greene, *Did Obama Administration Cut Corners For a Green Energy Company?*, ABC NEWS (May 24, 2011), <http://abcnews.go.com/Blotter/obama-administration-solyndra/story?id=13640783&singlePage=true#.UJUhbkBUQ> (asking rhetorically if President Obama played favorites) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment). While Kaiser's participation was well known, as explained in the text, it is important to clarify that even the House Republican Energy Committee Report did not conclude that the decision to fund Solyndra was done in order to help Obama's fundraiser. See House Republican Report, *supra* note 78, at 144–46 (discussing the influence of George Kaiser).

150. See House Republican Report, *supra* note 78, at 31 ("For DOE, this meant obtaining a final marketing report, a final credit rating assessment from the Fitch credit rating agency, and completing other due diligence.").

151. See House Republican Report, *supra* note 78, at 32 (quoting Letter from Managing Director, Fitch Ratings, to Wilbur G. "Bill" Stover, CFO, Solyndra, Inc. (Aug. 7, 2009)).

152. See House Republican Report, *supra* note 78, at 33 ("In addition to the rating, Fitch estimated that there would be an 89 % chance of recovery in the event of default.").

153. See House Republican Report, *supra* note 78, at 32–33 ("In the letter, Fitch noted that the pricing of photovoltaic solar panels was then under 'extreme competitive pressures,'

policy director once again expressed to her superiors her concerns over Solyndra's financial projections, including its working capital and the potential for dangerous cost overruns.<sup>154</sup>

In the summer of 2009, White House interests once again affected the timing, and perhaps the substance, of the Energy Department's decisions on Solyndra. This time, a chief catalyst appears to have been Aditya Kumar, Director for Special Projects for Rahm Emanuel, then chief of staff for President Obama.<sup>155</sup> The chief of staff typically is the advisor with the closest day-to-day connection with the President. Inquiring on August 10 about when the Department would give its final approval to the Solyndra loan, Kumar asked about the "announcement value" of the loan finalization at a groundbreaking in Fremont, pointing out that it would "lead to thousands of new jobs."<sup>156</sup> The next day, Emanuel himself wrote in an e-mail to the Energy Department that "we want to think about the potential announcement value in this," and suggested that Vice President Biden participate in an event to publicize the Solyndra loan.<sup>157</sup> A week later, Vice President Biden's Chief Staff Ron Klain explained that "Rahm was super hot for this" because "[j]obs and high tech and Recovery Act is a winning combination."<sup>158</sup>

On August 17, Kumar e-mailed scheduling personnel for President Obama and wrote that "Ron [Klain, Biden's chief of staff] said this morning that the POTUS [President Obama] definitely wants to do this (or

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and that these pressures 'will be the largest challenge facing Solyndra and the largest credit risk incurred in repayment of the Fab 2 loan.'")

154. See House Republican Report, *supra* note 78, at 34 ("If even a small amount of the project's cash was 'tied up in working capital,' Ms. Colyar projected that the project 'will face a funding shortfall' and that '[e]ven one day of [Accounts Receivable] results in a negative cash balance.'").

155. In 2013, Emanuel was mayor of Chicago, Illinois. See *generally About the Mayor, CITY OF CHICAGO*, [http://www.cityofchicago.org/city/en/depts/mayor/supp\\_info/about\\_the\\_mayor.html](http://www.cityofchicago.org/city/en/depts/mayor/supp_info/about_the_mayor.html) (last visited Nov. 1, 2012) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

156. House Republican Report, *supra* note 78, at 35 (quoting E-mail from Aditya Kumar, Dir. of Special Projects, The White House, to Jay Carney, Dir. of Comm., Office of the Vice President, Elizabeth Oxhorn, Spokeswoman for the Recovery Act, The White House & Ron Klain (Aug. 10, 2009, 11:07 PM)).

157. Tamara Best, *Milestones: Solyndra's Meltdown*, N.Y. TIMES (Oct. 14, 2011), *available at* [http://www.nytimes.com/interactive/2011/10/04/us/20111004\\_SOLYNDRA\\_TIMELINE.html?ref=Solyndra](http://www.nytimes.com/interactive/2011/10/04/us/20111004_SOLYNDRA_TIMELINE.html?ref=Solyndra).

158. House Republican Report, *supra* note 78, at 39 (quoting E-mail from Heather Zichal to Ron Klain (Aug. 19, 2009) (reviewed in camera by Committee staff)).

Rahm definitely wants the POTUS to do this).<sup>159</sup> Kumar then pushed the scheduling personnel for a date for a presidential appearance; he was told that the earliest date available was September 8.<sup>160</sup> Spurred by Kumar, Energy officials then requested that the President set aside time on this date.<sup>161</sup> On August 19, the White House Staff created a Scheduling Proposal for President Obama, stating that the Solyndra loan proposal was a “prime example of a public-private partnership” and would create thousands of new jobs.<sup>162</sup>

On the same day, however, Kumar inquired about concerns expressed by Heather Zichal, a deputy to the White House climate change policy director.<sup>163</sup> Zichal explained that the financial funding community was skeptical of Solyndra’s Fab 2 plan.<sup>164</sup> Nonetheless, after being told of Emanuel’s enthusiasm for the planned Solyndra event, Zichal stated: “[B]ut if Rahm wants it, we’ll make it happen.”<sup>165</sup> During the next week, plans for

159. See House Republican Report, *supra* note 78, at 36 (quoting E-mail from Aditya Kumar to Alyssa Mastromonaco, Ass’t to the President & Dir. of Scheduling & Advance, The White House et al. (Aug. 17, 2009, 9:56 AM)).

160. See House Republican Report, *supra* note 78, at 36–37 (“Mr. Kumar asked about the President’s availability in early September for an appearance via satellite at the event . . . Ms. Crutchfield responded that the President’s schedule was ‘packed’ and that the earliest date available for a possible Solyndra event was September 8.”).

161. See House Republican Report, *supra* note 78, at 37 (“Forwarding his exchange with Ms. Crutchfield to DOE, Mr. Kumar asked . . . whether an event on or about September 8, 2009, that would include in-person appearances by Secretary Chu and a senior White House official and satellite remarks by the President, would suit DOE’s schedule.”).

162. House Republican Report, *supra* note 78, at 40.

163. See House Republican Report, *supra* note 78, at 37 (“After discussing a possible announcement event with DOE, documents produced by the White House show that Mr. Kumar became aware that Heather Zichal, a top deputy to White House Office of Energy and Climate Change Policy Director Carol Browner, had concerns about the Solyndra event.”). The White House climate change policy director was Carol Browner, former administrator of EPA under President Clinton. See *Carol Browner*, CTR. FOR AM. PROGRESS, <http://www.americanprogress.org/about/staff/browner-carol/bio/> (last visited Jan. 7, 2013) (providing career data about Carol Browner) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment). Once again, it was a woman who expressed a desire for caution. During e-mail exchanges on Aug. 20, an Energy Department stimulus advisor sent to Kumar a list of Solyndra’s investors, including a biography of George Kaiser, the leading private investor and fundraiser for president Obama. See House Republican Report, *supra* note 78, at 227 (“The following day, he forwarded to Mr. Kumar a list of Solyndra’s major investors and a Forbes.com biography of George Kaiser.”) (citing E-mail from Steve Spinner to Aditya Kumar (Aug. 20, 2009, 11:54 AM)).

164. See House Republican Report, *supra* note 78, at 38–39 (stating that people in the financial community raised concerns about the Solyndra loan guarantee).

165. House Republican Report, *supra* note 78, at 39 (quoting E-mail from Heather Zichal, Deputy Assistant to President for Energy & Climate Change Policy, Deputy Dir., Office of Energy & Climate Change Policy to Ronald Klain, Chief of Staff to Vice President (Aug. 19, 2009)).

the announcement accelerated.<sup>166</sup> Kumar wrote on August 25 that he now planned for Vice President Biden to speak by satellite, not on September 8 but on September 4.<sup>167</sup> The change, he explained, was because “[i]t’s the same day unemployment numbers come out, and we[] want to use this as an example of where the Recovery Act is helping [to] create new high tech jobs.”<sup>168</sup>

On the same day, however, the OMB briefed the Energy Department on its findings concerning the Solyndra loan.<sup>169</sup> This briefing comprehensively summarized the financial aspects of the plan, including the risks that Solyndra would face stiff competition, especially over price.<sup>170</sup> OMB specifically requested further information about the energy efficiency of Solyndra’s panels compared to that of competing panels.<sup>171</sup>

Three days later, an Energy Department official inquired anxiously whether the OMB would soon complete its review, because he had “the OVP [Office of the Vice President] and WH [White House] breathing down my neck on this.”<sup>172</sup> Over the next few days, numerous officials from the White House and Energy Department badgered OMB to wrap up its review.<sup>173</sup> On September 1, OMB staff met to discuss Solyndra.<sup>174</sup> At least

166. See House Republican Report, *supra* note 78, at 40 (presenting the scheduling proposal and its changes regarding satellite remarks by the President and Vice President).

167. See House Republican Report, *supra* note 78, at 40 (reflecting the decision to move the Vice President’s speech from September 8 to September 4).

168. See House Republican Report, *supra* note 78, at 40 (quoting E-mail from Aditya Kumar, Deputy Assistant to Vice President & Senior Advisor to Vice President’s Chief of Staff to Steve Spinner, Small Bus. Loan Guarantee Program Advisor on Recovery Act et al. (Aug. 25, 2009, 10:28 EST)).

169. See House Republican Report, *supra* note 78, at 41 (offering a briefing on Office of Management and Budget’s findings on Solyndra’s loan on September 4) (citing U.S. Dep’t of Energy, *Solyndra FAB 2, LLC: \$733 Million Capacity Expansion for Manufacturer of Thin Film Omnifacial Solar Modules for Commercial Roof Top Applications* [Presentation to Office Mgmt. & Budget (OMB)] (Aug. 25, 2009)).

170. See House Republican Report, *supra* note 78, at 41–42 (summarizing Solyndra’s financial model) (citing U.S. Dep’t of Energy, *Solyndra FAB 2, LLC: \$733 Million Capacity Expansion for Manufacturer of Thin Film Omnifacial Solar Modules for Commercial Roof Top Applications* [Presentation to OMB] (Aug. 25, 2009)).

171. See House Republican Report, *supra* note 78, at 42–43 (requesting more information from the Department of Energy regarding Solyndra’s recovery and risk ratings for the project).

172. House Republican Report, *supra* note 78, at 43 (quoting E-mail from Steve Spinner, Small Bus. Loan Guarantee Program Advisor on Recovery Act to Kelly Colyar, Dir. of Credit Policy, Loan Program Office (Aug. 28, 2009, 12:51 EST)).

173. See House Republican Report, *supra* note 78, at 43–45 (“[T]he White House and DOE grew increasingly anxious about the amount of time Office of MB was taking to review the deal. A number of e-mails and calls were placed by DOE and the White House to OMB to determine the status of the Solyndra review.”) (citing messages from Aditya Kumar, Deputy Assistant Vice President & Senior Advisor to Ronald Klain, Vice President’s Chief of Staff et al.).

one staff member stated that the questions about energy efficiency had not been answered satisfactorily.<sup>175</sup> Others expressed concern that OMB had not had its usual thirty days in which to review the full details of the loan guarantee.<sup>176</sup> Finally, however, on the afternoon of September 1, OMB staff concluded that it would not block the Solyndra loan guarantee.<sup>177</sup>

Three days later, on September 4, in Fremont, Solyndra broke ground for the Fab 2 facility, with Energy Secretary Chu in attendance and Vice President Biden appearing by satellite video.<sup>178</sup> Thanking President Obama and the Energy Department, Solyndra noted in a news release that it was the first recipient of a loan under the Energy Policy Act.<sup>179</sup> Boasting of a backlog of orders, Solyndra asserted that its operations “will produce enough solar panels over their lifetime to cut over 350 million metric tons of CO<sub>2</sub> emissions or 850 million barrels of oil.”<sup>180</sup>

During 2009, however, Solyndra's business languished.<sup>181</sup> With prices falling for competing silicon-based panels, the company's cash flow deteriorated.<sup>182</sup> Solyndra sought further financing, both from the government and from its private investors.<sup>183</sup> In late 2009, Argonaut, the leading private investor, suggested the possibility of another federal loan

174. See House Republican Report, *supra* note 78, at 45 (recounting that the OMB staff met on September 1, 2009 and discussed Solyndra's panel efficiency).

175. See House Republican Report, *supra* note 78, at 45 (“Solyndra has not commissioned a test which I think is the gold standard—comparison of the performance of Solyndra vs. regular panel installations at scale on similar roofs. This really should be possible, and I find it disturbing that only modeling results for such a comparison are available.”) (quoting E-mail from Program Exam'r, OMB to Kevin Carroll, Chief of Energy Branch, OMB et al. (Sept. 1, 2009, 11:02 EST)).

176. See House Republican Report, *supra* note 78, at 45 (contemplating waiving the thirty day review period despite the lack of extraordinary circumstances) (citing E-mail from Richard Mertens, to Sally Ericsson, Program Assoc. Dir., Natural Res. Program, OMB & Kevin Carroll, Chief, Energy Branch, OMB (Sept. 1, 2009, 14:34 EST)).

177. See House Republican Report, *supra* note 78, at 46 (concluding that the “Solyndra deal could go forward”).

178. See House Republican Report, *supra* note 78, at 46 (confirming Vice President Biden's satellite appearance and Secretary Chu's in-person appearance at Solyndra's groundbreaking event).

179. Solyndra Corp., *Solyndra Breaks Ground on New 500 Megawatt Solar Plant* (Sept. 4, 2009), <http://www.solyndra.com/2009/09/megawatt-solar> (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

180. *Id.*

181. See House Republican Report, *supra* note 78, at 47 (revealing Solyndra's weakening financial position throughout 2010).

182. See House Republican Report, *supra* note 78, at 47–48 (discussing the deteriorating financial condition and “the events that precipitated Solyndra's running out of cash”).

183. See House Republican Report, *supra* note 78, at 47–48 (seeking to “obtain a second [Department of Energy] loan guarantee and secure additional government assistance during this time period”).

guarantee of more than \$400 million for additional work on Feb 2.<sup>184</sup> George Kaiser articulated to Steve Mitchell, the Managing Director of Argonaut Private Equity, in December “that he thought there was ‘significant risk to getting a second loan (because of the political concern about giving too much to one supplicant and one technology).’”<sup>185</sup> On February 24, 2010, Kaiser met with staff officials of the Office of Vice President Biden at the White House, where he discussed a variety of issues, including Solyndra.<sup>186</sup> In a later message to the head of his Argonaut fund, Kaiser related that the government officials called Solyndra “one of their prime poster children.”<sup>187</sup> The Energy Department once again began due diligence preparation for a second loan guarantee.<sup>188</sup>

In early 2010, however, Solyndra’s troubles were widely publicized.<sup>189</sup> The company’s auditor, PricewaterhouseCoopers, filed on March 16 an addendum to Solyndra’s S-1 registration with the Securities and Exchange Commission.<sup>190</sup> The document concluded soberly that the “[c]ompany has suffered recurring losses from operations, negative cash flows since inception and has a net stockholders’ deficit that, among other concerns, raises substantial doubt about its ability to continue as a going concern.”<sup>191</sup>

184. See House Republican Report, *supra* note 78, at 49–50 (discussing a second loan guarantee of \$469 million and reflecting Argonaut’s approval of such a loan) (citing E-mail from Inv. Manager, Argonaut Private Equity, to George Kaiser, Chairman, BOK Fin. Corp. & Steve Mitchell, Managing Dir., Argonaut Private Equity (Dec. 17, 2009, 09:39 EST)).

185. See House Republican Report, *supra* note 78, at 50 (quoting E-mail from George Kaiser, Chairman, BOK Fin. Corp. to Steve Mitchell, Managing Dir., Argonaut Private Equity et al. (Dec. 17, 2009, 09:42 EST)).

186. See House Republican Report, *supra* note 78, at 51 (identifying the meeting between Kaiser, Levit, and officials of the Office of Vice President Biden) (citing E-mail from Kenneth Levit, Exec. Dir., George Kaiser Family Found. to Steve Mitchell, Managing Dir., Argonaut Private Equity (Feb. 27, 2010, 07:55 EST)). Levit, the head of the George Kaiser’s foundation, wrote to the head of Kaiser’s Argonaut, of the Biden officials, “They about had an orgasm in Biden’s office when we mentioned Solyndra.” See House Republican Report, *supra* note 78, at 51.

187. See House Republican Report, *supra* note 78, at 52 (quoting E-mail from George Kaiser, Chairman, BOK Fin. Corp. to Steve Mitchell, Managing Dir., Argonaut Private Equity et al. (Mar. 5, 2010, 18:38 EST)).

188. See House Republican Report, *supra* note 78, at 52–53 (reporting that “Solyndra’s application for the second loan guarantee was slated to enter into due diligence on March 17, 2010”).

189. See House Republican Report, *supra* note 78, at 47 (recounting the mounting questions of Solyndra’s financial condition in the spring of 2010).

190. House Republican Report, *supra* note 78, at 48 (citing Solyndra, Inc., Amendment to S-1 Registration Statement (Form S-1/A) (Mar. 16, 2010), available at <http://www.sec.gov/Archives/edgar/data/1443115/000119312510058567/ds1a.htm> [hereinafter PWC S-1 Amendment]).

191. PWC S-1 Amendment, *supra* note 190.

This document sounded alarms at the Energy Department and OMB and among private investors and the business press.<sup>192</sup> One alarmist was Steve Westley, a venture capitalist and Obama contributor, who emailed an assistant to the President in May, citing the SEC filing and the perception that the company was burning through its capital.<sup>193</sup> The pressing concern was that President Obama was about to make a publicized visit to Solyndra.<sup>194</sup> After concluding that the situation was not dire, the White House went ahead with the event.<sup>195</sup> President Obama spoke in Fremont on May 26, 2010.<sup>196</sup> After touting his Administration's financial help to students, seniors, and persons whose insurance had been dropped, he moved on to energy.<sup>197</sup> Noting that America's share of the solar panel industry had fallen over the previous decade, he cited the stimulus: "And we can see the positive impacts right here at Solyndra. Less than a year ago, we were standing on what was an empty lot. But through the Recovery Act, this company received a loan to expand its operations. This new factory is the result of those loans."<sup>198</sup> He also said: "The true engine of economic growth will always be companies like Solyndra."<sup>199</sup>

In June, however, Solyndra cancelled a planned initial public offering of stock—another sign of its weakening condition.<sup>200</sup> Meanwhile, private investors looked to the government as a savior.<sup>201</sup> One investor

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192. See House Republican Report, *supra* note 78, at 48 (discussing the negative impact of Solyndra's Form S-1 Filing with the SEC).

193. See House Republican Report, *supra* note 78, at 56 (citing E-mail from Steve Westley, Managing Partner, The Westley Group, to Valerie Jarrett, Senior Advisor to the President, the White House (May 24, 2010, 03:10 EST)).

194. See House Republican Report, *supra* note 78, at 49 (discussing the risk of embarrassment to the President and the Department of Energy from Solyndra's financial troubles).

195. See House Republican Report, *supra* note 78, at 56–57 (referring to messages between the White House, the Vice President's Office, and the Energy Department).

196. See President Barack Obama, Remarks by the President on the Economy at Solyndra, Inc., Fremont, Cal.

(May 26, 2010), <http://www.whitehouse.gov/the-press-office/remarks-president-economy-0> (addressing Solyndra employees after touring the Solyndra facility) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

197. See *id.* (addressing the federal government's actions in response to the recession).

198. *Id.*

199. *Id.* Following President Obama's visit, a Solyndra lobbyist visited White House official Roger Nelson in Washington. See *Blinding Officials*, *supra* note 123, at 38 (reproducing E-mail from Joe Posetti to Roger Nelson (Aug. 9, 2010)).

200. See House Republican Report, *supra* note 78, at 49 (discussing the role of the Department of Energy in monitoring Solyndra's financial condition).

201. See House Republican Report, *supra* note 78, at 50 ("On December 17, 2009, an Argonaut investment manager emailed George Kaiser and others stating 'G[oldman] S[achs] and we agree that a second DOE loan is a necessary condition for going public in spring 2010'" (quoting E-mail from Inv. Manager, Argonaut Private Equity, to George Kaiser,



wrote in August that “getting business from Uncle Sam is a principal element of Solyndra’s channel strategy.”<sup>202</sup> A few months later, Argonaut’s chief wrote to Kaiser that “[t]he current thinking is that the White House chief of staff is the right person to approach— obviously big changes in that role and they have asked who has strong connections there.”<sup>203</sup> Peter Rouse had replaced Rahm Emanuel as the President's chief of staff.<sup>204</sup> The Argonaut chief soon thereafter expressed a hope that Kaiser could be a “direct pathway,”<sup>205</sup> and that “[a]ll we are asking is that the WH helps us soften some of the terms of the DOE financing we received and work with us to give Solyndra the runway needed to take off (i.e. help us get some orders with DOD and others, which Obama offered to do in May). If they don’t, it will be a tragic failure of not just one high-potential company, but of an Obama effort to nurture an industry of the future.”<sup>206</sup> Kaiser himself met with President Obama on Oct. 23, 2010; he later wrote that he discussed the solar business in general, including China’s subsidies of its solar panel industry and effects on American manufacturers, but not Solyndra specifically.<sup>207</sup>

As 2010 progressed, Solyndra’s financial condition worsened.<sup>208</sup> In September, a consultant reported to the Energy Department that “Solyndra’s current cost structures are too high to compete long term in the solar PV market.”<sup>209</sup> The report specifically mentioned lower-cost Chinese competitors.<sup>210</sup> In October, Solyndra informed the Energy Department that

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Chairman, BOK Fin. Corp. and Steve Mitchell, Managing Dir., Argonaut Private Equity (Dec. 17, 2009, 09:39 EST)).

202. See House Republican Report, *supra* note 78, at 57 (quoting E-mail from Tom Baruch, Founder & Partner Emeritus, CMEA Capital, to Steve Mitchell et al. (Aug. 10, 2010, 19:46 EST)).

203. See House Republican Report, *supra* note 78, at 60 (quoting E-mail from Steve Mitchell to George Kaiser (Oct. 3, 2010, 23:24 EST)).

204. See House Republican Report, *supra* note 78, at 60 (discussing how best to approach the government with respect to the dire financial conditions of Solyndra) (citing E-mail from George Kaiser to Kenneth Levit (Oct. 4, 2010, 12:03 EST)).

205. See House Republican Report, *supra* note 78, at 60 (quoting E-mail from Steve Mitchell to Kenneth Levit, et al. (Oct. 6, 2010, 18:15 EST)).

206. See House Republican Report, *supra* note 78, at 61 (quoting E-mail from Steve Mitchell to Kenneth Levit (Oct. 6, 2010, 18:54 EST)).

207. See House Republican Report, *supra* note 78, at 62 (recounting George Kaiser’s brief conversation with President Obama regarding China, Solyndra, and subsidies) (citing E-mail from George Kaiser to Kenneth Levit (Oct. 23, 2010, 00:28 EST)).

208. See House Republican Report, *supra* note 78, at 64 (“While Solyndra and its advocates were pursuing an aggressive government sales strategy throughout the fall of 2010, the company’s financial condition was rapidly declining.”).

209. House Republican Report, *supra* note 78, at 66 (quoting Navigant Consulting, Inc., DOE Loan Guarantee Program Final Report (Sept. 22, 2010)).

210. See House Republican Report, *supra* note 78, at 66 (discussing the barriers to success for Solyndra in the solar PV market).

the company's "situation has changed drastically."<sup>211</sup> Without additional loan funds, the company reported, it "would run out of cash in November."<sup>212</sup>

Later in October, the Energy Department learned that Solyndra was planning to lay off 200 of its 1200 workers on October 28.<sup>213</sup> During a company conference call with investors, however, a participant stated that "[t]he DOE has requested a delay until after the election (without mentioning the election), but management believes they need to communicate as quickly as possible . . . ."<sup>214</sup> Solyndra made the layoff announcement in California on November 3, the day of the mid-term elections.<sup>215</sup> At a congressional hearing a year later, Secretary Chu denied knowing of a request to delay the announcement, saying that "it is not the way I do business" and promising to investigate the matter.<sup>216</sup> At about the same time, White House environmental advisors wrote to the President of their complaints with the Energy Department, including its "slow implementation" of the loan guarantee program and the excessive risks in these loans.<sup>217</sup>

As Solyndra's precarious position became clear at the end of 2010, each stakeholder pushed an agenda.<sup>218</sup> The company sought to restructure its loan to shore up its finances, while the investors and government sought

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211. See House Republican Report, *supra* note 78, at 66 (attaching presentation entitled "Fab 2 Front End—October 10, 2010") (quoting E-mail from Wilbur G. "Bill" Stover to Frances Nwachuku et al. (Oct. 12, 2010, 02:27 EST)).

212. See House Republican Report, *supra* note 78, at 66.

213. See House Republican Report, *supra* note 78, at 67–68 (citing the October 12, 2010 "Consolidation Plan" proposed by Solyndra and the plans to announce the plan in November).

214. See House Republican Report, *supra* note 78, at 68 (quoting E-mail from Solyndra Investor to Kenneth Levit et al. (Oct. 27, 2010, 07:26 EST)).

215. See House Republican Report, *supra* note 78, at 68 (discussing Solyndra's announcement of layoffs).

216. House Republican Report, *supra* note 78, at 68 (quoting The Solyndra Failure: Views from DOE Secretary Chu: Hearing Before the Subcomm. on Oversight & Investigations of the H. Comm. on Energy & Commerce, 112th Cong. 84, at 112, 119 (2011) (testimony of Steven Chu, Sec'y, U.S. Dep't of Energy), <http://archives.republicans.energycommerce.house.gov/hearings/hearingdetail.aspx?NewsID=9090>) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

217. See House Republican Report, *supra* note 78, at 70–71 (discussing the increased scrutiny by the White House of the Loan Guarantee Program) (citing Memorandum for the President from Carol Browner, Dir., Office of Energy & Climate Change Policy, The White House, Ron Klain, Chief of Staff, Office of the Vice President & Lawrence Summers, Dir., Nat'l Econ. Council, The White House, *Renewable Energy Loan Guarantees and Grants*, at 1, 4 (Oct. 25, 2010)).

218. See House Republican Report, *supra* note 78, at 70–72 (discussing the negotiations over restructuring the DOE loan).

to improve their positions against the other in the event of a bankruptcy.<sup>219</sup> In December, Argonaut informed the Energy Department that it would commit additional money to Solyndra if the federal government agreed to commit an even larger amount of loan money.<sup>220</sup>

Eventually, the Energy Department agreed to a complex restructure of the loan guarantee, in which private investors lent another \$75 million to Solyndra, and under which the government's status as creditor was made subordinate to that of the private investors.<sup>221</sup> The restructuring plan immediately raised questions about the legality of making taxpayer guarantees subordinate to private investment.<sup>222</sup> The Energy Policy Act of 2005, under which the loan was made, states: "The obligation shall be subject to the condition that the obligation is not subordinate to other financing."<sup>223</sup> The Energy Department's Loan Policy Office asked for an opinion from law firm Morrison & Foerster L.L.P., which drafted a memorandum concluding that the law prohibited subordination.<sup>224</sup> The Department, however, concluded that it was the best interpreter of the Act,<sup>225</sup> and this memorandum was never finalized.<sup>226</sup> Instead, the Department determined that the prohibition barred only subordination under the original terms of an obligation, not a restructuring.<sup>227</sup> The statute's use

219. See House Republican Report, *supra* note 78, at 70–72 (stating one of the arguments provided by Solyndra during the loan restructuring negotiations).

220. See House Republican Report, *supra* note 78, at 74 (discussing the loan restructuring negotiations and Solyndra's request from the government) (citing various letters from Argonaut's Steven Mitchell).

221. See House Republican Report, *supra* note 78, at 79 ("[Department of Energy] offered to subordinate its interest in the loan guarantee to Solyndra's investors on December 7, 2010.").

222. See House Republican Report, *supra* note 78, at 80–81 (stating that the Department of Energy offered to subordinate its interest on December 7, 2010, and that Loan Programs Office questioned the legality of subordination the next day).

223. 42 U.S.C. § 16512(d)(3) (2012).

224. See House Republican Report, *supra* note 78, at 81–82 ("Morrison & Foerster forwarded a draft of this memorandum . . . on January 3, 2011[, which] . . . states that 'Subordination of DOE-Guaranteed Loans is Prohibited.'"). Officials at both the OMB and Treasury Department expressed skepticism of the subordination. See House Republican Report, *supra* note 78, at 87–88, 104 (discussing questions of OMB and Treasury Department officials regarding the subordination).

225. See House Republican Report, *supra* note 78, at 82 ("[Morrison & Foerster] did not finish the legal analysis because DOE made the determination that it should be 'done in house,' as it was DOE's responsibility to interpret its own statute.").

226. See House Republican Report, *supra* note 78, at 82 ("[Morrison & Foerster's] memorandum was never finalized.").

227. See House Republican Report, *supra* note 78, at 94 (stating that the Department of Energy's argument was based on the provision's use of the present tense as well as the structure of the provision).

of the word “is” was critical to this interpretation.<sup>228</sup> Secretary Chu signed the Energy Department’s analysis on February 22, 2011.<sup>229</sup>

During 2011, Solyndra’s financial condition continued to worsen.<sup>230</sup> The Energy Department recognized in May that bankruptcy was real possibility.<sup>231</sup> In August, matters came to a head. On August 17, at a briefing for government officials, a consultant hired by the Department reported that “[a]bsent new funding in the near-term, the Company will be forced to begin an orderly wind-down of the business.”<sup>232</sup> The next morning, the chief of the Department’s Loan Program Office left a phone message with George Kaiser for the second time in a week, citing a “matter of some urgency.”<sup>233</sup> Kaiser decided not to return the call.<sup>234</sup> Later that day, however, Argonaut decided to fund Solyndra’s operating capital for one more week.<sup>235</sup> Meanwhile, other Energy Department officials were pushing to have Solyndra’s panels purchased for another government-funded solar program, called Amp, in which panels were to be installed on buildings managed by ProLogis, an international real estate company.<sup>236</sup>

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228. See House Republican Report, *supra* note 78, at 94 (“DOE’s primary legal argument was that the Energy Policy Act’s prohibition on subordination applied at origination only and was ‘not [a] continuing obligation.’”). The House Energy and Commerce Committee concluded that it had insufficient information to determine whether the White House played any role in the decision. See House Republican Report, *supra* note 78, at 105–07 (“[T]he Committee has attempted to determine what role the White House played in the decision. . . . [But t]he documents produced by the White House . . . do not provide any substantive information about [its] ‘reluctant’ decision to accept DOE’s ‘cause of action to embrace restructuring.’”).

229. See House Republican Report, *supra* note 78, at 84 (stating that Secretary Chu signed the memorandum on February 22, 2011).

230. See House Republican Report, *supra* note 78, at 107 (“Solyndra continued to have significant cash flow issues in the months following the restructuring.”).

231. See House Republican Report, *supra* note 78, at 107 (discussing Solyndra executives’ statement that they had retained bankruptcy counsel).

232. See House Republican Report, *supra* note 78, at 113 (discussing Lazard Ltd.’s analysis of a potential second restructuring).

233. See House Republican Report, *supra* note 78, at 109 (“On the morning of August 18, 2011, Mr. Silver left another voicemail for Mr. Kaiser’s assistant.”).

234. See House Republican Report, *supra* note 78, at 110 (“[I]t appears from the documents that Mr. Kaiser was firm in his decision not to communicate with Mr. Silver.”).

235. See House Republican Report, *supra* note 78, at 110 (stating that Argonaut agreed to provide Solyndra with the necessary operating capital to get the company through another week).

236. See House Republican Report, *supra* note 78, at 116–19 (discussing the plan to have Solyndra supply the solar panels for the first phase of Project Amp). After Solyndra’s bankruptcy, the deal with Solyndra was canceled. See House Republican Report, *supra* note 78, at 127 (“On September 15, 2011, Prologis informed DOE that it would not use Solyndra panels for Phase I [of Project Amp].”).

On August 31, 2011, Solyndra filed for bankruptcy.<sup>237</sup> Due in large part to the subordination of the federal credit position to that of the private investors, it was unclear how much of the guaranteed loans the federal government would be able to recover, according to an analysis by the New York Times.<sup>238</sup>

#### V. *Lessons from Solyndra about Carrots and Sticks*

The Solyndra debacle offers subtle lessons. It is not a story—despite its prominence during the 2012 campaign—of treachery in government. There was no bribery, no midnight conspiracies in a dark garage, and no plot to push the American economy into socialism. Nonetheless, the Solyndra debacle highlights the flaws of using carrots as environmental policy and helps to develop two powerful lessons.

##### A. *First Lesson: A Governmental Policy of Awarding Carrots is Inherently Susceptible to Infection by Politics*

The Solyndra story shows how the ostensibly public-spirited goal of carrots for a renewable energy company became fatally infected with “politics”—meaning that short-term public relations or party interests trumped long-term environmental protection. The traditionally optimistic view of government has been challenged in recent decades by the *public choice* school of thought, which applies models of market behavior to lawmaking, in which private parties jostle in order to win legal benefits for themselves, with politicians and bureaucrats as their agents.<sup>239</sup> Lawmakers

237. See House Republican Report, *supra* note 78, at 126–27 (discussing the decision of Solyndra’s Board of Directors to file for bankruptcy on August 30, 2011 and Solyndra’s August 31, 2011 public announcement regarding the decision).

238. See *Blinding Officials*, *supra* note 123, at 1 (“[I]t remains unclear how much, if any, of the \$535 million in loans the federal government guaranteed will be recovered.”).

239. See generally the founding document of the public choice school, JAMES M. BUCHANAN & GORDON TULLOCK, *THE CALCULUS OF CONSENT* 8 (1962) (“We construct a model of collective choice-making that is more closely analogous to the theory of private choice embodied in the theory of markets.”); James M. Buchanan, *Politics Without Romance*, in *THE THEORY OF PUBLIC CHOICE—II* 11, 18–19 (James M. Buchanan & Robert D. Tollison eds., 1984) (applying public choice principles to the political market); Gary Becker, *A Theory of Competition Among Pressure Groups for Political Influence*, 98 Q.J. ECON. 371, 371 (1983) (“The economic approach to political behavior assumes that actual political choices are determined by the efforts of individuals and groups to further their own interests.”); Jonathan R. Macey, *Public Choice: The Theory of the Firm and the Theory of Market Exchange*, 74 CORNELL L. REV. 43, 46 (1988) (“The basic thrust of the model is that legislatures use ‘taxes, subsidies, regulations, and other political instruments . . . to raise the welfare of more influential pressure groups.’”) (quoting Gary Becker, *Pressure Groups and Political Behavior*, in *CAPITALISM AND DEMOCRACY: SCHUMPETER REVISITED* 124 (1985)).

participate willingly if their primary incentives are to collect enough short-term money and special-interest support to get elected or re-elected.<sup>240</sup>

Under this model, lawmakers are encouraged to press for glamorous projects that sprinkle benefits on important voter segments or financial contributors, even if the projects are flawed as matters of long-term policy and public finance.<sup>241</sup> Spending money on high-profile projects is attractive, under the concentrated benefits/distributed costs model, because the recipients of the concentrated benefits—lobbyists, contributors, and voter interest groups—are grateful, while the millions of taxpayers will be unlikely to identify this particular project as a significant factor in their taxes.<sup>242</sup> One of the most famous examples is the long-standing suite of government carrots for corn ethanol production, which observers have connected to the out-sized influence of Iowa voters in the presidential primary campaigns.<sup>243</sup>

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240. See John H. Aldrich & Kenneth A. Shepsle, *Explaining Institutional Change: Soaking, Poking and Modeling in the U.S. Congress*, in CONGRESS ON DISPLAY, CONGRESS AT WORK 31 (William T. Bianco ed., 2000) (noting that legislators are guided by re-election, good policy, and in-chamber power); Pierre Lemieux, *The Public Choice Revolution*, 27 REG. 22 (2004) (“Individuals, when acting as voters, politicians, or bureaucrats, continue to be self-interested and try to maximize their utility.”).

241. See Jeffrey S. Banks et al., *The Politics of Commercial R&D Programs*, in THE TECHNOLOGY PORK BARREL 57 (Linda R. Cohen & Roger G. Noll eds., 1991) (“If voters hold elected political officials responsible for the fate of a program that is providing local jobs, politicians can be expected to take into account the likely recipients of a program’s expenditures when evaluating it.”).

242. See WILLIAM N. ESKRIDGE, PHILIP FRICKEY, & ELIZABETH GARRETT, *supra* note 67, at 54–59 (explaining that under the concentrated benefits/distributed costs model, interest groups send benefits to legislators, who respond with governmental largesse, particularly if legislators believe that the electorate will remain unaware of the costs or can be deceived by “public-regarding half-truths about the statutory purposes”).

243. See, e.g., The Iowa Journal, *The Caucuses: Ethanol Politics*, IOWA PUB. TELEVISION (Jan. 3, 2008, 11:54 AM), <http://www.iptv.org/iowajournal/story.cfm/143> (noting the almost universal support of ethanol subsidies among presidential campaigners in recent election years) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment). There was a notable mention of this phenomenon in an episode of the acclaimed TV series *West Wing*, in which the public-spirited presidential candidate Matthew Santos is cajoled into supporting ethanol subsidies by campaign manager Josh Lyman, who tells him: “You walk out on that stage and come out against ethanol, you are dead meat. Bambi would have a better shot of getting elected President of the NRA than you will have of getting a single vote in this caucus.” See *id.* (discussing characterizations of ethanol as “the ultimate political pander” in popular culture). Indeed, the ethanol carrots extend so far as to require motor fuel companies to use a certain percentage of biofuels that do not exist. See Matthew Wald, *A Fine for Not Using a Biofuel That Doesn't Exist*, N.Y. TIMES (Jan. 7, 2012), available at <http://www.nytimes.com/2012/01/10/business/energy-environment/companies-face-fines-for-not-using-unavailable-biofuel.html> (discussing the Energy Independence and Security Act of 2007, which requires the addition of cellulosic acid, a commercially-unavailable biofuel, to fuel).

In the Solyndra debacle, politics appears to have infected many policy choices. There is no scientific proof, of course, but there are many points of obvious political influence.<sup>244</sup> At the outset, Congress may have been encouraged by the prospect of awarding carrots to influential or contributing private parties in enacting the Energy Policy Act of 2005,<sup>245</sup> it also fits a model in which politicians attract votes by appearing to take decisive steps, even when the action is in reality too small, too expensive, or too unfocused.<sup>246</sup> Certainly, the decision to speed up approval of Solyndra's application was spurred by a political desire to take bold action to stimulate the economy, even though it risked a rash and dangerous decision.<sup>247</sup> The government's financial watchdogs—OMB and the Treasury Department—were largely ignored in their exhortation to the Energy Department to take more time to consider Solyndra's application.<sup>248</sup> Indeed, the timing of a political event—a planned visit of President Obama to California—appears to have been a driving force in the rushed conditional approval of the loan guarantee.<sup>249</sup>

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244. See House Republican Report, *supra* note 78, at 146 (concluding that Solyndra shows how political pressures and a desire to create political events that highlight policy goals can result in poor decision-making).

245. See generally Lindsay Renick Mayer, *Big Oil, Big Influence*, NOW ON PBS (Aug. 1, 2008), <http://www.pbs.org/now/shows/347/oil-politics.html> (stating that the Energy Policy Act of 2005 was based on recommendations from then-Vice President Cheney's Energy Task Force, which relied on advice from major oil and energy companies, which had been donors of the Bush Administration) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment); Alexei Barrionuevo, *Boom in Ethanol Reshapes Economy of Heartland*, N.Y. TIMES (Jun. 26, 2006), <http://www.nytimes.com/2006/06/25/business/25ethanol.html?ref=ethanol&pagewanted=print> ("Last year, spurred by soaring energy prices, the ethanol lobby broke through in its long campaign to win acceptance outside the corn belt, inserting a provision in the Energy Policy Act of 2005.") (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

246. See, e.g., Steven J. Dubner, *It's Not the President, Stupid*, FREAKANOMICS (Mar. 8, 2012), <http://www.freakonomics.com/2012/03/08/it%E2%80%99s-not-the-president-stupid-a-new-marketplace-podcast> (arguing that the President has little direct influence over the economy, but presidential candidates act as if the President has influence over the economy because voters tend to blame or credit the President for the state of the economy) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

247. See House Republican Report, *supra* note 78, at 146 ("DOE pushed forward with the guarantee despite . . . warnings because of the Obama Administration's desire to use the Solyndra guarantee to highlight its stimulus."); see also *supra* notes 101–14 and accompanying text.

248. See *supra* notes 115–28, 149–56 and accompanying text. See House Republican Report, *supra* note 78, at 128 (concluding that "[t]he timing of the Solyndra Conditional Commitment was coordinated with the White House, and scheduled before DOE had reached an agreement with the company on key terms.").

249. See *supra* notes 108–14 and accompanying text. See House Republican Report, *supra* note 78, at 133 (finding that [t]he White House and the Department of Energy

Once the company reported signs of serious financial difficulties, the Energy Department restructured its creditor status to one of subordination—a highly unusual and arguably unlawful step—possibly because of the influence of the top private investor in Solyndra, Argonaut, which is affiliated with George Kaiser, a significant Obama contributor.<sup>250</sup> Argonaut benefitted by the government's subordination.<sup>251</sup> Even small points, such as apparent government influence over the delay of Solyndra's announcement of employee layoffs until the day of the 2010 national election, show the creeping influence of politics.<sup>252</sup> The Fact Checker column for the *Washington Post*, which usually supports President Obama's policies, concluded that "the clean-energy program was infused with politics at every level and that the Administration remained steadfast in supporting the solar-panel maker despite clear warning signs of a potential collapse."<sup>253</sup>

These examples of political influence concern a single carrot—the award and maintenance of a loan guarantee to the Solyndra Corporation of Fremont, California. It takes little imagination to recognize other potential points of political manipulation in other contexts—from the crude, such as bribery, "pay to play," and *quid pro quo* deals with lobbyists and contributors,<sup>254</sup> to the subtle, such as awarding carrots to parties in

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scheduled a public announcement event to commemorate the closing of the Solyndra loan guarantee before OMB had reviewed the transaction, impacting the length and quality of OMB's review.").

250. See *supra* notes 174–79, 188–95 and accompanying text. See House Republican Report, *supra* note 78, at 144 (finding that "George Kaiser was closely involved in important decisions related to Solyndra throughout the life of the loan guarantee."); see Josh Hicks, *President Obama and Crony Capitalism: Examining Mitt Romney's Claims*, THE FACT CHECKER, WASH. POST. (Feb. 20, 2012, 6:02 AM), available at [http://www.washingtonpost.com/blogs/fact-checker/post/president-obama-and-crony-capitalism-examining-mitt-romneys-claims/2012/02/17/gIQAGRTQKR\\_blog.html](http://www.washingtonpost.com/blogs/fact-checker/post/president-obama-and-crony-capitalism-examining-mitt-romneys-claims/2012/02/17/gIQAGRTQKR_blog.html) [hereinafter *Crony Capitalism*] (concluding that "[o]verall, the facts of the Solyndra matter represent a strong case for Romney's claims of crony capitalism, but they don't provide conclusive evidence.").

251. *Supra* notes 188–90 and accompanying text.

252. *Supra* notes 184–86 and accompanying text.

253. See *Crony Capitalism*, *supra* note 253 (describing the actions that the Obama Administration took while allegedly looking the other direction at what was really going on).

254. See Monica Davey, *Blagojevich Draws 14-Year Sentence for Corruption Conviction*, N.Y. TIMES (Dec. 8, 2011), available at <http://www.nytimes.com/2011/12/08/us/blagojevich-expresses-remorse-in-courtroom-speech.html?ref=rodrblagojevich> (discussing perhaps the most notable recent instance of corruption involving former Illinois Governor Rod Blagojevich, who was convicted in 2011 of corruption and perjury charges).



influential “swing” states before elections and choosing glamorous but ineffective projects in order to gather votes in the short-term.<sup>255</sup>

It is ironic, of course, that the apparent political advantage of awarding a carrot to Solyndra came back to bite the Obama Administration. Had President Obama and Secretary Chu known in 2009 and 2010 that the Solyndra debacle would become the most prominent environmental topic of the 2012 election—while disturbing news about climate change was largely ignored—they surely would have nipped the carrot in the bud. But they did not know and politicians are by nature optimistic. In fact, it is impossible to say, in hindsight, whether any analyst would have known when President Obama took office that Solyndra was bound to fail. But we may conclude that government is innately optimistic about its ability to shape the market for the better through its carrots, which leads to the next lesson of the Solyndra debacle.<sup>256</sup>

*B. Second Lesson: Government is Inherently Inaccurate in Awarding Carrots to Private Parties in the Competitive Market*

Because carrots are typically awarded to only one or a few participants in the market, some free market economists criticize government intervention as “picking winners and losers.”<sup>257</sup> In the first carrot awarded under the Energy Policy Act, the Solyndra Corporation was the short-term winner.<sup>258</sup> The most obvious losers in the long run were the

255. See *supra* notes 207–08 and accompanying text (discussing that some critics have cited the example of the Obama Administration’s rejection of Yucca Mountain, Nev., as the site of the national nuclear waste repository, despite decades of work, apparently to appease Senate Majority Leader Harry Reid and the voters of the swing state of Nevada); See Editorial, *After Yucca*, N.Y. TIMES (Feb. 16, 2012), available at <http://www.nytimes.com/2012/02/16/opinion/after-yucca-mountain.html> (“During the 2008 campaign, President Obama sought to curry favor with Nevada voters by pledging to shut down the Yucca project altogether.”).

256. See House Republican Report, *supra* note 78, at 132 (suggesting that the DOE was overly optimistic and ignored red flags about Solyndra).

257. See, e.g., House Republican Report, *supra* note 78, at 147 (concluding that “Solyndra is a prime example of the perils that come when the Federal government plays investor, tries to keep a company and industry afloat with subsidies and attempt to pick the winners and losers in a particular marketplace.”); Stephen Moore & Dean Stansel, *Ending Corporate Welfare as We Know It*, THE CATO INSTITUTE, POLICY ANALYSIS no. 225 (May 12, 1995), available at <http://www.cato.org/publications/policy-analysis/ending-corporate-welfare-we-know-it> [hereinafter *Ending Corporate Welfare*] (criticizing government carrots); Neil B. Niman, *Picking Winners and Losers in the Global Technology Race*, 13 CONTEMP. ECON. POL’Y 77, 80–82 (1995) (criticizing government’s picking of winners and losers, especially under President Clinton’s policies).

258. See House Republican Report, *supra* note 78, at 146–47 (describing that although Solyndra won, the U.S. lost).

American taxpayers; other potential losers were solar industry competitors to Solyndra, other businesses generating renewable energy, such as wind, wave, and nuclear, and, perhaps, the sellers of fossil fuels.<sup>259</sup> The essence of the free market criticism of government's choosing winners and losers is that government does a poor job of picking the best winners, especially in a world of politicized decisions.<sup>260</sup>

A more nuanced view is that government is not merely picking a winner, but is making a "bet" that the awarded company will be able to use the carrot to develop new technology that will help the nation in the long run.<sup>261</sup> Government can make bets on projects that are too risky for private investors, but that may pay off over time, especially for services such as solar energy, which provides a positive externality to the public, in that it obviates some need for fossil fuels.<sup>262</sup> But the question remains: Do we trust government to award carrots efficiently, so as to result in a good record of bets that pay off?<sup>263</sup>

When government makes bets, it faces obstacles that private investors do not face. The most significant is that government moves in discrete, deliberate, legally mandated steps that make it slow to react to changes in the markets. Consider the award of carrots to Solyndra. The process began in 2005, when Congress enacted the Energy Policy Act, which locked in for years to come a bureaucratic system of awarding loan guarantees to projects for "renewable energy systems."<sup>264</sup> With this, the

259. See House Republican Report, *supra* note 78, at 146 (discussing the other companies that also failed under the stimulus funding).

260. See, e.g., *Ending Corporate Welfare*, *supra* note 257 (asserting that "[t]he federal government has a poor record of picking industrial winners and losers"); Robert Higgs, *Cumulating Policy Consequences, Frightened Overreactions, and the Current Surge of Government's Size, Scope, and Power*, 33 HARV. J.L. & PUB. POL'Y 531, 551 (2010) [hereinafter *Cumulating Policy*] (criticizing a policy of choosing winners and losers).

261. See Michael Borrus & Jay Stowsky, *Technology Policy and Economic Growth* 10 (Berkeley Roundtable on the International Economy, UC Berkeley Working Paper No. 97, 1997), available at <http://escholarship.org/uc/item/5dc781j5> (last visited Nov. 22, 2012) [hereinafter *Technology Policy*] ("Picking winners and losers is the wrong metaphor to characterize the socially useful and necessary activity of government in supporting that process. Government is actually placing a bet on our collective future.").

262. See Adam B. Jaffe et al., *A Tale of Two Market Failures: Technology and Environmental Policy*, 54 ECOLOGICAL ECON. 164, 172–73 (2005) (referring to solar energy as providing a positive externality).

263. See Jeffrey Ball, *Tough Love for Renewable Energy: Making Wind and Solar Power Affordable*, 91 FOREIGN AFF. 122, 131 (2012) (critiquing the practice of bets on technology as shortsighted); see Peter Z. Grossman, *U.S. Energy Policy and the Presumption of Market Failure*, 29 CATO J. 295, 313 (2009) ("... history has demonstrated that government energy programs reach for more than they are ever likely [to] achieve, and end up misallocating resources").

264. 42 U.S.C. § 16513(a), (b) (2006).

government made a commitment to favor this technique (and its costs) over other methods of fostering positive externalities in energy production, such as subsidies for greater production of traditional nuclear energy<sup>265</sup> or for switching electrical generation from coal to somewhat cleaner natural gas.<sup>266</sup> When the Obama Administration decided in 2009 to accelerate the award of carrots under the Act, in order to fulfill campaign pledges and stimulate the economy, it was constrained by the limited number of applications, such as Solyndra's.<sup>267</sup> Although sources were reporting that prices for competing silicon-based solar panels were falling in 2009, it appears that the Obama Administration ignored the warnings, apparently because the wheels of bureaucracy were already in motion.<sup>268</sup> Moreover,

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265. Support for nuclear energy has plummeted across the world after the tsunami-related disaster at Japan's Fukushima nuclear plant in 2011. *See, e.g.,* Stefan Nicola & Tino Andresen, *Merkel's Green Shift Forces Germany to Burn More Coal*, BLOOMBERG (Aug. 17, 2012, 11:59 AM), <http://www.bloomberg.com/news/2012-08-19/merkel-s-green-shift-forces-germany-to-burn-more-coal-energy.html> (explaining the change in public policy in Europe's largest economy away from nuclear power, largely as a result of the Japanese disaster) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment). An American law that favored nuclear energy would not have been able to anticipate such a change; nor would a law enacted today that encourages alternatives to nuclear energy be able to anticipate a possible resurgence in the popularity of nuclear energy in the near future. Finally, it is obvious that the Solyndra debacle, which may cast a cloud over solar energy in the United States for years to come, was not anticipated either by Congress or federal agencies.

266. *See* Kevin Begos, *AP Impact: CO2 Emissions in US Drop to 20-Year Low*, ASSOCIATED PRESS (Aug. 16, 2012, 10:39 PM), <http://bigstory.ap.org/article/ap-impact-co2-emissions-us-drop-20-year-low> (noting a decrease in carbon emissions to a 20-year low in the United States, largely attributable to electrical power producers shifting from coal to natural gas, following a decrease in price of the latter fossil fuel) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

267. *See* House Republican Report, *supra* note 78, at 16–17 (illustrating the increased pressure to finalize the Solyndra project).

268. *See* House Republican Report, *supra* note 78, at 130–32 (discussing the warnings of 2008 and 2009). One of the most prominent news reports was made just weeks before the Energy Department made its final loan commitment to Solyndra in September 2009. *See* Kate Galbraith, *As Prices Slump, Solar Industry Suffers*, N.Y. TIMES GREEN BLOG (Aug. 13, 2009, 6:02 PM), <http://green.blogs.nytimes.com/2009/08/13/as-prices-slump-solar-industry-suffers> (noting price decreases and the increase in production from China) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment). *See* Brad Plumer, *Five Myths About the Solyndra Collapse*, WASH. POST WONKBLOG (Sept. 14, 2011 10:07 AM), [http://www.washingtonpost.com/blogs/ezra-klein/post/five-myths-about-the-solyndra-collapse/2011/09/14/gIQAfkyvRK\\_blog.html](http://www.washingtonpost.com/blogs/ezra-klein/post/five-myths-about-the-solyndra-collapse/2011/09/14/gIQAfkyvRK_blog.html) (describing that defenders of the Solyndra carrot have pointed to large subsidies from China as a key factor in the company's failure, but others point out that it was the price of silicon, which helped Chinese manufacturers, that was the greatest detriment to Solyndra's non-silicon panels) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment). Chinese subsidization of industry—its own carrots—is nothing new, of course. Indeed, if one accepts that the goal of the Energy Policy Act of 2005 was to avoid greenhouse gas emissions, 42 U.S.C. §

once the government in 2009 made Solyndra its “poster child” for clean energy carrots, both politics and bureaucratic slowness made a potential reversal of course in 2010 and 2011 highly difficult.<sup>269</sup>

In addition to being inherently slow to respond to market changes, government carrots are susceptible to failure because they are the product of only one participant in the market. Even perceptive private capitalists make significant mistakes.<sup>270</sup> Consider the example of the Chevy Volt electric car. In 2008, as Senator Barack Obama was moving toward the presidency, the venerable *Atlantic* magazine ran a cover story about General Motors' commitment to a new electric car.<sup>271</sup> The Volt, which was not yet completed because of the complexities of its ground-breaking battery, was called an “automobile sensation” that might “reinvent the automobile.”<sup>272</sup> The Volt was designed to revolutionize the public's perception of General Motors, which for much of the twentieth century was the largest corporation in the world but which had been stung by changes in the market,<sup>273</sup> on which Japanese competitors capitalized.<sup>274</sup> The *Atlantic* quoted GM officials as stating that “failure is not an option,” and implying that the future of the largest industrial corporation in the United States hung

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16513(a)(1), China's subsidies should be welcome, in that the Chinese government is paying for the United States to be able to buy inexpensive products that can cut emissions more cheaply than it otherwise could. This parallels the argument that China's fostering of exports helps Americans consumers by providing them with low-cost goods—although arguably at the cost of American manufacturing jobs.

269. See House Republican Report, *supra* note 78, at 141–43 (illustrating that although OMB and the White House knew there were financial problems, they continued with the program).

270. See *Technology Policy*, *supra* note 261, at 10 (describing the risks private companies such as Macintosh and IBM make when investing and their mistakes).

271. See Jonathan Rauch, *Electro-Shock Therapy*, THE ATLANTIC (Jul./Aug. 2008), available at <http://www.theatlantic.com/magazine/archive/2008/07/electro-shock-therapy/306871> [hereinafter *Electro-Shock*] (describing the road GM took to create the Chevrolet Volt).

272. See *id.* (illustrating the positives and negatives of the new automobile).

273. In 1953, former GM chief Charles Wilson, at hearings before Congress for his nomination to secretary of defense, stated that there would no conflict between his former job and his future one because, he said, “for years I thought that what was good for our country was good for General Motors, and vice versa.” The quote was often repeated by critics as “What's good for General Motors is good for the country”—supposedly an example of a capitalist's foolishly conflating corporate profits with the national welfare. See John Berlau, *What's Good for GM is Now Terrible for America*, AM. SPECTATOR (Nov. 18, 2010, 6:09 AM), <http://spectator.org/archives/2010/11/18/whats-good-for-gm-is-now-terri> (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

274. See *Electro-Shock*, *supra* note 271 (discussing Toyota's moves and success creating the Prius which put GM on its heels).

in the balance.<sup>275</sup> When it was introduced for sale two years later, in late 2010, however, the Chevy Volt hardly made a ripple in the market.<sup>276</sup>

What had happened in the interim was unexpected, of course. The global economic recession had sent the once-mighty General Motors into insolvency, with its rescue assured only by a colossal infusion of federal money and a government-sponsored bankruptcy reorganization that created a new corporation, with the federal government as the largest stockholder.<sup>277</sup> Meanwhile, gas prices, which topped four dollars a gallon in 2008, had fallen dramatically, diminishing the incentive for highly fuel-efficient cars.<sup>278</sup> At the same time, environmentally oriented Americans were flocking to buy the Toyota Prius, a hybrid car that became a great success: in 2011, Toyota's Prius sales were more than 136,000, while GM sold only 7,671 Volts.<sup>279</sup> In 2012, GM briefly suspended production of the Volt.<sup>280</sup>

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275. See *Electro-Shock*, *supra* note 271 (describing the fragility of the situation while the creating the Volt).

276. See Paul Stenquist, *G.M. 'Officially' Introduces 2011 Chevrolet Volt amid Controversy*, N.Y. TIMES, WHEELS (Oct. 11, 2010, 5:11 PM), <http://wheels.blogs.nytimes.com/2010/10/11/g-m-officially-introduces-2011-chevrolet-volt-amid-controversy> (describing that the "controversy" concerned engineering, not public reception) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

277. See *General Motors*, N.Y. TIMES TOPICS (Oct. 31, 2012), [http://topics.nytimes.com/top/news/business/companies/general\\_motors\\_corporation/index.html](http://topics.nytimes.com/top/news/business/companies/general_motors_corporation/index.html) (recounting the history of GM) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment). In 2012, one estimate placed the cost to the federal government of the GM rescue at more than \$25 billion. Brad Plumer, *Auto Bailout Price Tag Rises to \$25 Billion. How High Will it Go?*, WASH. POST, EZRA KLEIN'S WONKBLOG (Aug. 15, 2012, 2:38 PM), <http://www.washingtonpost.com/blogs/ezra-klein/wp/2012/08/15/auto-bailout-price-tag-rises-to-25-billion-how-high-will-it-go> (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

278. See U.S. Energy Info. Agency, *U.S. All Grades Conventional Retail Gasoline Prices*, [http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=EMM\\_EPM0U\\_PTE\\_NUS\\_DPG&f=M](http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=EMM_EPM0U_PTE_NUS_DPG&f=M) (last visited Nov. 4, 2012) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

279. See Toyota Corp, *Toyota Reports December 2011 and Year-End Sales* (Jan. 4, 2012), <http://pressroom.toyota.com/releases/toyota+reports+december+2011+year-end+sales.htm> (reporting on Prius sales) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment); David Welch, *GM's Chevy Volt Misses 2011 U.S. Sales Goal As Safety Probed*, BLOOMBERG (Jan. 4, 2012), <http://www.bloomberg.com/news/2012-01-04/gm-s-chevy-volt-misses-2011-sales-target-as-safety-probe-goes-on.html> (reporting on Volt sales) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

280. See Charles Lane, *Electric Cars and Liberals' Refusal to Accept Science*, WASH. POST (Mar. 5, 2012), available at <http://www.washingtonpost.com/opinions/electric-cars->

What accounted for the failure of the Volt and the success of the Prius? Analysts have cited a variety of factors, including the unique styling of the Prius, which is distinctive even from a distance, and its adoption during the heyday of Gore-fueled environmental awareness by Hollywood celebrities, including Leonardo DiCaprio.<sup>281</sup> While a Volt costs somewhat less to operate each year, because it uses very little gasoline, it initially costs more than \$40,000 before a federal tax credit of \$7,500, whereas a basic Prius, the hybrid engine of which does not need to be plugged in, can be purchased for about \$27,000.<sup>282</sup> The auto tax credit, another example of a seemingly minor but expensive carrot, has been called a “snobby” subsidy for wealthy environmentalists.<sup>283</sup> This is not to say that the Volt will be a permanent failure; it is conceivable that gasoline prices will soar to ten dollars a gallon later this decade, making the Volt far more attractive.<sup>284</sup> The point of this vignette is that any single organization—be it a corporate giant such as General Motors, or the federal Energy Department—is likely to make mistakes concerning which projects to award carrots; there are simply too many variables, and too many unknown factors, to hand out carrots with confidence.<sup>285</sup> With the taxpayer’s money at stake, an expensive regime of carrots is both dangerous and unwise—especially because of the straightforward alternative, to which the Essay makes its final turn.<sup>286</sup>

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and-the-liberal-war-with-science/2012/03/05/gIQA7SpYtR\_story.html (outlining the Volt’s business failures).

281. See Jacquelyn Ottman, *What Green Marketers Can Learn from Prius’ Success*, J. OTTMAN CONSULTING (Mar. 8, 2008), <http://www.greenmarketing.com/blog/comments/what-green-marketers-can-learn-from-prius-success> (discussing factors that made the Prius commercially successful) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

282. Nick Bunkley, *Payoff for Efficient Cars Takes Years*, N.Y. TIMES (Apr. 4, 2012), available at <http://www.nytimes.com/2012/04/05/business/energy-environment/for-hybrid-and-electric-cars-to-pay-off-owners-must-wait.html?pagewanted=all>. According to Bunkley, the gas savings from a Volt would take 27 years to pay off. *Id.*

283. Charles Lane, *Unaffordable at Any Speed*, SLATE (Jul. 30, 2010), [http://www.slate.com/articles/business/moneybox/2010/07/unaffordable\\_at\\_any\\_speed.html](http://www.slate.com/articles/business/moneybox/2010/07/unaffordable_at_any_speed.html) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

284. See John Broder, *The Electric Car, Unplugged*, N.Y. TIMES (Mar. 24, 2012), available at <http://www.nytimes.com/2012/03/25/sunday-review/the-electric-car-unplugged.html?pagewanted=all> (assessing the gloomy prospects for electric cars).

285. See *Cumulating Policy*, *supra* note 260, at 537–38, 545 (describing the way government intervention disrupts normal market signals and influences corporate survival “with little or no apparent economic logic to support their decisions.”); *Ending Corporate Welfare*, *supra* note 257, at 5 (noting the poor federal track record of picking worthy recipients and lack of experience relative to private capital markets).

286. See *supra* notes 244–65 and accompanying text. The number of federal carrots for “clean” energy is legion, including the Advanced Biofuel Production Grant and Loan Guarantee Program. See 7 U.S.C. § 8103 (2011). Another notable carrot, the hydrogen fuel

*VI. The Stick and the Invisible Hand*

A well-crafted regulatory stick, in contrast to a carrot, can minimize the drawbacks of politicization and inaccuracy. Consider a simple form of a legal stick: a tax on greenhouse gas pollution.<sup>287</sup> Because of the wide reach and evenhandedness of such a tax, the problems of politicization and accuracy are largely avoided.<sup>288</sup>

A straightforward tax on greenhouse gases would reach all sources of such pollution, from coal-fired power plant smokestacks, to small factory pollution, to emissions from the tailpipes of both gas-guzzling cars and the Toyota Prius.<sup>289</sup> It avoids politicization because it offers few policy decisions though which politics can seep: there are no applications, no discretionary awards, no negotiations with private investors, few chances for entanglements with campaign contributors, and no contracts with private parties.<sup>290</sup> The variant of a tax, a cap-and-trade regime, holds somewhat more chances for politicization, in that it is more complex and

excise tax credit, provides substantial tax credits for using alcohol fuels, biodiesel mixtures, and other alternative fuels. *See* 26 U.S.C. § 6426 (2011). Likewise, the small ethanol producer tax credit provides a similar carrot on the production side. *See* 26 U.S.C. § 40 (2011). For state laws, *see Financial Incentives for Renewable Energy*, DATABASE OF STATE INCENTIVES FOR RENEWABLES & EFFICIENCY, <http://www.dsireusa.org/summarytables/finre.cfm> (last visited Jan. 7, 2013) (summarizing credits available in each state) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

287. Taxes used as economic incentives are often called *Pigovian* taxes in honor of Arthur Pigou. *See* ARTHUR C. PIGOU, *ECONOMICS OF WELFARE* 28–29 (1950) (“[A]ll taxes which differentiate against saving, as compared with spending, must diminish economic welfare. . . . Our analysis also suggests that economic welfare could be increased by some rightly chosen degree of differentiation *in favour* of saving.”) (emphasis in original).

288. *See* GLOBAL CLIMATE CHANGE AND U.S. LAW 583–85 (Michael Gerrard ed., 2007) [hereinafter *GLOBAL CLIMATE CHANGE*] (noting that the carbon tax rate could be keyed to scientific evidence, while encouraging various appropriate behavioral changes for the variety of users affected).

289. For explanations of the workings of a tax, *see* ANTHONY GIDDENS, *THE POLITICS OF CLIMATE CHANGE* 152–53 (2009) [hereinafter *POLITICS OF CLIMATE CHANGE*] (stating that carbon taxes can be broad-based or target a specific polluter, and generally should target the sources of pollution rather than taxing the consumption end); ENVIRONMENTAL REGULATIONS AND GLOBAL WARMING 123–24 (Paul Ruschmann ed., 2009) [hereinafter *ENVIRONMENTAL REGULATIONS*] (discussing a tax as an option to attempt to curb global warming); *GLOBAL CLIMATE CHANGE*, *supra* note 288, at 583–85 (describing pollution taxes as affording producers maximum flexibility in choosing abatement measures while placing a ceiling on costs).

290. *See* *POLITICS OF CLIMATE CHANGE*, *supra* note 289, at 154–56 (noting that while it takes “fairly complex” policy strategies to implement simple carbon taxes that do not act regressively, in an alternative scheme of carbon rationing, “the role of government would be crucial” to conduct constant monitoring and quota-setting).

offers more opportunities for politically motivated adjustments.<sup>291</sup> The most notable cap-and-trade system for greenhouse gases was established through the Kyoto Protocol of 1997;<sup>292</sup> the United States refused to join largely because of the political decision by the parties not to demand greenhouse gas reductions from developing nations such as China.<sup>293</sup>

The key advantage of a tax is that all producers and consumers of greenhouse gases would be prodded, by the stick, to look constantly for ways to avoid paying the tax or to avoid paying as much tax.<sup>294</sup> An electrical generator would factor into its business plans a switch from highly-taxed coal to less-highly-taxed natural gas; if and when solar energy becomes more efficient and competitive, the plant might consider a switch to this renewable source.<sup>295</sup> If and when hydrogen fuel cells are improved so that they are advantageous, parties would be nudged into considering this source.<sup>296</sup> Another great benefit of a tax is that government does not have to be able to make bets about the future—it simply sets in place a regulatory mechanism that encourages the development of alternatives to the taxed

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291. See *POLITICS OF CLIMATE CHANGE*, *supra* note 289, at 198–99 (recounting the ineffectiveness of the European Emissions Trading Scheme, caused in large part by political lobbying). A cap and trade system allocates allowances to pollute; these allowances then may be bought and sold in the market. See *GLOBAL CLIMATE CHANGE*, *supra* note 288, at 104 (describing the EU Emissions Trading Scheme). The decisions of how to allocate or sell the initial allowances, whether to impose any restrictions on sales, and whether to award credits for carbon sinks (mechanisms that remove carbon from the atmosphere) make a cap-and-trade system more complex than a tax. See *GLOBAL CLIMATE CHANGE*, *supra* note 288, at 120 (posing various questions that must be decided in a cap and trade regime). For these reasons, many economists prefer the simplicity of a tax. See *GLOBAL CLIMATE CHANGE*, *supra* note 288, at 583–84 (explaining the relative benefits of a straightforward tax, but noting that any policy with the word “tax” engenders opposition).

292. Kyoto Protocol to the United Nations Framework Convention on Climate Change, Dec. 10, 1997, 37 ILM 22 (1998). In the United States, the most notable state cap-and-trade system is California’s Global Warming Solutions Act of 2006. See CAL. HEALTH & SAFETY CODE §§ 38500–99 (West 2010).

293. See Bradford C. Mank, *Standing and Global Warming: Is Injury to All Injury to None?*, 35 ENVTL. L. 1, 18–21 (2005) (explaining the politics involved in the rejection of the Kyoto Protocol).

294. See *THE SCIENCE AND POLITICS OF GLOBAL CLIMATE CHANGE*, 134–36 (Andrew Dessler & Edward Parson eds., 2010) [hereinafter *SCIENCE AND POLITICS*] (“Under a tax, every emitter will cut until the marginal cost of the next ton is equal to the tax rate . . . beyond that point they would rather pay the tax than make the more expensive cuts available to them.”).

295. See *id.* at 127–28 (describing how fuel shifts from coal to natural gas to renewable sources would decarbonize energy production over time).

296. See *GLOBAL CLIMATE CHANGE*, *supra* note 288, at 568 (describing the current technical limitations of fuel cells and their reliance on coal-fueled electrical generation in the U.S.).



sources of pollution and then lets the market and technology work out efficient switches.<sup>297</sup>

Which renewable technology holds the key to the future: solar, wind, waves, nuclear, geothermal, hydrogen? With a tax, the choice is not made by a politicized, slowly reacting government and its laws, but by the forces of a constantly changing and evolving market.<sup>298</sup> To quote the 18th-century Scottish economist Adam Smith, an actor in society is “led by an invisible hand to promote an end which was no part of his intention . . . . By pursuing his own interest he frequently promotes that of the society more effectually than when he really intends to promote it.”<sup>299</sup> A tax on greenhouse gas emissions would encourage conservation even by skeptics of global climate change and even by those who think that recycling is all they need to do to save the world.<sup>300</sup>

Technologies that seem auspicious today, but that do not pan out, would be cast aside by the cool logic of the market and its invisible hand.<sup>301</sup>

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297. See GLOBAL CLIMATE CHANGE, *supra* note 288, at 584 (“[A] carbon tax encourages several kinds of appropriate behavioral change . . . whichever is the most cost effective for the particular user.”); POLITICS OF CLIMATE CHANGE, *supra* note 289, at 153–54 (explaining the widespread incentives of a tax); SCIENCE AND POLITICS, *supra* note 294, at 134 (explaining how all actors in society would be motivated by a tax to look for ways to avoid the tax).

298. *Supra* notes 246–47 and accompanying text.

299. ADAM SMITH, AN INQUIRY INTO THE NATURE AND CAUSES OF THE WEALTH OF NATIONS 423 (Edwin Cannan ed., Random House, Inc. 1937).

300. See GLOBAL CLIMATE CHANGE, *supra* note 288, at 84 (discussing the attractiveness of greenhouse gas taxes for their broad reach, and the fact that a rise in gas prices in 2005 was sufficient to slow the trend of increasing consumption). How much should a tax on carbon emissions cost? This detail is not the subject of this Essay, but economists have suggested numbers ranging from \$10 per ton of carbon to \$55 dollars and beyond. See ENVIRONMENTAL REGULATIONS, *supra* note 289, at 123 (stating estimates related to carbon emissions tax); GLOBAL CLIMATE CHANGE, *supra* note 288, at 152 (citing a 2007 study advocating a \$55 per metric ton tax). If a low tax initially did not encourage enough reduction, the tax could be raised to match the perceived externality, or otherwise “adjusted for changing circumstances.” GLOBAL CLIMATE CHANGE, *supra* note 288, at 583. There is no doubt that such a tax would cost both American consumers and businesses and that a tax would cause an economic slump, at least in the short-term. See SCIENCE AND POLITICS, *supra* note 294, at 149 (citing a range of studies and models suggesting that meaningful emission limits could cut GDP in future years by several percentage points). Such a slump could be ameliorated by slowly phasing in a tax that grew over time. *Cf.* SCIENCE AND POLITICS, *supra* note 294, at 184–85 (proposing a phased-in cap and trade system). Weighing the advantages of a short-term economic slump against the costs of global climate change is a complex economic and political question, of course.

301. For an example of this dynamic at work, see *Nuclear Energy*, N.Y. TIMES TOPICS (Oct. 12, 2012), <http://topics.nytimes.com/top/news/business/energy-environment/atomic-energy/index.html> (describing the history of nuclear energy) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment). While nuclear power was seen in its early days as “the wave of the future,” high plant construction costs and serious

Throughout recent history, many glamorous technological innovations that seemed promising in the short run failed in the end, due to changes in taste, science, or economics that government planners and corporate strategists could not have predicted with any certainty.<sup>302</sup> While they once seemed like waves of the future, eight-track tape music players, Betamax videotape players, and CD-ROM data storage devices have all been sent to the dumpster by the forces of the market economy.<sup>303</sup> Which renewable energy source will prove to be the most effective in combating greenhouse emissions, over the next ten or one hundred years? Only the forces of market, spurred by a tax, will be able to tell efficiently.

Another advantage of a stick is that it spurs movement away from all sources of the externality, even when actors do not know that they are part of the problem. In the United States, for example, a popular image of greenhouse gas emissions might be a pollution-belching factory.<sup>304</sup> But in the United States more than 32 % of carbon emissions arise from the generation of electricity (through power plants that burn fossil fuels) and another 32 % from vehicles.<sup>305</sup> A tax would encourage consumers to take day-to-day steps to conserve household electricity and limit driving, such as purchasing smaller homes with less square footage to heat, installing fans so that air conditioning is used less in summer, and living closer to work so that they drive less.<sup>306</sup> Western European households enjoy a similar

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environmental dangers quashed market interest during the 1980s and 1990s, while the meltdowns at Fukushima Daiichi Nuclear Power Station dampened recent resurgent interest in the technology as a viable alternative energy source. *Id.*

302. ENVIRONMENTAL REGULATIONS, *supra* note 289, at 134–35; see POLITICS OF CLIMATE CHANGE, *supra* note 289, at 129–38 (criticizing the appealing but faulty allure of a single breakthrough technology, such as hydrogen cells).

303. See Sam Grobart, *Daddy, What Were Compact Disks?*, N.Y. TIMES (May 30, 2012), available at <http://www.nytimes.com/2012/05/31/technology/personaltech/daddy-what-are-turntables-eight-tracks-and-floppy-disks.html?pagewanted=all> (recalling the “dirty little skirmishes” in which older technologies were entirely supplanted by modern improvements).

304. For one such example, see generally ENVIRONMENTAL REGULATIONS, *supra* note 289 (displaying such a factory in a cover image).

305. *Estimated U.S. Carbon Dioxide Emission in 2010: 5632 Million Metric Tons*, LAWRENCE LIVERMORE NATL. LAB., <https://flowcharts.llnl.gov/carbon.html> (last visited Nov. 7, 2012) (on file with the Washington and Lee Journal of Energy, Climate and the Environment).

306. *Supra* note 286 and accompanying text. An advantage of a tax is that actors are not *forced* into making changes; they are merely encouraged. Thus, an American who greatly enjoys driving a Ford F-350 truck long distances each day might grudgingly agree to pay the high tax, while others will avoid doing so by switching their habits. A tax thus takes into account personal preferences in a way that other regulatory techniques do not. Americans prefer to be nudged than ordered to do things. See generally RICHARD H. THALER & CASS R. SUNSTEIN, *NUDGE: IMPROVING DECISIONS ABOUT HEALTH, WEALTH, AND HAPPINESS* (2011) (examining the benefits of legal polices that nudge, and noting that this kind of “libertarian

standard of living to those in the United States, yet they pollute significantly less in greenhouse gases, largely because they tend to live in smaller houses and drive less.<sup>307</sup> None of these steps requires any breakthrough in new technology.<sup>308</sup> The mundane might be more effective than the glamorous.

### VII. Conclusion

It is an extraordinary irony that one of the Obama Administration's first significant steps in the fight against climate change in 2009—the award of a carrot to the Solyndra Corporation—morphed into an albatross around the neck of the climate change movement and became arguably the

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paternalism” has received bipartisan support in Congress). One complaint about a potential carbon tax is that it is *regressive*, meaning that a low-income household would probably pay a much larger percentage of its income for a tax on household electricity than would a rich household. See POLITICS OF CLIMATE CHANGE, *supra* note 289, at 152–54 (discussing the regressivity dilemma). One straightforward way to address this complaint would be to begin the tax only when a household's electricity usage rises above a *baseline* amount—perhaps the amount typically used in a small apartment. This system would work to the advantage of poorer people, who tend to live in smaller households, but would still encourage electricity conservation across society. See *Average Square Footage of U.S. Homes*, by Housing Characteristics, 2009, U.S. ENERGY INFORMATION ADMINISTRATION, available at <http://www.eia.gov/consumption/residential/data/2009/index.cfm?view=characteristics#undefined> (last visited Nov. 7, 2012) (showing a nearly threefold increase in average square footage per housing unit from the lowest to highest household income brackets, with similar increases for average heated and cooled square footage).

307. The average house size in the United States in 2010 was 2,392 square feet, up from 1,740 square feet in 1980. *Median and Average Square Feet of Floor Area in New Single-Family Houses Completed by Location*, U.S. BUREAU OF THE CENSUS, <http://www.census.gov/const/C25Ann/sfttotalmedavgsqft.pdf> (last visited Nov. 5, 2012). By comparison, in 2010 a typical house in Germany was only 1,346 square feet, while the average home in England was 990 square feet. See *Buying a House or Apartment in Germany*, HOW TO GERMANY, <http://www.howtogermy.com/pages/housebuying.html> (last visited Nov. 5, 2012) (citing privately obtained figures for German homes) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment); U.K. DEP'T FOR COMMUNITIES AND LOCAL GOVERNMENT, ENGLISH HOUSING SURVEY: HOMES REPORT 2010, at 15 (2010), available at <http://www.communities.gov.uk/publications/corporate/statistics/ehs2010homesreport> (“The average dwelling [in England] had a total usable floor area of 92m<sup>2</sup>.”). Meanwhile, the typical Briton drove about 3,400 miles in 2008-09; the average licensed driver in America, in contrast, drove over 14,000 miles. Compare U.K. DEP'T FOR TRANSPORT, AVERAGE DISTANCE TRAVELLED BY MODE- REGION AND AREA TYPE: GREAT BRITAIN (2011), available at <http://assets.dft.gov.uk/statistics/tables/nts9904.xls> (last visited Nov. 22, 2012) (providing U.K. data) with U.S. FEDERAL HIGHWAY ADMINISTRATION, OUR NATION'S HIGHWAYS: 2010, at 31, available at <http://www.fhwa.dot.gov/policyinformation/pubs/hf/pl10023/> (last visited Nov. 22, 2012) (providing U.S. data).

308. See POLITICS OF CLIMATE CHANGE, *supra* note 289, at 158–61 (touting the energy efficiency of smaller-scale, better-planned communities employing existing technology).

most prominent environmental topic during the 2012 presidential election.<sup>309</sup> To be sure, a confluence of bad luck and untimely events may have contributed to the political debacle.<sup>310</sup> Nonetheless, as this Essay has endeavored to show, the story illustrates that a policy of awarding carrots in the name of environmental protection is inherently susceptible to infection by politics and poor market choices.<sup>311</sup> Solyndra stands as a powerful cautionary tale for both environmentalists and lawmakers.<sup>312</sup> It would behoove future environmentally-oriented lawmakers to avoid the allure of carrots.<sup>313</sup> Only the stick of a tax, or its variant of a cap-and-trade program, is likely to be widely effective, while avoiding the risks of a carrot.<sup>314</sup> To be sure, it is extraordinarily difficult to convince the American public that imposing a stick on them is wise policy.<sup>315</sup> But if we are serious about using law to combat climate change and protect the environment, it is the sensible choice.

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309. *Supra* notes 76–77, 102–20 and accompanying text.

310. *Supra* notes 209–19 and accompanying text.

311. *Supra* notes 206, 218 and accompanying text.

312. *See Ending Corporate Welfare, supra* note 257, at 5 (arguing that there has been a poor federal track record of picking worthy recipients, and a lack of experience, relative to private capital markets).

313. During his second inaugural address, on Jan. 21, 2013, President Obama included an unusually strong comment on climate change, stating, “We will respond to the threat of climate change, knowing that the failure to do so would betray our children and future generations.” Juliet Eilperin, *In inaugural address, Obama makes a moral case for action on climate change*, Wash. Post, (Jan. 22, 2013), [http://www.washingtonpost.com/national/health-science/obama-makes-a-moral-case-for-action-on-climate-change/2013/01/22/1d33ea98-64cf-11e2-9e1b-07db1d2ccd5b\\_story.html?hpid=z8](http://www.washingtonpost.com/national/health-science/obama-makes-a-moral-case-for-action-on-climate-change/2013/01/22/1d33ea98-64cf-11e2-9e1b-07db1d2ccd5b_story.html?hpid=z8) (on file with the Washington and Lee Journal of Energy, Climate, and the Environment).

314. *Supra* note 269 and accompanying text.

315. *See* GLOBAL CLIMATE CHANGE, *supra* note 288, at 584 (noting that “[s]everal carbon tax proposals have been before Congress, but none has come close to enactment.”)