

# **Offshore Wind Energy in Maryland – Renewable Portfolio Standard Set-Asides v. Feed-in Tariffs**

By Anna Binau

## **I. Introduction**

On April 9, 2012, three students, one from the University of Maryland at College Park and two from St. Mary's College of Maryland, were arrested for blocking "the front steps of the Maryland State House in protest of the expected failure of a bill to spur development of offshore wind power."<sup>1</sup> The bill at issue specifically encouraged the development of offshore wind power through the establishment of an offshore wind set-aside within Maryland's existing Renewable Portfolio Standard (RPS). A RPS set-aside alone is not the optimal solution. Rather, Maryland's best approach to promote offshore wind projects, legally and economically, is to adopt both an offshore wind set-aside and a Feed-in Tariff (FIT). Legally, Maryland would need both programs because a FIT alone would not comply with federal law. Economically, Maryland would benefit from both programs because a FIT can be structured to provide income sufficient to cover the higher costs of an offshore wind project.

Part II of the paper will describe Maryland Governor Martin O'Malley's offshore wind bills. This part will contrast the bill Governor O'Malley presented to the Maryland Legislature in 2012 with the bill that failed to pass in the 2011 legislative session. Part III will explain the meaning of a RPS, and more specifically, a RPS set-aside. Part IV will then define FITs, examine their design features, and discuss existing FITs. Part V will provide a side-by-side

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<sup>1</sup> John Wagner et al., *Clock Ticks on Chaotic Final Day for Maryland Legislature*, THE WASHINGTON POST (April 9, 2012), [http://www.washingtonpost.com/blogs/maryland-politics/post/much-to-do-on-md-legislatures-90th-day/2012/04/09/gIQAJFUB5S\\_blog.html](http://www.washingtonpost.com/blogs/maryland-politics/post/much-to-do-on-md-legislatures-90th-day/2012/04/09/gIQAJFUB5S_blog.html).

comparison of a RPS set-aside and a FIT in terms of their advantages, disadvantages, and legal limitations.

## II. Maryland Offshore Wind Proposals

### A. Maryland Offshore Wind Energy Act of 2011

On February 11, 2011, Governor O'Malley introduced the Maryland Offshore Wind Energy Act of 2011.<sup>2</sup> The 2011 bill required that public utilities enter into long-term agreements with wind power generation facilities located ten miles off the Mid-Atlantic coast to purchase between 400 to 600 megawatts (MW) of power for a period of twenty or more years.<sup>3</sup> The higher costs of the offshore wind power would be passed on to customers in the form of a line-item charge on their monthly bills.<sup>4</sup> The 2011 bill stalled in the Senate Finance Committee.<sup>5</sup>

### B. Maryland Offshore Wind Energy Act of 2012

The Maryland Offshore Wind Energy Act of 2012 faced a similar path as that of the 2011 bill. Governor O'Malley unveiled the 2012 offshore wind bill on January 23, 2012.<sup>6</sup> The bill passed the Maryland House of Delegates on March 30, 2012.<sup>7</sup> Like the 2011 bill, the 2012 bill stalled in the Senate Finance Committee. The chairman of the Senate Finance Committee refused to bring the measure to a vote before the General Assembly's scheduled adjournment on

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<sup>2</sup> *Governor O'Malley Introduces the Maryland Offshore Wind Energy Act of 2011*, OFFICE OF GOVERNOR MARTIN O'MALLEY (Feb. 11, 2011), <http://www.governor.maryland.gov/pressreleases/110211b.asp>.

<sup>3</sup> *Id.*; H.D. 1054, 428<sup>th</sup> Gen. Assemb., Reg. Sess. (Md. 2011), *available at* <http://mlis.state.md.us/2011rs/bills/hb/hb1054f.pdf>.

<sup>4</sup> H.D. 1054, *supra* note 3; Aaron C. Davis, *O'Malley Wind Farms Face More Challenges As Maryland Legislature Returns*, THE WASHINGTON POST (Jan. 8, 2012), [http://www.washingtonpost.com/local/md-politics/omalley-wind-farms-face-more-challenges-as-maryland-legislature-returns/2012/01/06/gIQA7D5ojP\\_story.html](http://www.washingtonpost.com/local/md-politics/omalley-wind-farms-face-more-challenges-as-maryland-legislature-returns/2012/01/06/gIQA7D5ojP_story.html).

<sup>5</sup> Aaron C. Davis, *O'Malley to Submit New Wind Proposal*, THE WASHINGTON POST, Jan. 23, 2012, at B1; *Governor continues to push for Offshore Wind*, GREENWIRE (Jan. 23, 2012), <http://www.eenews.net>.

<sup>6</sup> Davis, *O'Malley to Submit*, *supra* note 5; Michael Dresser, *O'Malley to Unveil New Approach to Wind Power*, THE BALTIMORE SUN, Jan. 23, 2012, at 2A.

<sup>7</sup> Greg Masters, *Maryland House Approves Bill to Subsidize Offshore Wind Development*, THE WASHINGTON POST (Mar. 30, 2012), [http://www.washingtonpost.com/local/md-politics/maryland-house-approves-bill-to-subsidize-offshore-wind-development/2012/03/30/gIQA3bhNmS\\_story.html](http://www.washingtonpost.com/local/md-politics/maryland-house-approves-bill-to-subsidize-offshore-wind-development/2012/03/30/gIQA3bhNmS_story.html).

April 9, 2012.<sup>8</sup> Two special legislative sessions were held, but the bill was not on the agenda of either one.<sup>9</sup>

Despite their similar paths, the 2012 bill is markedly different from the 2011 bill. Unlike the 2011 bill, the 2012 bill establishes an offshore wind energy set-aside within Maryland's existing RPS program.<sup>10</sup> Accordingly, the existing RPS program requires that electricity suppliers purchase twenty percent of the electricity they sell from renewable sources by 2022.<sup>11</sup> With the set-aside, 2.5 percent of the twenty percent renewable sourced electricity must be from offshore wind beginning in 2017.<sup>12</sup> The offshore wind set-aside would be in addition to the existing solar set-aside.<sup>13</sup>

The offshore wind set-aside is only imposed upon wholesale electricity suppliers if certain conditions are met. In order to determine whether the set-aside is warranted, the Maryland Public Service Commission (PSC) first hires an independent analyst to assess whether the costs to ratepayers would be outweighed by the potential benefits of offshore wind.<sup>14</sup> The PSC also oversees a process by which offshore wind developers compete to become qualified

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<sup>8</sup> Wagner et al., *Clock*, *supra* note 1.

<sup>9</sup> John Wagner, *Pit Bull, Bingo Bills also Introduced in Md. Special Session*, THE WASHINGTON POST (May 14, 2012), [http://www.washingtonpost.com/blogs/maryland-politics/post/pit-bull-bingo-bills-also-introduced-in-md-special-session/2012/05/14/gIQAS9YSPU\\_blog.html](http://www.washingtonpost.com/blogs/maryland-politics/post/pit-bull-bingo-bills-also-introduced-in-md-special-session/2012/05/14/gIQAS9YSPU_blog.html); Aaron C. Davis & John Wagner, *Md Special Session Moves Quickly on Tax Package*, THE WASHINGTON POST (May 14, 2012), [http://www.washingtonpost.com/local/md-politics/md-special-session-moves-quickly-on-tax-package/2012/05/14/gIOAAmysPU\\_story.html](http://www.washingtonpost.com/local/md-politics/md-special-session-moves-quickly-on-tax-package/2012/05/14/gIOAAmysPU_story.html); Associated Press, *Senate to Take Up Gambling Expansion Bill on Second Day of Special Session*, THE WASHINGTON POST (Aug. 10, 2012), [http://www.washingtonpost.com/local/senate-to-take-up-gambling-expansion-bill-on-second-day-of-special-session/2012/08/10/cd763cbe-e2aa-11e1-89f7-76e23a982d06\\_story.html](http://www.washingtonpost.com/local/senate-to-take-up-gambling-expansion-bill-on-second-day-of-special-session/2012/08/10/cd763cbe-e2aa-11e1-89f7-76e23a982d06_story.html).

<sup>10</sup> H.D. 441, 429<sup>th</sup> Gen. Assemb., Reg. Sess. (Md. 2012), *available at* <http://mlis.state.md.us/2012rs/bills/hb/hb0441t.pdf>; S. 237, 429<sup>th</sup> Gen. Assemb., Reg. Sess. (Md. 2012), *available at* <http://mlis.state.md.us/2012rs/bills/sb/sb0237f.pdf>; *Governor Martin O'Malley Unveils 2012 Legislative Agenda*, OFFICE OF GOVERNOR O'MALLEY (Jan. 23, 2012), <http://www.governor.maryland.gov/blog/?p=3558>.

<sup>11</sup> Laura D'Alessandro, *Retail Suppliers, Environmental Group Oppose Md. Offshore Wind Energy Bill*, SNL RENEWABLE ENERGY WEEKLY (Feb. 24 2012); *Maryland Offshore Wind Energy Act of 2012: Facts & Figures*, US STATE NEWS (Feb. 14, 2012).

<sup>12</sup> H.D. 441, *supra* note 10; S. 237, *supra* note 10; Dresser, *supra* note 6; D'Alessandro, *supra* note 11; Timothy B. Wheeler, *U.S. Gives Green Light to Offshore Wind Farms*, THE BALTIMORE SUN (Feb. 2, 2012), [http://articles.baltimoresun.com/2012-02-02/features/bs-gr-offshore-wind-power-20120202\\_1\\_offshore-wind-wind-farms-turbines](http://articles.baltimoresun.com/2012-02-02/features/bs-gr-offshore-wind-power-20120202_1_offshore-wind-wind-farms-turbines).

<sup>13</sup> *See infra* Part III.A

<sup>14</sup> H.D. 441, *supra* note 10; S. 237, *supra* note 10; Davis, *O'Malley to Submit*, *supra* note 5; Dresser, *supra* note 6.

providers of offshore renewable energy credits.<sup>15</sup> The electricity produced from offshore wind is then sold, along with accompanying renewable energy credits needed to meet Maryland's RPS, at competitive prices.<sup>16</sup> Bids are selected based on legislated criteria— including lowest price, long-term price stability, environmental and public health benefits, in-state jobs, and other factors.<sup>17</sup> The set-aside is ultimately only imposed if the study shows that (1) an offshore wind program provides a net benefit to Maryland, and (2) the bids the PSC receives provide positive net benefits to the state and are priced below statutory safeguards for ratepayers.<sup>18</sup>

The statutory safeguards place restrictions on the increase in customer bills caused by the offshore wind projects. The additional costs of offshore wind projects would be factored into the rates charged to customers.<sup>19</sup> In contrast to the offshore wind costs associated with the 2011 bill, the additional costs associated with the 2012 bill would not appear as a line-item surcharge on customer bills.<sup>20</sup>

Furthermore, under the original 2012 bill proposed by Governor O'Malley, the PSC could reject an offshore wind project if the project was expected to increase an average resident's electricity rate by more than two dollars per month or any nonresidential customer's rate by more than 2.5 percent.<sup>21</sup> In negotiations with lawmakers, however, Governor O'Malley agreed to lower the maximum increase for residential customers to \$1.50 and for nonresidential customers

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<sup>15</sup> H.D. 441, *supra* note 10; S. 237, *supra* note 10; *Maryland Offshore Wind Energy Act of 2012*, MARYLAND LEAGUE OF CONSERVATION VOTERS, [http://www.mdlev.org/files/2012/MDOW\\_-\\_2012\\_Bill\\_1\\_Page\\_-\\_Short.pdf](http://www.mdlev.org/files/2012/MDOW_-_2012_Bill_1_Page_-_Short.pdf).

<sup>16</sup> Davis, *O'Malley to Submit*, *supra* note 5.

<sup>17</sup> H.D. 441, *supra* note 10; S. 237, *supra* note 10; *Maryland Offshore Wind Energy Act of 2012*, *supra* note 15.

<sup>18</sup> H.D. 441, *supra* note 10; S. 237, *supra* note 10; *Maryland Offshore Wind Energy Act of 2012*, *supra* note 15; Dresser, *supra* note 6.

<sup>19</sup> Dresser, *supra* note 6.

<sup>20</sup> *Id.*

<sup>21</sup> S. 237, *supra* note 10; *Maryland Offshore Wind Energy Act of 2012*, *supra* note 15; *Maryland Offshore Wind Energy Act of 2012 Testimony*, US STATE NEWS (Feb. 23, 2012); Dresser, *supra* note 6; Davis, *O'Malley to Submit*, *supra* note 5; Aaron C. Davis & Greg Masters, *Md. Wind Power Plan Draws Gale of Support*, THE WASHINGTON POST, Feb. 20, 2012, at B4; *Governor continues*, *supra* note 5; Masters, *Maryland House*, *supra* note 7; Greg Masters, *Md. Offshore Wind Supporters Encircle State House*, THE WASHINGTON POST (Apr. 2, 2012 9:50PM), [http://www.washingtonpost.com/blogs/maryland-politics/post/md-offshore-wind-supporters-encircle-state-house/2012/04/02/gIQAShxurS\\_blog.html](http://www.washingtonpost.com/blogs/maryland-politics/post/md-offshore-wind-supporters-encircle-state-house/2012/04/02/gIQAShxurS_blog.html).

to 1.5 percent.<sup>22</sup> Additionally, under the 2012 bill, the residential and nonresidential customers' rates would not be increased until electricity is actually being produced by the offshore wind projects, which is likely to be 2017 at the earliest.<sup>23</sup> The increased rate would remain in place for twenty years.<sup>24</sup>

Governor O'Malley and other supporters of the 2012 bill argue that it will provide substantial benefits to Maryland. Offshore wind, for instance, is crucial to Maryland meeting its RPS goal of twenty percent by 2022.<sup>25</sup> Governor O'Malley maintains that the 2012 bill will further his goal of having one-fifth of Maryland's electricity supply come from in-state renewable sources by 2022.<sup>26</sup> Administration officials believe the 2012 bill would support a wind farm of 40 turbines that would produce 200 megawatts annually, which is less than half of the megawatts sought with the 2011 bill.<sup>27</sup> The bill would create 1,800 jobs in the construction phase of the offshore wind project and 360 permanent jobs once an offshore wind farm is fully operating.<sup>28</sup> The 2012 bill would also increase electricity production and reduce air pollution.<sup>29</sup> Governor O'Malley heralded the bill as a way to address a congestion problem on the region's electricity grid,<sup>30</sup> claiming that "wind power could feed into an offshore transmission line that would bring down congestion rates."<sup>31</sup>

Opponents have criticized the bill on several grounds. Senate Republican leader E.J. Pipkin, for instance, said that both lawmakers and the public should have no faith that the rate

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<sup>22</sup> H.D. 441, *supra* note 10; Masters, *Maryland House*, *supra* note 7; Masters, *Md. Offshore*, *supra* note 22.

<sup>23</sup> H.D. 441, *supra* note 10; S. 237, *supra* note 10; Dresser, *supra* note 6; *Maryland Offshore Wind Energy Act of 2012 Testimony*, *supra* note 22; Masters, *Maryland House*, *supra* note 7.

<sup>24</sup> Masters, *Maryland House*, *supra* note 7.

<sup>25</sup> James S. McGarry, *Which Way Does the Wind Blow?*, THE BALTIMORE SUN, Feb. 10, 2012, at 19A.

<sup>26</sup> Masters, *Md. Offshore*, *supra* note 22.

<sup>27</sup> Masters, *Maryland House*, *supra* note 7.

<sup>28</sup> Dresser, *supra* note 6; Davis, *O'Malley to Submit*, *supra* note 5; Davis & Masters, *supra* note 22.

<sup>29</sup> Davis, *O'Malley to Submit*, *supra* note 5; Davis & Masters, *supra* note 22.

<sup>30</sup> D'Alessandro, *supra* note 11.

<sup>31</sup> *Id.*

increases would be limited to two dollars.<sup>32</sup> He said “the PSC—which is controlled by O’Malley appointees, including two who lobbied for offshore wind last year—could not objectively analyze the costs and benefits of offshore wind.”<sup>33</sup> Moreover, some Republican and Democratic members of a Senate committee, before which O’Malley appeared to answer questions about the 2012 bill, commented that they were concerned the 2012 bill “would cost customers too much and leave too much power in the hands of regulators handpicked by O’Malley to structure the plan to guarantee a private developer a profit so that it can secure Wall Street financing.”<sup>34</sup> Other members of the committee said that another two dollars seemed over the top in combination with other O’Malley proposals to raise income taxes, add a sales tax to gasoline purchases, and double the flush tax for homeowners, which is a stormwater fee.<sup>35</sup> Opponents argue that the potential amount of electricity that could be produced from the offshore wind farm would do little to relieve the region’s grid congestion.<sup>36</sup>

### **III. Renewable Portfolio Standard Set-Aside**

This part contains two sections. Section A describes a typical state RPS program, including its design, mechanics, and purpose. Section B provides the purpose and definition of a RPS set-aside, while also discussing Maryland’s existing solar set-aside and how solar energy and offshore wind are similar.

#### **A. RPS In General**

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<sup>32</sup> Davis, *O’Malley to Submit*, *supra* note 5.

<sup>33</sup> *Id.*

<sup>34</sup> Davis & Masters, *supra* note 22.

<sup>35</sup> *Id.* Greg Masters, *What Did Pass The Maryland General Assembly*, THE WASHINGTON POST (April 10, 2012 5:11PM), [http://www.washingtonpost.com/blogs/maryland-politics/post/what-did-pass-the-maryland-general-assembly/2012/04/10/gIQAUs1s8S\\_blog.html](http://www.washingtonpost.com/blogs/maryland-politics/post/what-did-pass-the-maryland-general-assembly/2012/04/10/gIQAUs1s8S_blog.html).

<sup>36</sup> D’Alessandro, *supra* note 11.

Under a RPS program, utilities or other retail electric providers are required to obtain a specific percentage of electricity supply from renewable energy sources.<sup>37</sup> The definition of renewable energy source varies by state and the percentage requirement sometimes will increase over time.<sup>38</sup> The percentage established is ordinarily greater than the current percentage of renewable energy.<sup>39</sup> The percentage requirement is also typically accompanied by a legal mechanism for achieving it.<sup>40</sup> States typically require every retail provider to have renewable energy credits (RECs) equal to a percentage of its annual sales.<sup>41</sup> The utilities acquire the RECs by generating the renewable energy and the accompanying REC directly or by purchasing RECs from other suppliers.<sup>42</sup> RPS programs are also known as quota systems, renewable obligations, renewable energy standards, or tradeable green certificate programs.<sup>43</sup>

A REC certifies that a unit of electricity has been generated from a qualified renewable energy source.<sup>44</sup> Each REC typically represents one megawatt hour of electricity generated by a renewable energy source.<sup>45</sup> RECs can be sold along with, or separately from, the electricity used to create them.<sup>46</sup> Thus, a qualified renewable energy source creates “two saleable products: (1)

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<sup>37</sup> CHRIS WOLD ET AL., CLIMATE CHANGE AND THE LAW 841 (LexisNexis 2009); Steven Ferrey, *Threading the Constitutional Needle with Care: The Commerce Clause Threat to the New Infrastructure of Renewable Power*, 7 TEX. J. OIL, GAS & ENERGY L. 59, 61-62 (2011-2012); William T. Reisinger, *Federal and State Renewable Portfolio Standards: Conflict or Harmony?*, 41 U. TOL. L. REV. 877, 878 (2010); FRED BOSSELMAN ET AL., ENERGY, ECONOMICS AND THE ENVIRONMENT 694-95 (Foundation Press 2000); Shane Thin Elk, Note, *The Answer Is Blowing in the Wind: Why Northern Dakota Should Do More to Promote Wind Energy Development*, 6 GREAT PLAINS NAT. RESOURCES J. 110, 119 (2001).

<sup>38</sup> WOLD ET AL., *supra* note 38, at 841; Elk, *supra* note 38, at 119.

<sup>39</sup> John C. Dernbach & Seema Kakade, *Climate Change Law: An Introduction*, 29 ENERGY L.J. 1, 16 (2008).

<sup>40</sup> *Id.*

<sup>41</sup> *Id.*

<sup>42</sup> WOLD ET AL., *supra* note 38, at 84; Joshua P. Fershee, *Renewable Mandates and Goals*, in THE LAW OF CLEAN ENERGY: EFFICIENCY AND RENEWABLES 77, 79 (Michael B. Gerrard ed., American Bar Association 2011); Elk, *supra* note 38, at 119; DIANNE RAHM, CLIMATE CHANGE POLICY IN THE UNITED STATES: THE SCIENCE, THE POLITICS, AND THE PROSPECTS FOR CHANGE 142 (McFarland & Company, Inc. 2010).

<sup>43</sup> RYAN WISER ET AL., ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY, SUPPORTING SOLAR POWER IN RENEWABLES PORTFOLIO STANDARDS: EXPERIENCE FROM THE UNITED STATES 1 (Oct. 2010), <http://eetd.lbl.gov/ea/ems/reports/lbnl-3984e.pdf>.

<sup>44</sup> Ferrey, *Threading*, *supra* note 38, at 63.

<sup>45</sup> *Id.*

<sup>46</sup> Fershee, *supra* note 43, at 79.

the electricity, and (2) the RECs.”<sup>47</sup> The state certifies the credits, monitors for compliance, and imposes penalties when necessary.<sup>48</sup>

A RPS program is designed to stimulate competition among various renewable energy technologies.<sup>49</sup> It allows the most economically attractive technology to win out.<sup>50</sup> RPS programs have been criticized, however, for not yielding a significant diversity of renewable energy resources.<sup>51</sup> Typically, wind power has been the primary renewable energy resource installed under a RPS program because a RPS stimulates investment in lower-cost and lower-risk technologies and discourages investment in higher cost technologies.<sup>52</sup>

#### B. RPS Set-Aside

In response to the criticism levied against RPS, many states have adopted RPS set-asides aimed at encouraging renewable energy diversity.<sup>53</sup> States establish a RPS set-aside for a particular renewable energy technology that has been shut out of the market because of its higher costs.<sup>54</sup> Under a RPS set-aside, a state requires that a certain percentage of the RPS be met with electricity generated from a particular renewable energy technology.<sup>55</sup>

Many states, including Maryland, have established a solar set-aside.<sup>56</sup> Under the Maryland solar set-aside, electricity retail suppliers are currently required to obtain 0.06 percent

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<sup>47</sup> *Id.*

<sup>48</sup> Dernbach & Kakade, *supra* note 40, at 16.

<sup>49</sup> WISER ET AL., *supra* note 44, at ii, 1.

<sup>50</sup> *Id.*

<sup>51</sup> *Id.* at ii; WOLD ET AL., *supra* note 38, at 842.

<sup>52</sup> WISER ET AL., *supra* note 44, at 4; WOLD ET AL., *supra* note 38, at 842.

<sup>53</sup> WISER ET AL., *supra* note 44, at ii, 2, 6; WOLD ET AL., *supra* note 38, at 842.

<sup>54</sup> K.S. CORY & B.G. SWEZEY, NATIONAL RENEWABLE ENERGY LABORATORY, RENEWABLE PORTFOLIO STANDARDS IN THE STATES: BALANCING GOALS AND IMPLEMENTATION STRATEGIES 11 (Dec. 2007), <http://www.nrel.gov/docs/fy08osti/41409.pdf>; WOLD ET AL., *supra* note 41, at 842.

<sup>55</sup> CORY & SWEZEY, *supra* note 55, at 11; WOLD ET AL., *supra* note 38, at 842.

<sup>56</sup> CORY & SWEZEY, *supra* note 55, at 11, 24; WISER ET AL., *supra* note 44, at ii; WOLD ET AL., *supra* note 38, at 842.

of their total energy generation, and two percentage points of the twenty percent RPS by 2022, from solar power.<sup>57</sup>

Solar energy and offshore wind are alike in many ways. They both have higher up-front costs than onshore wind.<sup>58</sup> The additional cost for offshore turbines is the result of the specialized components, such as reinforced foundations to anchor the machines to the seafloor and the anti-corrosive features to withstand the damaging effects of the sea air and saltwater.<sup>59</sup> The costs increase substantially the further offshore the turbines are placed and the deeper the water in which their foundations are laid.<sup>60</sup> Solar and offshore wind are also in a less mature state of commercial development than onshore wind.<sup>61</sup> Solar farms are being built on private property, in the deserts, and on federal lands on the West Coast,<sup>62</sup> while offshore wind farms have yet to be developed in the United States.<sup>63</sup>

#### **IV. Feed-in Tariff**

This part contains three sections. Section A provides the purpose and definition of a FIT, and discusses the similarities between a FIT and the Maryland Offshore Wind Energy Act of 2011. Section B explains five particular features of a FIT. Finally, Section C describes the FIT programs in Germany, Ontario, and the United States.

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<sup>57</sup> Dresser, *supra* note 6; McGarry, *supra* note 26.

<sup>58</sup> CORY & SWEZEY, *supra* note 55, at 35; Ed Feo & Josh Ludmir, *Challenges in Development and Financing of Offshore Wind Energy*, 14 ROGER WILLIAMS U. L. REV. 672, 675, 677 (2009); Erica Schroeder, *Turning Offshore Wind On*, 98 CALIF. L. REV. 1631, 1641 (2010).

<sup>59</sup> Feo & Ludmir, *supra* note 59, at 674.

<sup>60</sup> *Id.* at 675.

<sup>61</sup> CORY & SWEZEY, *supra* note 55, at 35.

<sup>62</sup> Julie Cart, *The Solar Desert: Landowners See Gold in Solar Power*, LOS ANGELES TIMES, Feb. 18, 2012, at A1; Associated Press, *US Pushing Ahead on Wind Projects*, BOSTON GLOBE, Dec. 21, 2011, at 6.

<sup>63</sup> Associated Press, *US Pushing*, *supra* note 63; Peter Asmus, *Putting the Wind in Industry's Sails*, THE STAR-LEDGER (Newark), April 29, 2012.

## A. FIT In General

The purpose of a FIT is to encourage renewable energy production by guaranteeing that renewable energy generators return a profit.<sup>64</sup> A FIT requires electric utilities to enter into long-term power purchase agreements with renewable energy generators for electricity at a set price.<sup>65</sup> The price is set at a level that will ensure the renewable energy generator receives a reasonable economic return on its investment.<sup>66</sup> After the price is set, the additional costs are passed on to energy consumers by including the costs within the electricity rate charged customers.<sup>67</sup> The term of the agreement is typically from five to thirty years.<sup>68</sup> FITs are also called renewable energy payments.<sup>69</sup>

A FIT is similar to the Maryland Offshore Wind Energy Act of 2011 in two ways. First, both require utilities to enter into long-term agreements with renewable energy generators. The 2011 Bill, for instance, requires the agreements to be made specifically with offshore wind power generation facilities. In addition, both pass the supplemental costs of renewable energy generation on to electricity customers. Specifically, FITs include the additional costs of

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<sup>64</sup> John Perkins, Comment, *Overcoming Jurisdictional to Feed-In Tariffs in the United States*, 40 GOLDEN GATE U. L. REV. 97, 104 (2009).

<sup>65</sup> RAHM, *supra* note 43, at 142; WOLD ET AL., *supra* note 38, at 843; Steven Ferrey, *Sale of Electricity*, in THE LAW OF CLEAN ENERGY: EFFICIENCY AND RENEWABLES 217, 228 (Michael B. Gerrard ed., American Bar Association 2011); Steven Ferrey, *Restructuring a Green Grid: Legal Challenges to Accommodate New Renewable Energy Infrastructure*, 39 ENVTL. L. 977, 1007 (2009); Nan Sato, Note, *Red Dragon Gone Green: China's Approach to Renewable Energy Technologies, Its Legal Implications, and Its Impact on U.S. Energy Policy*, 2011 U. ILL. J.L. TECH. & POL'Y 463, 480 (2011); TOBY COUTURE ET AL., NATIONAL RENEWABLE ENERGY LABORATORY, A POLICYMAKER'S GUIDE TO FEED-IN TARIFF POLICY DESIGN v, 6 (July 2010), <http://www.nrel.gov/docs/fy10osti/44849.pdf>.

<sup>66</sup> David Grinlinton & LeRoy Paddock, *The Role of Feed-In Tariffs in Supporting the Expansion of Solar Energy Production*, 41 U. TOL. L. REV. 943, 944 (2010); Sato, *supra* note 66, at 480.

<sup>67</sup> Michael E. Streich, Comment, *Green Energy and Green Economy Act, 2009: A "FIT"-ing Policy for North America?*, 33 HOUS. J.INT'L L. 419, 426 (2011); ARNE KLEIN, FEED-IN TARIFF DESIGNS: OPTIONS TO SUPPORT ELECTRICITY GENERATION FROM RENEWABLE ENERGY SOURCES 63 (VDM Verlag Dr. Muller 2008); MIGUEL MENDONCA, FEED-IN TARIFFS: ACCELERATING THE DEPLOYMENT OF RENEWABLE ENERGY 100 (Earthscan 2007). See *infra* Part III.B3.

<sup>68</sup> Ferrey, *Sale*, *supra* note 66, at 228; Ferrey, *Restructuring*, *supra* note 66, at 1007.

<sup>69</sup> Sato, *supra* note 66, at 479.

renewable energy generation within the rate charged to customers, whereas under the 2011 bill, the additional costs would have been included as a line-item charge on customer bills.

## B. Design Features

A FIT can be designed in numerous ways. Accordingly, this section will focus on five of the more critical FIT design features: (1) payment level, (2) purchase obligation, (3) burden sharing, (4) forecast obligation, and (5) grid access.

### 1. Payment Level

Payment level refers to the price that utilities pay renewable energy generators for their electricity. The level has to be revised regularly to ensure that the FIT continues to serve its purpose of encouraging renewable energy production.<sup>70</sup> There are two different methods to revising the payment level: (1) periodic revision and adjustment; and (2) capacity-dependent adjustment.<sup>71</sup> With the first method, the payment level is revised on a set schedule either quarterly, annually, or on a multi-year basis.<sup>72</sup> Under the capacity-dependent adjustment method, the payment level is revised depending on the amount of installed capacity.<sup>73</sup>

There are five main approaches used to set the FIT payment level: (a) cost-based; (b) value-based; (c) fixed-price; (d) premium-price; and (e) auction-based.<sup>74</sup>

#### a. Cost-Based

Under the cost-based approach, the FIT payment level is based on the actual cost of renewable energy generation plus a targeted return that is typically set by the legislature or regulators.<sup>75</sup> Detailed market research and empirical analysis of current renewable energy costs

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<sup>70</sup> See MENDONCA, FEED-IN, *supra* note 68, at 92; KLEIN, *supra* note 68, at 25.

<sup>71</sup> MENDONCA, FEED-IN, *supra* note 68, at 92; KLEIN, *supra* note 68, at 25.

<sup>72</sup> COUTURE ET AL., *supra* note 66, at ix.

<sup>73</sup> KLEIN, *supra* note 68, at 26.

<sup>74</sup> COUTURE ET AL., *supra* note 66, at vi, vii, 7.

<sup>75</sup> *Id.* at vi, 7; Steven Ferrey et al., *Fire and Ice: World Renewable Energy and Carbon Control Mechanism Confront Constitutional Barriers*, 20 DUKE ENVTL. L & POL'Y F. 125, 170-71 (2010); KLEIN, *supra* note 68, at 16; Dennis L.

are used to establish the payment level.<sup>76</sup> This is the most commonly used approach in the European Union (EU).<sup>77</sup>

b. Value-Based

The value-based approach sets the FIT payment level by estimating the value, or quantifying the benefits, of renewable energy generation either to society or to the utility.<sup>78</sup> The value to society includes the value of electricity plus climate change mitigation, health impacts, energy security, and other externalities.<sup>79</sup> The value to the utility consists of avoided generation costs, and the time and location-specific value of electricity supply.<sup>80</sup> This approach is also called the benefit-based or avoided external costs approach.<sup>81</sup>

c. Fixed-Price

Under the fixed-price approach, the FIT payment is set at a simple fixed price.<sup>82</sup> The price is independent of costs or the market price and is constant over a fixed period.<sup>83</sup> Renewable energy generators receive a certain amount of money per kilowatt hour of electricity generated.<sup>84</sup>

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Arfmann et al., *The Regulatory Future of Clean, Reliable Energy: Increasing Distributed Generation*, 40 COLO. LAW. 31, 38 (2011).

<sup>76</sup> *Id.* at 8.

<sup>77</sup> COUTURE ET AL., *supra* note 66, at 7.

<sup>78</sup> *Id.* at vi, 8; Streich, *supra* note 68, at 427; Arfmann et al., *supra* note 76, at 38.

<sup>79</sup> COUTURE ET AL., *supra* note 6, at vi, 8.

<sup>80</sup> *Id.* at vii, 8.

<sup>81</sup> See Ferrey et al., *Fire*, *supra* note 76, at 171; KLEIN, *supra* note 68, at 16-17.

<sup>82</sup> COUTURE ET AL., *supra* note 66, at vii; MENDONCA, FEED-IN, *supra* note 68, at 97; KLEIN, *supra* note 68, at 48.

<sup>83</sup> COUTURE ET AL., *supra* note 66, at vii; MENDONCA, FEED-IN, *supra* note 68, at 97; KLEIN, *supra* note 68, at 48; J.P.M. Sijm, *The Performance of Feed-in Tariffs to Promote Renewable Electricity in European Countries*, 2 OIL, GAS, & ENERGY L. 5, 6 (2004), <http://www.ogel.org>.

<sup>84</sup> KLEIN, *supra* note 68, at 48.

#### d. Premium-Priced

The payment level under the premium-priced approach is determined by adding a premium tariff to the market electricity price.<sup>85</sup> The premium added can be either constant or sliding.<sup>86</sup> The constant premium is a fixed predetermined adder.<sup>87</sup> The sliding premium varies as a function of the market electricity price.<sup>88</sup> For example, the premium may decline as the market electricity price increases.<sup>89</sup>

#### e. Auction-Based

Under the auction-based approach, an auction is used to determine the FIT payment price.<sup>90</sup> The price is established by the market and not administratively by the government.<sup>91</sup> Variations of the auction-based approach are being introduced in Spain for solar energy and in China for solar and wind power.<sup>92</sup> Additionally, California has adopted a variation of this approach for small-scale renewable generation facilities as to be discussed in section C.

### 2. Purchase Obligation

A purchase obligation is an obligation for electricity grid operators, energy supply companies, or electricity consumers to purchase all the power produced from a renewable energy generator.<sup>93</sup> It is considered an important FIT feature because it assures investment security.<sup>94</sup> The purchase obligation is especially important for more variable renewable energy

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<sup>85</sup> COUTURE ET AL., *supra* note 66, at vii; Ferrey, *Restructuring*, *supra* note 66, at 1007; Ferrey et al., *Fire*, *supra* note 76, at 170-71; MENDONCA, FEED-IN, *supra* note 68, at 97; KLEIN, *supra* note 68, at 48.

<sup>86</sup> COUTURE ET AL., *supra* note 66, at vii.

<sup>87</sup> *Id.* at vii.

<sup>88</sup> *Id.*; MENDONCA, FEED-IN, *supra* note 68, at 98.

<sup>89</sup> COUTURE ET AL., *supra* note 66, at viii.

<sup>90</sup> *Id.* at 8.

<sup>91</sup> *Id.*

<sup>92</sup> *Id.*

<sup>93</sup> MENDONCA, FEED-IN, *supra* note 68, at 92; COUTURE ET AL., *supra* note 66, at viii; KLEIN, *supra* note 68, at 27; MIGUEL MENDONCA ET AL., POWERING THE GREEN ECONOMY: THE FEED-IN TARIFF HANDBOOK 29-30 (Earthscan 2010).

<sup>94</sup> MENDONCA ET AL., POWERING, *supra* note 95, at 29.

technologies—such as wind—because the producer has no control over when the electricity is generated.<sup>95</sup> Electricity is only generated when the wind is at optimal speeds.

### 3. Burden Sharing

Burden sharing is the financial mechanism whereby the additional costs associated with supporting renewable energy are equally distributed among all electricity consumers.<sup>96</sup> The additional costs are included in the rate charged and are thus passed on to energy consumers.<sup>97</sup>

### 4. Forecast Obligation

The purpose of the forecast obligation is to help grid operators deal with the variable output of renewable energy technologies, such as wind.<sup>98</sup> The forecast obligation requires the renewable energy generators to predict the amount of electricity that they plan to provide to the grid.<sup>99</sup> If the actual electricity provided deviates up or down by a certain percentage from the amount predicted, then the operators are required to pay a penalty fee.<sup>100</sup> The penalty provides an incentive to improve the accuracy of forecasts for renewable energy production.<sup>101</sup>

### 5. Grid Access

Grid access refers to the requirement that grid system operators immediately, and as a priority, connect plants generating electricity from renewable energy sources to the grid.<sup>102</sup> This feature settles the uncertainties related to grid access and interconnection that renewable energy generators face.<sup>103</sup>

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<sup>95</sup> *Id.* at 30.

<sup>96</sup> *Id.* at 28; MENDONCA, FEED-IN, *supra* note 68, at 100; KLEIN, *supra* note 68, at 63.

<sup>97</sup> MENDONCA, FEED-IN, *supra* note 68, at 100; KLEIN, *supra* note 68, at 63; COUTURE ET AL., *supra* note 66, at ix-x.

<sup>98</sup> COUTURE ET AL., *supra* note 66, at ix.

<sup>99</sup> MENDONCA, FEED-IN, *supra* note 68, at 101; KLEIN, *supra* note 68, at 72.

<sup>100</sup> MENDONCA, FEED-IN, *supra* note 68, at 101; KLEIN, *supra* note 68, at 72-73; COUTURE ET AL., *supra* note 66, at ix.

<sup>101</sup> MENDONCA, FEED-IN, *supra* note 68, at 101; KLEIN, *supra* note 68, at 73; COUTURE ET AL., *supra* note 66, at ix.

<sup>102</sup> MENDONCA ET AL., POWERING, *supra* note 95, at 30.

<sup>103</sup> COUTURE ET AL., *supra* note 66, at 11.

### C. Existing FITs

FITs are used in sixty-one countries along with twenty-six states and provinces worldwide.<sup>104</sup> Twenty out of the twenty-seven EU member states use FITs.<sup>105</sup> The following three sub-sections describe the FIT programs in Germany, Ontario, and the United States.

#### 1. Germany

Germany is well-known for its FIT program. Having been established in 1990, it is the oldest FIT in the world.<sup>106</sup> Originally, electric utilities were required to connect renewable energy generators to the grid and buy electricity at rates of sixty-five to ninety percent of the rate the utilities ultimately charged their customers.<sup>107</sup> The payment level was based on a fixed percentage of the retail electricity price, which depended on the renewable energy technology and the project size.<sup>108</sup> The generators were not required to enter into contracts with the utilities.<sup>109</sup> Additionally, there was no guarantee that the payment would remain constant over a specific period.<sup>110</sup>

Germany's FIT has since been amended three times: in 2000, 2004, and 2009.<sup>111</sup> In 2000, it was changed to a cost-based approach whereby the payment was fixed for twenty years.<sup>112</sup> In 2004, the cost-based approach was modified further to differentiate the payments

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<sup>104</sup> Umair Irifan, *Solar Power Continues to Push Its Way Into New Markets, Despite Recession*, CLIMATEWIRE (July 25, 2011), <http://www.eenews.net>.

<sup>105</sup> Colin Sullivan, *Deutsche Bank Sees U.S. and Canada Falling Behind in Clean Technology*, CLIMATEWIRE (July 29, 2011), <http://www.eenews.net>.

<sup>106</sup> RAHM, *supra* note 43, at 142; MENDONCA ET AL., *POWERING*, *supra* note 95, at 80; Grinlinton & Paddock, *supra* note 67, at 949.

<sup>107</sup> MENDONCA, *FEED-IN*, *supra* note 68, at 28; Bradley Motl, Comment, *Reconciling German-Style Feed-in Tariffs with PURPA*, 28 WIS. INT'L L.J. 742, 747 (2011).

<sup>108</sup> COUTURE ET AL., *supra* note 66, at 9.

<sup>109</sup> MENDONCA, *FEED-IN*, *supra* note 68, at 28.

<sup>110</sup> MENDONCA ET AL., *POWERING*, *supra* note 95, at 80; Motl, *supra* note 109, at 748.

<sup>111</sup> See MENDONCA, *FEED-IN*, *supra* note 68, at 30-36.

<sup>112</sup> MENDONCA ET AL., *POWERING*, *supra* note 95, at 80; MENDONCA, *FEED-IN*, *supra* note 68, at 31; Streich, *supra* note 68, at 430; Motl, *supra* note 109, at 748; COUTURE ET AL., *supra* note 66, at 10; Sijm, *supra* note 85, at 9.

based on technology, location, and the size of renewable energy generation plants.<sup>113</sup> The 2004 amendments were designed to encourage solar development.<sup>114</sup> The 2004 Amendments can be deemed especially successful because Germany's FIT has created the world's largest solar energy market.<sup>115</sup> However, Germany has recently reduced the level of payment provided for solar energy.<sup>116</sup>

Germany's FIT has included some of the FIT design features discussed in section B. Specifically, Germany's FIT has the purchase obligation, grid access, and burden sharing features.<sup>117</sup> Additionally, Germany has established a FIT for offshore wind farms under which operators of offshore wind turbines receive more than operators of onshore wind turbines.<sup>118</sup>

## 2. Ontario, Canada

On October 1, 2009, Ontario enacted its first FIT for offshore wind farms.<sup>119</sup> It adopted the fixed-price approach, setting the payment level at nineteen cents per kilowatt hour.<sup>120</sup> The term of the FIT is twenty years.<sup>121</sup>

## 3. Programs in the United States

Vermont and California are the only states that have enacted and implemented a FIT.<sup>122</sup> Several other states are proposing or experimenting with FIT programs.<sup>123</sup>

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<sup>113</sup> MENDONCA ET AL., POWERING, *supra* note 95, at 80.

<sup>114</sup> Grinlinton & Paddock, *supra* note 67, at 949.

<sup>115</sup> RAHM, *supra* note 43, at 142; Ferrey et al., *Fire*, *supra* note 76, at 171.

<sup>116</sup> See *German's Solar Subsidy Cuts Go Deeper, Arrive Sooner Than Expected*, CLIMATEWIRE (Feb. 24, 2012), <http://www.eenews.net>.

<sup>117</sup> Streich, *supra* note 68, at 430; Motl, *supra* note 109, at 748; COUTURE ET AL., *supra* note 66, at 10; Sijm, *supra* note 85, at 9.

<sup>118</sup> KLEIN, *supra* note 68, at 36; MENDONCA, FEED-IN, *supra* note 68, at 33, 35.

<sup>119</sup> *Report of the Renewable Energy & Demand-Side Management Committee*, 31 ENERGY L.J. 287, 309 (2010).

<sup>120</sup> *Id.*

<sup>121</sup> *Id.*

<sup>122</sup> See Grinlinton & Paddock, *supra* note 67, at 969-72.

<sup>123</sup> *Id.*; COUTURE ET AL., *supra* note 66, at 16.

Vermont became the first state in the United States to implement a FIT in May 2009.<sup>124</sup> It adopted the cost-based approach to establishing the payment level.<sup>125</sup> The payment level will be revised periodically.<sup>126</sup>

California has since followed Vermont and established a type of FIT program for small-scale renewable energy generation facilities.<sup>127</sup> California's three investor-owned utilities (IOUs) will hold biannual reverse auctions.<sup>128</sup> Under the reverse auctions, the IOUs accept the lowest bid to build renewable energy projects.<sup>129</sup> Through the auctions, the IOUs will buy renewable energy contracts of up to 20 megawatts in size until they collectively have bought a total of one gigawatt (1,000 MW).<sup>130</sup> The FIT is designed to help utilities meet California's RPS.<sup>131</sup>

## V. Comparison of RPS Set-Aside v. FIT

This part has two sections. In section A, the advantages and disadvantages of a RPS set-aside will be compared to those of a FIT. In terms of the RPS set-aside, the discussion will focus on solar set-asides. Section B provides the legal limitations of both a RPS set-aside and a FIT in terms of the United States Constitution and federal statutes.

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<sup>124</sup> MENDONCA ET AL., POWERING, *supra* note 95, at 95; Grinlinton & Paddock, *supra* note 67, at 969; Motl, *supra* note 109, at 743.

<sup>125</sup> MENDONCA ET AL., POWERING, *supra* note 95, at 95.

<sup>126</sup> *Id.*

<sup>127</sup> Grinlinton & Paddock, *supra* note 67, at 970; Anne C. Mulkern, *Solyndra Bankruptcy Reveals Dark Clouds in Sun-Power Industry*, GREENWIRE (Sept. 6, 2011), <http://www.eenews.net>.

<sup>128</sup> Mulkern, *Solyndra*, *supra* note 129; Debra Kahn, *State Sets Up Auctions for Utilities to Buy Small Renewable Energy Contracts*, CLIMATEWIRE (Aug. 22, 2011), <http://www.eenews.net/public/climatewire/2011/08/22/7>.

<sup>129</sup> Kahn, *supra* note 130; Anne C. Mulkern, *Calif. Utilities Start Moving Toward Feed-in Tariffs*, GREENWIRE (July 7, 2011), [http://eenews.net/special\\_reports/california](http://eenews.net/special_reports/california).

<sup>130</sup> Mulkern, *Solyndra*, *supra* note 129; Kahn, *supra* note 130; Saqib Rahim, *Republicans Weigh a Federal 'Reverse Auction to Push Clean Energy*, CLIMATEWIRE (April 4, 2011), <http://www.eenews.net/public/climatewire/2011/04/04/1>.

<sup>131</sup> Grinlinton & Paddock, *supra* note 67, at 970.

## A. Advantages and Disadvantages

A RPS set-aside and a FIT provide different degrees of certainty. A solar RPS set-aside provides “a degree of certainty that the RPS will result in the development of a certain amount of solar resources: a key ingredient to financing large-scale solar projects.”<sup>132</sup> Thus, a RPS set-aside provides certainty as to quantity but leaves the price to be determined by the free market.

In contrast, a FIT provides certainty as to price and grid interconnection and lets the market determine quantity.<sup>133</sup> A FIT provides stable prices, especially if a fixed-cost payment method is adopted. A FIT is more beneficial to investors because renewable energy investors care more about price than quantity.<sup>134</sup> The investors require reliable information and predictable rates of return from the start of the financing process.<sup>135</sup> Additionally, a grid access feature guarantees a developer interconnection to the grid.<sup>136</sup>

A RPS set-aside and FIT also have different effects on renewable energy development. RPS set-asides spur only the growth of the technology to which it applies. Solar RPS set-asides have played a significant role in the recent growth of the United States solar market.<sup>137</sup> Of the nine states that have active solar or distributed generation set-aside obligations in 2008, only three fully met their targets through the purchase of renewable energy or RECs.<sup>138</sup> In contrast, FITs are superior in supporting less-mature technologies.<sup>139</sup> FITs “encourage small-scale

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<sup>132</sup>CORY & SWEZEY, *supra* note 55, at 6.

<sup>133</sup> Brian Jansen, *Community Wind Power: Making More Americans Energy Producers Through Feed-in Tariffs*, 20 KAN. J.L. & PUB. POL’Y 329, 347 (2011).

<sup>134</sup> MENDONCA ET AL., *POWERING*, *supra* note 95, at 152.

<sup>135</sup> *Id.* at 160.

<sup>136</sup> Ferrey et al., *Fire*, *supra* note 76, at 173.

<sup>137</sup> WISER ET AL., *supra* note 44, at iii.

<sup>138</sup> *Id.* at iii-iv.

<sup>139</sup> *Id.* at 1.

renewables that are ignored by utilities in meeting their requirements under a RPS.”<sup>140</sup> FITs also foster more rapid renewable energy development.<sup>141</sup>

Furthermore, RPS set-asides and FITs entail different risks. A primary disadvantage of RPS set-asides is “the risk that they will put upward pressure on RPS compliance costs, if solar is more expensive than other sources of renewable generation.”<sup>142</sup> With set-asides, there is a risk that they will make it more expensive for electricity providers to comply with a RPS, which will in turn make it more expensive for consumers. In contrast, FITs tend to lower the risks of higher electricity costs. FITs decrease investment risk by guaranteeing an investor a long-term contract at a secured price with a return on investment.<sup>143</sup> The reduction of the investment risk helps to reduce the cost of capital used to finance renewable projects<sup>144</sup> and ultimately reduces the cost of renewable electricity.<sup>145</sup>

With FITs, there is also a high risk that a particular FIT payment level will be either too high or too low.<sup>146</sup> If payment levels are not adjusted over time and, as a result, the level is too high, then consumers will pay unnecessarily high prices for renewable energy.<sup>147</sup> If the payment level is too low, then it will spark little or no new investment in renewable energy generation.<sup>148</sup> Revising the payment level periodically, however, ensures that the payment level is in step with the market.

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<sup>140</sup> WOLD ET AL., *supra* note 38, at 843.

<sup>141</sup> Grinlinton & Paddock, *supra* note 67, at 948; Jansen, *supra* note 135, at 344; *see also* MENDONCA, FEED-IN, *supra* note 68, at 69.

<sup>142</sup> CORY & SWEZEY, *supra* note 55, at 6.

<sup>143</sup> Ferrey et al., *Fire*, *supra* note 76, at 172.

<sup>144</sup> The large cash flows from the FIT reduce the amount of equity an investor needs to put into the project and allows the investor to acquire additional debt. Nathan Paine, *Minnesota's Winds of Progress: How Our Wind Energy Industry Can Continue Growing*, MINNESOTA2020 20 (July 2009), <http://www.mn2020.org/assets/uploads/article/wind.pdf>.

<sup>145</sup> Grinlinton & Paddock, *supra* note 67, at 948; RAHM, *supra* note 43, at 143; Jansen, *supra* note 135, at 346.

<sup>146</sup> MENDONCA ET AL., POWERING, *supra* note 95, at 62.

<sup>147</sup> *Id.*; MENDONCA, FEED-IN, *supra* note 68, at 13.

<sup>148</sup> MENDONCA ET AL., POWERING, *supra* note 95, at 62, COUTURE ET AL., *supra* note 66, at 13.

## B. Legal Limitations

This section addresses the legal limitations of RPS set-asides and FITs. The first subsection will address the constitutional challenges that RPS set-asides and FITs face. The second subsection examines whether RPS set-asides and FITs violate the Public Utility Regulatory Policies Act (PURPA).

### 1. Constitutional Challenges

A RPS set-aside could be challenged as violating the dormant Commerce Clause. Under the dormant Commerce Clause, states are prohibited from enacting laws that favor in-state businesses.<sup>149</sup> If a statute favors local interests to the detriment of interstate commerce, a court will find the statute to be *per se* invalid.<sup>150</sup> If the RPS program favors in-state renewable resources over out-of-state ones, then the RPS program would violate the dormant Commerce Clause and the RPS program, including the set-aside, would be invalid.<sup>151</sup> Examples of such RPS programs include those that require that the RECs be created by in-state power generation or ban the export of RECs from the state.<sup>152</sup>

For example, the Massachusetts RPS had two provisions that favored in-state renewable resources.<sup>153</sup> First, it required long-term renewable energy contracts to be established with in-state generators.<sup>154</sup> Secondly, the RPS program had a solar set-aside that mandated retail suppliers to buy a certain amount of the solar energy required under the RPS from in-state generators.<sup>155</sup> A challenge was filed in April 2010 against the Massachusetts RPS program on

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<sup>149</sup> Fershee, *supra* note 43, at 82.

<sup>150</sup> Ferrey, *Threading*, *supra* note 38, at 85.

<sup>151</sup> Fershee, *supra* note 43, at 83.

<sup>152</sup> Ferrey, *Threading*, *supra* note 38, at 86, 97.

<sup>153</sup> Fershee, *supra* note 43, at 83.

<sup>154</sup> *Id.* at 83; Ferrey, *Threading*, *supra* note 38, at 92.

<sup>155</sup> Fershee, *supra* note 43, at 83; Ferrey, *Threading*, *supra* note 38, at 92.

constitutional grounds but the case was settled without resolving the constitutionality of the two provisions.<sup>156</sup>

Additionally, if the RPS set-aside itself favors in-state renewable resources, like the Massachusetts RPS set-aside, it could be challenged as violating the dormant Commerce Clause. For further clarification, let us say, hypothetically, that the law establishing the Maryland RPS solar set-aside stated that 0.5 percent of the two percent solar RPS set-aside must be met by buying solar energy from Maryland generators. The Maryland solar set-aside could then face a dormant Commerce Clause challenge.

Like RPS set-asides, FITs are also vulnerable to constitutional challenges. A FIT could be challenged, for instance, as violating the Supremacy Clause of the United States Constitution.<sup>157</sup> When a transaction is subject to exclusive federal jurisdiction and regulation, state regulation of the same transaction is preempted under the Supremacy Clause.<sup>158</sup> Under the Federal Power Act (FPA), the Federal Energy Regulatory Commission (FERC) is entitled to regulate the rates, terms, and provisions of any wholesale sale or transmission of electricity in interstate commerce.<sup>159</sup> Interstate commerce refers to transactions between states. All state regulation of wholesale interstate power transactions are preempted by FERC regulation.<sup>160</sup> A RPS program does not involve the sale of power and therefore does not invoke problems under the FPA.<sup>161</sup>

A FIT intrudes into FERC jurisdiction in one of two ways. Under a FIT, a renewable energy generator's sale is a wholesale sale because the generator is selling the energy for

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<sup>156</sup> Fershee, *supra* note 43, at 83; Ferrey, *Threading*, *supra* note 38, at 92.

<sup>157</sup> Steven Ferrey, *The New Climate Metric: The Sustainable Corporation and Energy*, 46 WAKE FOREST L. REV. 383, 400 (2011).

<sup>158</sup> Ferrey, *Sale*, *supra* note 66, at 229.

<sup>159</sup> *Id.* at 229; Ferrey, *New*, *supra* note 159, at 400; Ferrey et al., *Fire*, *supra* note 76, at 180; Ferrey, *Threading*, *supra* note 38, at 94.

<sup>160</sup> Ferrey, *Sale*, *supra* note 66, at 229; Ferrey et al., *Fire*, *supra* note 76, at 180.

<sup>161</sup> Ferrey, *Threading*, *supra* note 38, at 86.

subsequent resale.<sup>162</sup> If that renewable energy generator sells the energy to a retail electricity provider in another state, then FERC jurisdiction applies.<sup>163</sup> Additionally, a FIT establishes a price for renewable power sale that is above the general wholesale price of power in the region.<sup>164</sup> By carving out special treatment for the renewable wholesale power sale, the states intrude into an area reserved for FERC. Accordingly, such treatment is preempted by FERC regulation.<sup>165</sup>

However, PURPA carved out an exemption from FERC's jurisdiction. Under PURPA, qualifying facilities (QFs) are not considered utilities and are therefore exempt from regulation under the FPA.<sup>166</sup> QFs refer to cogenerators or small power production facilities that comply with FERC rules on fuel use, size, fuel efficiency, and reliability.<sup>167</sup> A small power production facility is a generating facility of 80 megawatts of electricity or less whose primary energy source is hydro, wind, solar, biomass, waste, or geothermal resources.<sup>168</sup> Under PURPA, states can establish rates for QFs and not intrude into FERC's jurisdiction.<sup>169</sup> Whether the FIT payment levels themselves violate PURPA is to be discussed in the next subsection.

## 2. PURPA

PURPA requires covered utilities to purchase electricity from QFs at the utility's avoided cost.<sup>170</sup> Under PURPA, no rule requiring a utility to purchase electricity from a QF can provide for a rate that exceeds the utility's avoided costs.<sup>171</sup> The avoided costs are the costs for both the electricity and the facilities that the purchasing utility would have incurred if it had purchased the

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<sup>162</sup> Perkins, *supra* note 65, at 106.

<sup>163</sup> *Id.* at 106.

<sup>164</sup> Ferrey, *Sale*, *supra* note 66, at 229.

<sup>165</sup> *Id.* at 229.

<sup>166</sup> Grinlinton & Paddock, *supra* note 67, at 960.

<sup>167</sup> *Id.* at 960.

<sup>168</sup> *Id.* at 960; Motl, *supra* note 109, at 753.

<sup>169</sup> Grinlinton & Paddock, *supra* note 67, at 963.

<sup>170</sup> Fershee, *supra* note 43, at 81.

<sup>171</sup> Grinlinton & Paddock, *supra* note 67, at 963.

electricity from an alternative supplier, or it had generated the electricity itself by constructing its own facility.<sup>172</sup> State regulators are responsible for determining the exact procedure for calculating a utility's avoided cost.<sup>173</sup> FERC provides states with a list of factors that should be used to calculate avoided cost.<sup>174</sup>

RPS programs that require utilities to buy renewable energy do not violate PURPA. They are considered non-rate mechanisms and therefore are not subject to the avoided cost PURPA restrictions on wholesale power sale prices.<sup>175</sup>

If the FIT payment level exceeds avoided cost, then the FIT may violate PURPA.<sup>176</sup> The avoided costs are the cost of producing the same amount of electricity in the cheapest manner possible.<sup>177</sup> The "utilities' avoided costs are typically set based on the default set of generators, and are thus below that required to support more expensive renewable projects."<sup>178</sup> In order for a FIT designed to encourage renewable projects to be effective, it would have to be well above the utilities' avoided costs.<sup>179</sup>

FERC's four decisions on FITs and avoided costs provide information on how a FIT can comply with PURPA. In the mid-1990s, the California Public Utilities Commission (CPUC) ordered several utilities to establish long-term fixed-priced contracts with QFs.<sup>180</sup> The utilities argued that the contract price exceeded avoided cost and requested that FERC void the order.<sup>181</sup>

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<sup>172</sup> MENDONCA, FEED-IN, *supra* note 68, at 26; Grinlinton & Paddock, *supra* note 67, at 960, 964; Christine Real de Azua, *The Future of Wind Energy*, 14 TUL. ENVTL. L.J. 485, 505 (2001); Perkins, *supra* note 65, at 104.

<sup>173</sup> Motl, *supra* note 109, at 761.

<sup>174</sup> *Id.* at 761.

<sup>175</sup> Ferrey et al., *Fire*, *supra* note 76, at 194.

<sup>176</sup> Grinlinton & Paddock, *supra* note 67, at 964; Paul Savage et al., *DC Microgrids: Benefits and Barriers* in FROM SILOS TO SYSTEMS: ISSUES IN CLEAN ENERGY AND CLIMATE CHANGE A REPORT ON THE WORK OF THE REIL NETWORK 2008-2010 51, 65 (Yale School of Forestry and Environmental Studies 2010).

<sup>177</sup> Motl, *supra* note 109, at 753.

<sup>178</sup> Todd J. Griset, *Harnessing the Ocean's Power: Opportunities in Renewable Ocean Energy Resources*, 16 OCEAN & COASTAL L.J. 395, 422 (2011).

<sup>179</sup> Ferrey, *Restructuring*, *supra* note 66, at 1008.

<sup>180</sup> S. Cal. Edison Co., 70 FERC ¶61,215, 61,666 (1995); Grinlinton & Paddock, *supra* note 67, at 964.

<sup>181</sup> S. Cal. Edison Co., 70 FERC at ¶61,676; Grinlinton & Paddock, *supra* note 67, at 964.

FERC ruled in 1995 that California's program violated PURPA because, by limiting the competition for the contracts to QFs, the CPUC had excluded potential lower cost sellers from the competition and thus caused prices that exceeded avoided cost.<sup>182</sup> In its decision, FERC stated that "[o]ur decision today does not, for example, preclude the possibility that, in setting an avoided cost rate, a state may account for environmental costs of all fuel sources included in an all source determination of avoided cost."<sup>183</sup> Under FERC's decision, California could have included environmental costs in its definition of avoided costs if it had adopted uniform requirements that applied to all power generation facilities and included all the power generation facilities, not just QFs, in the avoided cost bidding process.<sup>184</sup>

FERC issued another decision in 1995 clarifying the meaning of environmental costs.<sup>185</sup>

FERC stated:

Thus, in setting avoided cost rates, a state may only account for costs which actually would be incurred by the utilities. A state may, through state action, influence what costs are incurred by the utility. . . . For example, a state may impose a tax or other charge on all generation produced by a particular fuel, and thus increase the costs which would be incurred by utilities in building and operating plants that use that fuel. . . . A state, however, may not set avoided cost rates or otherwise adjust the bids of potential suppliers by imposing environmental adders or subtractors that are not based on real costs that would be incurred by utilities.<sup>186</sup>

Thus, according to FERC, environmental costs can only include costs, like taxes, that a utility actually incurs.

In July 2010, a FIT was once again the focus of a FERC decision. At issue in FERC's July 2010 decision was California's FIT program for combined heat and power generators (CHPs). The program required each IOU in California to file with the CPUC a FIT under which

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<sup>182</sup> S. Cal. Edison Co., 70 FERC at ¶61,676; Grinlinton & Paddock, *supra* note 67, at 964.

<sup>183</sup> S. Cal. Edison Co., 70 FERC at ¶61,676

<sup>184</sup> Grinlinton & Paddock, *supra* note 67, at 964.

<sup>185</sup> S. Cal. Edison Co., 71 FERC ¶61,269 (1995); Grinlinton & Paddock, *supra* note 67, at 965;

<sup>186</sup> S. Cal. Edison Co., 71 FERC at ¶62,080.

the IOU offered to buy electricity generated by CHPs (whose capacity does not exceed twenty megawatts) for ten years at a price set by the CPUC.<sup>187</sup> The CPUC filed a petition to FERC for a declaratory order seeking approval of its orders specifying the prices that the IOUs must offer for the output of the CHP generators as an appropriate exercise of its authority.<sup>188</sup> CPUC argued that the FITs were compatible with the FPA and PURPA because states have jurisdiction over the resource portfolios of utilities within their jurisdiction and the program only required that such utilities make an offer to buy power.<sup>189</sup> Three affected IOUs filed a petition for a declaratory order seeking invalidation of the CPUC's actions to set rates for wholesale sales of electricity as preempted by the FPA.<sup>190</sup>

In response to the petitions, FERC issued a number of orders. It held that the California FIT was permissible only with respect to the purchases of power from QFs and only when the set price that utilities are required to offer does not exceed the utility's avoided cost.<sup>191</sup> FERC declined to address whether the specific prices approved by the CPUC exceeded the California IOUs' avoided cost rates because no petitioner had requested such a determination.<sup>192</sup> As for non-QFs, FERC held that the FPA does not preempt the states from requiring IOUs to purchase

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<sup>187</sup> Cal. Pub. Util. Comm'n, 132 FERC ¶61,047, 61,326-27 (2010); David Yaffe et al., *FERC Issues First Major Ruling on Compatibility of State Feed-in Tariffs with Applicable Federal Energy Law*, VANNESS FELDMAN ISSUE ALERT 1 (July 22, 2010), <http://www.vnf.com/assets/attachments/638.pdf>; *Report of the Electricity Regulation Committee*, 32 ENERGY L.J. 265, 316 (2011).

<sup>188</sup> Yaffe et al., *supra* note 189, at 1-2.

<sup>189</sup> Cal. Pub. Util. Comm'n, 132 FERC at ¶62,327; Yaffe et al., *supra* note 189, at 1; *FERC Provides Clarification on Feed-in Tariff Options for States*, IREC INTERSTATE RENEWABLE ENERGY COUNCIL, <http://www.irecusa.org/2010/10/ferc-provides-clarification-on-feed-in-tariff-options-for-states/> (Last visited May 2, 2012).

<sup>190</sup> Cal. Pub. Util. Comm'n, 132 FERC at ¶62,326, 61,329; Yaffe et al., *supra* note 189, at 1-2; *Report of the Electricity Regulation Committee*, *supra* note 188, at 316.

<sup>191</sup> Cal. Pub. Util. Comm'n, 132 FERC at ¶62,338; Yaffe et al., *supra* note 189, at 1-2; Grinlinton & Paddock, *supra* note 70, at 966; *Report of the Electricity Regulation Committee*, *supra* note 188, at 316; Franco et al., *FERC Clarifies Feed-In Tariff Ruling, Allows Multi-Tiered Avoided Cost Rates*, VANNESS FELDMAN ISSUE ALERT 1 (Oct. 26, 2010), <http://www.vnf.com/assets/attachments/662.pdf>.

<sup>192</sup> Cal. Pub. Util. Comm'n, 132 FERC at ¶62,338; Yaffe et al., *supra* note 189, at 1-2.

wholesale electricity from CHPs that are not QFs.<sup>193</sup> However, FERC ruled the FPA preempted the states from specifying the wholesale price for such purchases.<sup>194</sup>

In response to FERC's rulings, the CPUC requested clarification about its flexibility to establish avoided costs for specific renewable resource technology that it wanted to encourage.<sup>195</sup> FERC provided the requested clarification in its October 21, 2010 order.<sup>196</sup> FERC held that a multi-tiered avoided cost rate structure—whereby different levels of avoided costs are set for different types of resources—was consistent with PURPA.<sup>197</sup> Under the avoided cost rate structure, the avoided cost rate for QFs that meet the state's RPS can be different from the rate for QFs that do not.<sup>198</sup> The reasoning was that where a state requires a utility to acquire a certain percentage of energy from generators with certain characteristics, those types of generators constitute the sources that are relevant for the utility avoided cost determination.<sup>199</sup> Under FERC's ruling, the avoided cost that a utility could be ordered to pay for a specific technology subject to a RPS set-aside would be the cost at which the particular purchasing utility could construct or purchase such power.<sup>200</sup>

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<sup>193</sup> Cal. Pub. Util. Comm'n, 132 FERC at ¶62,338; Yaffe et al., *supra* note 189, at 1-2; *Report of the Electricity Regulation Committee*, *supra* note 189, at 316.

<sup>194</sup> Cal. Pub. Util. Comm'n, 132 FERC at ¶62,338; Yaffe et al., *supra* note 189, at 1-2; *Report of the Electricity Regulation Committee*, *supra* note 189, at 316.

<sup>195</sup> Cal. Pub. Util. Comm'n, 133 FERC ¶61,059, 61,261 (2010); *FERC Provides*, *supra* note 191.

<sup>196</sup> Cal. Pub. Util. Comm'n, 133 FERC at ¶61,261; *FERC Provides*, *supra* note 191.

<sup>197</sup> Cal. Pub. Util. Comm'n, 133 FERC at ¶61,265-66; *FERC Clarifies California Feed-in Tariff Procedures*, FEDERAL ENERGY REGULATORY COMMISSION NEWS (Oct. 21, 2010), <http://www.ferc.gov/media/news-releases/2010/2010-4/10-21-10-E-2.pdf>; Griset, *supra* note 180, at 422; *Report of the Electricity Regulation Committee*, *supra* note 189, at 317; Franco et al., *supra* note 193, at 1.

<sup>198</sup> Franco et al., *supra* note 193, at 1.

<sup>199</sup> Cal. Pub. Util. Comm'n, 133 FERC at ¶61,267; *FERC Provides*, *supra* note 191.

<sup>200</sup> Ferrey, *Sale*, *supra* note 66, at 231.

## VI. Conclusion

There are several issues involved in determining whether a RPS set-aside or a FIT is better for promoting offshore wind. The first issue is determining which approach best helps to provide the necessary funding for offshore wind power, especially when considering that offshore wind projects are more costly than onshore wind projects.<sup>201</sup> These costs are compounded by the lack of experience and confidence in offshore wind projects as compared to onshore wind projects.<sup>202</sup> The RPS set-aside does not generate sufficient income for the offshore wind project to be built.<sup>203</sup> However, a FIT, which features both grid access and a purchase obligation, provides the necessary income by guaranteeing a price for a long period, access to the grid, and suppliers to buy the electricity.

The second major issue is whether either program would be legally barred. A RPS set-aside that favors in-state renewable energy generators could be challenged as violating the dormant Commerce Clause. Although the Maryland Offshore Wind Energy Act of 2012 does not explicitly state that the offshore wind RECs can only come from Maryland generators nor does it prohibit the export of RECs from Maryland, the set-aside established under the 2012 bill was designed specifically to subsidize an offshore wind project in Maryland. As such, it may constitute de facto discrimination, which arises when state law is factually neutral but its application nevertheless results in a disparity.<sup>204</sup> For the offshore wind RPS set-aside to withstand constitutional challenge, it cannot favor in-state offshore wind projects on its face or as applied.

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<sup>201</sup> MENDONCA, FEED-IN, *supra* note 68, at 12.

<sup>202</sup> *Id.* at 12-13.

<sup>203</sup> *Id.* at 13.

<sup>204</sup> *Am. Airlines, Inc. v. County of San Mateo*, 912 P.2d 1198, 1213 (Cal. 1996).

A FIT can be challenged on both constitutional and statutory grounds. If the FIT establishes a wholesale price of renewable power for non-QFs, then the FIT program will be preempted by the FPA and challenged as violating the Supremacy Clause. If the FIT establishes a wholesale price for renewable power for QFs that exceeds the avoided cost, then the FIT program will be challenged as violating PURPA. Prior to FERC's October 21, 2010 Order, establishing the payment level above the avoided cost was the only way to support the more costly offshore wind project.<sup>205</sup> However, FERC's October 21, 2010 Order allows states with offshore wind set-asides to establish a multi-tiered avoided cost rate structure that both complies with PURPA's avoided cost requirement and makes the payment level sufficient to cover the additional costs of an offshore wind project.

A FIT can be used in the United States to complement the existing RPS programs.<sup>206</sup> "The beauty of a complementary system comprised of an RPS and a [FIT] is that where one policy falls short, the other can fill the gap."<sup>207</sup> Having both a RPS set-aside and a FIT will provide certainty as to both the price and the amount of offshore wind power. The certainty will decrease investment risk even further than having only a FIT program. The RPS set-aside, in combination with the FIT, will spur growth and support the less-mature offshore wind technology. Accordingly, the best approach, both legally and economically, to promote offshore wind projects in Maryland is to propose legislation that adopts both an offshore wind set-aside and a FIT.

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<sup>205</sup> See Ferrey, *Restructuring*, *supra* note 66, at 1008.

<sup>206</sup> *Id.*; Streich, *supra* note 68, at 448; Jansen, *supra* note 135, at 347.

<sup>207</sup> Streich, *supra* note 68, at 448-49.