

# A GRASSROOTS VEHICLE FOR SUSTAINABLE ENERGY: THE CONSERVATION RESERVE PROGRAM & RENEWABLE ENERGY

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## INTRODUCTION

Farm owners in the United States are no strangers to leading important, dramatic movements in society. They brought populism to the people and championed land and soil conservation following the dust bowl.<sup>1</sup> Today, as the United States stands on the tip of an energy crisis iceberg,<sup>2</sup> farmers are once again poised in a position to significantly change the way this nation creates and uses energy.

It is clear that the United States is vulnerable to an energy crisis. With an increased global demand for oil in the past ten years, combined with production that has not kept pace, many observers speculated before 2005 that one disaster—caused by either natural or terrorist forces—had the potential to significantly affect the United States' supply and cost of oil.<sup>3</sup> Hurricane Katrina proved this to be true.<sup>4</sup> The price of oil skyrocketed to unprecedented levels in the United States, and fears of a shortage loomed.<sup>5</sup>

Since Hurricane Katrina, the price of oil has begun to recover, but its lessons have remained.<sup>6</sup> The United States is vulnerable to a future energy crisis.<sup>7</sup> The public should not be fooled into thinking that our

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<sup>1</sup> See Worth Robert Miller, *Farmers and Third-Party Politics*, in *THE GILDED AGE: ESSAYS ON THE ORIGINS OF MODERN AMERICA* 235, 235-60 (Charles W. Calhoun ed., 1996).

<sup>2</sup> See Justin Blum, *An Easily Threatened Oil Industry*, WASH. POST, Sept. 21, 2005, at D01, available at <http://www.washingtonpost.com/wp-dyn/content/article/2005/09/20/AR2005092001791.html>.

<sup>3</sup> *Id.*

<sup>4</sup> *Id.*

<sup>5</sup> *Id.*

<sup>6</sup> *Id.*

<sup>7</sup> *Id.*

current situation is similar to past fuel problems. Further investigation reveals a key difference between the oil crunch of the 1970s and that of 2005: the former was caused only by oil-producing states purposely limiting supply.<sup>8</sup> With an ever-increasing demand appearing on the horizon, the need for alternative sources of oil to increase the United States' self-sufficiency has made itself clear.<sup>9</sup>

Many observers now believe that the United States should include in its energy framework sources of energy that are more sustainable than fossil fuels.<sup>10</sup> Whether such an alternative source of energy exists, could be developed, and, if so, adopted into a framework suitable to meeting United States' energy needs is not clear. However, the answer may very well come from renewable energy sources.<sup>11</sup>

Renewable energy sources, for purposes of this Note, are defined as "energy obtained from sources at a rate that is less than or equal to the rate at which the source is replenished."<sup>12</sup> The use of renewable energy resources is non-exhaustive. As the ability to rely on forms of energy such as oil and coal begin to diminish, renewable energy may be used to supplement, or eventually replace, these finite means of energy.<sup>13</sup>

There are several well-established forms of renewable energy currently being used in a small capacity to supplement the United States' energy supply. One such source of renewable energy is biomass, plants or organic wastes that can be converted into many different forms of usable energy.<sup>14</sup> Biomass, in fact, currently produces around two percent of electricity in the United States.<sup>15</sup> Along with certain other renewable energy resources, such as wind power,<sup>16</sup> biomass can be produced on fields within the United States.<sup>17</sup>

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

<sup>9</sup> See *Biomass Use in Future Energy Production: Hearing Before the S. Comm. on Agriculture, Nutrition, and Forestry*, 108th Cong. 99 (2004) (statement of Samuel B. McLaughlin) [hereinafter *Biomass Use*], available at <http://agriculture.senate.gov/Hearings/SBMcL.pdf>.

<sup>10</sup> See VIJAY V. VAITHEESWARAN, *POWER TO THE PEOPLE* 3-10 (2003).

<sup>11</sup> BENT SORENSON, *RENEWABLE ENERGY: ITS PHYSICS, ENGINEERING, USE ENVIRONMENTAL IMPACTS, ECONOMICS AND PLANNING ASPECTS* 14 (3d ed. 2004).

<sup>12</sup> JOHN R. FANCHI, *ENERGY IN THE 21ST CENTURY* 92 (2005).

<sup>13</sup> *Biomass Use*, *supra* note 9, at 2.

<sup>14</sup> Union of Concerned Scientists, *Growing Energy on the Farm: Biomass Energy and Agriculture*, [http://www.ucsusa.org/clean\\_energy/renewable\\_energy\\_basics/growing-energy-on-the-farm-biomass-and-agriculture.html](http://www.ucsusa.org/clean_energy/renewable_energy_basics/growing-energy-on-the-farm-biomass-and-agriculture.html) [hereinafter *Growing Energy*] (last visited Mar. 1, 2007).

<sup>15</sup> *Id.*

<sup>16</sup> U.S. Department of Energy, *Wind Energy Resource Potential*, [http://www.eere.energy.gov/windandhydro/wind\\_potential.html](http://www.eere.energy.gov/windandhydro/wind_potential.html) (last visited Mar. 1, 2007).

<sup>17</sup> See *Growing Energy*, *supra* note 14.

Recent events have made it apparent that the United States needs to reduce its current level of reliance on fossil fuels.<sup>18</sup> Lawmakers must pass or renew legislation that shifts this country towards a more sustainable future. Substantially investing in renewable energy resources is an important first step. The prospect of the renewal in 2007 of the 2002 Farm Bill<sup>19</sup> presents a timely opportunity for implementing further renewable capabilities into the United States' farming infrastructure.

This Note argues that the United States Congress should amend the Conservation Reserve Program in the Farm Bill of 2007 to create greater flexibility and incentives for farmers to increase the production of two important renewable energy resources—biomass and wind energy—on their land that is currently restricted for conservation purposes. Part I examines the United States' current energy issues arising from the use of fossil fuels,<sup>20</sup> including a discussion of the United States' reliance on fossil fuels and the future availability of fossil fuels compared to forecasted needs.<sup>21</sup> Part I also discusses the current use of, and potential for, renewable energy resources.<sup>22</sup> This Part concludes with an explanation of why now is the time to begin shifting towards a lesser reliance on fossil fuels through renewable energy.<sup>23</sup>

Part II of this Note addresses the Conservation Reserve Program as laid out in the Farm Bill of 2002.<sup>24</sup> This Part discusses the history, purpose, and operations of the Conservation Reserve Program, and examines the statutory authorization of the program.<sup>25</sup> The current implementation of renewable energy resource incentives and regulations, as well as developments that have occurred since 2002, are also discussed.<sup>26</sup> Part II ends with an examination of the legislative future of the current Farm Bill.<sup>27</sup>

Part III explores specific renewable energy resources that can be used within the Conservation Reserve Program.<sup>28</sup> Biomass,<sup>29</sup> the practice

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<sup>18</sup> See VITO A. STAGLIANO, A POLICY OF DISCONTENT: THE MAKING OF A NATIONAL ENERGY STRATEGY 430 (2001); Blum, *supra* note 2.

<sup>19</sup> FANCHI, *supra* note 12, at 16-17.

<sup>20</sup> See *infra* Part I.

<sup>21</sup> See *infra* Part I.A.

<sup>22</sup> See *infra* Part I.B.

<sup>23</sup> See *infra* Part I.C.

<sup>24</sup> See *infra* Part II.

<sup>25</sup> See *infra* Part II.A.

<sup>26</sup> See *infra* Part II.B.

<sup>27</sup> See *infra* Part II.C.

<sup>28</sup> See *infra* Part III.

<sup>29</sup> See *infra* Part III.A.

of converting crops into energy, and wind energy,<sup>30</sup> the ability to harness the power of wind through turbines, are discussed in detail.

This Note concludes that the use of permits and incentives for the implementation of renewable energy resources on land reserved for conservation under the Conservation Reserve Program should be expanded by modifying the current Farm Bill in 2007.<sup>31</sup> It is through the implementation of this policy that the United States can take a great step in the direction of non-fossil fuel energy sustainability.

## I. CURRENT ISSUES IN ENERGY POLICY

Energy has become one of the new "hot-button" topics in today's political conversation.<sup>32</sup> With some experts forecasting that the world's energy consumption will increase fifty-four percent by the year 2025, especially in the fastest growing economies,<sup>33</sup> the question of future sustainability has pushed its way to the forefront of the national discourse.<sup>34</sup>

### A. *Reliance on Fossil Fuels*

Fossil fuels are energy sources formed by diagenesis, which is "the death, decay, and transformation . . . of life."<sup>35</sup> Over great periods of time, this process has created many sources of energy that are used today, including coal, petroleum, gas, and oil.<sup>36</sup> Fossil fuels are finite resources;

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<sup>30</sup> See *infra* Part III.B.

<sup>31</sup> See *infra* Part IV.

<sup>32</sup> See, e.g., President's Remarks to the Economic Club of Washington, DC, 41 WEEKLY COMP. PRES. DOC. 1600 (Oct. 26, 2005), available at <http://www.whitehouse.gov/news/releases/2005/10/20051026-2.html> (commenting on the importance of focusing on energy sustainability problems and solutions for the future). "[W]e all must be concerned about our growing dependence on foreign sources of energy. Our energy supplies are not keeping up with consumption, and that's why people's prices are going up." *Id.*

<sup>33</sup> R. Lemus & R. Lal, *Bioenergy Crops and Carbon Sequestration*, 24 CRITICAL REV. IN PLANT SCI. 1, 2 (2005).

<sup>34</sup> See VAITHEESWARAN, *supra* note 10, at 295-96 (discussing how the world-wide use of energy has dramatically increased over the past several decades).

Energy consumption in the developing world has long been dwarfed by consumption in the rich world, both in absolute terms and in terms of use per person. However, that could change dramatically over the coming decades as Asian economies, especially India and China, grow wealthier, more urban, and more likely to use commercial fuels.

*Id.*

<sup>35</sup> FANCHI, *supra* note 12, at 24.

<sup>36</sup> See *id.* at 24-46.

once they are used they cannot be replenished.<sup>37</sup> Despite this, fossil fuels are by far the most common source of energy used in the United States.<sup>38</sup> In 2004, fossil fuels—primarily oil, coal, and natural gas—represented eighty-six percent of the United States’ energy consumption.<sup>39</sup>

In his 2006 State of the Union Address, President Bush highlighted this issue by claiming that “America is addicted to oil.”<sup>40</sup> The United States consumes more barrels of oil per day than any other country in the world.<sup>41</sup> Despite this heavy reliance on fossil fuels, the United States, like most industrialized countries, must import a significant portion of its oil because it requires more energy than it has the ability to produce.<sup>42</sup> Thus, the United States is dependent on other countries to maintain its supply of fossil fuels.

Before the 1970s, consumers did not worry much about how life would change if oil became scarce and prices rose dramatically.<sup>43</sup> In 1973, a shift occurred that changed the nature of fossil fuel supply forever.<sup>44</sup> The Organization of the Petroleum Exporting Countries (“OPEC”), a powerful group of oil suppliers, raised prices on all oil that its members exported.<sup>45</sup> This cost increase created the first ever oil crisis, causing the price of oil to jump in many countries.<sup>46</sup> Despite this crisis, the United States continued in its reliance on fossil fuels.<sup>47</sup>

For years, many energy industry experts have forecasted that the United States’ reliance on fossil fuels will continue despite indications of future peril.<sup>48</sup> Frustrated with the seemingly never-ending parade of presidential administrations that gave lip service to creating a better energy framework but never took action, some commentators began to

<sup>37</sup> SIDNEY BOROWITZ, *FAREWELL FOSSIL FUELS: REVIEWING AMERICA’S ENERGY POLICY* 27 (1999); U.S. Environmental Protection Agency, Glossary of Green Power Terms, <http://www.epa.gov/grnpower/whatis/glossary.htm> (last visited Mar. 1, 2007).

<sup>38</sup> Energy Information Administration, U.S. Department of Energy, Renewable Energy Trends 2004 (2005), <http://www.eia.doe.gov/cneaf/solar.renewables/page/trends/rentrends04.html> [hereinafter Renewable Energy Trends 2004].

<sup>39</sup> *See id.* at fig.H1.

<sup>40</sup> President’s Address Before a Joint Session of the Congress on the State of the Union, 42 WEEKLY COMP. PRES. DOC. 145 (Jan. 31, 2006) [hereinafter State of the Union 2006].

<sup>41</sup> CHARLES E. BROWN, *WORLD ENERGY RESOURCES* 15 (2002).

<sup>42</sup> *Id.*

<sup>43</sup> *See* FANCHI, *supra* note 12, at 16-17.

<sup>44</sup> *Id.*

<sup>45</sup> *Id.* at 17. *See* OPEC, <http://www.opec.org> (last visited Mar. 1, 2007).

<sup>46</sup> FANCHI, *supra* note 12, at 17.

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

<sup>48</sup> STAGLIANO, *supra* note 18, at 430.

identify a trend.<sup>49</sup> For example, Vito A. Stagliano, who served as the Deputy Assistant Secretary of Energy for Policy Analysis in the George H.W. Bush Administration, has asserted that “[t]he cycle of crises in the oil sector seems immune to change.”<sup>50</sup>

While forecasters such as Stagliano have warned that this oil cycle may not end until it is too late, only recently have events brought this fear to mainstream Americans.<sup>51</sup> With her gale force winds, Hurricane Katrina also brought a fierce warning: the energy system is currently very “tight,” and any event that pushes the demand for oil higher than available supply can make it hard to come by at an affordable price.<sup>52</sup> This implies, of course, that even before Katrina’s waves hit America’s beaches, the United States was operating a vulnerable system.

Though the price of oil rose dramatically after Hurricane Katrina, it has since lowered.<sup>53</sup> This might cause some to believe that, just as after the oil crisis in the 1970s, gas prices will continue to lower and the United States will not have to worry about energy supply for much longer. This is not so.<sup>54</sup>

John R. Fanchi, in his book *Energy in the 21st Century*, explains that in the United States’ energy system, oil has become the main fuel used to satisfy energy demands.<sup>55</sup> This high level of reliance on oil, however, is a problem because many experts believe that the world’s supply of oil will reach its peak by 2025 and then begin to descend.<sup>56</sup> If the world, especially the United States, continues to increase its demand for fossil fuel energy, oil will become more scarce and more expensive.<sup>57</sup> Eventually, it will no longer be feasible to rely on oil as a dependable source

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<sup>49</sup> See generally *id.*

<sup>50</sup> *Id.* at 430. See also VAITHEESWARAN, *supra* note 10, at 94. “I am not in the business of forecasting or dreaming, but I am certain of one thing: hydrocarbons will remain the fuel of choice for the twenty-first century.” *Id.* (citing a quote from Saudi Arabian Minister of Petroleum Ali Naimi as an example of hubris reflecting this view).

<sup>51</sup> Blum, *supra* note 2.

<sup>52</sup> *Id.*

<sup>53</sup> James R. Healey, *Gas Prices are Doing Something Crazy: Falling*, USA TODAY, Oct. 24, 2005, [http://www.usatoday.com/money/industries/energy/2005-10-24-gas-prices-usat\\_x.htm?poe=newisva](http://www.usatoday.com/money/industries/energy/2005-10-24-gas-prices-usat_x.htm?poe=newisva).

<sup>54</sup> See FANCHI, *supra* note 12, at 1-2.

<sup>55</sup> *Id.* at 1.

<sup>56</sup> *Id.*

<sup>57</sup> See *id.* at 2.

of energy.<sup>58</sup> As Fanchi explains, “[t]he issue is not whether oil will be replaced, but when.”<sup>59</sup>

### B. *Use of Renewable Energy Resources*

Renewable energy currently comprises only a small percentage of energy used in the United States.<sup>60</sup> According to the Energy Information Administration of the U.S. Department of Energy, renewable energy resources (particularly biomass, hydroelectric, geothermal, wind, and solar) supplied a total of six percent of the nation’s energy in 2004.<sup>61</sup> This statistic reflects the United States’ outlook on energy over the past fifty years, especially towards technological and scientific advancement; far more effort has been devoted to extracting and utilizing non-renewable energy resources than to the development of alternative sources of energy.<sup>62</sup> Due to this focus on non-renewable energies, funds have only recently been allocated to research on and the development of renewable energy resources.<sup>63</sup> Thus, whether prudent or not, renewable energy is now only an “emerging science.”<sup>64</sup>

Despite its status as an emerging science, several promising renewable energy resources have received attention lately. Biomass crops, for example, have the potential to provide for a “significant portion” of America’s future energy needs.<sup>65</sup> Wind energy is another exciting source of renewable energy, having experienced great advances in the past thirty

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<sup>58</sup> See RICHARD HEINBERG, *THE PARTY’S OVER: OIL, WAR AND THE FATE OF INDUSTRIAL SOCIETIES* 6 (2d ed. 2005) (comparing modern society’s reliance on fossil fuels to a dying party).

Industrial societies have been flourishing for roughly 150 years now, using fossil energy resources to build far-flung trade empires, to fuel the invention of spectacular new technologies, and to fund a way of life that is opulent and fast-paced. It is as if part of the human race has been given a sudden windfall of wealth and decided to spend that wealth by throwing an extravagant party. . . . But soon the party itself will be a fading memory—not because anyone decided to heed the voice of moderation, but because the wine and food are gone and the harsh light of morning has come.

*Id.*

<sup>59</sup> FANCHI, *supra* note 12, at 197.

<sup>60</sup> Renewable Energy Trends 2004, *supra* note 38, at 1.

<sup>61</sup> *Id.* fig.H1.

<sup>62</sup> SORENSON, *supra* note 11, at vii.

<sup>63</sup> *Id.*

<sup>64</sup> *Id.*

<sup>65</sup> Growing Energy, *supra* note 14.

years.<sup>66</sup> These renewable technologies, among others, have potential for greater development.<sup>67</sup>

President Bush's comments in his 2006 State of the Union Address demonstrate that the United States government may now be poised to encourage greater technological development of renewable technology.<sup>68</sup> In his Address, President Bush explained that ten billion dollars have been spent since 2001 "to develop cleaner, cheaper, and more reliable alternative energy sources."<sup>69</sup> Pointing to the future, he commented that "we are on the threshold of incredible advances."<sup>70</sup>

If and when the United States begins to implement a strategy for improved energy self-sufficiency, promising renewable resources will be very important.<sup>71</sup> As fossil fuels become a less feasible and reliable source of energy, adopting such a strategy rises in importance. Renewable technologies will be needed as replacements for oil and natural gas.<sup>72</sup>

### C. *The Need for a Shift to Increased Renewable Energy*

To understand why it is important to be concerned about energy sources at all, it is necessary to understand that energy is involved in some way with every part of daily life.<sup>73</sup> It is impossible to discuss technology, jobs, and economic growth without first considering the role that energy plays in each of those arenas.<sup>74</sup>

As discussed earlier, fossil fuels are a finite resource, and will not always be able to provide for this nation's energy needs.<sup>75</sup> For humankind to maintain its current population and way of life in the long-term, it must find a way to locate and use a renewable source of energy.<sup>76</sup> Thus, the world, especially the United States, must expand its limited capacity

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<sup>66</sup> U.S. Department of Energy, History of Wind Energy, [http://www1.eere.energy.gov/windandhydro/wind\\_history.html](http://www1.eere.energy.gov/windandhydro/wind_history.html) (last visited Mar. 1, 2007).

<sup>67</sup> EDWARD S. CASSEY, PROSPECTS FOR SUSTAINABLE ENERGY: A CRITICAL ASSESSMENT 226 (2000).

<sup>68</sup> See State of the Union 2006, *supra* note 40, at 150.

<sup>69</sup> *Id.*

<sup>70</sup> *Id.*

<sup>71</sup> *Biomass Use*, *supra* note 9, at 2.

<sup>72</sup> *Id.*

<sup>73</sup> BROWN, *supra* note 41, at 4.

<sup>74</sup> *Id.* at 4-5.

<sup>75</sup> See *supra* notes 35-37 and accompanying text.

<sup>76</sup> See SORENSON, *supra* note 11, at 14.

of renewable energy technology into a more viable resource.<sup>77</sup> It is now a question of when, not a question of whether, these changes need to happen.

There is currently an urgent need to take important steps towards a sustainable future.<sup>78</sup> A large reason for this is that the future of energy supply and cost is unknown.<sup>79</sup> With an uncertain future, today's decisions will determine available technological advances and energy composition years from now.<sup>80</sup> Most importantly, the decisions made now will affect investments made in the energy infrastructure everywhere, not just in the United States.<sup>81</sup> By shifting attitudes toward renewable energy, the world may be able to take advantage of the "dizzying pace of innovation" to render current energy policies obsolete.<sup>82</sup>

The shift to a new source of energy is unlikely to be easy or fast. In fact, switching an oil-based energy system to a sustainable, non-fossil fuels based system is one of the greatest challenges currently facing the nation.<sup>83</sup> The United States must develop and implement a new energy strategy to bring renewable resources into the national energy supply.<sup>84</sup>

## II. THE CONSERVATION RESERVE PROGRAM

### A. *Overview of the Conservation Reserve Program*

In 1985, the United States Congress established the Conservation Reserve Program to provide farmers with rental payments in return for abstaining from farming highly erodible and marginal land.<sup>85</sup> Administered by the United States Department of Agriculture, the Conservation

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<sup>77</sup> See generally *id.*

<sup>78</sup> See generally *id.*

<sup>79</sup> See FANCHI, *supra* note 12, at 223.

<sup>80</sup> *Id.*

<sup>81</sup> VAITHEESWARAN, *supra* note 10, at 20.

<sup>82</sup> *Id.*

After all, coal plants and oil refineries last for decades—and that sunk investment displaces or discourages nimbler, cleaner, and more distributed options like micropower. If we want to shift to a clean, secure, low-carbon energy system during this century, the time to start is now. . . . If micropower really takes off, then there is every reason for optimism about our planet's future. Let the revolution roll!

*Id.*

<sup>83</sup> SORENSON, *supra* note 11, at 867.

<sup>84</sup> *Biomass Use*, *supra* note 9, at 8.

<sup>85</sup> Jeremy Ames, New and Proposed Federal Incentives for Bioenergy Production 5 (Sept. 23, 2002), <http://www.newuses.org/Ames2002.doc>.

Reserve Program works to enhance water and soil quality and create or maintain suitable wildlife habitat.<sup>86</sup> When farmers enroll in the program, they are paid to “convert highly erodible cropland or other environmentally sensitive acreage to vegetative cover, such as tame or native grasses, wildlife plantings, trees, filterstrips, or riparian buffers.”<sup>87</sup> This cover helps rehabilitate the land.<sup>88</sup>

An excellent example of farmland enrolled in the Conservation Reserve Program can be found in the soybean fields of Mississippi:

Marginal cropland in Mississippi, planted to soybeans, is at continual risk of erosion because of sandy, silty soils and a slope too great for tillage. One landowner chose to convert a portion of his land to pine trees as permanent cover through CRP. The cost of planting was about \$60/acre, including the seedlings and paying a contractor for machine planting. CRP paid the landowner \$30/acre, or 50 percent of the cost of conversion, plus \$36/acre annual rental payment. The land is protected from severe erosion with tree cover, and additional income could come from thinning the trees in 13 to 16 years.<sup>89</sup>

Other examples of Conservation Reserve Program projects include growing a grass cover for environmentally-damaged wheat fields in New Mexico and converting a dairy farm in Wisconsin into grass to correct its “shallow soils.”<sup>90</sup>

The Conservation Reserve Program is authorized by Section 3831 of Title 16 of the United States Code.<sup>91</sup> The 2002 Farm Bill extended the Conservation Reserve Program through 2007 and raised the authorized acreage enrollment cap to 39.2 million acres.<sup>92</sup>

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<sup>86</sup> *Id.*

<sup>87</sup> Natural Resources Conservation Service, Conservation Reserve Program, <http://www.nrcs.usda.gov/programs/crp/> (last visited Mar. 1, 2007).

<sup>88</sup> *See id.*

<sup>89</sup> National Sustainable Agricultural Information Service, Conservation Reserve Program, [http://www.attra.org/guide/a\\_m/crp.html](http://www.attra.org/guide/a_m/crp.html) (last visited Mar. 1, 2007).

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

<sup>91</sup> 16 U.S.C. § 3831 (2007); NAT. RESOURCES CONSERVATION SERV., U.S. DEPT OF AGRIC., FARM BILL 2002: CONSERVATION PROVISIONS OVERVIEW (2002), <http://www.nrcs.usda.gov/programs/farmbill/2002/pdf/ConsProv.pdf> [hereinafter CONSERVATION PROVISIONS OVERVIEW]

<sup>92</sup> Farm Security and Rural Investment Act of 2002, Pub. L. No. 107-171, 116 Stat. 134 (2002); CONSERVATION PROVISIONS OVERVIEW, *supra* note 91. For a critique of provisions

The Conservation Reserve Program is not compulsory; agricultural landowners enter into the contract voluntarily.<sup>93</sup> When a farmer enrolls in the program, he or she can receive cost-share assistance and annual rental payments.<sup>94</sup> Annual rental payments are determined by the agricultural rental value of the enrolled land, and the cost-share program can reimburse up to fifty percent of the farmer's costs incurred in following approved conservation practices.<sup>95</sup> In 2004, the average payment for enrolled land was \$47.99 per acre.<sup>96</sup>

Both the rental payments and cost-share assistance are administered through the Farm Service Agency by the Commodity Credit Corporation ("CCC").<sup>97</sup> The CCC is a corporation completely owned by the government that borrows money to pay farmers under the authority of congressional legislation.<sup>98</sup> It receives support from the Cooperative State Research and Education Extension Service, Natural Resources Conservation Service, local Soil and Water Conservation Districts, and state forestry agencies.<sup>99</sup>

Land enrolled in the Conservation Reserve Program is then used to create the "long-term, resource conserving covers" discussed earlier.<sup>100</sup> The contracts last anywhere from ten to fifteen years and are administered through the Farm Service Agency.<sup>101</sup> The Farm Service Agency reported that in fiscal year 2004, a total of 34,707,287 acres were enrolled.<sup>102</sup>

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of the Farm Bill of 2002 not discussed here, see generally Jesse Ratcliffe, Comment, *A Small Step Forward: Environmental Protection Provisions in the 2002 Farm Bill*, 30 *ECOLOGY L.Q.* 637, 639, 652 (2003) ("[T]he conservation provisions of the Bill may not sufficiently reduce environmental harm. . . . Congress should end subsidies not linked more substantially to conservation.").

<sup>93</sup> Farm Service Agency, Conservation Reserve Program, <http://www.fsa.usda.gov/FSA/webapp?area=home&subject=copr&topic=crp> (last visited Mar. 1, 2007).

<sup>94</sup> *Id.*

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

<sup>96</sup> FARM SERV. AGENCY, THE CONSERVATION RESERVE PROGRAM: SUMMARY AND ENROLLMENT STATISTICS 3 (2004), [http://www.fsa.usda.gov/Internet/FSA\\_File/fy2004.pdf](http://www.fsa.usda.gov/Internet/FSA_File/fy2004.pdf) [hereinafter ENROLLMENT STATISTICS].

<sup>97</sup> Farm Service Agency, Conservation Reserve Program, *supra* note 93.

<sup>98</sup> See Ratcliffe, *supra* note 92, at 643 (discussing how the CCC provides funding for the Conservation Security Program). "The practical significance of the CCC mechanism is that programs funded through the CCC are not reliant on the congressional appropriations process, in theory making it more difficult for Congress to remove funding." *Id.*

<sup>99</sup> Farm Service Agency, Conservation Reserve Program, *supra* note 93.

<sup>100</sup> See *supra* notes 87-90 and accompanying text.

<sup>101</sup> *Id.*

<sup>102</sup> ENROLLMENT STATISTICS, *supra* note 96, at 3.

*B. Renewable Energy Resource Incentives for the Conservation Reserve Program under the Farm Bill of 2002*

For the first time since the Conservation Reserve Program's inception, the United States Congress in 2002 gave authority and incentives for farmers to use land reserved under the Conservation Reserve Program for renewable-energy resources development.<sup>103</sup> The provision allows for managed biomass harvesting on enrolled land as long as it is consistent with the conservation goals of the program.<sup>104</sup> Additionally, the provision calls for an appropriate reduction in Conservation Reserve Program rental payments to take into account economic benefits obtained by the farmer from the renewable resources, but not enough to impede

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<sup>103</sup> Ames, *supra* note 85, at 6. The new provision of the Farm Bill stated that:

(a) In General. Under the terms of a contract entered into under this subchapter, during the term of the contract, an owner or operator of a farm or ranch shall agree . . .

(7) not to conduct any harvesting or grazing, nor otherwise make commercial use of the forage . . . except that the Secretary may permit, consistent with the conservation of soil, water quality, and wildlife habitat (including habitat during nesting seasons for birds in the area)

(A) managed harvesting and grazing (including the managed harvesting of biomass) except that in permitting managed harvesting and grazing, the Secretary

(i) shall, in coordination with the State technical committee—

(I) develop appropriate vegetation management requirements; and

(II) identify period during which harvesting and grazing under this paragraph may be conducted;

(ii) may permit harvesting and grazing or other commercial use of the forage on the land that is subject to the contract in response to a drought or other emergency; and

(iii) shall, in the case of routine managed harvesting or grazing or harvesting or grazing conducted in response to a drought or other emergency, reduce the rental payment otherwise payable under the contract by an amount commensurate with the economic value of the activity; and

(B) the installation of wind turbines, except that in permitting the installation of wind turbines, the Secretary shall determine the number and location of wind turbines that may be installed, taking into account—

(i) the location, size, and other physical characteristics of the land;

(ii) the extent to which the land contains wildlife and wildlife habitat; and

(iii) the purposes of the conservation reserve program under this subchapter.

Farm Security and Rural Investment Act of 2002, Pub. L. No. 107-171, § 1232(a)(7), 116 Stat. 134, 243-44 (2002) (codified at 16 U.S.C. § 3832 (2007)).

<sup>104</sup> Ames, *supra* note 85, at 5.

a net incentive.<sup>105</sup> The entire Farm Bill of 2002, including this provision, is set to expire in 2007.<sup>106</sup>

In an interim rule, the United States Department of Agriculture explained the basis for the decision to include a provision that implements biomass and wind turbines on Conservation Reserve Program land where there was none before.<sup>107</sup> Wind turbines, the rule explains, have a limited environmental impact because their base only requires a “footprint” of one-tenth of an acre.<sup>108</sup> Not only do they have a very small impact on wildlife, which is in line with the program’s goals, but they also provide an environmentally-friendly source of energy.<sup>109</sup> Whether wind turbines may be installed on a particular parcel of enrolled land, the standards used in installation, and the number of turbines allowed to be installed is determined by the Farm Service Agency.<sup>110</sup>

The interim rule expresses the hope that biomass could affect around twenty-five percent of grassland eligible within the Conservation Reserve Program.<sup>111</sup> Haying and grazing could be conducted after the development of a “detailed conservation plan” to help ensure long-term viability of the land while still protecting sensitive land, water, and wildlife.<sup>112</sup> The allowance of haying and grazing could increase the amount of vegetative cover, helping to increase diversity of vegetative covers and improve wildlife habitats as well.<sup>113</sup> The interim rule explains that a panel of grassland ecologists determined that eligible fields could participate one in every three years.<sup>114</sup>

*C. Developments Since 2002: President Bush’s Commitment to the Conservation Reserve Program*

Recent statutory action, presidential directives, and government agency actions, demonstrate that the Conservation Reserve Program is

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<sup>105</sup> *Id.* at 5-6.

<sup>106</sup> Farm Security and Rural Investment Act of 2002, 116 Stat. at 134.

<sup>107</sup> 2002 Reserve Program Long-Term Policy, 68 Fed. Reg. 24,830, at 24,832-33 (May 8, 2003) (interim rule) (codified at 7 C.F.R. §§ 1410.1-.63 (2007)).

<sup>108</sup> *Id.* at 24,833.

<sup>109</sup> *Id.*

<sup>110</sup> *Id.*

<sup>111</sup> *Id.*

<sup>112</sup> *Id.*

<sup>113</sup> *See id.*

<sup>114</sup> *Id.*

not stagnant, but growing in popularity and governmental support.<sup>115</sup> In August of 2004, the United States Department of Agriculture ("USDA") reiterated its commitment to the Conservation Reserve Program.<sup>116</sup> In a press release the USDA specifically commented that it would "fully implement" directives given by President Bush promoting the continuation of the Conservation Reserve Program.<sup>117</sup> Specifically, President Bush called for contract extensions and early re-enrollment for land currently involved in the program that begins to expire in 2007.<sup>118</sup> Secretary of Agriculture Ann M. Veneman was quick to point out that the both the Bush Administration and the USDA are supportive of continuing the Conservation Reserve Program.<sup>119</sup> Veneman explained, "[t]he President is dedicated to full enrollment of the Conservation Reserve Program by offering early re-enrollments and contract extensions."<sup>120</sup> This is a clear indication that the program will not be discontinued in the foreseeable future.

Faced with an ever-approaching energy supply crisis, it will become necessary to turn towards certain types of renewable resources in the future.<sup>121</sup> The Conservation Reserve Program represents an important avenue through which the potential of specific renewable energy resources can be pursued.<sup>122</sup>

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<sup>115</sup> See generally PATRICK SULLIVAN ET AL., AGRIC. ECON. REPORT NO. 834, THE CONSERVATION RESERVE PROGRAM: ECONOMIC IMPLICATIONS FOR RURAL AMERICA iv, 3-8 (2004), available at <http://www.ers.usda.gov/Publications/aer834/aer834.pdf> (addressing the concerns of critics of the Conservation Reserve Program who argue it hurts local agriculture markets, and discussing the history of the program).

<sup>116</sup> Press Release, U.S. Dep't of Agric., Bush Administration Expands Conservation Reserve Program (Aug. 4, 2004), <http://www.usda.gov/Newsroom/0324.04.html>.

<sup>117</sup> *Id.*

<sup>118</sup> *Id.*

In three years, 16 million acres under CRP contract will expire. Another 6 million acres will follow in 2008, 4 million in 2009 and 2 million in 2010. President Bush's directive to offer early re-enrollment and extensions of existing contracts to current CRP participants underscores a commitment to full enrollment of CRP up to 39.2 million acres.

*Id.*

<sup>119</sup> *Id.*

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

<sup>121</sup> SORENSON, *supra* note 11, at 16.

<sup>122</sup> Ames, *supra* note 85, at 6.

### III. RENEWABLE ENERGY RESOURCES COMPATIBLE WITH THE CONSERVATION RESERVE PROGRAM

The Conservation Reserve Program has the potential to help develop two important renewable energy resources: biomass and wind energy.<sup>123</sup> The fact that these two renewable energy resources can be implemented into the Conservation Reserve Program is not insignificant. In its 2002 Energy Outlook, the Energy Information Administration listed biomass and wind power as the renewable energy resources that have the highest potential to “penetrate the electric market” within twenty years.<sup>124</sup> This Part discusses the condition, development, and potential use within the Conservation Reserve Program of both resources and their accompanying technology.

#### A. Biomass

##### 1. History of Biomass

While recent technological advancements have brought about the ability to create energy from various plants, traditionally biomass has been thought of as the burning of wood.<sup>125</sup> Wood, in fact, has been one of the greatest sources of energy throughout history.<sup>126</sup> The actual term “biomass,” however, refers to matter which was formed recently by photosynthesis.<sup>127</sup> This includes wood and animal or plant matter which has the ability to be “converted into fuels” or “burned directly.”<sup>128</sup>

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<sup>123</sup> 2002 Reserve Program Long-Term Policy, 68 Fed. Reg. at 24,833.

<sup>124</sup> JACOB KAMINSKY, NAT'L RENEWABLE ENERGY LAB., NREL/SR-510-33524, DEVELOPMENT OF STRATEGIES FOR DEPLOYMENT OF BIOMASS RESOURCES IN THE PRODUCTION OF BIOMASS POWER (2004), available at <http://www.nrel.gov/docs/fy04osti/33524.pdf>.

<sup>125</sup> See FANCHI, *supra* note 12, at 118. For a discussion of the potential of new biomass conversion technologies, see generally Growing Energy, *supra* note 14.

One promising technology is direct combustion in an advanced gas turbine to run a generator and produce electricity. This process is twice as efficient as simply burning raw biomass to produce electricity from steam. Researchers are also developing small, high-speed generators to run on biogas.

*Id.*

<sup>126</sup> FANCHI, *supra* note 12, at 122-23.

<sup>127</sup> *Id.* at 118.

<sup>128</sup> *Id.* at 118-19.

Throughout history, biomass has primarily been used to provide energy for cooking, (i.e. heat).<sup>129</sup> As technology has developed, so has the use of biomass. Fuel from biomass now has the ability to generate electricity and other forms of energy on both large and small scales.<sup>130</sup> To become economically viable, however, the availability of biomass at competitive prices must increase.<sup>131</sup>

## 2. Facts About Biomass

Biomass is a resource considered very abundant in the United States.<sup>132</sup> Among renewable resources, only biomass can be readily converted into chemical byproducts and liquid fuels.<sup>133</sup> The current technology used to create biopower products from biomass, including fuel and other products, has been developed largely through support provided by the federal government.<sup>134</sup> Additionally, many researchers and farmers in the United States support the use of biomass and the resulting biopower.<sup>135</sup> Members of both groups share an enthusiasm for the possibility that bioenergy crops can become an "economically viable" way of significantly decreasing the United States' need to import energy, increasing energy security.<sup>136</sup> The United States Congress recognized the many benefits of biopower when it began to implement new incentives for biomass production in the 2002 Farm Bill.<sup>137</sup>

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<sup>129</sup> *Id.* at 125.

<sup>130</sup> *Id.* For a discussion of how biomass has the potential to change the fuel industry through the creation of methanol, see VAITHEESWARAN, *supra* note 10, at 239.

Methanol champions argue that their fuel, unlike gasoline, can be produced easily from a variety of sources, ranging from natural gas to "biomass" (plant matter, cow dung, and such like). This could make methanol attractive in poor countries, which use a lot of biomass. Rich countries may also prefer methanol because it would reduce their dependence on OPEC.

*Id.*

<sup>131</sup> Kaminsky, *supra* note 124, at 1.

<sup>132</sup> Ames, *supra* note 85, at 1.

<sup>133</sup> *Id.*

<sup>134</sup> *Id.*

<sup>135</sup> *Biomass Use*, *supra* note 9, at 2.

<sup>136</sup> *Id.*

<sup>137</sup> Ames, *supra* note 85, at 2.

Thus far, the development of renewable energy technologies through biomass has focused on corn ethanol.<sup>138</sup> However, corn ethanol has a relatively high cost of production.<sup>139</sup> Despite this, its ability to create a demand for bio-based energy cannot be overlooked, and it is expected that corn ethanol will continue to be very important in the future.<sup>140</sup>

There are many forms of biomass other than corn ethanol, however, that are already produced by farmers.<sup>141</sup> One other extremely promising source of biopower that has begun to attract a lot of attention is cellulosic feed, specifically switchgrass.<sup>142</sup>

Switchgrass is an “energy crop,” or a crop that requires less input and maintenance than annual row crops.<sup>143</sup> This feature of energy crops allows them to be raised less expensively than traditional crops and with a higher level of sustainability.<sup>144</sup> Of the herbaceous energy crops, switchgrass has emerged as the most promising.<sup>145</sup> Not only does it produce high yields, but it is able to be harvested annually for several years before replanting is necessary.<sup>146</sup>

Switchgrass has been labeled as a “model bioenergy crop” because of its efficient and productive nature.<sup>147</sup> As described above, it is a cellulosic feedstock.<sup>148</sup> Other examples of cellulosic feedstock include mill and forestry residues, agricultural residues, and urban wood waste.<sup>149</sup> Unlike these other forms of feedstock, switchgrass is particularly attractive for biomass use because it can be grown where industries that would use it for bioproducts and bioenergy are located.<sup>150</sup>

Another great advantage that places switchgrass at the forefront of farm-assisted biopowers is that it can be harvested and produced like hay.<sup>151</sup> Switchgrass requires very low levels of fertilization and water.<sup>152</sup>

<sup>138</sup> *Biomass Use*, *supra* note 9, at 7.

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

<sup>140</sup> *Id.*

<sup>141</sup> *Growing Energy*, *supra* note 14.

<sup>142</sup> *Biomass Use*, *supra* note 9, at 3-7.

<sup>143</sup> *Growing Energy*, *supra* note 14.

<sup>144</sup> *Id.*

<sup>145</sup> *Id.*

<sup>146</sup> *Id.*

<sup>147</sup> *Biomass Use*, *supra* note 9, at 2.

<sup>148</sup> *Id.*

<sup>149</sup> *Id.*

<sup>150</sup> *Id.*

<sup>151</sup> *Id.* at 3.

<sup>152</sup> *Id.*

Much of the same equipment and technology used to harvest hay may be used for switchgrass.<sup>153</sup> Thus, every farmer that has the knowledge and ability to produce and harvest hay could also grow switchgrass.<sup>154</sup> With fourteen percent of current cropland in the United States, or sixty million acres, dedicated to hay, it is no surprise that switchgrass has emerged as a potential focus of biomass and biopower production.<sup>155</sup>

Bioenergy crops are able to grow on land that must be protected from soil erosion.<sup>156</sup> This includes agricultural soil that is both highly degraded and marginal, much like the land enrolled in the Conservation Reserve Program.<sup>157</sup>

### 3. Advantages of Biopower

The use of biopower offers several advantages. From an environmental perspective, products that are bio-based are biodegradable and less toxic than products that are petroleum-based.<sup>158</sup> Increasing the use of biopower and decreasing the use of fossil fuels could reduce emissions that cause global warming.<sup>159</sup>

Biomass is also more dependable than most forms of energy, whether it be a finite resource such as oil or an intermittent resource such as solar energy.<sup>160</sup> Its greater dependability derives from the fact that it is more readily available than other sources.<sup>161</sup> In addition, as opposed to many other renewable energy resources which rely heavily on unpredictable environmental conditions, biomass can store its energy until it is needed.<sup>162</sup>

Many sources of biomass, switchgrass in particular, are great forage species for cattle.<sup>163</sup> This creates additional incentives for farmers to grow these crops on their land.<sup>164</sup> In the future, switchgrass may even be able to serve as an animal feed protein source because it is high in leaf protein.<sup>165</sup>

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<sup>153</sup> *Id.*

<sup>154</sup> *Id.*

<sup>155</sup> *Id.*

<sup>156</sup> Lemus & Lal, *supra* note 33, at 4.

<sup>157</sup> *See generally id.*

<sup>158</sup> Ames, *supra* note 85, at 3.

<sup>159</sup> *See generally* Growing Energy, *supra* note 14.

<sup>160</sup> Ames, *supra* note 85, at 1.

<sup>161</sup> *See* FANCHI, *supra* note 12, at 119.

<sup>162</sup> *Id.* at 119-20.

<sup>163</sup> *Biomass Use*, *supra* note 9, at 3.

<sup>164</sup> *Id.*

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

Energy crops that are perennial, such as switchgrass, can improve the quality of soil that has been damaged through overuse.<sup>166</sup> Perennial crops are able to do this because their roots grow deep into the ground, improving the soil structure while strengthening its organic content.<sup>167</sup> Farmland devoted to switchgrass and other perennial crops does not need to be tilled as much, allowing land that has been damaged by machinery to heal.<sup>168</sup>

Switchgrass also provides the advantage of needing less pesticide, fertilizer, fungicide, and herbicide than traditional crops.<sup>169</sup> This results in a reduction in chemical use on the soil.<sup>170</sup> This reduction keeps “excessive aquatic plant growth” and poisons away from surface and ground water.<sup>171</sup> The deep roots of energy crops can also aid in filtering waterways from chemical runoff brought in by neighboring fields and inhibit erosion-induced sedimentation.<sup>172</sup>

Increased use of biomass will also help farmers by providing them, as well as the rural communities that support them, a potentially lucrative source of income.<sup>173</sup>

#### 4. Biopower and Conservation Reserve Program Policy

Prior to the 2002 Farm Bill, the Conservation Reserve Program prohibited any commercial use of land enrolled in the program.<sup>174</sup> The 2002 Farm Bill amended the rules of the Conservation Reserve Program to allow non-emergency grazing and haying (including biomass), which gave farmers a very “useful tool” to help manage these lands productively.<sup>175</sup>

This allowance provides farmers with an ability to manage their enrolled land while allowing them to increase the land’s cover disturbance, an occurrence that spawns greater quality and diversity among the land’s vegetative covers and improves the land’s wildlife habitats.<sup>176</sup> The type of biomass cover most conducive to these results on Conservation Reserve

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<sup>166</sup> Growing Energy, *supra* note 14.

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

<sup>168</sup> *Id.* (“One study estimates that converting a corn farm of average size to switchgrass could save 66 truckloads of soil from erosion each year.”).

<sup>169</sup> *Id.*

<sup>170</sup> *Id.*

<sup>171</sup> *Id.*

<sup>172</sup> *Id.*

<sup>173</sup> *Id.*

<sup>174</sup> 2002 Reserve Program Long-Term Policy, 68 Fed. Reg. at 24,832-33.

<sup>175</sup> *Id.* at 24,833.

<sup>176</sup> *Id.*

Program-enrolled land is switchgrass.<sup>177</sup> Switchgrass may very well be the best biomass-based solution to restoring the United States' agricultural fields while protecting them at the same time.<sup>178</sup>

While these benefits to farmers are very appealing and should not be overlooked, allowing non-emergency haying and grazing creates a significant amount of new biomass production which may play a role in increasing the nation's energy self-sufficiency.<sup>179</sup> Energy created from biomass has the potential to provide a great amount of the United States' future energy requirements.<sup>180</sup> Beyond this, biopower may also be able to aid rural communities of the United States in reinvigorating their economies.<sup>181</sup>

It is important to remember that the original goals of the Conservation Reserve Program will not be compromised by the allowance of biomass production on set-aside land.<sup>182</sup> Although careful planning must be incorporated into biomass production on enrolled lands, with the right management energy crops can be grown successfully while protecting the environment.<sup>183</sup>

The potential benefits of biopower warranted, and continue to justify, the federal investment in biomass production laid out by Congress in the 2002 Farm Bill.<sup>184</sup> Biopower has the ability to benefit this nation by reducing air pollution, increasing economic development, producing increased energy diversity, and, of most concern here, lowering the United States' dependence on fossil fuels.<sup>185</sup> In the United States' quest to enact improved strategies aimed at creating a greater level of energy sustainability, it will need to look to biopowered fuel to replace fossil fuel.<sup>186</sup> Biopower has the ability to become a significant part of Congress's long-range

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<sup>177</sup> *Biomass Use*, *supra* note 9, at 4.

<sup>178</sup> *See id.*

<sup>179</sup> Ames, *supra* note 85, at 6 (noting that the 2002 Farm Bill creates a greater channel for farm income as biomass production is opened up.) For a greater discussion of this topic, see *infra* Part IV.A.1.

<sup>180</sup> *Growing Energy*, *supra* note 14.

<sup>181</sup> *Id.* In an interesting aside, this Note also comments on the ability of rural-based biopower to create a better way for communities to control their own energy needs: "Rural communities could become entirely self-sufficient when it comes to energy, using locally grown crops and residues to fuel cars and tractors and to heat and power homes and buildings." *Id.*

<sup>182</sup> *See id.*

<sup>183</sup> *Id.*

<sup>184</sup> Ames, *supra* note 85, at 9.

<sup>185</sup> *Id.*

<sup>186</sup> *Biomass Use*, *supra* note 9, at 3.

energy strategy.<sup>187</sup> The time to make a serious investment in this resource to secure a greater energy future has arrived.<sup>188</sup>

## B. *Wind Energy*

### 1. History of Wind Energy

Human beings have harnessed the power of wind as a source of energy for thousands of years.<sup>189</sup> The seemingly age-old uses of sail boats and windmills reflect the many uses for which wind power has been adapted.<sup>190</sup> Windmills have provided the ability to pump water and grind grain, all without the need of electrical power.<sup>191</sup> These classical uses of wind energy have proven so popular that they continue to be used today, most notably for recreational purposes such as parasailing.<sup>192</sup>

While the traditional use of wind power may not yet be obsolete, it is wind's potential to create electrical power that has this age-old resource once again at the forefront of energy discussions.<sup>193</sup> As recently as the 1970s, however, the only wind turbines in existence dated back to the 1930s and were salvaged from ranches in the Great Plains.<sup>194</sup> Today, that has changed dramatically.<sup>195</sup> Following the oil embargos of the 1970s, research and development of wind energy technology enhanced the United States' knowledge of and ability to use wind power.<sup>196</sup> Along with biomass, wind energy has been forecasted as one of the renewable energy technologies most capable of successfully entering the electrical market over the coming twenty years.<sup>197</sup>

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<sup>187</sup> See Ames, *supra* note 85, at 9.

<sup>188</sup> See *id.*

<sup>189</sup> FANCHI, *supra* note 12, at 93. Wind power can also be seen as a derivative of solar power because it is the sun which directly powers the movement of wind on earth, with about one to two percent of the sun's energy used to generate wind. See Danish Wind Industry Association, Where Does Wind Energy Come From?, <http://www.windpower.org/en/tour/wres/index.htm> (last visited Mar. 1, 2007).

<sup>190</sup> FANCHI, *supra* note 12, at 93.

<sup>191</sup> *Id.*

<sup>192</sup> *Id.*

<sup>193</sup> *Id.*

<sup>194</sup> PAUL GIPE, WIND POWER: RENEWABLE ENERGY FOR HOME, FARM, AND BUSINESS 1 (2004).

<sup>195</sup> *Id.*

<sup>196</sup> History of Wind Energy, *supra* note 66.

<sup>197</sup> KAMINSKY, *supra* note 124, at 1.

## 2. Facts about Wind Energy

Wind-based technology works by capturing the flow of wind as it passes by and converting it into energy through a turbine.<sup>198</sup> As the wind moves, the turbine captures its kinetic energy.<sup>199</sup> This kinetic energy is then converted into electricity.<sup>200</sup>

There are two types of wind turbines in use, both of which use rotating blades to convert the wind's power into electricity that can be stored in a generator.<sup>201</sup> The first type of turbine, a vertical axis turbine, rotates much like an "eggbeater" and is used less.<sup>202</sup> The most common turbine, the horizontal axis turbine, is the one seen in fields and in pictures that most people are familiar with.<sup>203</sup> Horizontal turbines are built with two or more blades connected to a "machine cabin," an instrument which contains the generator.<sup>204</sup> The machine cabin rests atop a "foundation block" attached to the ground.<sup>205</sup> When the blades rotate vertically the machine cabin is able to rotate horizontally.<sup>206</sup>

For a wind turbine to maximize its ability to harness electrical power from wind, the rotation of its blades should be perpendicular to the wind's direction.<sup>207</sup> A turbine which is improperly placed parallel to the wind may not produce any energy at all, especially if its blades are not

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<sup>198</sup> FANCHI, *supra* note 12, at 93. For a detailed discussion of how the atmosphere creates the flow of wind, see GIPE, *supra* note 194, at 23-26.

The atmosphere is a huge, solar-fired engine that transfers heat from one part of the globe to another. Large-scale convective currents set in motion by the sun's rays carry heat from lower latitudes to northern climes. The rivers of air that pour across the surface of the earth in response to this global circulation are what we call wind, the working fluid in the atmospheric heat engine.

*Id.* at 23.

<sup>199</sup> American Wind Energy Association, Wind Energy Basics, [http://www.awea.org/faq/wwt\\_basics.html](http://www.awea.org/faq/wwt_basics.html) (last visited Mar. 1, 2007).

<sup>200</sup> *Id.* Albert Betz showed in 1928 that the maximum amount of wind energy that can be captured and converted to electric energy is about 59.3%. FANCHI, *supra* note 12, at 96.

<sup>201</sup> FANCHI, *supra* note 12, at 93. Turbines generally rise to several hundred feet in the air. *Id.* at 94.

<sup>202</sup> *Id.* at 93.

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

<sup>204</sup> *Id.*

<sup>205</sup> *Id.*

<sup>206</sup> *Id.*

<sup>207</sup> *Id.* at 95.

very large.<sup>208</sup> For similarly-situated turbines, the size of the rotor blade will determine how much electricity can be produced.<sup>209</sup> Larger rotor blades can capture more energy from wind, generating more electricity.<sup>210</sup>

As with all energy sources, wind turbines face certain obstacles.<sup>211</sup> Obviously, wind turbines depend on a source that is rarely, and certainly not always, constant.<sup>212</sup> Thus, the success of a wind turbine is dependent upon proper site selection.<sup>213</sup> The United States Department of Energy has determined that around six percent of the contiguous United States can be described as “[g]ood wind areas.”<sup>214</sup> Additionally, a wind turbine’s blade rotation speed is dependent on the speed of wind.<sup>215</sup> Speed of wind, in fact, is the most important factor influencing the amount of power that a wind turbine can generate.<sup>216</sup> If the wind is blowing too hard the rotation speed of the blade may damage the turbine.<sup>217</sup> If this happens, the turbine will have to be shut down until the high winds pass.<sup>218</sup>

Wind turbines can be collected together into groups called wind farms or wind parks.<sup>219</sup> Wind parks require a substantial amount of space, enough so that the long blades can move in any direction about the radius without hitting another turbine’s blades.<sup>220</sup> Additional spacing concerns include room to minimize turbulence and restore windstreams to their normal state while passing between the turbines.<sup>221</sup>

Perhaps the most important advancement in regard to wind energy over the past several decades is its reduction in cost. The United States Department of Energy reports that the cost of energy produced from wind power has dropped almost ninety percent over the past twenty years.<sup>222</sup> Additionally, incentives such as the federal production tax credit and net

<sup>208</sup> *Id.*

<sup>209</sup> GIPE, *supra* note 194, at 34.

<sup>210</sup> *Id.*

<sup>211</sup> *See* FANCHI, *supra* note 12, at 95-96.

<sup>212</sup> *Id.*

<sup>213</sup> GIPE, *supra* note 194, at 1.

<sup>214</sup> Wind Energy Resource Potential, *supra* note 16.

<sup>215</sup> FANCHI, *supra* note 12, at 96.

<sup>216</sup> GIPE, *supra* note 194, at 34.

<sup>217</sup> FANCHI, *supra* note 12, at 96.

<sup>218</sup> *Id.*

<sup>219</sup> *Id.*

<sup>220</sup> *Id.*

<sup>221</sup> *Id.* at 96-97.

<sup>222</sup> AM. WIND ENERGY ASS’N, THE ECONOMICS OF WIND ENERGY (2005), <http://www.awea.org/pubs/factsheets/EconomicsOfWind-Feb2005.pdf>.

metering provisions, which are available in some locales, help to lessen the cost of wind technology.<sup>223</sup>

### 3. Advantages of Wind Energy

From an environmental perspective, wind turbines provide an attractive form of energy because they are clean.<sup>224</sup> Unlike electrical energy produced from fossil fuels, energy produced by turbines comes from a naturally clean source.<sup>225</sup> Thus, the numerous undesirable emissions that accompany the use of fossil fuels can be avoided when a wind turbine is used instead.<sup>226</sup>

On a political level, the use of wind turbines as a source of electricity falls in line with this nation's recently enhanced energy policy goals.<sup>227</sup> Electrical energy from wind can be produced within the United States, and there is no doubt the United States has a plentiful supply of wind.<sup>228</sup> Wind is also renewable because it is derived from the sun and thus unsusceptible to the problem of depletion that faces finite fuels.<sup>229</sup>

Wind turbines are perfect for use on farmland away from urban areas.<sup>230</sup> The best sites for wind are found in rural areas,<sup>231</sup> particularly in the Great Plains and the Midwest.<sup>232</sup> This helps rural economies by providing an alternate source of income.<sup>233</sup> At the same time, though, it does not diminish the productivity of farmers who wish to continue using the land, perhaps even for the production of biomass, because the footprint of a turbine covers only a small fraction of the farmland.<sup>234</sup>

Wind energy has also improved upon several of its main disadvantages over the past few decades.<sup>235</sup> Distractions such as visual and noise

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<sup>223</sup> *Id.*

<sup>224</sup> U.S. Department of Energy, Advantages and Disadvantages of Wind Energy, [http://www1.eere.energy.gov/windandhydro/wind\\_ad.html](http://www1.eere.energy.gov/windandhydro/wind_ad.html) (last visited Mar. 1, 2007).

<sup>225</sup> *Id.*

<sup>226</sup> *Id.*

<sup>227</sup> *Id.* See also State of the Union 2006, *supra* note 40, at 150.

<sup>228</sup> Advantages and Disadvantages of Wind Energy, *supra* note 224.

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

<sup>230</sup> *Id.*

<sup>231</sup> *Id.*

<sup>232</sup> RENEWABLE RES. DATA CTR., WIND ENERGY RESOURCE ATLAS OF THE UNITED STATES, at map 2-1 (1986) [hereinafter WIND ENERGY RESOURCE ATLAS], available at <http://rredc.nrel.gov/wind/pubs/atlas/maps/chap2/2-01m.html>.

<sup>233</sup> Advantages and Disadvantages of Wind Energy, *supra* note 224.

<sup>234</sup> See *id.*; BBC Weather Centre, Climate Change: Wind Power, [http://www.bbc.co.uk/climate/adaptation/wind\\_power.shtml](http://www.bbc.co.uk/climate/adaptation/wind_power.shtml) (last visited Mar. 1, 2007).

<sup>235</sup> Advantages and Disadvantages of Wind Energy, *supra* note 224.

problems have been reduced through in technological advancements and improved site placement.<sup>236</sup> Surveys can now be conducted to determine the turbines' negative impact on birds,<sup>237</sup> and they can be placed so as to avoid bird migration patterns.<sup>238</sup> The possibility of television transmission interruption from the use of metal materials has become unlikely because sophisticated computer models are used to assist with site selection.<sup>239</sup> Also, previously high costs have decreased to the point where wind energy is now one of the most cost-effective renewables.<sup>240</sup>

#### 4. Wind Energy and Conservation Reserve Program Policy

With the passage of the 2002 Farm Bill, wind turbines were allowed to be constructed on lands set aside under the Conservation Reserve Program.<sup>241</sup> Wind turbines were chosen specifically for many of the reasons discussed above.<sup>242</sup> Environmentally, turbines have a small impact and do not pollute.<sup>243</sup> They take up very little field space (around one-tenth of an acre) and have a limited effect on wildlife.<sup>244</sup>

As with the implementation of biomass, wind turbines are only allowed if they remain consistent with the land's goals as set by the Conservation Reserve Program.<sup>245</sup> This includes the program's water, soil, and habitat goals.<sup>246</sup> Furthermore, the number of wind turbines allowed on enrolled land is determined by the Farm Service Administration.<sup>247</sup>

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<sup>236</sup> *Id.*

<sup>237</sup> U.S. Department of Energy, Environmental Impacts? Interaction with Birds, Bats, and other Wildlife, [http://www.eere.energy.gov/windandhydro/windpoweringamerica/ne\\_issues\\_environment.asp](http://www.eere.energy.gov/windandhydro/windpoweringamerica/ne_issues_environment.asp) (last visited Mar. 1, 2007).

<sup>238</sup> FANCHI, *supra* note 12, at 94. An additional alternative for lowering the impact on birds "is to use large rotor blades that turn at relatively low speeds of rotation." *Id.*

<sup>239</sup> U.S. Department of Energy, Can a Wind Project be a Good Neighbor?, [http://www.eere.energy.gov/windandhydro/windpoweringamerica/ne\\_issues\\_neighbor.asp](http://www.eere.energy.gov/windandhydro/windpoweringamerica/ne_issues_neighbor.asp) (last visited Mar. 1, 2007).

<sup>240</sup> Advantages and Disadvantages of Wind Energy, *supra* note 224.

<sup>241</sup> 2002 Reserve Program Long-Term Policy, 68 Fed. Reg. at 24,833.

<sup>242</sup> *Id.* See *supra* Part III.B.3.

<sup>243</sup> *Id.*

<sup>244</sup> *Id.*

<sup>245</sup> U.S. Department of Energy, Wind Energy Provisions in 2002 Farm Bill, [http://www.eere.energy.gov/windandhydro/windpoweringamerica/ag\\_farm\\_bill.asp](http://www.eere.energy.gov/windandhydro/windpoweringamerica/ag_farm_bill.asp) (last visited Mar. 1, 2007).

<sup>246</sup> 2002 Farm Bill Makes History with New Energy Title, WINDUSTRY NEWSL., Spring 2002, at 1, available at <http://www.windustry.org/newsletter/2002SpringNews.pdf>.

<sup>247</sup> 2002 Reserve Program Long-Term Policy, 68 Fed. Reg. at 24,833.

#### IV. PROPOSALS FOR THE MODIFICATION OF THE CONSERVATION RESERVE PROGRAM IN THE 2007 FARM BILL

The federal government announced recently an ambitious energy goal for the next two decades, aiming to “replace more than 75 percent of our oil imports from the Middle East by 2025.”<sup>248</sup> In discussing this goal, President Bush declared that the United States can end its Middle East oil-dependence and shift away from a “petroleum-based economy” through the application of technology and talent.<sup>249</sup> Renewable energy resources represent an important step in achieving this level of self-sufficiency and sustainability.<sup>250</sup> The United States Congress addressed the use of renewable energy resources in the 2002 version of the Farm Bill.<sup>251</sup> Congress included a provision in that Bill allowing for the use of renewable energy resources, particularly biomass and wind energy, on lands enrolled in the Conservation Reserve Program.<sup>252</sup>

With a new Farm Bill set to come before Congress in 2007, few understand better than Secretary of Agriculture Mike Johanns the potential that farmers have to positively impact energy production through renewable resources in the United States.<sup>253</sup> During the summer of 2005, Johanns embarked on a listening tour to hear ideas and concerns about the 2007 Farm Bill.<sup>254</sup> At a stop at the state fair in Iowa— a state directly impacted by the provisions of the Farm Bill— participants expressed their belief that the 2007 bill should focus more on, among other things, renewable energy.<sup>255</sup> Johanns understands that more than just farming issues

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<sup>248</sup> State of the Union 2006, *supra* note 40, at 150. For a discussion of the Bush Administration’s interactions with the renewable resource community since the State of the Union in progress towards this goal, see generally *Bush Blames Cuts at Energy Lab on Mix-Up*, CBS NEWS, Feb. 21, 2006, <http://www.cbsnews.com/stories/2006/02/21/ap/politics/mainD8FTQ6UO0.shtml> (explaining that the work of renewable energy lab workers is very important and a recent budget cut was unintended). “My message to those who work here is we want you to know how important your work is. We appreciate what you’re doing and we expect you to keep doing it, and we want to help you keep doing it.” *Id.* (quoting President George W. Bush).

<sup>249</sup> State of the Union 2006, *supra* note 40, at 150. President Bush also explained in this Address that these steps “can dramatically improve our environment.” *Id.*

<sup>250</sup> *Biomass Use*, *supra* note 9, at 1.

<sup>251</sup> CONSERVATION PROVISIONS OVERVIEW, *supra* note 91.

<sup>252</sup> *Id.*

<sup>253</sup> See Chris Clayton, *Fairgoers Offer Farm Bill Ideas*, OMAHA WORLD-HERALD, Aug. 12, 2005, at 01D.

<sup>254</sup> *Id.*

<sup>255</sup> *Id.*

must be addressed in the Farm Bill: "It's tax policy, it's trade policy, it's energy policy."<sup>256</sup> In the next Farm Bill, Congress should consider the opinions of farmers and the current state of energy production, and pay heed to the lessons learned by Secretary Johanns on his national tour.<sup>257</sup>

The Conservation Reserve Program is a perfect platform from which to enhance the United States' commitment to renewable energy. The 2007 Farm Bill should modify incentives to increase the development of biomass and wind power resources on Conservation Reserve Program land.

#### A. *Why the Conservation Reserve Program?*

Conservation Reserve Program lands are very suitable for the increased use of the renewable energy technologies of biomass<sup>258</sup> and wind energy.<sup>259</sup> By choosing to expand the Conservation Reserve Program's current level of commitment to renewable energies, the United States can draw closer to its future energy goals without incurring great economic or environmental costs.<sup>260</sup>

##### 1. Biomass Production within an Enhanced Conservation Reserve Program Policy

As the United States proceeds towards energy self-sustainability, it must turn to biomass.<sup>261</sup> Biomass currently only supplies a very small percentage of the United States' electricity (two percent), a small amount of fuel used by automobiles (one percent), and an insignificant amount of steam and heat consumed by businesses and homes.<sup>262</sup> These numbers, however, do not have to remain the same in the future.<sup>263</sup> Biomass can capture a much greater percentage of the energy market if more energy crops are grown and biomass-related technology is developed further.<sup>264</sup> With the help of programs like the Conservation Reserve Program and

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<sup>256</sup> *Id.*

<sup>257</sup> *See id.*

<sup>258</sup> *See generally Biomass Use, supra* note 9; *Growing Energy, supra* note 14.

<sup>259</sup> *See* 2002 Reserve Program Long-Term Policy, 68 Fed. Reg. at 24,833; *Advantages and Disadvantages of Wind Energy, supra* note 224.

<sup>260</sup> *See generally* State of the Union 2006, *supra* note 40, at 150; *Advantages and Disadvantages of Wind Energy, supra* note 224.

<sup>261</sup> *See generally Biomass Use, supra* note 9.

<sup>262</sup> *Growing Energy, supra* note 14.

<sup>263</sup> *Id.*

<sup>264</sup> *Id.*

complimenting advances, it is forecasted that biomass-related crops could account in the future for fourteen percent of electricity used in the United States, or thirteen percent of the United States' motor fuel.<sup>265</sup>

The Conservation Reserve Program is well-suited to help achieve this end because millions of acres of farmland, of poor quality for food crops and currently unused, are already enrolled in the program.<sup>266</sup> Switchgrass, one of the crops with the greatest potential to create biopower, is also the most suitable energy crop for land enrolled in the Conservation Reserve Program because of its ability to help restore eroded and environmentally-injured lands.<sup>267</sup> Under the supervision of attentive management, this land, which contains native grasses, trees, and other covers described earlier, could be used to produce biomass energy crops.<sup>268</sup> Biomass energy-development is thus one place where the Conservation Reserve Program has the potential to work as a positive, substantial force for change.<sup>269</sup>

These activities, if expanded on a wider-scale throughout the Conservation Reserve Program, fall in step with the United States' current energy goals.<sup>270</sup> With an increased capacity to produce electricity through non-fossil fuel sources, this policy could help meet important national objectives.<sup>271</sup>

## 2. Wind Energy Production within an Enhanced Conservation Reserve Program Policy

The vast majority of land enrolled in the Conservation Reserve Program is concentrated in the Midwest and Great Plains.<sup>272</sup> This land is set aside for environmental recuperation.<sup>273</sup> Of poor quality for harvesting

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<sup>265</sup> *Id.*

<sup>266</sup> *Id.*

<sup>267</sup> *Biomass Use*, *supra* note 9, at 3. "Results indicated that at present production costs, switchgrass would be the most economically competitive of these energy crops on 99% of available crop lands when maximum production potential was sought." *Id.* at 5.

<sup>268</sup> *Growing Energy*, *supra* note 14.

<sup>269</sup> *Id.*

<sup>270</sup> *See State of the Union 2006*, *supra* note 40, at 150.

<sup>271</sup> *See Growing Energy*, *supra* note 14.

<sup>272</sup> *See Conservation Reserve Program Approaches Acreage Limit*, AGRIC. OUTLOOK, June-July 1999, at 23, 24, available at <http://www.ers.usda.gov/publications/agoutlook/jun1999/ao262.pdf>. For the most recent geographical enrollment statistics, including detailed maps of the Conservation Reserve Program enrollment, see ENROLLMENT STATISTICS, *supra* note 96.

<sup>273</sup> *See Growing Energy*, *supra* note 14.

cash crops,<sup>274</sup> this land appears open to further use. These lands are located, in large part, within the area of the United States containing the greatest amount of wind.<sup>275</sup> Therefore, the Conservation Reserve Program is useful in identifying farmland that is not currently used to harvest crops that is located within an area possessing great wind power potential.

Wind energy production is also best suited for land that is located away from cities, in more rural atmospheres.<sup>276</sup> The Conservation Reserve Program targets farms in these rural types of areas.<sup>277</sup> These farms are well-suited for the placement of wind turbines, whose ability to function while taking up little space enables farmers to perform other activities on the Conservation Reserve Program land.<sup>278</sup> As Delbert Watson, an Iowa corn farmer, put it, “I didn’t really expect them to come all the way out here in northern Iowa to start a wind farm. But this is really great. Now we grow corn on the ground and generate power in the air—all on the same piece of property.”<sup>279</sup>

The pursuit of an increased use of wind turbine technology on Conservation Reserve Program land would complement the revamped energy policies of this presidential administration.<sup>280</sup> Wind energy is a renewable energy resource that can be produced in the United States.<sup>281</sup> On a broader level, an increased use of wind farms on land enrolled in the Conservation Reserve Program meets the goal of both the program and many people in the United States to produce electricity without polluting and damaging the land.<sup>282</sup>

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<sup>274</sup> *See id.*

<sup>275</sup> *See* WIND ENERGY RES. ATLAS, *supra* note 232; Loni Kemp, Minnesota Department of Agriculture, Harvesting the Wind, <http://www.mda.state.mn.us/crp/wind.htm> (last visited Mar. 1, 2007) (stating that “[t]he Upper Midwest has such tremendous wind resources that it’s often called the Saudi Arabia of Wind Energy”).

<sup>276</sup> Advantages and Disadvantages of Wind Energy, *supra* note 224 (noting that when these rural farms are economically strengthened, so too are their rural communities).

<sup>277</sup> *See* ARTHUR W. ALLEN & MARK W. VANDEVER, A NATIONAL SURVEY OF CONSERVATION RESERVE PROGRAM (CRP) PARTICIPANTS ON ENVIRONMENTAL EFFECTS, WILDLIFE ISSUES, AND VEGETATION MANAGEMENT ON PROGRAM LANDS at v, 28 (2003), *available at* <http://www.fort.usgs.gov/products/publications/21075/21075.pdf>.

<sup>278</sup> *See* Advantages and Disadvantages of Wind Energy, *supra* note 224.

<sup>279</sup> Union of Concerned Scientists, Farming the Wind: Wind Power and Agriculture, [http://www.ucsusa.org/clean\\_energy/renewable\\_energy\\_basics/farming-the-wind-wind-power-and-agriculture.html](http://www.ucsusa.org/clean_energy/renewable_energy_basics/farming-the-wind-wind-power-and-agriculture.html) (last visited Mar. 1, 2007).

<sup>280</sup> *See* State of the Union 2006, *supra* note 40, at 150.

<sup>281</sup> Advantages and Disadvantages of Wind Energy, *supra* note 224.

<sup>282</sup> 2002 Reserve Program Long-Term Policy, 68 Fed. Reg. at 24,832-33.

*B. Incentives for the Increased Use of Renewable Energy Resources on Conservation Reserve Program Land*

This Note advocates not only that the renewable energy provisions implemented in the Conservation Reserve Program as part of the 2002 Farm Bill be renewed, but the support of renewable energy production on enrolled lands should be enhanced as well. The advancement of renewable energy fits perfectly in line with the energy goals of this administration, and the Conservation Reserve Program provides a great home for its continued development and application.<sup>283</sup>

When drafting the new Farm Bill, Congress should consider the Conservation Reserve Program among the leaders in programs addressing our future energy needs. While maintaining the same environmental standards for land enrolled in the Conservation Reserve Program, Congress should significantly decrease the practice of reducing the rental payments it makes to farmers who choose to incorporate either biomass or wind turbines into their recovery fields. If our nation wants farmers to assist in renewable energy development, it should provide a suitable economic incentive.

In the case of biomass crops, the recent past has shown that increased investments in bioenergy resources cause the cost of biopower to go down.<sup>284</sup> As for wind energy, the technology and its application grew greatly when segments of the United States population started developing the further use of turbines in the 1970s.<sup>285</sup> It is time to give these technologies further room to grow.

As the United States' ability to rely on fossil fuels declines it will be forced to turn to renewable energy alternatives.<sup>286</sup> By incorporating increased incentives for the development of renewable energy resources into successful programs such as the Conservation Reserve Program, the United States can take steps to avoid an energy crisis in the future.<sup>287</sup>

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<sup>283</sup> See *supra* Part IV.A.

<sup>284</sup> Ames, *supra* note 85, at 9.

<sup>285</sup> See GIPE, *supra* note 196, at 1.

<sup>286</sup> See *Biomass Use*, *supra* note 9, at 2.

<sup>287</sup> See, e.g., Ames *supra* note 85, at 9 (discussing biomass specifically).

## CONCLUSION

This Note began by asking whether or not farmers can once again become new, revolutionary leaders in the United States. Put another way, will farmers, drawing on a history of social change that dates back to populism, emerge as important players in aiding the United States in meeting its future energy sustainability needs? The answer to this question is a strong, emphatic “yes.”

With the recent spike in energy prices following Hurricane Katrina, the United States received a wake-up call as to the stark energy future that will arise with continued reliance on fossil fuels.<sup>288</sup> This wake-up call extended to the highest levels of the federal government, with President Bush using his widest platform, the annual State of the Union Address, to challenge this country to decrease its reliance on fossil fuels and further develop its renewable resources energy potential.<sup>289</sup>

Congress, realizing that farm fields set aside for environmental recuperation could be used for renewable energy purposes, amended the Conservation Reserve Program in the Farm Bill of 2002 to permit, for the first time, the use of renewable resources on its enrolled fields, four years before President Bush placed renewable energy as a national priority.<sup>290</sup> In amending the Farm Bill, Congress focused on two promising renewable energy resources that fit perfectly within the goals of the Conservation Reserve Program: biomass and wind energy.<sup>291</sup> Both biomass and wind energy show great potential to one day provide a significant portion of the United States’ energy needs.<sup>292</sup> These sources produce clean, safe energy domestically, on this country’s own fields.<sup>293</sup> The energy is produced by American farmers, who throughout this country’s brief history have proved to be the backbone of strength and growth.<sup>294</sup>

While Congress’s foresight is laudable, its attention to renewable energy incentives in the Conservation Reserve Program should not end with the 2002 amendments. With Congress set to renew the Farm Bill in 2007, it has a great opportunity to send the message that it is committed to both increasing the role of the farmer in alternative energy production and

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<sup>288</sup> See *supra* Part I.A.

<sup>289</sup> See State of the Union 2006, *supra* note 40, at 150.

<sup>290</sup> See *supra* Part II.B.

<sup>291</sup> *Id.*

<sup>292</sup> See *supra* Parts III.A-B.

<sup>293</sup> See *supra* Parts IV.A.1-2.

<sup>294</sup> See generally Miller, *supra* note 1.

to achieving the policy goals of this administration. Congress should not only renew the provision in 2007, but dramatically reduce the amount of partially off-setting rent deductions that currently take place when a farmer decides to incorporate biomass or wind turbines on his or her enrolled land. By encouraging farmers in this way, the United States will come one step close to energy sustainability.

A diverse, creative mix of energy alternatives will be needed to meet the United States' growing energy demands as the supply of fossil fuels drops to an insufficient level.<sup>295</sup> The first steps in creating this mix need to occur now, and the Conservation Reserve Program is a great, efficient vehicle for effecting this change.

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<sup>295</sup> See FANCHI, *supra* note 12, at 199-200.