The Biomass Crop Assistance Program: Orchestrating the Government's First Significant Step to Incentivize Biomass Production for Renewable Energy

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Editors' Summary

Rapidly emerging renewable energy legislation in the United States will create unprecedented demand for biomass feedstock. In 2008, Congress created the Biomass Crop Assistance Program (BCAP). Program implementation, however, has been fraught with delays. USDA has yet to designate project areas that govern establishment and annual production payments, the newly issued draft EIS leaves some important questions unanswered, and the federal government lacks an integrated biomass deployment strategy. Only timely and thoughtful deployment of BCAP funding, coupled with a coordinated federal strategy, will secure the commercialization of biomass so critical to America's future renewable energy needs.

Federal efforts to reduce greenhouse gas (GHG) emissions have accelerated greatly with the inauguration of the Barack Obama Administration and a new Democratic majority in the U.S. Congress. These GHG initiatives and related sustainability concerns have raised significantly the profile of biomass[1] as a feedstock for renewable energy.

While Congress continues to debate the best strategy to mitigate climate change,[2] the U.S. Environmental Protection Agency (EPA) has moved quickly and on many fronts throughout 2009 to regulate GHGs. In April of this year, EPA issued a finding that GHGs endanger public health and welfare, a prerequisite to regulation under the Clean Air Act (CAA).[3] In May 2009, EPA issued its draft rule implementing the Energy Independence and Security Act's (EISA's) 2007 revised Renewable Fuel Standard (RFS), which dictates increased levels of renewable fuels from cellulosic biomass.[4] At the same time, EPA and the U.S. Department of Transportation (DOT)[5] proposed that auto manufacturers receive credit for flex-fuel light-duty vehicle production against new Corporate Average Fuel Economy (CAFE) standards that will include, for the first time, GHG emission restrictions.[6] On October 30, 2009, EPA finalized a mandatory GHG reporting rule for certain source categories, including petroleum refiners, importers, and exporters.[7] Renewable fuels will benefit directly from this regulation to the extent that reporting raises the cost of conventional gasoline. In addition to the reporting rule, EPA has proposed permitting

1. The U.S. Department of Energy (DOE) generally defines biomass as "agricultural and forestry residues, municipal solid wastes, industrial wastes, and terrestrial and aquatic crops grown solely for energy purposes." U.S. DOE, *Biomass FAQs,* http://www1.eere.energy.gov/biomass/biomass_basics_faqs.html. Depending on the statute, however, some sources may be excluded from the definition of biomass. *See, e.g., infra* note 60 (providing the definition of "renewable biomass" under the Biomass Crop Assistance Program (BCAP)).
2. *See* American Clean Energy and Security Act of 2009, H.R. 2454 (passed June 26, 2009; reported in the U.S. Senate July 6, 2009); Clean Energy Jobs and American Power Act, S. 1733 (introduced Sept. 30, 2009), http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=111_cong_reports&docid=f:hr137.111.pdf.
3. 42 U.S.C. §§7401-7671q, ELR Stat. CAA §§101-618. Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gasses Under Section 202(a) of the Clean Air Act; Proposed Rule, 74 Fed. Reg. 18886 (Apr. 24, 2009) (to be codified at 40 C.F.R. ch. 1). EPA sent its final proposal to the Office of Management and Budget for review on November 6, 2009. *See* Tom Doggett, *EPA CO_2 Endangerment Finding to White House*, Reuters, Nov. 9, 2009.
4. Energy Independence and Security Act of 2007, Pub. L. No. 110-140, 121 Stat. 1492 (2007) [hereinafter EISA]; Regulation of Fuels and Fuel Additives; Changes to Renewable Fuel Standard Program, Proposed Rule, 74 Fed. Reg. 24804 (May 26, 2009) (to be codified at 40 C.F.R. pt. 80).
5. The National Highway Traffic Safety Administration (NHSTA) is responsible for the standard within the DOT.
6. Proposed Rulemaking to Establish Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards; Proposed Rule, 74 Fed. Reg. 49531 (Sept. 28, 2009) (to be codified at 40 C.F.R. pts. 86 and 600).
7. Mandatory Reporting of Greenhouse Gases, Final Rule, 74 Fed. Reg. 56260 (Oct. 30, 2009) (to be codified at 40 C.F.R. pts. 86, 87, 89, 90, 94, 98, 1033, 1039, 1042, 1048, 1051, 1054, and 1065).

requirements for certain major sources of GHG emissions.[8] This almost certainly will increase the demand for biomass from power plants in order to lower the GHG emissions that the regulation targets.

Due to the absence of federal leadership in the 2000s, California is ahead of the federal government in developing GHG regulatory programs, which started with comprehensive legislation in 2006.[9] California is now in the process of implementing, among other policies, a Low Carbon Fuel Standard,[10] Renewable Portfolio Standards,[11] and GHG emission restrictions and credits for alternative fuel use[12] that will increase demand for biomass. California also is considering non-carbon-related sustainability standards for fuel sources under the Low Carbon Fuel Standard,[13] which likely will favor biomass for its environmental benefits.

It is clear that emerging laws and regulations at the federal level, and in California, recognize biofuels' important role in reducing GHG emissions and other environmental externalities, from field to tailpipe. In 2007, biomass made up approximately 3.5% of total energy consumption, or 5% of energy produced in the United States.[14] The majority of biomass grown in the United States comes from forests.[15] The greatest challenge regulators and regulated entities face moving forward, however, is sourcing sufficient quantities of biomass, whether for transportation fuel or heat and power generation to meet exponential increase in demand. Government-funded research and development (R&D) and supply-chain subsidies (direct payments, loans and loan guarantees, and grants) likely will be necessary to incentivize biomass production that meets this growing demand.

On the R&D side, the Biomass Research and Development Act of 2000 recognized that to produce quality biomass feedstock and overcome biomass recalcitrance, "a focused, integrated, and innovation-driven research effort" was needed.[16] The 2000 Act established, for the first time, the Biomass Research and Development Board (BRDB) to bring "coherence to federal strategic planning."[17] Senior officers from the U.S. Departments of Energy (DOE) and Agriculture (USDA), EPA, the National Science Foundation, the Office of Science and Technology Policy, and other agencies serve on the BRDB.[18] The 2000 Act also created the Biomass Research and Development Technical Advisory Committee, comprised of industry, academic, scientific, commodity, environmental, and economic specialists, to evaluate and perform strategic planning.[19] Lastly, the 2000 Act set up the Biomass Research and Development Initiative (BRDI) to channel R&D monies for, among other purposes, promotion of integrated research between institutions.[20] The new Obama Administration also has actively invested in R&D for renewable energy projects as part of its 2008 Farm Bill implementation and $787 billion economic stimulus plans. For example, in January 2009, DOE and the USDA announced $25 million of funding for projects that include feedstock development,[21] and in May 2009, DOE announced the investment of $110 million for fundamental biofuel research, including biomass, from stimulus monies.[22]

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8. Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule; Proposed Rule, 74 Fed. Reg. 55292 (Oct. 27, 2009) (to be codified at 40 C.F.R. pts. 51, 52, 70, and 71).
9. Assembly Bill (A.B.) No. 32 (Sept. 27, 2006) (codified at Cal. Health & Safety Code 25.5, §38500), http://www.leginfo.ca.gov/pub/05-06/bill/asm/ab_0001-0050/ab_32_bill_20060927_chaptered.pdf.
10. *See* Air Resources Board (ARB), Proposed Modified Regulation Order (Sept. 23, 2009), http://www.arb.ca.gov/regact/2009/lcfs09/lcfs2ndmodtxt.pdf; Air Resource Board, Resolution 09-31 (Apr. 23, 2009), http://www.arb.ca.gov/regact/2009/lcfs09/res0931.pdf [hereinafter LCFS].
11. *See* Senate Bill (S.B.) 1078 (Sept. 12, 2002) (amending Chapter 2.3 of Part 1 of Division 1 of the Pub. Util. Code), http://www.energy.ca.gov/portfolio/documents/SB1078.PDF; A.B. 1969 (Apr. 24, 2006), http://info.sen.ca.gov/pub/05-06/bill/asm/ab_1951-2000/ab_1969_cfa_20060420_170234_asm_comm.html (adding a feed-in-tariff requirement); Exec. Order S-21-09 (Sept. 15, 2009) (ordering the ARB to adopt, by July 31, 2010, a regulation setting a 33% renewable energy target by 2020), http://gov.ca.gov/executive-order/13269/.

    Twenty-nine other states, in addition to California, maintain some form of a renewable portfolio standard. For tables identifying these states, and comparing their programs, see Pew Center on Global Climate Change, *Renewable & Alternative Energy Portfolio Standards*, http://www.pewclimate.org/what_s_being_done/in_the_states/rps.cfm.
12. California is issuing regulations to implement A.B. No. 1493 (Pavley) (July 22, 2002) (codified at Cal. Health & Safety Code §42823), http://www.arb.ca.gov/cc/ccms/documents/ab1493.pdf. The ARB promulgated the regulations in 2005 (*see* Final Regulation Order, Cal. Code Regs. tit. 13, §§1900 et seq.), http://www.arb.ca.gov/regact/grnhsgas/revfro.pdf. The ARB could not implement them, however, because EPA under the Bush Administration refused to grant California a Clean Air Act (CAA) waiver. EPA under the Obama Administration, granted the waiver on June 30, 2009. *See* California State Motor Vehicle Pollution Control Standards; Notice of Decision Granting a Waiver of Clean Air Act Preemption for California's 2009 and Subsequent Model Year Greenhouse Gas Emission Standards for New Motor Vehicles; Notice, 74 Fed. Reg. 32744 (July 8, 2009).
13. *See* LCFS, *supra* note 10, at ES-22.
14. U.S. DOE, Energy Information Administration, Renewable Energy Annual (2007 ed.), http://www.eia.doe.gov/cneaf/solar.renewables/page/rea_data/rea_sum.html.
15. *Id.*
16. The Biomass Research and Development Act of 2000, Pub. L. No. 106-224, 114 Stat. 438, §302 [hereinafter 2000 BRD Act] (extended by the Farm Security and Rural Investment Act of 2002, Pub. L. No. 107-171, 116 Stat. 134, §9008 [hereinafter 2002 Farm Bill]; and, the Energy Policy Act of 2005, Pub. L. No. 108-357, §941, 118 Stat. 1418; and reestablished by the Food, Conservation, and Energy Act of 2008, Pub. L. No. 110-246, §9008(e), 122 Stat. 1651, 2089 (2008) [hereinafter 2008 Farm Bill]).
17. BRD Act, *supra* note 16, at §§304-305.
18. *Id.* §305. *See generally* Biomass Research and Development Board website, http://www.usbiomassboard.gov/.
19. 2000 BRD Act, *supra* note 16, at §306.
20. *Id.* §307.
21. *See* U.S. DOE, Press Release, USDA, *DOE Announce Up to $25 Million in Funding for Biomass Research and Development Initiative* (Jan. 30, 2009), http://www.energy.gov/news_section/print/6888.htm.
22. U.S. DOE, *Secretary Chu Announces Nearly $800 Million From Recovery Act to Accelerate Biofuels Research and Commercialization* (May 5, 2009), http://www.energy.gov/news2009/7375.htm (referring to the American Recovery and Reinvestment Act (ARRA) of 2009, Pub. L. No. 111-5, 123 Stat. 115 (Feb. 7, 2009), http://www.gpo.gov/fdsys/pkg/PLAW-111publ5/pdf/PLAW-111publ5.pdf).

The 2008 Farm Bill also authorizes up to $15 million annually through 2012 for R&D on forestry biomass for energy,[23] and established within the USDA a new agricultural bioenergy feedstock and energy efficiency research and extension initiative to improve biomass production.[24]

In addition to R&D monies, the 2008 Farm Bill added renewable biomass to the Commodity Credit Corporation's (CCC's) Farm Storage Facility Loan Program.[25] Under the program, renewable biomass includes algae, crop residues, plants and trees (but excluding old growth timber), renewable plant materials (including commodity grains and cellulosic biomass), and vegetative wastes.[26] Manure does not qualify for the loan program.[27] Loans only are for new structures, or limited costs related to pre-owned structures that are moved, and must have a useful life of at least 15 years.[28] The 2008 Farm Bill also includes a provision authorizing the Federal Crop Insurance Corporation (FCIC) to contract for a study regarding crop insurance for biomass production.[29]

In 2007, the Biomass Research and Development Technical Advisory Committee issued a roadmap that recommended research and policy measures for biomass commercialization to achieve the "20 by 10" goal set by then-President George W. Bush.[30] The Committee, consisting of members of industry, academia, and government, among others, drew its information and recommendations from a series of workshops held throughout the United States. The roadmap recognizes the need to improve biomass performance at all points in the supply chain, and that regional variations present different research and development challenges.[31] It concludes that policies should be "supportive" to biobased fuels, power, and products, and makes recommendations at each stage of the supply chain. In terms of biomass feedstock, it recommends an economic analysis of all biofuels incentives so that governments can prioritize the most cost-effective alternative, a commodities exchange for biomass, an assessment of incentives for energy crops, "GMO acceptance," more funding for research and clarification of intellectual property rights, and rethinking land use policy to accommodate production of biomass.[32] It advocates for incentives to establish a biomass infrastructure for distribution and storage.[33] The roadmap calls for development of regulatory systems for biomass, including standards for best practices, GHG mitigation, and a long-term, consistent federal energy policy.[34]

Like its GHG regulation program, California has executed its efforts to incentivize biomass through a coordinated strategy. In 2006, the California Energy Commission, in conjunction with the California Biomass Collaborative, issued a Roadmap for the Development of Biomass in California.[35] The Roadmap emphasizes greater R&D coordination, as well as consistency and coordination of regulations and permitting to both ensure sustainability and encourage investment.[36] As part of the effort to achieve consistency and coordination, the document identifies all the agencies and policies that implicate biomass production, and recommends changes in regulatory policy that would simplify the permitting process while maintaining environmental standards.[37] The Roadmap recommends five specific actions, with time lines for achievement: resource access, e.g., feedstock sustainability, land use decisions, collection/harvest/storage/transportation improvements, commodity markets for biomass, enterprise zones; market access, e.g., incentives, infrastructure, standards development, deployment; R &D; education, training, and outreach; and regulatory/policy.[38]

Until the 2008 Farm Bill,[39] direct federal government payments to agriculture did not include support for biomass crops.[40] Most significantly, of the new biomass production incentives created by the 2008 Farm Bill, BCAP provides a system of incentives for biomass production that includes direct payments for the production, and collection/harvest/storage/transportation (CHST) of biomass to qualified facilities that produce heat, power, biofuel, or other value-added products. BCAP may fill an important gap in renewable energy infrastructure, particularly in the biofuels supply chain. Although the 2008 Farm Bill provides for funding "as necessary" for fiscal years 2008-2012, the Congressional Budget Office (CBO) estimates that BCAP will require $14 million each year for years 2009 and 2010, and $21 million for years 2011-2012, for a total cost of $70 million.[41] The Farm Service Administration (FSA) issued the first BCAP CHST payment in August 2009.[42]

23. 2008 Farm Bill, *supra* note 16, at §9012.
24. *Id.* at §7207.
25. *Id.* §1614; *see generally* USDA, Farm Facility Loan Program, http://www.fsa.usda.gov/FSA/webapp?area=home&subject=prsu&topic=flp-fp.
26. CCC, Farm Storage Facility Loan Program, Notice FSFL-62 (Aug. 14, 2009), at 3, http://www.fsa.usda.gov/Internet/FSA_Notice/fsfl_62.pdf.
27. *Id.*
28. *Id.* at 8.
29. 2008 Farm Bill, *supra* note 16, at §12022.
30. Biomass Research and Development Initiative, Biomass Research and Development Technical Advisory Committee, Roadmap for Bioenergy and Biobased Products in the United States (Oct. 2007), http://www1.eere.energy.gov/biomass/pdfs/obp_roadmapv2_web.pdf [hereinafter BRDI Roadmap]. The "20 in 10" goal aspires for the replacement of 20% of transportation fuels with renewable by 2017. *Id.* at 1. In 2002, the Technical Advisory Committee set 2030 goals for biomass in: power generation (5%); transportation fuels (20%); and chemicals (25%). U.S. DOE, Roadmap for Agriculture Biomass Feedstock Supply in the United States 5 (Nov. 2003), http://devafdc.nrel.gov/pdfs/8245.pdf.
31. BRDI Roadmap, *supra* note 30, at v.
32. *Id.* at 33-34.
33. *Id.* at 35.
34. *Id.* at 36.
35. California Energy Commission (CEC), A Roadmap for the Development of Biomass in California (Nov. 2006), http://biomass.ucdavis.edu/materials/reports%20and%20publications/2006/2006_Biomass_Roadmap.pdf.
36. *Id.* at xviii, 17, 122.
37. *Id.* at 111-27.
38. *Id.* at 128-34.
39. 2008 Farm Bill, *supra* note 16, at §9001(a).
40. For materials explaining the history of federal subsidies to commodity agriculture crops, see USDA, Farm and Commodity Policy: Recommended Readings, http://www.ers.usda.gov/Briefing/FarmPolicy/readings.htm.
41. Suzanne Retka Schill, *Making the Switch*, Ethanol Producer (Nov. 2008), http://www.ethanolproducer.com/article.jsp?article_id=4868&q=&page=all (citing CBO estimates).
42. Press Release, USDA, *Agriculture Secretary Vilsack Announces Missouri Conversion Facility First With BCAP Producer Payments* (Aug. 31, 2009), http://www.usda.gov/wps/portal/!ut/p/_s.7_0_A/7_0_2KD/.cmd/ad/.ar/sa.latestreleases/.c/6_5_P1/.ce/7_5_229/.p/5_5_1I5/.d/8/_th/J_5_9D/_s.7_0_A/7_0_2KD?PC_7_5_229_parentnav=NEWSROOM&PC_7_5_229_navid=LATEST_RELEASES&PC_7_5_229_navtype=RT#7_5_229.

The following Article provides a primer on implementation of the BCAP program, and poses important questions for regulators to consider moving forward. The Article first details the two pillars of the BCAP program: project area designation; and matching payments for biomass collection, harvest, storage, and transportation. Part II then sorts through the accompanying programmatic environmental impact statement (PEIS) to determine how it may guide biomass crop area designation and funding decisions. The Article concludes by identifying critical, unresolved issues that ultimately will determine whether BCAP will be an effective tool in meeting increased exponential demand for biomass as a feedstock for renewable energy.

I. Background of the BCAP Program

The 2008 Farm Bill directs the Secretary of Agriculture to establish and administer BCAP to achieve two distinct goals.[43] First, BCAP must "support the establishment and production of eligible crops for conversion to bioenergy in select BCAP *project areas.*"[44] Second, the program must "assist agricultural and forest land owners and operators with *collection, harvest, storage, and transportation* of eligible material for use in a biomass conversion facility."[45] Based on these delineations, the FSA, within the USDA, currently is in the process of implementing BCAP as two distinct programs: the Project Areas Program; and the Collection, Harvest, Storage, and Transportation Matching Payment Program (CHST Program).[46]

A. *The Project Areas Program*

The Project Areas Program component of BCAP aims to incentivize the development of biomass production infrastructure by making two types of payments directly to biomass producers[47]: (1) direct payments to biomass producers to establish biomass crops for energy, and (2) annual payments to biomass producers for lost opportunity costs associated with choosing biomass crops over traditional commodity crops.[48] Prior to biomass producers' receipt of BCAP funds under the Project Areas Program, the Secretary of Agriculture first must designate a given growing area as a "BCAP project area."[49] Thus, designation plays a very important role in BCAP payments for establishment and annual payments for production. The USDA has not issued implementing regulations to date, nor designated any project areas. The following discussion, therefore, sets forth the program as contained in the 2008 Farm Bill.[50]

43. 7 U.S.C. §8111(b) (2009).
44. *Id.* §8111(b)(1) (emphasis added).
45. *Id.* §8111(b)(2) (emphasis added).
46. 74 Fed. Reg. 39915; USDA Farm Service Agency, Draft BCAP Programmatic Environmental Impact Statement 1-1 (2009) [hereinafter PEIS], http://www.fsa.usda.gov/Internet/FSA_File/bcapseisbody.pdf.
47. 7 U.S.C. §8111(c)(5)(A) (2009).
48. *Id.* §8111(c)(5)(C).
49. *Id.* §8111(c)(1).
50. *Id.* §8111.

1. Project Area Designation

Project sponsors initiate project areas.[51] The 2008 Farm Bill defines project sponsors as "a group of producers; or . . . a biomass conversion facility" (BCF).[52] Prior to BCAP project area designation, the project sponsor must demonstrate that it has a lineup of "producers with contract acreage that will supply a portion of the renewable biomass needed by a biomass conversion facility[,]" and an area location with specified boundaries that is located within an "economically practicable distance" from a BCF.[53]

If the project sponsor satisfies these two requirements, the sponsor then must submit a written proposal to the Secretary of Agriculture that must include, at a minimum, four other types of information.[54] First, the proposal must include "a description of the eligible land and eligible crops of each producer that will participate in the proposed BCAP project area."[55] "Eligible land" is defined as "agricultural and nonindustrial private forest land, but excludes: (1) federal or state-owned land; (2) "native sod" as of the date of the 2008 Farm Bill enactment; (3) lands enrolled in the conservation reserve program (CRP)[56]; (4) lands in the wetlands reserve program[57]; and, (5) lands in the grassland reserve program.[58], [59] "Eligible crop" is liberally defined in the statute as any renewable biomass,[60] with the exclusion of: (1) any crop eligible to

51. *Id.* §8111(c)(2).
52. *Id.* §8111(a)(8). A project sponsor could include a farmer's cooperative consisting of producers and a BCF that the producers own. *See infra* note 103 (explaining exceptions, under the CHST program, to the requirement that transactions between a BCF and biomass producer be at "arm's-length").
53. *Id.* §8111(a)(2). Under BCAP, the term "contract acreage" is defined as "eligible land that is covered by a BCAP contract entered into with the Secretary." *Id.* §8111(a)(3). BCAP is silent as to what constitutes "an economically practicable distance from the biomass conversion facility." *Id.* §8111(a)(2)(C).
54. *Id.* §8111(c)(2)(A).
55. *Id.* §8111(c)(2)(A)(i). Under the BCAP provision, "eligible land" is defined as "agricultural and nonindustrial private forest land (as defined in section 2103a(c) of Title 16)." *Id.* §8111(a)(5)(A).
56. *See* 16 U.S.C. §§3831-3835a; 7 C.F.R. pt. 1410.
57. *See* 16 U.S.C. §§3837-3837f; 7 C.F.R. pt. 1467.
58. *See* 16 U.S.C. §§3838n-3838q; 7 C.F.R. pt. 1415.
59. 7 U.S.C. §8111(a)(5)(B)(i)-(v).
60. The BCAP section of the 2008 Farm Bill does not contain a separate definition for "renewable biomass." Instead, the definition of "renewable biomass," referred to in the BCAP section, is contained in the general definition section of the 2008 Farm Bill. *See* 7 U.S.C. §8101(12) (defining renewable biomass as:

> (A) materials, precommercial thinning, or invasive species from National Forest System land and public lands (as defined in section 1702 of title 43) that—(i) are byproducts of preventative treatments that are removed—(I) to reduce hazardous fuels; (II) to reduce or contain disease or insect infestation; or (III) to restore ecosystem health; (ii) would not otherwise be used for higher-value products; and (iii) are harvested in accordance with—(I) applicable law and land management plans; and (II) the requirements for—(aa) old-growth maintenance, restoration, and management direction of paragraphs (2), (3) and (4) of subsection (e) of section 6512 of title 16; and (bb) large-tree retention of subsection (f) of that section; or (B) any organic matter that is available on a renewable or recurring basis from non-Federal land or land belonging to an Indian or Indian tribe that is held in trust by the United States or subject to a restriction against alienation imposed by the United States, including—(i) renewable plant material, including—(I) feed grains; (II) other agricultural commodities; (III) other plants and trees; and (IV) algae; and (ii) waste material, including (I) crop residue; (II) other vegetative waste material (including wood waste and wood residues); (III) animal waste and byproducts (including fats, oil, greases, and manure); and (IV) food waste and yard waste).

receive payments under Title I of the 2008 Farm Bill[61]; and, (2) "any plant that is invasive or noxious or has potential to become invasive or noxious, as determined by the Secretary of Agriculture, in consultation with other appropriate Federal and State departments and agencies."[62]

Second, the proposal must include a letter from a BCF that it will buy eligible crops produced in the BCAP project area.[63] If the BCF is not yet operational, the proposal's third requirement is that the project sponsor provide evidence of sufficient equity.[64] Lastly, the proposal must contain any other information that assures the USDA that the BCF will be in operation by the time BCAP crops are available.[65]

In determining which proposals to select as BCAP project areas, the Secretary of Agriculture is directed to consider nine economic and environmental factors.[66] Specifically, the 2008 Farm Bill mandates that:

> [i]n selecting BCAP project areas, the Secretary shall consider—(i) the volume of the eligible crops proposed to be produced in the proposed BCAP project area and the probability that such crops will be used for the purposes of the BCAP; (ii) the volume of renewable biomass projected to be available from sources other than the eligible crops grown on contract acres; (iii) the anticipated economic impact in the proposed BCAP project area; (iv) the opportunity for producers and local investors to participate in the ownership of the biomass conversion facility in the proposed BCAP project area; (v) the participation rate by—(I) beginning farmers or ranchers (as defined in accordance with section 1991(a) of this title); or (II) socially disadvantaged farmers or ranchers (as defined in section 2279(e) of this title); (vi) the impact on soil, water, and related resources; (vii) the variety in biomass production approaches within a project area, including (as appropriate)—(I) agronomic conditions; (II) harvest and postharvest practices; and (III) monoculture and polyculture crop mixes; (viii) the range of eligible crops among project areas; and (ix) any additional information, as determined by the Secretary.[67]

While USDA implementing regulations may delineate whether the Secretary or the project sponsor is responsible for gathering supporting material for these criteria, projects sponsors have an incentive to submit this additional information as part of the application if it supports designation.

2. The Contract Between the USDA and the Biomass Producer

Once the Secretary of Agriculture designates a BCAP project area, each biomass producer in the area that seeks Project Area payments to establish or grow a biomass crop must enter into a written contract with the USDA.[68] The contract terms dictate that biomass producers must agree to provide the Secretary with information deemed "appropriate to promote the production of eligible crops and the development of biomass conversion technology."[69] Producers also must agree to observe highly erodible land conservation and wetland conservation requirements,[70] and implement a conservation or forest stewardship plan.[71] The statute requires the contract to have a term of up to five years for annual or perennial crops, or 15 years for woody biomass.[72]

Upon finalizing the requisite contract, a given biomass producer will be entitled to receive an establishment payment (if a perennial biomass crop) and subsequent annual payments.[73] The initial biomass crop establishment payment covers up to 75% of the costs in establishing the crop under BCAP contract.[74] The producer can use the payment to offset seeds or stock, e.g., rhizomes, purchases, planting of the biomass feedstock, and site preparation and planting (if on

61. Title I refers to Title I of the 2008 Farm Bill, *supra* note 16. Under Title I, direct (unrelated to production or prices) or counter-cyclical payments (payments when market prices are low) are made by USDA to producers with eligible historical production of certain "covered commodities": wheat, corn, barley, grain sorghum, oats, upland cotton, long and medium grain rice, soybeans, other oilseeds (sunflower, rapeseed, canola, safflower, flaxseed, mustard seed, crambe and sesame seed), peanuts, and pulse crops (small and large chickpeas, dry peas, and lentils). *See* Jim Monke, *Farm Commodity Programs in the 2008 Farm Bill*, CRS-3 (Cong. Res. Serv., July 23, 2008). Despite being a covered commodity, pulse crops do not receive direct payments. *Id.* Marketing assistance loans and loan deficiency payments are available under Title I to producers of wheat, feed grains, cotton, rice, oilseeds, wool and mohair, honey, and pulse crops. Sugar and Dairy production fall under Title I as well, but do not receive direct or counter-cyclical payments. *Id.* at CRS-4.
62. 7 U.S.C. §8111(a)(4). *Cf. id.* §7702(10) (2008) (defining "noxious weed" as "any plant or plant product that can directly or indirectly injure or cause damage to crops (including nursery stock or plant products), livestock, poultry, or other interests of agriculture, irrigation, navigation, the natural resources of the United States, the public health, or the environment" for purposes of the Plant Protection Act). *See also infra*, note 162 (discussing, in the PEIS, noxiousness and invasiveness).
63. 7 U.S.C. §8111(c)(2)(A)(ii).
64. *Id.* §8111(c)(2)(A)(iii). The Secretary determines what is "sufficient equity." *Id.*
65. *Id.* §8111(c)(2)(A)(iv).
66. *Id.* §8111(c)(2)(B).
67. *Id.*
68. *Id.* §8111(c)(3)(A).
69. *Id.* §8111(c)(3)(B)(i). This information may also be required to be submitted to "an institution of higher education or other entity designated by the Secretary." *Id.* Thus, if a biomass producer wishes to participate in a research project that prohibits the disclosure of proprietary information, the producer will likely have to choose between participation in BCAP and participation in the research project.
70. *Id.* §8111(c)(3)(B)(ii). The "highly erodible land conservation requirements" are found at 16 U.S.C. §§3811 et seq. (2008) and the "wetland conservation requirements" are found at 16 U.S.C. §§3821 et seq. (2008).
71. 7 U.S.C. §8111(c)(3)(B)(iii). In the absence of a formal BCAP regulation addressing conservation stewardship, plans that could meet this requirement might include those prepared under existing USDA programs, such as the CRP. *See infra* note 56 (setting out the requirements of the requisite conservation plan under the CRP). Crops from CRP land, however, do not qualify under the BCAP program. *See* note 56 and accompanying text.

    As private organizations begin to create biomass sustainability standards, it will be interesting to see if meeting such standards would satisfy this requirement. *See* Jody M. Endres, *Clearing the Air: The Meta-Standard Approach to Ensuring Biofuels Environmental and Social Sustainability*, 27 Va. Envt'l L.J. (forthcoming Fall 2009) (examining existing and future sustainability schemes for biomass production).
72. 7 U.S.C. §8111(c)(3)(C). For an economic analysis of investing in short-term versus long-term rotation crops, see H. Zeller et al., *Investing in Short Rotation Coppice—Alternative Energy Crop or an Albatross Around the Neck?* Presentation to the International Farm Management Association (July 24, 2009), http://www.ifma17.org/pdf/Peer-Reviewed-Papers.pdf at 328.
73. 7 U.S.C. §8111(c)(5).
74. *Id.* §8111(c)(5)(B).

nonindustrial, private forestland).[75] Once the crop has been established, the producer is eligible for annual payments in an amount "determined by the Secretary."[76] At this time, because the USDA has not implemented the Project Areas program, no one knows how much this payment might be. When a biomass crop is ready for harvest and delivery to a BCF, the annual payment is subject to reduction if the producer receives a CHST payment.[77] The producer also will receive a reduction if the contract terms are violated, the biomass is used for another purpose, or any other circumstance determined by the Secretary.[78]

The USDA has announced that it will be promulgating a new regulation to implement the Project Areas Program component of BCAP.[79] This rulemaking, however, likely has been stymied by the delay in developing the requisite PEIS.[80] Currently, the FSA is seeking comments on two alternatives for implementation of the Project Areas Program: (1) "a targeted implementation of BCAP to specific areas or regions of the United States"; and, (2) "a broad national implementation of BCAP."[81] A draft of the PEIS was released by the FSA on August 10, 2009.[82] The USDA must now examine the PEIS's conclusions in order to move forward on a proposed rule for the Project Areas Program.[83]

B. The CHST Program

While the draft environmental impact statement (EIS) for the Project Areas Program remained in protracted limbo, on May 5, 2009, President Obama issued a Presidential Directive ordering the Secretary of Agriculture to implement, within 30 days, the CHST portion of the BCAP program.[84] In response, the CCC and the FSA issued a Notice of Funds Availability for the CHST Program (CHST NOFA) on June 11, 2009.[85] In implementing the CHST Program without rulemaking,[86] the FSA has apparently sidestepped the delays associated with implementing the BCAP Project Areas Program, at least for the time being.[87] Arguably, the Secretary has the authority for separate implementation, as the statute allows for "payment for the delivery of eligible material to a biomass conversion facility to—(A) a producer of an eligible crop that is produced on BCAP contract acreage; or (B) a person with the right to collect or harvest eligible material."[88] *"Eligible material" is defined as "renewable biomass,"*[89] not "renewable biomass from a project area." In the absence of project area designations or CHST rules, the following section provides an overview of the CHST Program as implemented and described in the CHST NOFA.

Implementation irregularities aside, the stated purpose of the CHST Program is to assist biomass producers with "the collection, harvest, storage, and transportation of eligible material delivered for use in a CHST-qualified biomass conversion facility."[90] Under the program, "eligible material" is liberally defined as renewable biomass, *except* for: (1) harvested grains, fiber, or other commodities eligible to receive payments under Title I of the 2008 Farm Bill; (2) animal waste and animal waste byproducts, including fats, oils, greases, and manure; (3) food waste and yard waste; and, (4) algae.[91] The CHST Program pays biomass producers $1 for every $1 of dry ton eligible material delivered to a CHST-qualified BCF, up to $45 a dry ton.[92] The biomass producer may receive payments for up to two years, commencing at the time the biomass producer qualifies for the CHST Program.[93] In order for the biomass producer to receive match-

75. *Id.*
76. *Id.* §8111(c)(5)(C)(i).
77. *Id.* §8111(c)(5)(C)(ii)(III). See *infra* Part II.B., for details of the CHST Program.
78. *Id.* §8111(c)(5)(C)(ii).
79. Unified Agenda, 74 Fed. Reg. 21872, 21873 (May 11, 2009).
80. PEIS, *supra* note 46.
81. Notice of Availability of the Draft Programmatic Environmental Impact Statement for the Biomass Crop Assistance Program, 74 Fed. Reg. 39915 (Aug. 10, 2009) [hereinafter Draft PEIS NOA]; *see also infra* Part III.B.
82. Draft PEIS NOA, *supra* note 81.
83. *See infra* notes 115-75 (examining the PEIS).
84. Biofuels and Rural Economic Development Memorandum, 74 Fed. Reg. 21531, 21531-32 (May 5, 2009).
85. Notice of Funds Availability for the Collection, Harvest, Storage, and Transportation of Eligible Material, 74 Fed. Reg. 27767 (June 11, 2009) [hereinafter CHST NOFA].
86. The FSA has announced that it eventually will issue rulemaking for the CHST Program, however. CHST NOFA, *supra* note 85, at 27767. The CHST NOFA indicates that all comments received in response to it not only will be incorporated into forthcoming CHST Program rulemaking, but also into "rulemaking for the entire BCAP Program, which will include CHST." *Id.*

    In support of the FSA's ability to implement the CHST Program in the absence of formal rulemaking, the CHST NOFA cites to an exception found in the Administrative Procedure Act (APA). *Id.* Specifically, a provision in the APA provides that an agency can forego formal rulemaking procedure "when the agency for good cause finds (and incorporates the finding and a brief statement of reasons therefore in the rules issued) that notice and public procedure thereon are impracticable, unnecessary, or contrary to the public interest." 5 U.S.C. §553(b)(3)(B) (2008). The CHST NOFA asserts that the FSA has met this burden based on the facts that: (1) "this NOFA provides guidance for the CHST matching payments program as part of a process that will include rulemaking later this year"; (2) "this NOFA simply makes funds available in accord with a statutory mandate"; (3) "USDA has determined that making these funds available as soon as possible is in the public interest"; (4) "[w]ithholding this NOFA to provide for public notice and comment would unduly delay the provision of benefits associated with this program"; (5) "[s]hould the actual practice of the program produce reasons for program modifications, those modifications can be brought to the attention of the Department and changes made in the future rulemaking process"; (6) [t]he CHST matching payment program provisions will be included, with potential modifications, in rulemaking later this year"; and (7) "[d]elay caused by normal rulemaking procedures under the APA would frustrate the accomplishment of the purposes of the statutory provisions and would not produce benefits for this fiscal year." CHST NOFA, *supra* note 85, at 27771. While it is questionable whether these asserted reasons satisfy the burden imposed in the APA, it is unlikely that the FSA's actions will be challenged. 5 U.S.C. §553(b)(3)(B).
87. For example, the USDA's implementation of the CHST portion, without consideration of the PEIS' conclusions, may violate the National Environmental Policy Act (NEPA), *infra* note 115.
88. 7 U.S.C. §8111(d)(1) (emphasis added).
89. *Id.* §8111(a)(6). *See supra* note 60, for the 2008 Farm Bill's definition of "renewable biomass," which is referred to throughout the BCAP section of the Farm Bill.
90. CHST NOFA, *supra* note 85, at 27767.
91. *Id.* note 85, at 27768. Like the 2008 Farm Bill and BCAP sections, the CHST NOFA provides two definitions: one for renewable biomass, and one for eligible material. While the definition of renewable biomass is expansive, *see infra* note 60, several materials that are otherwise renewable biomass are not eligible materials for purposes of CHST payment, such as crops that receive Title I subsidies, animal wastes and byproducts, food and yard waste, and algae. *Id.* at 27767-68; 7 U.S.C. §8111(a)(6). For a list of materials eligible under BCAP, see http://www.fsa.usda.gov/Internet/FSA_File/bcap_elig_mats_090714.pdf. *See infra* note 63, for an explanation of Title I commodities.
92. CHST NOFA, *supra* note 85, at 27768.
93. *Id.* This two-year time period begins to run immediately after the FSA approves the first CHST matching payment application by a given eligible mate-

ing payments, three general requirements must be satisfied: (1) prior to delivery, the BCF must meet specific requirements and sign a Memorandum of Understanding (MOU) with the CCC[94]; (2) prior to delivery, the biomass producer must successfully apply to be an eligible material owner[95]; and, (3) after delivery, the biomass producer must successfully apply for CHST matching payments.[96]

Before any biomass can be delivered and matching payment made, a biomass conversion facility first must be CHST-qualified. All the requirements must be memorialized in the MOU.[97] First, the BCF must convert, or propose to convert, eligible material into: (1) heat, (2) power, (3) biobased products, or (4) advanced biofuels.[98] Second, the facility must satisfy any and all local, state, or federal regulatory and permitting requirements.[99] Third, the facility must agree to maintain for USDA inspection records of all biomass purchases, regardless of CSHT qualification, and make purchase information public.[100] Specifically, the facility must agree that the FSA can make this information public via its county offices and its website.[101] Fourth, the BCF must agree to specific requirements regarding the way in which it measures and records the dry-weight tonnage of eligible materials that it purchases.[102] Most significantly, the BCF must be an entirely separate legal entity from the owner of the eligible material delivered to it and conduct transactions at arm's-length, with exceptions.[103]

In addition to the BCF's requirements, the biomass producer must apply to be an "eligible material owner" prior to delivering its biomass to a CHST-qualified BCF.[104] This application must be submitted to the county FSA office where the biomass is produced, and if a biomass producer intends to deliver eligible materials to multiple CHST-qualified BCFs, it must submit a separate application for each facility.[105] The application must include an estimate of the quantity and type of biomass the producer expects to sell to the BCF, the name of the BCF that will receive it, the price the producer expects to receive, and the date the producer will deliver it.[106] This advance information certainly will help the USDA estimate the budgetary outlays for the CHST Program in advance. If the FSA approves the application, the biomass producer is considered an eligible material owner. Once the eligible material owner delivers biomass to a CHST-qualified BCF, it must submit a request for CHST matching payment on an FSA form with accompanying documentation.[107] Upon approval of this matching payment request, the FSA will issue the matching payment.[108]

Since its implementation in June 2009, the CHST Program has expanded rapidly.[109] Within two months of NOFA issuance, the FSA had recognized five BCFs as CHST-qualified.[110] Eight days after the FSA made qualifications public, the number increased to nine.[111] On August 31, 2009, the first matching payment was issued under the CHST Program.[112] The FSA maintains an up-to-date list of qualified BCFs on its website.[113] As of early October, over 80 BCFs qualified to accept BCAP eligible material.[114]

rial owner. *Id.* at 27770.

94. *Id.*
95. *Id.* at 27769.
96. *Id.* at 27769-70.
97. *Id* at 27770.; *see also* FSA, BCAP Fillable Agreement, http://www.fsa.usda.gov/Internet/FSA_File/bcap_fillable_agreement.pdf, and FSA, Fillable Agreement 1, http://www.fsa.usda.gov/Internet/FSA_File/bcap_1_fillable_form.pdf. The MOU does not entitle the CHST-qualified BCF to any payments or other direct benefits. CHST NOFA, *supra* note 85, at 27770.
98. *Id.* at 27768, 27770. Under the CHST Program, a biobased product is defined as "a product, determined by the Deputy Administrator to be a commercial or industrial product (other than food or feed) that is: (1) [c]omposed in whole, or in significant part, of biological products, including renewable domestic agricultural materials and forestry materials or (2) [a]n intermediate ingredient or feedstock." *Id.* This definition excludes "commercially produced timber, lumber, wood pulp or other finished wood products." *Id.*
99. *Id.* at 27770. These records must be maintained for "not less than 3 years from the application date." *Id.*
100. *Id.* The FSA has put a sample spreadsheet on its website delineating the information to be provided by the BCF. *See* FSA, BCAP Purchase List, http://www.fsa.usda.gov/FSA/webapp?area=home&subject=ener&topic=bcap.
101. *Id.*
102. *Id.* Specifically, "[t]he facility must agree to clearly indicate on the scale ticket the actual tonnage delivered, have the manager or owner of the facility sign the scale ticket, and provide it to the eligible biomass owner." *Id.* Furthermore, "[t]he facility must also agree to provide a total dry-weight tonnage equivalent to the eligible biomass owner" and "must have access to commercial freight scales that are certified for accuracy by applicable State or local authorities and accurate moisture measurement equipment to determine the dry ton weight equivalent of actual tonnage delivered." *Id.*
103. *Id.* For purposes of the program, an arm's-length transaction is defined as one between ready, willing, and able disinterested parties who are not affiliated with or related to each other and have no security, monetary, or stockholder interest in each other, with the exception that members of either (1) an association of agricultural producers or (2) farmer cooperative organizations, or (3) a farmer cooperative, may deliver and sell at market rates eligible material to such associations, organizations or cooperatives they have a monetary or stockholder interest in and such transaction may be considered arm's-length transactions.
Id.
104. *Id.* at 27769.
105. *Id.*
106. *Id.*
107. *Id.* at 27769-70. The eligible material owner must submit a copy of the scale ticket supplied by the CHST-qualified biomass conversion facility. *Id.* This scale ticket must "clearly indicat[e] the total actual tonnage delivered and signed by the manager or owner of the CHST qualified biomass conversion facility, as well as a total dry-weight tonnage equivalent amount determined by the CHST qualified biomass conversion facility using accurate moisture measuring equipment." *Id.* A copy of the invoice reflecting the total payment that the eligible material owner received for its delivery must also be included. *Id.* The program further mandates that "each invoice or check must also be annotated and initialed by the manager or owners of the CHST qualified biomass conversion facility clearly indicating the per-ton payment rate the facility paid the owner for the eligible material delivery." *Id.* In the event that a third-party carrier delivered the biomass, a copy of each bill of lading must be supplied. *Id.* Finally, there is a general requirement to provide "[a]ny other additional documents or records determined necessary by the Deputy Administrator to verify eligibility for matching payments." *Id.*
108. *Id.* The payment is made via direct deposit. *Id.*
109. *See generally* Biomass Crop Assistance Program, http://www.fsa.usda.gov/FSA/webapp?area=home&subject=ener&topic=bcap (last visited Sept. 7, 2009).
110. FSA, Facility Listing #2, http://www.fsa.usda.gov/Internet/FSA_File/bcapfacilities083109.pdf.
111. *Id.*
112. Weekly Update of the National Sustainable Agriculture Coalition, https://app.e2ma.net/app/view:CampaignPublic/id:13831.6511243412/rid:84c423f57d7c9c7f112822210d7ab4b2.
113. FSA, Facilities List, http://www.fsa.usda.gov/Internet/FSA_File/bcapfacilitieslist.pdf.
114. *Id.*

II. The PEIS

The National Environmental Policy Act (NEPA)[115] requires the FSA, on behalf of the CCC, to prepare an EIS to guide designation of BCAP Project Areas. The CCC issued its initial Notice of Intent (NOI) to conduct an EIS on October 1, 2008.[116]

The CCC issued an amended NOI on May 13, 2009, and held a series of public scoping meetings to solicit public comment.[117] On August 10, 2009, the CCC issued a draft PEIS[118] for administration and implementation of the BCAP program.[119] The FSA will use the final PEIS to determine what areas can be categorically excluded from further review, and which areas will require either further environmental review or a full EIS.[120] Although many stakeholders submitted comments on the approach the USDA should take, the PEIS only summarizes those comments in an appendix.[121] The comment period on the PEIS closed on September 24, 2009.

The PEIS considers three alternatives for BCAP implementation: no action; targeted implementation[122]; and broad implementation.[123] Targeted implementation would provide payments to achieve "some risk mitigation," versus broad implementation that would completely replace lost income potential.[124] The PEIS addresses each environmental medium that BCAP could potentially affect, including: socioeconomics and land use,[125] biological resources,[126] water quality,[127] soil resources,[128] air quality,[129] and recreation.[130]

A. Socioeconomic Impacts

The PEIS uses economic modeling[131] to estimate changes in net farm income, farm prices, government payments, land use shifts, and the direct/indirect/induced economic impacts of these changes.[132] The PEIS also uses modeling to estimate the carbon and energy impacts of these changes.[133] The modelers selected two paths for modeling the alternative of targeted implementation: the top five project locations based on the cost to the BCAP program[134]; and the top project in every state that would sustain a BCF.[135] For the broad implementation option, modeling was conducted at both a regional and national level, with the goal of meeting EISA's renewable fuel, e.g., corn, and advanced/cellulosic biofuel mandates.[136] In this scenario, the model assumed a $45/ton BCAP payment to the biomass producers (under the CHST Program), plus a matching payment from the BCF.[137]

Under the targeted implementation scenario, total net returns for biomass crops are negative in each of the top five areas, and in top projects in each state, without the BCAP subsidy.[138] The PEIS estimates production costs of $60 per dry ton, and payments to producers of $45/ton under the CHST Program and $45/ton from the BCF.[139] This results in a $30/ton "enticement fee" to the producer.[140] The PEIS concludes, however, that this gain, which would be spread throughout the local economy, would be offset, in part, by a

115. 42 U.S.C. §§4321-4370f, ELR Stat. NEPA §§2-209.
116. 73 Fed. Reg. 57047.
117. 74 Fed. Reg. 22510. *See also* Geo-Marine Inc., *Public Comments*, http://public.geo-marine.com/project.aspx?id=26.
118. Because the FSA is considering various options for area designation, and the number of participants is unknown, it has prepared a PEIS. PEIS, *supra* note 46, at 1-1.
119. *Id.*
120. *Id.* at 1-2.
121. *Id.* app. C.
122. The targeted option would only support biomass production projects that support large BCFs, no new nonagricultural lands would qualify, and payment rates would be limited. *Id.* at 2-5. Participating BCFs would have to demonstrate compliance with RFS GHG limitations. *Id.*
123. Under the broad implementation scenario, anyone in a project area could enroll, new nonagricultural lands would be eligible, and small and pilot BCFs could participate. *Id.*
124. *Id.* at 2-5.
125. This includes: net-farm income, farm prices, agricultural government payments, land use shifts, the number of farms and land in farms, rural population trends, and primary field crops. *Id.* at 3-1 to 3-3.
126. The PEIS uses the 28 National Resource Conservation Service (NRCS) land resource regions, and select state wildlife action plans (SWAPs), *see generally* http://www.wildlifeactionplans.org/about/index.html, to guide its analysis. *Id.* at 3-7. The resource regions identify common wildlife and vegetation areas. *Id.* CCC contemplates that if a BCAP-funded project would affect protected species under the Endangered Species Act (ESA), the FSA would conduct a site-specific evaluation and consult with the U.S. Fish and Wildlife Service. *Id.* at 2-7.
127. The PEIS concludes that increased residue removal may result in surface and underground water quality degradation, but that dedicated energy crops would require fewer inputs, thus reducing water pollution. *Id.* at 3-35 to 3-36. Setting aside the potential for increased water usage, it further predicts that irrigated biomass cropping will not be economically feasible. *Id.* at 3-36.
128. The PEIS identifies growing regions where the most biomass, including residues, would be located, including primary and secondary energy crop regions. *Id.* at 3-27 to 3-33. It concludes that perennial crops have the greatest potential for sequestering soil carbon. *Id.* at 3-33.
129. Regarding air quality, the PEIS concludes that "all bioenergy cropping systems reduce net GHG emissions compared to the current use of gasoline or diesel." *Id.* at 3-26. While it acknowledges the debate surrounding indirect land use change, it does not consider it in arriving at this conclusion. *Id.*
130. This includes wildlife watching, fishing, and hunting. *Id.* at 3-40 to 3-41. The PEIS recognizes that the CRP monetary benefits per acre of "selected wildlife practices," which could similarly accrue with certain types of biomass crops in the BCAP program. *Id.* at 3-52.
131. Specifically, the PEIS uses a version of the Policy Analysis System (POLYSYS) model from Oak Ridge National Lab (ORNL). For more on this modeling framework, see generally Univ. of Tenn. Inst. of Ag., POLYSYS, http://www.agpolicy.org/polysys.html; Oak Ridge National Laboratory, Fact Sheet: Land-Use Changes and Bioenergy, http://www.ornl.gov/sci/besd/cbes/factsheets/ORNLLandUsefactsheetv8.pdf; Daniel G. De La Torre Ugarte & Daryll E. Ray, *Biomass and Bioenergy Applications of the POLYSYS Modeling Framework*, 18 Biomass & Bioenergy 291 (Mar. 9, 2000).
132. PEIS, *supra* note 46, at 4-1.
133. *Id.* at 4-2. The POLYSYS model incorporates carbon accounting modeling. *Id.*
134. *Id.* at 4-7 (showing Figure 4.1-1, which delineates the locations of these top five locations).
135. *Id.* at 4-9 (showing Figure 4.1-3, which delineates the top BCAP project sites in states with enough feedstock production potential).
136. *Id.* at 4-6.
137. *Id.*
138. *Id.* at 4-11.
139. *Id.* at 4-19.
140. *Id.*

reduction in local purchases of inputs, which affects the local economy.[141] The PEIS also estimates transportation costs for each BCF at $1.3 million.

Under the broader implementation scenario, the modelers assume the DOE goal of $1.76/gallon ethanol and $51 per dry ton of biomass feedstock.[142] Aggregate farm income rises in the broader implementation scenario over targeted implementation. Part of this rise is due to increased prices of commodity crops producers will receive due to displacement of acreage by energy crops, particularly for soybeans and wheat.[143] The model assumes the same payment to producers ($45/ton CHST and $45/ton from the BCF), but concludes that the cost of production is lowered to $53/ton, amounting to a $37/ton "enticement fee."[144] The model concludes that this would add $29.2 billion to the national economy and would create 262,000 jobs.[145]

B. Biological Impacts

The PEIS estimates the ecological footprint of each BCF at 50 miles, which is the distance that many economists agree is the point at which transportation costs exceed the value of any fuel produced.[146] The PEIS uses the 28 National Resource Conservation Service (NRCS) Land Resource Regions (LLRs) as a baseline for analysis.[147] The analysis caps BCAP acres, like in the CRP Program, to 25% of land within a county for the targeted action alternative.[148] The PEIS concludes that any site-specific effects would have to be addressed further as part of "NEPA and the permitting process."[149]

The PEIS looks at the effect of increased biomass cropping brought on by existing and proposed BCFs on vegetation and wildlife, both locally and regionally within the LRRs, under broad and targeted implementation.[150] The analysis assumes that the BCFs will use primarily switchgrass and crop residues.[151] The PEIS calculates the increase in biomass acreage,[152] and concludes that several negative impacts could occur depending on the LRR, including, from a vegetation standpoint, conversion of diverse grass and pasture land to monocropped biomass.[153] The PEIS notes that monocropped biomass can have the same negative effect on wildlife, and may not decrease inputs.[154] Native grasses, therefore, are preferable to introduced grasses in some cases.[155] Even if producers plant native crops, however, the PEIS states that management decisions must be timed to get the most benefit for wildlife, birds, amphibians and reptiles, invertebrates, and fish,[156] and to avoid harming recreational opportunities.[157] At the very least, the environmental landscape will change.[158]

The PEIS recommends that to maintain economic viability of the BCAP program, more rigorous conservation practices must be focused on higher risk areas.[159] The PEIS also recommends avoidance of high-conservation value areas, which is best achieved by using existing agricultural and marginal lands.[160] The PEIS suggests that BCAP could incorporate some of the tenets of the CRP Program, such as the Environmental Benefits Index (EBI).[161] The PEIS examines regulation of noxious and non-native species,[162] and notes that because existing laws do not prevent introduction of non-native species unless they are on federal or state noxious weed lists, regulators must recognize and control the potential for damaging invasiveness.[163] In the same vein, the PEIS also recommends that use of genetically modified organisms (GMOs), particularly in relation to invasiveness, be evaluated according to FSA procedures on a case-by-case, site-specific basis.[164]

From a GHG emissions perspective, the PEIS concludes that the carbon emission reductions of the targeted approach are negligible, but that broad implementation would result in significant positive effects.[165] The PEIS created Net Ecosystem Carbon Budgets for multiple scenarios using the Intergovernmental Panel on Climate Change (IPCC) methodology for estimating nitrous oxide (N_2O) emissions, and modeling developed by the Oak Ridge National Laboratory and the University of Tennessee that estimates carbon flux from land management practices and initial carbon content.[166] The PEIS deploys the same Policy Analysis System (POLYSYS) model used for economic modeling to model impacts to soil quality.[167] The PEIS concludes that even under both implementation scenarios, significant reductions in soil erosion, and reductions in fertilizer and chemical applications, would

141. *Id.*
142. *Id.* at 4-21.
143. *Id.* at 4-23 to 4-24.
144. *Id.* at 4-31.
145. *Id.*
146. *Id.* at 4-33. The PEIS looked at 312 BCFs throughout the country. *Id.*
147. *Id.*
148. *Id.* at 4-35.
149. *Id.* at 4-34. It is unclear what "permitting process" would apply to BCAP payments, other than project area or CHST payment approval.
150. *Id.* Because many of the basic conclusions are similar, the article cites to pages in the PEIS for targeted implementation.
151. *Id.* at 4-35.
152. *Id.* at 4-41 to 4-44.
153. *Id.* at 4-36 to 4-37.
154. *Id.* at 4-39, 4-49
155. *Id.* at 4-50.
156. *Id.*
157. *Id.* at 4-97 to 4-98.
158. *Id.* at 4-59.
159. *Id.* at 4-60.
160. *Id.*
161. *Id.* at 4-62. *See also* USDA, Farm Service Agency, Fact Sheets, *Conservation Reserve Program Sign-Up 33, Environmental Benefits Index* (May 2006), http://www.fsa.usda.gov/FSA/newsReleases?area=newsroom&subject=landing&topic=pfs&newstype=prfactsheet&type=detail&item=pf_20060401_consv_en_crp33ebi0.html.
162. PEIS, *supra* note 49, at 4-73. *See also* Executive Order No. 13112 (Feb. 3, 1999), http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=1999_register&docid=99-3184-filed.pdf (to prevent introduction and control of invasive species); The Plant Protection Act, Pub. L. No. 106-224, 114 Stat. 438 (June 20, 2000) (codified at 7 U.S.C. §§7701 et seq.). For general information on how both provisions work to prevent introduction of invasive, non-native species, see M. Lynne Corn et al., *Invasive Non-Native Species: Background and Issues for Congress* (Cong. Res. Serv., Nov. 25, 2002), http://www.nationalaglawcenter.org/assets/crs/RL30123.pdf.
163. PEIS, *supra* note 46, at 4-75 (citing Joseph M. DiTomaso et al., Biofuel Feedstocks: The Risk of Future Invasions (CAST, Nov. 2007), http://www.fs.fed.us/ficmnew/documents/notices/Biofuels2007.pdf).
164. PEIS, *supra* note 46, at 4-72 to 4-73.
165. *Id.* at 4-80 to 4-81.
166. *Id.* at 4-77.
167. *Id.* at 4-83; *see also supra* note 131 (POLYSYS model).

occur.[168] This, in turn, would boost water quality.[169] In terms of water quantity, switchgrass planting has the potential to reduce the need for irrigation in the top five areas considered for possible BCAP implementation.[170]

C. *Cumulative Effects*

The PEIS examines BCAP with other federal and state initiatives to determine the possible cumulative effects on the environment.[171] The PEIS provides a table of estimated cumulative effects by alternative for BCAP that categorizes cumulative impacts as significant, insignificant, or no-effect, and either positive or negative.[172] In addition to conclusions for each EIS category, the PEIS concludes that biomass has the potential to provide a significant net energy balance (NEB), particularly second- and third-generation feedstocks.[173]

From a mitigation perspective, the PEIS concludes that the long-term effects are expected to be minor.[174] Short-term negative effects are predicted most substantially at the establishment phase, and those associated with certain management practices.[175]

III. Concluding Thoughts: Is BCAP an Effective Tool to Meet Increased Demand for Biomass?

In the early to mid-2000s, the federal government set aspirational and ambitious renewable energy goals.[176] A 2005 joint study by the USDA and DOE concedes, however, that to meet the goal of replacing 30% of petroleum consumption in the Unnited States by 2030, U.S. farmers will have to produce one billion tons of dry biomass each year.[177] Of the 7% of renewables in the total U.S. energy portfolio, biomass made up 53% in 2008.[178] The BCAP PEIS predicts that without the program, "it would be unlikely that domestic production for bioenergy would meet [even] the demand for [EISA] advanced biofuels components" in the short-term.[179] Will the Secretary of Agriculture be able to report progress to Congress in 2012?[180]

To reach sufficient levels of production, producers must view future demand as more than mere speculation. Leadership sends signals to the private market of policy direction, which in turn provides a level of predictability for investors. A climate of economic downturn and volatility will continue to bench renewable energy investors nervously on the sidelines, however, without the certainty that government incentives and mandates inject into the marketplace. Millions of economic stimulus monies are now flowing into renewable energy infrastructure building. Ramped-up mandates for advanced and cellulosic biofuels blending requirements in the new Renewable Fuels Standard will create demand for biomass from the transportation fuels industry. Renewable portfolio standards in 30-plus states require increasing percentages of renewable energy in power generation. Emerging GHG regulation of stationary and mobile sources will also increase the need for biomass as feedstock.

The Obama Administration must move swiftly and decisively to overcome the dismal odds that the next political wind again will throw renewable energy policy into stagnation and chaos, as has been the norm in the United States over the past 40 years. At this incredibly critical juncture in renewable energy policy history, coordination, consistency, and cooperation between government agencies—the three Cs—will be the linchpin between success and failure. Commanding leadership must make the three Cs a central part of federal renewable energy policy.

All the good intentions set forth by the Biomass Research and Development Act of 2000, and the commendable work of the Biomass Research and Development Board and Technical Advisory Committee it created, has failed to meet the recommendations from various roadmaps and scoping meetings in a timely manner. The Administration's recent establishment of a Biofuels Interagency Working Group (IWG) in May 2009 supports this criticism. The IWG is co-chaired by the Administrator of EPA and the Secretaries of Energy and Agriculture and must coordinate its work with the Biomass Research and Development Board of the National Science and Technology Council.[181] The IWG has three tasks: (1) develop the nation's first comprehensive biofuels market development program; (2) coordinate infrastructure policies affecting the supply, secure transport, and distribution of biofuels; and (3) identify new policy options to ensure the environmental sustainability of *biomass feedstock production*, with particular consideration of land use policy, agronomic practices, habitat conservation, water quantity and quality, and life-cycle GHG emission.[182] Unfortunately, one must ask whether this new working group would be necessary if the Biomass Research and Development Board and the Technical Advisory Committee were achieving the three Cs in a timely manner.

While the new Biofuels IWG is a necessary step toward agency coordination, cooperation, and consistency, its critical flaw is that the biomass sector encompasses more than production of biofuel feedstock. Indeed, many believe that demand for biomass from power plants will be the initial driver for farmers to enter the market. Although the first

168. *Id.* at 4-83 to 4-90.
169. *Id.* at 4-91.
170. *Id.* at 4-92.
171. *Id.* at 5-1 to 5-3.
172. *Id.* at 5-5.
173. *Id.* at 5-9 to 5-10.
174. *Id.* at 6-1.
175. *Id.*
176. *See supra* note 30 and accompanying text; Billion-Ton Supply, *infra* note 177.
177. U.S. DOE & USDA, Biomass as Feedstock for a Bioenergy and Bioproducts Industry: The Technical Feasibility of a Billion-Ton Annual Supply (Apr. 2005) [hereinafter Billion-Ton Supply], http://www1.eere.energy.gov/biomass/pdfs/final_billionton_vision_report2.pdf.
178. U.S. DOE, Energy Information Administration, Renewable Energy Consumption and Electricity Preliminary Statistics 2008, http://www.eia.doe.gov/cneaf/alternate/page/renew_energy_consump/rea_prereport.html.
179. PEIS, *supra* note 46, at ES-3.
180. 7 U.S.C. §8111(e) (requiring the Secretary to report to Congress within four years of BCAP enactment).
181. Presidential Documents, Biofuels and Rural Economic Development, 74 Fed. Reg. 21531-32 (May 7, 2009).
182. *Id.* at 21531.

significant federal renewable energy mandates were in the transportation fuels sector, escalating demand from renewable portfolio standards and future GHG regulation requires agencies, and the Administration, to consider biomass within more than just the biofuels context. The Administration, therefore, should reconsider the formation and mission of the new Biofuels IWG to address more generally biomass production and logistics for all renewable energy sectors. For example, instead of creating the nation's first *biofuels* marketplace development program, the IWG could establish the nation's first *biomass* marketplace development program. Marketplace development requires coordination of infrastructure policy across agencies. This coordination might better enable, for example, the comprehensive economic analysis of existing incentives policies to determine cost-effectiveness and to identify barriers that the BRDI has called for, but not yet produced.[183] The POLYSYS model used by the PEIS is a good first start. The BCAP PEIS also attempted a limited analysis of federal and state biomass incentive policies to determine their cumulative environmental impacts. The results would have been better informed by an economic analysis that identifies all incentives, whether direct or indirect. Further, the Administration should look at the California approach to coordinated biomass policies, as California has many policies in place, including GHG regulations, that the federal government does not yet have.

Most significantly, the Administration indirectly recognized the more overarching importance of biomass when it charged the new Biofuels IWG with identifying new policies related to the sustainability of biomass production. While sustainability currently dominates policy decisions and cuts across agency jurisdictions, regulations, and legislation, such "massive problems" pose serious federal administrative challenges.[184] BCAP is a prime example. The BCAP PEIS would have benefitted greatly from inter- and intraagency contribution and cooperation. For example, both the BCAP PEIS and EPA's RFS rulemaking attempt to measure the soil carbon emissions and sequestration potential. Future EPA rulemaking for the RFS likely will include non-carbon sustainability considerations, including biomass sustainability. The PEIS, however, makes no reference to EPA's carbon modeling, nor recognizes current efforts on several fronts to develop biomass sustainability criteria. The PEIS does not even reference intraagency rulemaking to support its conclusions, including programmatic EISs for both the CRP[185] and the Wildlife Habitat Incentives Program.[186] The PEIS also references only one state program in measuring the cumulative environmental effects of biomass incentivization policy. A biomass IWG might assist in greater cooperation and coordination that could ameliorate these types of gaps and oversights.

Further, a biomass IWG could work to resolve important inconsistencies between and within federal legislation and regulations. For example, the FSA has never conducted NEPA review of Title I commodity subsidies, which have caused severe environmental harm in some cases.[187] Site-specific environmental impact studies, which the BCAP PEIS relies upon,[188] will delay program implementation and impose costs on biomass producers. The PEIS has already delayed implementation of the Project Areas Program, and arguably should be applied to the CHST Program.[189] While assessing the environmental benefits of biomass production likely can benefit producers in the marketplace in some instances, e.g., RFS and grant qualification,[190] the federal government must consider putting all agricultural production on a level regulatory playing field.

An example of definitional inconsistency is BCAP's definition of "eligible lands" for project area designation. Biomass from "native sod" as of the date of enactment of the 2008 Farm Bill (May 22, 2008) does not qualify as "eligible land" for purposes of BCAP payment.[191] The EISA's definition of "renewable biomass," on the other hand, excludes biomass from lands cultivated after EISA enactment (December 17, 2007).[192] The U.S. House of Representatives' climate change bill reported to the U.S. Senate adds a definition of "renewable biomass" that is different from BCAP's definition of "eligible crops."[193] Further, to the extent BCAP places a carbon value in implementing regulations, the FSA should be cognizant of EPA efforts to model carbon emissions at the biomass level. In the same vein, when the FSA considers environmental sustainability factors in project area designation, it should draw upon sustainability considerations in other programs, e.g., RFS, CRP. This reduces application and compliance costs for biomass producers. It must also determine how to ensure that BCAP producers adhere to sustainable practices throughout the contract term.

A broader, more general policy inconsistency exists between BCAP's treatment of algae and other federal policies that incentivize algae production. Algae is ineligible for

183. BRDI Roadmap, *supra* note 30, at 33.

184. J.B. Ruhl & James Salzman, *Massive Problems in the Administrative State: Strategies for Whittling Away*, 98 Cal. L. Rev. (forthcoming 2010) (designing models that explain the challenges created by massive problems, such as climate change, and proposing "strategies for engaging in more effective multiagency coordination").

185. USDA, FSA, Programmatic Environmental Impact Statement: Select Provisions of the 2008 Farm Bill Regarding the Conservation Reserve Program (Nov. 2008), http://www.fsa.usda.gov/Internet/FSA_File/provisionscrppeafinal12908.pdf.

186. USDA, Natural Resources Conservation Service (NRCS), Wildlife Habitat Incentives Program: Final Programmatic Environmental Impact Statement (Jan. 2009), http://www.nrcs.usda.gov/programs/env_assess/fonsi_files/Final_WHIP_EA_1-9-09.pdf.

187. For an analysis of why NEPA should apply to Title I subsidies, see Jennifer Hoffpauir, *The Environmental Impact of Commodity Subsidies: NEPA and the Farm Bill*, 20 Fordham Envt'l L. Rev. 233 (Spring 2009).

188. PEIS, *supra* note 46, at 2-6 to 2-8; 4-73. The PEIS does not mention any site-specific studies that may already exist, and how the FSA could use such studies programmatically to alleviate some of the burden on the applicant to address, for example, biological resources within native and multicropped systems.

189. This is particularly true if farmers are now being paid BCAP funds for residues, which qualify as eligible materials under the CHST Program. Residue removal has significant implications for soil erosion and fertility. Increased stress on transportation infrastructure also could occur.

190. California, for example, is considering a program that evaluates renewable energy projects for grant funding based on sustainability factors. California Energy Commission, Working Draft Discussion Paper 1 (Dec. 5, 2008), http://www.energy.ca.gov/ab118/documents/2008-12-05_staff_meeting/2008-12-05_Draft_Sustainability_Framework.pdf.

191. *See supra* note 56.

192. *See supra* note 4.

193. *See supra* note 2, at §126.

CHST payments, and arguably is not considered by establishment or annual payments under the Project Areas Program. DOE, however, is increasing funds for algal R&D (including $50 million for an algal biofuels consortium),[194] and has issued a lengthy algae biofuels roadmap.[195] Bills have been introduced in Congress to qualify algae-based fuels under the RFS like other fuels, and for IRS tax incentives.[196] A biomass IWG could make sure that when Congress is considering renewable energy legislation, it strives for consistency in incentivization policy.

The biggest question the FSA must answer is whether to target payments on a smaller scale, or implement BCAP broadly. While broader implementation of BCAP may cause some environmental concerns, the PEIS concludes that broader implementation may also provide environmental benefits, depending on agronomic practices and plant variety selection. Environmental harms can be mitigated if the FSA incorporates some form of sustainability criteria in its implementing regulations, keeping current criteria development in mind and striving for consistency across programs.

The PEIS concludes that the socioeconomic benefits of broad implementation are far greater than targeted implementation. On the other hand, the costs of broad implementation will be very high. The PEIS estimates the total cost of establishment at $11 billion,[197] and the total cost of establishment of a crop and CHST of enough switchgrass for one BCF at $10 million.[198] The economic analyses referred to above would be useful in determining the cost-effectiveness of this large budgetary outlay. Further, industry may not support the PEIS's assumptions for both the targeted and broad implementation options. For example, the PEIS does not present the option of targeted implementation in areas where pilot facilities also exist. Instead, the targeted option only allows for large commercial BCFs in its scenario-building. Lastly, when the FSA finally implements the Project Areas Program, many of the site-specific economic and ecological questions deferred in the PEIS will appear in the FSA's evaluation of the project sponsor's application. It is unclear, however, if the project sponsor will be obligated to provide supporting information for the evaluation. Project applicants likely do not have the capacity to apply complex economic and biological modeling of local and regional conditions.

In addition to deciding on an implementation strategy, the other major[199] issue in BCAP implementation will be the implications of binding five- to 15-year contracts. If a biomass producer defaults on the BCAP contract, it is unclear what remedies the FSA and the BCF has against the producer. The statute does not allow for agronomic or market conditions to interrupt the contract cycle. Another question that arises is whether the BCAP contract runs with the producer (who may be a tenant farmer) or the land, and what rights the landlord, if there is one, has in the BCAP contract. The PEIS makes assumptions regarding the "enticement fee" the program will offer, although it is unclear how and what amount will be determined in the contract between the FSA and the biomass producers.

Constituencies in the lower Midwest (Kansas, Missouri, Oklahoma, and Texas) come out on top in either the top-five or top-fifty BCAP implementation scenarios chosen in the PEIS.[200] Undoubtedly, members of Congress, industry, farmers, and other stakeholders will want a detailed explanation of the methodology the FSA ultimately chooses in selecting project areas. If the PEIS's calculations are correct, selection will mean millions of dollars of income and jobs for local economies.

194. U.S. DOE, Special Notice, Notice of Upcoming Funding Opportunity Announcements: 2) "Recovery Act Funding of Development of Algal Biofuels and Advanced Fungible Biofuels Through Consortiums," (June 30, 2009), http://e-center2.doe.gov/doebiz.nsf/UNID/2479F50D3A7CD818862575AD006CF573?OpenDocument&PF.

195. U.S. DOE, Office of Energy Efficiency & Renewable Energy (EERE), National Algal Biofuels Technology Roadmap (June 3, 2009), https://e-center.doe.gov/iips/faopor.nsf/UNID/79E3ABCACC9AC14A852575CA00799D99/$file/AlgalBiofuels_Roadmap_7.pdf.

196. *See* H.R. 3460 (July 31, 2009); S. 1250 (June 11, 2009).

197. PEIS, *supra* note 46, at ES-4.

198. *Id.* at 4-16.

199. Other issues include, but are not limited to: (1) determining an "economically feasible distance" from a BCF for project designation; (2) the anti-competitive effects of reporting purchase and other information to the public and institutes of higher learning; (3) obtaining sufficient feedstock for establishment of annual crops, e.g., rhizomes; (4) how state and local regulations may affect project area formation and selection; and (5) what is "sufficient equity" for a nonoperational BCF for project area determination.

200. *Id.* at 4-7 to 4-9.