MINNESOTA DEPARTMENT OF AGRICULTURE

NextGen Energy Board

Report to the Legislature

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Next Generation Biofuels

Minnesota's energy policy took a leap forward in 2007, as Governor Tim Pawlenty and the Minnesota State Legislature worked with a broad range of stakeholders to pass the most aggressive energy package in state history. The initiative included:

- A goal that 25 percent of all Minnesota's energy be derived from renewable resources by 2025;
- The nation's most aggressive renewable energy standard for electricity, requiring that more than 27 percent of the state's electricity come from specified renewable sources by 2025;
- Energy efficiency requirements that effectively doubled the effort previously required of electric and natural utilities; and,
- The establishment of targets to reduce greenhouse gas emissions by 80 percent by 2050 (from a 2005 baseline), with interim reduction milestones for intervening years.

The governors of the 12-state Midwest Governor's Association made similarly strong commitments in 2007 to renewable electricity, energy efficiency, production and use of renewable fuels, and carbon sequestration. Six of the 12 states committed to the development of a regional cap-and-trade system to ensure greenhouse gas emission reductions. Since then, participating states have appointed diverse representatives to advisory groups charged with identifying more precisely what Midwestern states should do to secure their energy future and do their part on climate stewardship. The advisory groups anticipate releasing final recommendations in 2009.

The promise of biofuels and bioenergy production and their associated challenges also came into sharp focus in 2007 and 2008. The price of oil nearly doubled during this time, topping out at almost $150 a barrel in the summer of 2008. The global economic crisis in the fall of 2008 put enormous strain on many U.S. industries, including the biofuel and bioenergy industries. More people voiced concerns about resource depletion, economic vulnerability to high energy prices, and the capacity of global oil supplies to meet demand. Given the opportunity to create significant new economic benefits throughout the country, Congress enacted a 36-billion-gallon Renewable Fuel Standard (RFS) in late 2007. The new RFS will increase biofuel production six-fold over the next 15 years, beginning with a requirement for the production of nine billion gallons of renewable fuels in 2008.

It is widely recognized that there are opportunities for shifting our biofuel production focus beyond conventional row crops to other biomass materials. The potential for perennial biomass crops, mixed stands of native grasses, and trees as a bioenergy crop to provide feedstock for cellulosic ethanol production is a frequent subject of discussions at energy conferences around the country, and in the halls of the Minnesota and United States Capitols. Perennials also help mitigate rising prices of fossil fuels and reduce farm input costs. In 2007, research at the University of Minnesota examined the potential for mixed prairie grasses to provide biomass feedstock for carbon-neutral and carbon-negative fuels, sequester carbon, and preserve and enhance land and water quality. This research demonstrated that a win-win scenario can be created for bioenergy production if policy, research, technology and economics are successfully aligned.

It was in this context that the NextGen Energy Board was created, and has conducted its work over the course of 2007 and 2008.

NextGen Energy Board Background and Role

Minnesota has long been the national leader for enacting policies to promote the use of biofuels and ensure local benefits from their production. Briefly, those policies include:

- Becoming the first state in the nation to enact a 10 percent statewide ethanol blending requirement;
- Implementing an ethanol production incentive to support and promote farmer-owned cooperative ethanol production;
- Becoming the first state in the nation to implement a 2 percent statewide biodiesel blending requirement (progressing to B5 in 2009 and B20 in 2015); and,
- Implementing the nation-leading "E85 Everywhere" program, providing E85 fuel for flex-fuel vehicles at more than 350 stations in the state.[1]

Governor Pawlenty and the 2007 Minnesota Legislature established the NextGen Energy Board to ensure that Minnesota continues to lead the nation with policies to promote the next generation of biofuels. The Board is specifically tasked with developing recommendations and building consensus for the development of the "Next Generation" of biofuels in the state, as defined in statute:

> NextGen Energy Board – Minn. Stat. §41A.105
> The board shall research and report to the commissioner of agriculture and to the legislature recommendations as to how the state can invest its resources to most efficiently achieve energy independence, agricultural and natural resources sustainability, and rural economic vitality. The board shall:
>
> (1) examine the future of fuels, such as synthetic gases, biobutanol, hydrogen, methanol, biodiesel, and ethanol within Minnesota;
> (2) develop equity grant programs to assist locally owned facilities;
> (3) study the proper role of the state in creating financing and investing and providing incentives;
> (4) evaluate how state and federal programs, including the Farm Bill, can best work together and leverage resources;
> (5) work with other entities and committees to develop a clean energy program; and,
> (6) report to the legislature before February 1 each year with recommendations as to appropriations and results of past actions and projects.

The Board's primary focus is to examine the use of the state's resources to decrease our reliance on fossil fuels; to increase our use of home-grown energy sources; to work towards agricultural and natural resources sustainability; and to ensure rural economic vitality.[2]

The Board is comprised of 19 members, seven of which were appointed by the Governor[*]. The total membership includes:

- State Senator Ellen Anderson (District 66;
- Wayne Brandt*, Minnesota Forest Industries;
- Mike Bull*, Wind on the Wires;

[1] According to the Minnesota Department of Commerce, there were 351 E85 stations in Minnesota as of the summer of 2008.
[2] Although not directly germane to the NextGen Energy Board's charge, the Board acknowledges the importance of energy conservation and the use of renewable energy sources other than biomass, such as solar, wind, geothermal, to supplement biomass energy initiatives. Placing biomass energy initiatives in this context will help ensure that these initiatives remain consistent with sustainable, available biomass and environmental needs.
[*] Denotes NextGen Energy Board members appointed by Governor Pawlenty.

- Robert Elde*, University of Minnesota Initiative for Renewable Energy and the Environment (IREE);
- John Frey*, Minnesota State Colleges and Universities (MnSCU);
- William Grant*, Izaak Walton League;
- State Representative Bill Hilty (District 8A);
- Commissioner Mark Holsten, Minnesota Department of Natural Resources;
- Commissioner Gene Hugoson, Minnesota Department of Agriculture;
- State Representative Al Juhnke (District 13B);
- Rob King*, Minnesota Institute for Sustainable Agriculture (MISA);
- State Representative Doug Magnus (District 22A);
- Commissioner Dan McElroy, Minnesota Department of Employment and Economic Development;
- Commissioner Brad Moore, Minnesota Pollution Control Agency;
- Thom Petersen*, Minnesota Farmers Union;
- State Senator Julie Rosen (District 24);
- Teresa Spaeth, Agriculture Utilization Research Institute (AURI);
- Paul Stark*, Minnesota Farm Bureau Federation;
- State Senator Jim Vickerman (District 22); and,
- Commissioner Glenn Wilson, Minnesota Department of Commerce.

NextGen Energy Board Strategic Vision

Strategic Vision

Building on state initiatives that launched and supported the successful development of Minnesota's biofuel industry, the NextGen Energy Board supports policies for the production and use of biomass-based energy and fuels to provide maximum benefits to the state's economy. These next generation policies are guided by the principles of rural economic vitality, environmental sustainability, and energy security through energy conservation, increased use of homegrown renewable resources, and reduced reliance on fossil energy.

Minnesota's biofuel policies have created prosperity for Minnesota farming communities, improved air quality, reduced carbon emissions, displaced petroleum use and led to public acceptance of biofuels for widespread use. The Next Generation Energy Board's policies promote the continued improvement of biofuel technologies currently in use in Minnesota and spur aggressive innovation in the development and deployment of the next generation of bioenergy feedstocks and technologies in the state.

Objectives

Through a series of facilitated discussions, the NextGen Energy Board narrowed its focus on achieving the following objectives to promote the strategic vision:

- Build on and improve the technological capacity of those industries that will produce the next generation of biofuels. Such industries include those involved in the production of biomass-based fuels for transportation, heat and power; the pulp and paper sector; and other emerging technologies;
- Use an integrated strategy that supports research and development, education initiatives, technology transfer, production incentives, and market creation focused on next generation fuels;

- Harness and support the state's renewable energy entrepreneurial spirit through policies that provide all interested parties the opportunity to evaluate and determine which technologies and business models are most efficient and profitable, and which best achieve the public interest;
- Expand renewable fuel economic opportunities throughout Minnesota;
- Create and retain local community investments in current and new bioenergy enterprises;
- Promote creation of and investment in bioenergy technical and manufacturing support enterprises;
- Strengthen the current biofuels industry, which includes corn-based ethanol and soy-based biodiesel, to ensure improving economic and environmental performance as the industry contributes to state energy policies and goals;
- Ensure the efficient, innovative and sustainable use of energy and natural resources such as water and wood products; as well as the continued improvement in air quality;
- Expand reliance on perennial crops that improve habitat and water quality while reducing soil water runoff and providing an effective means of storing carbon; and,
- Provide greater energy self-reliance in the state by displacing the use of fossil fuels with energy conservation and the production and use of our homegrown renewable resources.

Strategies

To help meet its strategic vision and objectives, the Board adopted the following strategies:

- Develop sustainable production systems for bioenergy crops, crop residues and materials that minimize water, chemical, and fossil energy inputs while sequestering carbon and enhancing wildlife habitat, water and air quality;
- Encourage the evolution of current biofuel production technology toward processes that are more energy efficient, use less water, and consume less fossil energy;
- Help commercialize new biomass-based energy and fuel technologies that exhibit improved carbon and other greenhouse gas emissions performance relative to fossil energy;
- Help develop biomass feedstock collection, processing, transportation, and storage systems that can reduce overall field-to-facility costs; and,
- Create market-based policies that allow farmers, loggers, landowners, and producers to benefit economically from the next generation of bioenergy production.

NextGen Energy Grant Program

In addition to the NextGen Energy Board, the 2007 Minnesota Legislature established the NextGen Energy grant program, which appropriated $3 million for grants to bioenergy projects.[3] In the spring of 2008, the Minnesota Department of Agriculture (MDA) issued a request for proposals for NextGen Energy grant projects (See Appendix B). A total of 28 proposals were submitted to a technical review committee comprised of staff from the Minnesota Departments of Agriculture, Natural Resources, Commerce, Employment and Economic Development and the Pollution Control Agency. Projects were ranked based on the following criteria:

(1) How well the project met the objectives established by the NextGen Energy Board;
(2) Quality and experience of the applicant and/or project teams;
(3) Clarity and detail of the proposal;

[3] Following additional actions taken by the Minnesota State Legislature in 2008, approximately $2.7 million was available for the 2008 NextGen Energy grant program.

(4) Anticipated project outcomes, measurable results, and likelihood of success;
(5) Effective leverage of MDA NextGen Energy grant funds with non-state funding sources; and,
(6) Whether a project was at least 60 percent owned and controlled by farmers (as defined in Minnesota Statutes 2008, section 500.24, subdivision 2, paragraph (n)), or natural persons residing in the county or counties contiguous to where the facility is located.

The technical review committee made recommendations to the NextGen Energy Board, which approved the final project award list. In November of 2008, Governor Pawlenty announced the eight projects selected to receive NextGen Energy grants, as follows:

Central Minnesota Cellulosic Ethanol Partnership - $910,000

The Central Minnesota Cellulosic Ethanol Partnership—a joint venture between the Central Minnesota Ethanol Cooperative, SunOpta BioProcess, and Bell Independent Power Corporation—will receive $910,000 to conduct the final stage of a study to determine the feasibility of building, owning and operating a 10-million-gallon-per-year cellulosic ethanol plant. The plant would be co-located with the existing Central Minnesota corn ethanol plant in Little Falls, Minnesota.

Chippewa Valley Ethanol Company - $700,000

The Chippewa Valley Ethanol Company will receive $700,000 to introduce new biomass gasification technology to its 15-million-gallon-per-year corn ethanol plant in Benson, Minnesota. The technology will allow the facility to use farm or woodland biomass to power plant operations, replacing up to 90 percent of its current dependence on natural gas. The technology will also allow the facility to eventually transition from corn-based to cellulosic ethanol production.

Minnesota Valley Alfalfa Producers - $400,000

The Minnesota Valley Alfalfa Producers will receive $400,000 to demonstrate biomass "pelletizing," in which a variety of biomass materials—such as crop waste, grasses and woodland biomass—are processed into uniform-sized pellets that can be more easily stored and transported. The facility is located in Raymond, Minnesota.

Rick Neuvirth Farm - $220,000

The Rick Neuvirth Farm in Elkton, Minnesota will receive $220,000 to construct and install an anerobic digester and electric generator to produce and use biogas, heat and electricity. The anerobic digestor will use methane gas produced from the farm's swine manure and other organic residues to generate electricity, replacing nearly 100 percent of the farm's annual electricity and propane consumption and eliminating the need for manure hauling by truck.

Northern Excellence Seed - $200,000

Northern Excellence Seed, located in Williams, Minnesota, will receive $200,000 to construct a 100-kilowatt-per-hour gasifier. This project will demonstrate the viability of burning waste biomass such as grasses to produce electricity, and is potentially replicable throughout the state.

University of Minnesota Department of Forestry - $100,000

The University of Minnesota's Department of Forestry will receive $100,000 to study the sustainability of the state's approximately 16 million acres of forests, as well as the long-term availability of biomass in the state. The study will identify sustainable forest management practices that may serve to increase the volume of forest biomass available for expanding bioproduct industries.

Central Lakes College Ag Center - $100,000

The Central Lakes College Ag Center in Staples, Minnesota will receive $100,000 to establish and evaluate five perennial energy crops, including four native prairie plants (Switchgrass, Intermediate Wheatgrass, Survivor False Indigo, Prairie Cordgrass, and a Siberian strain of Miscanthus). The project is a partnership between a MnSCU campus, local farmers, and University of Minnesota faculty, and will demonstrate best-management practices for growing and harvesting perennials for use as cellulosic energy crops.

University of Minnesota-Morris - $50,000

The University of Minnesota at Morris is in the process of installing a biomass gasifier to provide campus heating and help reduce campus energy costs. The campus partnered with the West Central Research and Outreach Center to form the University of Minnesota Renewable Energy Research and Demonstration Center at Morris. This Center will receive $50,000 to assess the potential for a biomass servicing company to handle the logistics of collecting, transporting, and storing the large amounts of biomass needed for energy production. The project will also lead to the development of a contract with a biomass producer and establish a model for biomass production.

Update on 2008 Recommendations and Action Items

In 2008, the NextGen Energy Board adopted a number of recommendations to meet its strategic vision and objectives. The following provides a brief summary of the actions taken to address the Board's recommendations:

Recommendation #1: Modify the NextGen Board statute

A. Action Item: Propose legislation to expand the Board by one member, representing the forest products industry.

Status: Complete ✓

Forestry resources are expected to play a large role in the next generation of biofuel production. As such, the Board identified the need for a forest sector representative to be engaged in future discussions, and the 2008 Legislature confirmed this need.[4] In September of 2008, Governor Pawlenty appointed Wayne Brandt, executive vice president of the Minnesota Forest Industries, to the NextGen Energy Board. Brandt also serves as executive director of the Minnesota Timber Producers Association and as a member of the Minnesota Forest Resources Council. His Board term expires June 30, 2009.

B. Action Item: Propose legislation to repeal the expiration date of the NextGen Energy Board.

Status: Complete ✓

[4] Minn. Stat. § 41A.105, subd. 2.

The NextGen Board was originally set to expire June 30, 2009. Members found the Board to be an effective forum to address the diverse and interlinked issues associated with the development of the next generation of biofuels in the state. Thus, to allow for continued biofuel policy development and discussion, the 2008 Minnesota Legislation extended the NextGen Energy Board through June 30, 2014.[5]

C. Action Item: Propose legislation to provide that NextGen Energy grant appropriation funds do not cancel to the state's general fund, and are available through FY 2009 or until spent.

Status: Complete ✓

NextGen Energy grant funds were initially appropriated for fiscal year 2008, and did not roll into fiscal year 2009. However, legislative hearing records confirmed that it was the Legislature's intent that this funding be available until spent. To allow for funds to be expended in a fair and prudent manner, the 2008 Minnesota Legislature extended the NextGen Energy grant appropriation fund through June 30, 2009.[6]

D. Action Item: Add the concept of petroleum depletion and planning for its impacts as one of the drivers for NextGen Energy Board policies and recommendations.

Status: In progress

In 2008, the Board identified resource depletion and peak oil in particular as major drivers behind the need for next generation energy development. Peak oil can be defined as the point when global petroleum production is reached, after which the rate of production declines toward depletion. The concepts and potential impacts of petroleum depletion and continued dependence on foreign oil were incorporated into the NextGen Energy Board's strategic vision and objectives. For example, the Board identified as one of its objectives the intent to "provide greater energy self-reliance in the state by displacing the use of fossil fuels with energy conservation and the production and use of our homegrown renewable resources." Resource depletion also served as an impetus for the Board's decision to invest NextGen Energy grant program funding in advanced biofuels projects.

Recommendation #2: Dedicate NextGen funding to projects that support the Board's strategic vision

Action Item: Develop and implement guidelines for allocating available NextGen Energy funding to NextGen Energy purposes identified by the Board.

Status: Complete ✓

As discussed in this report, in November of 2008, the NextGen Energy Board awarded eight grants totaling approximately $2.7 million to bioenergy projects that met the Board's objectives and strategic vision. For example, the NextGen Energy grant awarded to the Central Lakes College Ag Center meets the Board's objective to "expand reliance on perennial crops that improve habitat and water quality while reducing soil water runoff and providing an effective means of storing carbon." Similarly, the University of Minnesota's Department of Forest Resources will use NextGen Energy grant funding to

[5] Minn. Stat. § 41A.105, subd. 5.
[6] Laws of Minnesota 2008, ch. 297, art. 1, sec. 63.

help meet the Board's objective to "ensure the efficient, innovative, and sustainable use of energy and natural resources."

The Board also discussed additional areas for focusing any future NextGen funding, as follows:

(1) Increasing the use of biomass as an industrial fuel through feasibility studies;
(2) Establishing a biomass infrastructure needed to support the next generation of biofuels;
(3) Improving energy and water efficiency in biofuel production; and,
(4) Funding of policy research and technical analysis.

A number of projects selected to receive NextGen Energy grants in 2008 address these areas of focus. For example, the Central Minnesota Cellulosic Ethanol Partners' feasibility study for a commercial-scale cellulosic ethanol plant meets the first, while the pelletization project through the Minnesota Valley Alfalfa Producers, the new biomass gasification technology at the Chippewa Valley Ethanol Company, and the study at the University of Minnesota-Morris address the second, third and fourth areas, respectively.

Recommendation #3: Support legislation in the 2008 legislative session to increase the biodiesel blending requirement from 2 percent to 20 percent

Action Item: Support legislation in the 2008 session to increase the blending requirement incrementally from B2 to B20, and ask the Biodiesel Task Force to develop criteria and recommendations for increasing the sustainability of biodiesel fuel at each enhanced blend level.

Status: Complete ✓

To maintain Minnesota's leadership role in biodiesel development, the 2008 Legislature adopted a bill setting incremental goals for Minnesota to progress from its current B2 blending mandate to B20 by 2015. Specifically, the bill requires that all diesel sold or offered for sale contain 5 percent biodiesel by May of 2009, 10 percent by May of 2012, and 20 percent by May of 2015.[7] The bill was signed into law by Governor Pawlenty in May of 2008.[8]

Recommendation #4: Support study of policies and activities to promote lower carbon fuels

A. Action Item: Support the development of a Low Carbon Fuel Standard that takes advantage of the progress Minnesota has made in biofuels development.

Status: In progress

Minnesota has long supported low carbon fuels through its promotion of current generation ethanol and biodiesel. To continue its support of next generation low carbon fuels, members of the Board requested that the state undertake a study regarding the impact of implementing a Low Carbon Fuel Standard in

[7] The 10 percent and 20 percent minimum content levels are effective during the months of April, May, June, July, August, September, and October only. The minimum content for the remainder of the year is 5 percent. However, if the commissioners of agriculture, commerce, and pollution control determine, after consultation with the biodiesel task force and other technical experts, that an American Society for Testing and Materials specification or equivalent federal standard exists for the specified biodiesel blend level in those clauses that adequately addresses technical issues associated with Minnesota's cold weather and publish a notice in the State Register to that effect, the commissioners may allow the specified biodiesel blend level in those clauses to be effective year-round.
[8] Minn. Stat. §239.77, subd. 2.

Minnesota. To that end, the Minnesota Department of Commerce's Office of Energy Security (OES) issued an RFP for a $200,000 grant, requesting a February 2009 project completion date. However, no applicants were able to conform to this timeframe, and OES reissued the RFP with an August 2009 completion date. The evaluation team (composed of members from the Minnesota Departments of Agriculture, Natural Resources, Commerce, and the Pollution Control Agency) recommended funding a proposal from the University of Minnesota to develop a modeling framework for assessing the outcome of a variety of potential Low Carbon Fuel Standard policies. The study will be completed in August of 2009.

B. Action Item: Support development of a Green Fuels Certification program.

Status: In progress

State agencies are currently engaged in discussions with various stakeholders to identify options for advancing Minnesota's green fuels market. However, if a nationwide Low Carbon Fuel Standard or cap-and-trade market is established, a state-certified program for green fuels may become obsolete.

While Minnesota has not developed a Green Fuels Certification program, the state's SmartFleet program encourages the use of renewable fuels and hybrid vehicles by state agencies. Specifically, this program aims to reduce the use of gasoline in state vehicles by 25 percent in 2010 and 50 percent in 2015, and the use of diesel in state vehicles by 10 percent in 2010 and 25 percent in 2015. To this end, the SmartFleet program requires that at least 75 percent of purchases of new state vehicles (excluding emergency and law enforcement vehicles) use "cleaner fuels"[9] and have fuel efficiency ratings that exceed 30 miles per gallon for city usage or 35 miles per gallon for highway usage, including but not limited to hybrid electric cars and hydrogen-powered vehicles. From January to September of 2008, state government fleet vehicles replaced just over 12 percent of gasoline usage with E85.

Recommendation #5: Encourage the purchase of bio-based products in public purchasing programs

Action Item: Support, through legislation or other means such as executive order, the procurement of bio-based products in public purchasing programs.

Status: In progress

A biomass-based fuel industry requires the development of a biomass market, which could be achieved by encouraging the procurement and use of bio-based products in state and local government purchasing programs. In November of 2007, the Midwestern Governors Association (MGA) released the ***Energy Security and Climate Stewardship Platform***, which included a resolution entitled "Establishing a Midwestern Bioproduct Procurement Program." The resolution was signed by 12 Midwestern states and one Canadian province, and stated the following goals:

(1) Signatory states/province jointly establish a Midwestern Bioproduct Procurement System to support growth of the region's bioeconomy;

[9] "Cleaner fuels" are defined in Minn. Stat. § 16C.135, subd. 1, as (1) biodiesel blends of 20 percent or greater by volume (B20-B100); (2) compressed natural gas; (3) ethanol blends of 70 percent or greater by volume (E70-E100); (4) hydrogen; (5) liquefied natural gas; and, (6) liquefied petroleum gas.

(2) The system should create a common approach for listing products consistent with the federal BioPreferred program,[10] with system members adopting products based on their own procurement rules;
(3) System members agree to seek authorizing legislation, where necessary, to enable participation in the System;
(4) System members agree to form a regional task force of state procurement officials and others to design the rules of a regional bio-based product system and make other recommendations as necessary to establish the system; and,
(5) The Governors and Premier, through the MGA, will appoint a task force of state procurement officials that shall work with the private and public sectors to oversee and implement the System and to develop and recommend to the governors and premier, no later than June 1, 2008, model rules for the system.

A regional task force meeting of state procurement officials—including a representative from the Minnesota Department of Administration—was held in Iowa in March of 2008. The meeting resulted in a list of model guidelines for implementing biobased product preferences at the state level and integrating a regional system, as proposed in the MGA resolution. These guidelines were formally announced by MGA in the fall of 2008.

Minnesota has not passed legislation specific to bio-based product procurement; however, the state may not need legislative authority to implement a bio-based product procurement preference as a matter of agency policy.

Recommendation #6: Promote the installation of methane digesters

Action Item: The Agricultural Utilization Research Institute (AURI), the Minnesota State Colleges and University System (MnSCU), the University of Minnesota, and private colleges should work with the Departments of Agriculture and Commerce to attract more investment in on-farm and community-based methane digesters by increasing the public's awareness of state and federal programs and incentives available for such projects.

Status: In progress

As discussed in this report, a $220,000 NextGen Energy grant was awarded to a Minnesota swine farm to construct and install an anaerobic digester to produce methane for generating electricity. MDA's Rural Finance Authority also administers an anaerobic digester loan program that has distributed approximately $400,000 in loans over the past decade to farms across Minnesota for constructing and installing methane digesters. In addition, the Minnesota Office of Energy Security (OES) awarded five grants to Minnesota dairies through its 2008 on-farm anaerobic digester grant program. The five awards totaled $1 million, and were matched by more than $12 million in funding from other sources. As a part of the 2008 OES Renewable Energy Research and Development Grant Program,[11] a $100,000 grant was

[10] The BioPreferred program was created by the Farm Security and Rural Investment Act of 2002 to increase the procurement and use of biobased products by establishing: 1) a procurement preference program for Federal agencies and their contractors, and 2) a labeling program to enable the marketing of biobased products.

[11] In April 2008, OES awarded ten grants totaling $2 million for renewable energy projects. Eight of these were for biomass projects, one for evaluation residential wind turbines and one to evaluate commercial solar walls for heating air. OES presented a research plan to the NextGen Energy Board for its review and comment regarding this grant program, and the NextGen Board encouraged OES to ensure grants issued under this program would result in measurable outcomes which demonstrate progress toward meeting state legislative policy goals in regard to energy, the environment and the economy. Projects focused on the application and evaluation of existing or relatively near term opportunities to specifically enhance the performance of Minnesota's renewable energy industry.

provided to a large Minnesota swine farm to complete an in-depth feasibility study complete with siting, design engineering, financial analysis and a business plan for converting swine manure to pipeline-quality natural gas (biomethane). Through the same program, OES provided a $300,000 grant to Seneca Foods Corp vegetable processing facility to convert methane from anaerobic digestion of food processing residuals into clean, compressed biomethane to replace use of natural gas at the facility.

Recommendation #7: Create a supply of biomass through farm incentives.

Action Item: Support funding to implement a Reinvest in Minnesota–Clean Energy (RIM-CE) program in the 2008 Capital Investment bill

Status: In progress

Several ongoing state and federal initiatives are focused on incentivizing the sustainable production of native energy biomass crops are currently ongoing, as discussed below.

State Initiatives: The RIM program currently includes approximately 106,000 acres enrolled under the Conservation Reserve and Enhancement Program and 70,000 acres in stand-alone RIM easements. The Governor's bonding recommendation included a $3.5 million capital investment to pilot the RIM-CE program.[12] The Legislature, however, did not provide any funding for the program. Instead, the Capital Investment bill clarified that the Board of Water and Soil Resources could amend existing RIM easement contracts to allow harvest of biomass as long as the harvest does not negatively impact wildlife, water quality or carbon sequestration. The existing RIM program is positioned to augment other biomass supplies. Periodic removal of vegetation is required to maintain healthy prairie vegetation. This historically was accomplished through grazing and fire, though well-managed harvest can provide many of the same benefits.

The Minnesota Department of Natural Resources (DNR) has also made efforts to incorporate biomass harvest into grassland management on state-owned conservation lands. These efforts will serve to augment other biomass initiatives, while providing an opportunity to test and refine grassland harvest practices in the near-term. The DNR has also invested relatively modest resources in targeted areas to support planting of native grasses that can be used for biomass production.

The Minnesota Resource Conservation and Development Districts also implemented a Productive Conservation/Conservation Initiative Grant in 2008. This project provides cost share funding to plant approximately 1,000 acres of energy crops or similar perennial cropping systems.

Federal Initiatives: The 2008 Food, Conservation and Energy Act ("Farm Bill") included provisions that will help to advance the planting of perennial energy crops. The modest Biomass Crop Assistance Program was authorized at approximately $70,000 to develop the planting of non-commodity program energy crops. It is anticipated that the funds will be targeted at planting perennial energy crops. In addition, Congress revised and expanded the Conservation Security Program (now the Conservation Stewardship Program). Details are pending, but the program should provide some funding that will make perennial cropping systems more attractive.

Recommendation #8: Education and training

[12] The actual potential annual harvest will be many fewer acres. Many parcels are not suitable for harvest and those that are suitable are not likely to be harvested more than once every three years.

Action Item: The NextGen Energy Board recommends that AURI, MnSCU, the University of Minnesota, and private colleges work closely with the Minnesota Department of Employment and Economic Development and the education and workforce training committees in the legislature to integrate the components of the Talent Development Initiative into the work of that agency and those committees.

Status: In progress

AURI, MnSCU, and the University of Minnesota continue to work together on the Minnesota Renewable Energy Roundtable's (MnRER) Talent Development Initiative. This group has identified the following as high-priority objectives for the success of talent development for the renewable energy industry:

(1) K-12 Curriculum Development;
(2) Post-Secondary Curriculum Development;
(3) Workforce Gap Analysis;
(4) Communication Processes, Structures and Incentive Creation; and,
(5) Customized Training, Lifelong Learning and Faculty Development.

The Talent Development Initiative committee has been engaged in regular monthly meetings over the past year to further the Initiative's work. Commissioner Dan McElroy, Minnesota Department of Employment and Economic Development (DEED), addressed the Talent Development group in February of 2008. Additionally, a representative from the DEED participates in the committee, and leads the subgroup on Customized Training of Workforce. This subgroup is working to develop core curriculum for customized training as well as a proposal for a federal Workforce Innovation in Regional Economic Development (WIRED) grant. The Talent Development group plans to continue to integrate components of its work with DEED.

Given that 2008 was not a funding year and much of the legislative focus was on bondable projects, the opportunity to officially address the education and workforce training committees in the Legislature was not explored. However, invitations for Renewable Energy Roundtable events are distributed to all legislators and the development of the MnRER portal will allow for greater communication between the Talent Development group members and other interested individuals, including legislators that may not be able to attend Roundtable events.

Recommendation #9: Improve biomass energy permitting to encourage biomass energy development

Action Item: The NextGen Energy Board recommends a legislative discussion of permitting processes to determine if there are appropriate actions the state could take to improve permitting, thus encouraging widespread and timely sustainable biomass energy development, environmentally sustainable siting of bioenergy facilities, and improved public health. Chief among these actions could be: (1) improving the understanding and characterization of different biomass air emission profiles; (2) improving the understanding and characterization of the capacity and extent of water resources, including ground water aquifers and surface water throughout Minnesota; and (3) encouraging technologies and processes that promote more efficient use of water and greater sensitivity to water availability when determining the location of proposed facilities.

Status: In progress

Various state agencies are addressing these issues, as discussed below.

(1) State agencies must review permit applications and assess how biomass energy development will affect air quality. Project developers and regulators lack information on the emission profiles of various types of biofuels, potentially hindering the permitting process. To address this deficiency, the Minnesota Pollution Control Agency (MPCA) undertook a project to collect information and develop emissions factors for the combustion of biofuels from various feedstocks—including corn stover, wheat hulls, wood, and straw. In June of 2007, the MPCA published the results of this project in a report entitled Emission Factors for Priority Biofuels in Minnesota. The MPCA is currently managing grants with two other entities performing additional related research.

(2) Water supply has been an issue in the environmental review and permitting process for some bioenergy facilities. Minnesota's ground water resources are complex and variable. Improved permitting will depend upon improved understanding of those resources. The legislature funded $1.6 million from the environmental trust fund, as recommended by the Legislative-Citizen Commission on Minnesota Resources, to better understand ground water resources in South Central Minnesota. Specifically, $706,000 was appropriated to the University of Minnesota to initiate the development of ground water atlases in three counties and $894,000 was appropriated to the Minnesota DNR to accelerate the development of ground water resources and investigate the physical and recharge characteristics of the Mt. Simon aquifer.

(3) State agencies are working to better define issues and data needs for sustainable ground water management. For instance, the MPCA recently improved its water permitting process by requiring project proposers to evaluate available water supply issues prior to submitting a formal proposal to the MPCA.

Recommendation #10: Improve Minnesota's web-based renewable energy resources.

Action Item: Develop an online "one-stop-shop" for information about renewable energy grant and loan programs within the state.

Status: In progress

This recommendation was identified in November of 2008 and is ongoing.

Appendix A: NextGen Energy Board Legislation

Minnesota Session Laws 2007, Chapter 45

Creation of the Board:

Sec. 47. **[41A.105] NEXTGEN ENERGY.**

Subdivision 1. **Purpose.** It is the goal of the state through the Department of Agriculture to research and develop energy sources to displace fossil fuels with renewable technology.

Subd. 2. **NextGen Energy Board.** There is created a NextGen Energy Board consisting of the commissioners of agriculture, commerce, natural resources, the Pollution Control Agency, and employment and economic development; the chairs of the house and senate committees with jurisdiction over energy finance; the chairs of the house and senate committees with jurisdiction over agriculture finance; one member of the second largest political party in the house, as appointed by the chairs of the house committees with jurisdiction over agriculture finance and energy finance; one member of the second largest political party in the senate, as appointed by the chairs of the senate committees with jurisdiction over agriculture finance and energy finance; and the executive director of the Agricultural Utilization Research Institute. In addition, the governor shall appoint seven members: two representing statewide agriculture organizations; two representing statewide environment and natural resource conservation organizations; one representing the University of Minnesota; one representing the Minnesota Institute for Sustainable Agriculture; and one representing the Minnesota State Colleges and Universities system.

Subd. 3. **Duties.** The board shall research and report to the commissioner of agriculture and to the legislature recommendations as to how the state can invest its resources to most efficiently achieve energy independence, agricultural and natural resources sustainability, and rural economic vitality. The board shall:

(1) examine the future of fuels, such as synthetic gases, biobutanol, hydrogen, methanol, biodiesel, and ethanol within Minnesota;

(2) develop equity grant programs to assist locally owned facilities;

(3) study the proper role of the state in creating financing and investing and providing incentives;

(4) evaluate how state and federal programs, including the Farm Bill, can best work together and leverage resources;

(5) work with other entities and committees to develop a clean energy program; and

(6) report to the legislature before February 1 each year with recommendations as to appropriations and results of past actions and projects.

Subd. 4. **Commissioner's duties.** The commissioner of agriculture shall administer this section.

Subd. 5. **Expiration.** This section expires June 30, 2009

Grant Program Appropriation:

Sec. 3. **DEPARTMENT OF AGRICULTURE …**

Subd. 4.**Bioenergy and Value-Added Agricultural Products…**

$3,000,000 the first year is for grants to bioenergy projects. The NextGen Energy Board shall make recommendations to the commissioner on grants for owners of Minnesota facilities producing bioenergy, organizations that provide for on-station, on-farm field scale research and outreach to develop and test the agronomic and economic requirements of diverse stands of prairie plants and other perennials for bioenergy systems, or certain nongovernmental entities. For the purposes of this paragraph, "bioenergy" includes transportation fuels derived from cellulosic material as well as the generation of energy for commercial heat, industrial process heat, or electrical power from cellulosic material via gasification or other processes. The board must give priority to a bioenergy facility that is at

least 60 percent owned and controlled by farmers, as defined in Minnesota Statutes, section 500.24, subdivision 2, paragraph (n), or natural persons residing in the county or counties contiguous to where the facility is located. Grants are limited to 50 percent of the cost of research, technical assistance, or equipment related to bioenergy production or $500,000, whichever is less. Grants to nongovernmental entities for the development of business plans and structures related to community ownership of eligible bioenergy facilities together may not exceed $150,000. The board shall make a good faith effort to select projects that have merit and when taken together represent a variety of bioenergy technologies, biomass feedstocks, and geographic regions of the state. Projects must have a qualified engineer certification on the technology and fuel source. Grantees shall provide reports at the request of the commissioner and must actively participate in the Agricultural Utilization Research Institute's Renewable Energy Roundtable. No later than February 1, 2009, the commissioner shall report on the projects funded under this appropriation to the house and senate committees with jurisdiction over agriculture finance. The commissioner's costs in administering the program may be paid from the appropriation.

Appendix B: NextGen Energy Grant Informal Solicitation

MINNESOTA DEPARTMENT OF AGRICULTURE
www.mda.state.mn.us

Minnesota Department of Agriculture
625 Robert St. N., St. Paul, MN 55155-2538

Commissioner's Office, Ph: 651-201-6599, Fx: 651-201-6118

I. Introduction

The purpose of this Minnesota Department of Agriculture (MDA) Informal Solicitation is to provide potential applicants with the necessary information regarding the 2008 NextGen Energy Grants and application procedures.

Minnesota Session Laws 2007, Chapter 45 established the NextGen Energy Board. The Board's primary focus is to examine the use of the state's resources to decrease our reliance on fossil fuels; to increase our use of home-grown energy sources; to work towards agricultural and natural resource sustainability; and to ensure rural economic vitality.

In addition, the Minnesota Legislature established the NextGen Energy grant program (Laws of Minnesota 2007, Chapter 45, Article 1, Subdivision 4, as amended in Laws of Minnesota chapter 363(House File 1812): https://www.revisor.leg.state.mn.us/laws/?id=363&doctype=Chapter&year=2008&type=0

> *$3,000,000 the first year is for grants to bioenergy projects. The NextGen Energy Board shall make recommendations to the commissioner on grants for owners of Minnesota facilities producing bioenergy, organizations that provide for on-station, on-farm field scale research and outreach to develop and test the agronomic and economic requirements of diverse stands of prairie plants and other perennials for bioenergy systems, or certain nongovernmental entities. For the purposes of this paragraph, "bioenergy" includes transportation fuels derived from cellulosic material as well as the generation of energy for commercial heat, industrial process heat, or electrical power from cellulosic material via gasification or other processes. The board must give priority to a bioenergy facility that is at least 60 percent owned and controlled by farmers, as defined in Minnesota Statutes, section 500.24, subdivision 2, paragraph (n), or natural persons residing in the county or counties contiguous to where the facility is located. Grants are limited to 50 percent of the cost of research, technical assistance, or equipment related to bioenergy production or $1,000,000, whichever is less. Grants to nongovernmental entities for the development of business plans and structures related to community ownership of eligible bioenergy facilities together may not exceed $150,000. The board shall make a good faith effort to select projects that have merit and when taken together represent a variety of bioenergy technologies, biomass feedstocks, and geographic regions of the state. Projects must have a qualified engineer certification on the technology and fuel source. Grantees shall provide reports at the request of the commissioner and must actively participate in the Agricultural Utilization Research Institute's Renewable Energy Roundtable.*

Following additional actions taken by the Minnesota State Legislature in 2008, approximately $2,700,000 is currently available for the 2008 NextGen Energy grants.

The NextGen Energy Board Project Objectives
As required for the development of this Informal Solicitation, the MDA utilized the 2008 NextGen Energy Report to the Legislature. The Board encouraged MDA to issue grants that achieve the following objectives:

A. Build on and improve the technological capacity of those industries that will produce the next generation of biofuels. Such industries include those involved in the production of biomass-based fuels for transportation, heat and power; the pulp and paper sector; and other emerging technologies;
B. Use an integrated strategy that supports research and development, education initiatives, technology transfer, production incentives and market creation focused on next generation fuels;
C. Harness and support the state's renewable energy entrepreneurial spirit through policies that provide all interested parties the opportunity to evaluate and determine which technologies and business models are most efficient and profitable, and which best achieve the public interest;
D. Expand renewable fuel economic opportunities throughout all of Minnesota;
E. Create and retain local community investments in current and new bioenergy enterprises;
F. Promote creation and investment of Bioenergy technical and manufacturing support enterprises;

G. Strengthen the current biofuels industry, which includes corn-based ethanol and soy-based biodiesel, to ensure improving economic and environmental performance as the industry contributes to state energy policies and goals;
H. Ensure the efficient, innovative and sustainable use of energy and natural resources such as water and wood products; and the continued improvement in air quality;
I. Expand reliance on perennial crops that improve habitat and water quality while reducing soil water runoff and providing an effective means of storing carbon; and,
J. Provide greater energy self-reliance in the state by displacing the use of fossil fuels with energy conservation and the production and use of our homegrown renewable resources.

Grants issued under this program will result in measurable outcomes which demonstrate progress toward meeting the NextGen Energy Board's objectives in regard to energy, the environment and the rural economy. So as not to duplicate bioenergy related activities funded through other publicly-funded initiatives in the state, this Informal Solicitation places emphasis on proposals that demonstrate strong technical merit and near-term commercial viability to specifically enhance performance of Minnesota's bioenergy industry.

Timelines
Applications must be received by ***July 31, 2008 by 4:00 p.m.*** **Central Daylight Time.**

Submissions must follow "Application Process" described in section IV of this Informal Solicitation to provide both:

1) An electronic Microsoft Word version of the application and attachments in Microsoft Word, Excel or Adobe PDF format (ZIPPED files not accepted) must be **e-mailed** to: Andrew.Carter@state.mn.us. Insert "(applicant's name) - RE Grant Proposal" in the subject line.

Faxed submittals will not be accepted.

October 2008: Applicants will be notified whether they are selected for a grant.

Questions
All questions concerning this Informal Solicitation should be submitted in writing or email to:

Andrew H. Carter
Minnesota Department of Agriculture
625 Robert St. N
Saint Paul, MN. 55155-2538
Andrew.Carter@state.mn.us

II. Eligibility

Eligible Applicants
Entities eligible to receive grants are:

1. Owners of Minnesota facilities producing bioenergy;
2. Organizations that provide for on-station, on-farm field scale research and outreach to develop and test the agronomic and economic requirements of diverse stands of prairie plant and other perennials for bioenergy systems; or
3. Certain non-governmental entities for the development of business plans and structure related to community ownership.

Eligible Matching Dollars The NextGen Grants can be no more than 50% of the total project cost. In addition, only 50% of the match can be in-kind services.

Eligible Projects
Successful applications will contribute toward meeting one of the NextGen Objectives outlined on page two.

III. Application Process

For consideration in this funding round, applications **must follow the specified deadlines and format** provided in this Informal Solicitation.

Applications

Applications are ten-page maximum (not including attachments) and include, both:

1) A hard copy of the complete application and attachments, addressed to:

   Gene Hugoson, Commissioner
   Department of Agriculture
   625 Robert Street North
   Saint Paul, MN 55155-2538

2) Electronic documents shall be in Microsoft Word, Excel or Adobe PDF format (ZIPPED files not accepted) and shall be **e-mailed** to: Andrew.Carter@state.mn.us. Insert "NEXTGEN Grant Proposal - (applicant's name)" in the subject line.

Attachments

The nature of attachments will vary depending upon project purpose and scope. Applicants are encouraged to provide supplemental information to accurately communicate such things as:

- Evidence of technical and economic feasibility of project;
- Evidence of financial and technical capability of applicant;
- Letters of commitment and match if proposed in budget; and
- Resume(s) supporting qualifications described in the application.

In addition to the hard copy of attachments accompanying the application, attachments must be e-mailed to the MDA. Electronically submitted attachments should be submitted in Microsoft Word, Excel or Adobe PDF format. The names of such documents should clearly be identified with your proposal, and be referenced in the application.

ZIPPED files will not be accepted. Faxed submittals will not be accepted.

If you anticipate or experience difficulties in submitting the application electronically, please contact Andrew Carter prior to the submittal deadline at (651) 201-6599 or Andrew.Carter@state.mn.us.

Deadlines

- July 31, 2008, by 4:00 p.m. Central Daylight Time: Application due date.
- October 2008: Final Applicants will be notified whether they are selected for a grant.

Awards are contingent on available funding and the Applicant's successful execution of a grant agreement within the specified timeframe.

Terms and Conditions

1. The MDA reserves the right to amend or cancel this Informal Solicitation at any time if the best interest of the State requires such action.
2. The MDA reserves the right to reject any or all proposals and to waive informalities and minor irregularities in proposals received and to accept any portion of a proposal if deemed in the best interest of the State.
3. The MDA assumes no liability in any fashion with respect to this Informal Solicitation or any matters related thereto. All prospective service providers and their assigns or successors, by their participation in the Informal Solicitation process, shall indemnify, save and hold the Department and its employees and agents free and harmless from all suits, causes of action, debts, rights, judgments, claims, demands, accounts, damages, costs, losses and expenses of whatsoever kind in law or equity, known and unknown, foreseen and unforeseen, arising from or out of this Informal Solicitation and/or any subsequent acts related thereto, including but not limited to the recommendation of a service provider and any action brought by an unsuccessful prospective service provider.

IV. Review and Evaluation of Applications

Applicants must submit Applications in the format and by the deadlines specified in the Informal Solicitation (see Section III. Application Process).

Applications are scored and ranked to determine which projects best meet the objectives and strategies developed by the NextGen Energy Board. Applications will include a detailed work plan and budget, and if applicable, authorizing resolutions and letters of support. Grant awards will be based on available funding and the review of Applications to determine which projects will be most beneficial in furthering the NextGen Energy Objectives as identified in this Informal Solicitation.

Applications will be reviewed and scored by the Technical Grant Review Team, as directed by the NextGen Energy Board. The review team will score, and rank applications, and provide information as requested to the NextGen Energy Board. The Board will evaluate this information and make recommendations to the Commissioner, who will then select the grant recipients.

Trade Secret Information: All information submitted as part of the application is public or will become public information, unless it qualifies as trade secret information under Minnesota Statutes 13.599.

Evaluation Criteria

Grant applications will be ranked on a 100 point scale according to:

1. How well the applications meet the objectives established by the NextGen Energy Board;(15)
2. The quality and experience of the applicant and/or project teams; (20)
3. Clarity and detail of the proposal; (20)
4. Anticipated project outcomes, measurable results, and likelihood of success; (25)
5. Effective leverage of MDA NextGen Energy grant funds with non-state funding sources; (10) and,
6. Whether a project is at least 60 percent owned and controlled by farmers, as defined in Minnesota Statutes, section 500.24, subdivision 2, paragraph (n) or natural persons residing in the county or counties contiguous to where the facility is located. (10)

V. Instructions to Complete Application

For consideration in this funding round, applications **must follow the specified deadlines and format** provided in this Informal Solicitation.

Completing the Pre-Formatted Application

The applicant must complete the following:

- Page 1 summarizes the project.
  - Provide a brief description of the proposed project. A more detailed description is called for on page 2 (Summary of the proposed project).
  - **Grant Requested**: The maximum grant award is dependent on project type, and is limited to 50% of the total project cost, or $1,000,000 whichever is less.
  - **Matching Funds/value of In-Kind**: The applicant must identify funding matches for the total Project Cost
  - **Total Project Cost**: The Grant Requested plus the Applicant's Match equals the Total Project Cost.

- Pages 2-10 are to be used to respond in narrative form to the 6 numbered topics.
  - Respond to the topic in the numbered order.
  - All questions must be addressed. If not applicable, write NA and why it is not applicable to your proposed project.
  - Submit resolutions, letters of support or any other documentation as attachments. Reference such as documentation in your response narratives.

Application - 2008 NextGen Energy Grants

Application data are private or nonpublic data until grant applications are opened. Names, addresses and requested amounts then become public information. An entire application becomes public when an agency has completed negotiating the grant agreement with a grantee. Individual grant applicants do not have to provide the information requested on the application form. If you do not, we will not be able to consider your grant request. The only persons who will have access to your data during the time that it is protected are those permitted access by law, by your written consent, by a court order or by those department employees whose job duties require access.

PLEASE PRINT

Clear Fields

APPLICANT/ORGANIZATION NAME			
MAILING ADDRESS			
CITY		STATE	ZIP
CONTACT NAME	CONTACT TITLE		
EMAIL	PHONE		
FAX	APPLICANT'S WEBSITE	MATCH AS % OF TOTAL =	%
PROJECT TITLE (BRIEF PROJECT DESCRIPTION)			
GRANT REQUESTED: $	MATCHING FUNDS/VALUE OF IN-KIND: $	TOTAL PROJECT COST: $	

1. Is Applicant the sole source of Matching Funds for the proposed project? ❑ YES ❑ NO
2. Has the Applicant received funding obtained through the Minnesota legislative budgeting process, or financial assistance from any state administered program since January 1, 2006? ❑ YES ❑ NO *If yes,* are those funds to be used as match for this project? ❑ YES ❑ NO
3. When does Applicant expect to be able to complete the proposed project?
4. Are Applicant and any significant participant(s) in compliance with Minnesota's tax and environmental regulatory requirements? ❑ YES ❑ NO

To complete this section, refer to Section II. Eligibility - Eligible Projects.

The proposed project is most representative of the following NextGen Objectives (select one):

A. ( ) Build on and improve the technological capacity of those industries that will produce the next generation of biofuels. Such industries include those involved in the production of biomass-based fuels for transportation, heat and power; the pulp and paper sector; and other emerging technologies;

B. ( ) Use an integrated strategy that supports research and development, education initiatives, technology transfer, production incentives and market creation focused on next generation fuels;

C. ( ) Harness and support the state's renewable energy entrepreneurial spirit through policies that provide all interested parties the opportunity to evaluate and determine which technologies and business models are most efficient and profitable, and which best achieve the public interest;

D. ( ) Expand renewable fuel economic opportunities throughout all of Minnesota;

E. ( ) Create and retain local community investments in current and new bioenergy enterprises;

F. ( ) Promote creation and investment of Bioenergy technical and manufacturing support enterprises;

G. ( ) Strengthen the current biofuels industry, which includes corn-based ethanol and soy-based biodiesel, to ensure improving economic and environmental performance as the industry contributes to state energy policies and goals;

H. ( ) Ensure the efficient, innovative and sustainable use of energy and natural resources such as water and wood products; and the continued improvement in air quality;

I. ( ) Expand reliance on perennial crops that improve habitat and water quality while reducing soil water runoff and providing an effective means of storing carbon; and,

J. ( ) Provide greater energy self-reliance in the state by displacing the use of fossil fuels with energy conservation and the production and use of our homegrown renewable resources.

For MDA Administrative Use Only:

Grant ID number:

2008 NextGen Energy Grants Application

Provide a narrative for each information category. Refer back to "Section V. Instructions to Complete Application" as you complete the application. Use minimum of 11-point font.

Information Categories:

1. Pre-formatted table page, "Minnesota Department of Agriculture Application - NextGen Energy Grants 2008".

2. Summary of the proposed project (limited to one page) including:
   a. Project goal;
   b. Issue(s) being addressed;
   c. How the use of proposed innovative technologies, methods, or techniques will address NextGen Energy Objectives;
   d. Anticipated, quantifiable direct or indirect outcomes/benefits; and,
   e. Applicability/replicability of project elsewhere in Minnesota.

3. Applicant/Organization's History (limited to two pages) including:
   a. Experience and qualifications of applicant and significant partners providing technical expertise related specifically to the proposed project;
   b. Assets and resources available to support the project; need for State funding;
   c. Dates, amounts and purpose of previous grants or public funding received that are associated with the goal of this project;
   d. Ability to implement project in a timely fashion; and
   e. Contact information for significant partners (identify individuals or organizations other than the applicant that are proposed to receive grant funding, or to provide matching funds or other significant resources - cash or in-kind - such as labor, space, supplies, equipment, advertising, etc.).
4. Proposed scope of work (limited to five pages) including a breakdown of Tasks (steps), Timeline and Outcome needed to accomplish project goal and to quantify results of project. If applicant is responsible for providing measurable results of their own technology, it is strongly recommended that appropriate Tasks include independent verification of procedures and results.

5. Proposed Budget (limited to one page, in landscape or portrait format, 9 pt font minimum):
   a. Provide a breakdown of anticipated project costs, such as for labor cost, equipment described as called for in Tasks, supplies, travel, etc. by funding source.
   b. Use categories and sub-categories as needed to reflect activities specified in your Tasks.)

Category	Task 1		Task 2		Task 3		Task 4		Task 5		Project Totals	
	Grant	Match	Grant	Match	Grant	Match	Grant	Match	Grant	Match	Grant	
Sub-Totals												
Total by Task												

**Identify key personal assigned and their billing rate so that their responsibilities, cost and funding source are known. If match is provided through letters of commitment by partner organizations, their allocations must be identified in the budget.*

6. Attachments may accompany the application, common examples include:
   - Evidence of technical and economic feasibility of project;
   - Evidence of financial and technical capability of applicant;
   - Letters of commitment and match if proposed in budget; and
   - Resume(s) specific to qualifications needed for project.

REMINDERS

- Application must be submitted as a Word document or a PDF file.
- Attachments may be submitted as separate Word, Excel or PDF files. The names of such documents should clearly be identified with your proposal, and be referenced in the application.
- Application submittal, inclusive of the formatted application page, have minimum one-inch margins and 11-point font.
- All items on the formatted page and total of 6 information categories must be addressed. If not applicable to your proposed project, write NA and provide a brief statement as to why not applicable.
- If you are submitting Trade Secret Data please mark the data "Trade Secret" and submit a statement addressing the trade secret justification requirements in Minn. Statutes section 13.37 subd. 1(b).

Appendix C: 2008 NextGen Energy Board Activities

June 12: Farm Bill Overview, NextGen Energy Grant Status

Lisa Noty, USDA Rural Development provided an overview of the 2008 Farm Bill energy provisions. The Board also heard from Quinn Cheney, Minnesota Department of Agriculture and Mark Lindquist, Minnesota Department of Natural Resources on the NextGen Energy grant RFP and grants as well as relevant legislative issues.

August 12: Biodiesel Research and Production

The Board toured the Minnesota Soybean Processors facility in Brewster, Minnesota. The Board also heard from Dr. Pete Greuel, SarTec/Cat Fuels on Augsburg's MyGyan process; Jason Willette, Met Council Environmental Services and Bob Polta, Metropolitan Wastewater Treatment Facility on algae-to-fuel research projects; Dennis Timmerman and Doug Root, AURI on corn fractionation; and Chuck Neece, Central BioProducts on animal fats.

September 16: Review and Recommendation of NextGen Energy Grant Applications

A facilitated discussion was lead by Quinn Cheney, Minnesota Department of Agriculture and Mark Lindquist, Minnesota Department of Natural Resources on the NextGen Energy grant process and technical team recommendations.

November 18: Summary of NextGen Energy Grant Recipients, Pelletization and Co-product Utilization

The Board heard updates on NextGen Energy Grant recipients and reporting requirements. Alan Doering from AURI provided a presentation on pelletization and co-product utilization.