MINNESOTA DEPARTMENT OF AGRICULTURE

NextGen Energy Board

2014 Report to the Legislature

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Pursuant to Minn. Stat. 3.197, the cost of preparing this report was approximately $1,000.

Executive Summary

The NextGen Energy Board was created by the Governor and the Minnesota Legislature in 2007. By law, the Board's purpose is to explore policies and opportunities for the state "to most efficiently achieve energy independence, agricultural and natural resources sustainability, and rural economic vitality."[1] The Board is comprised of 20 members—including 8 who are appointed by the governor—from state government, the legislature and stakeholder groups.

In 2010 and 2011, changes to policies and the economic climate for biofuels at both the state and federal level led the Board to modify its scope to focus on three high-level goals: 1) increase the use of our state's bioenergy resources; 2) encourage energy self-reliance and security in the state; and, 3) promote environmental and economic sustainability in the production and use of homegrown renewable fuels. The Board's strategies and objectives were then based on these goals.

In 2008, the Board provided approximately $3 million in grants to eight bioenergy projects across the state. These projects ended by June 2011—five projects were completed in full while three projects were terminated early. In 2012, the Board awarded approximately $2.4 million to nine bioenergy projects, which were scheduled for completion by June 2013, many of those extended from three months to a year.

[1] Minn. Stat. 41A.105, Subdivision 3.

Introduction

This report is submitted pursuant to Minn. Stat. 41A.105, subd.3:

> **NextGen Energy Board; 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) examine the opportunity for biobased content and biobased formulated product production at integrated biorefineries or stand-alone facilities using agricultural and forestry feedstocks;
>
> (3) develop equity grant programs to assist locally owned facilities;
>
> (4) study the proper role of the state in creating financing and investing and providing incentives;
>
> (5) evaluate how state and federal programs, including the Farm Bill, can best work together and leverage resources;
>
> (6) work with other entities and committees to develop a clean energy program; and
>
> (7) report to the legislature before February 1 each year with recommendations as to appropriations and results of past actions and projects.

Background

Minnesota is a recognized national leader in policies and programs that promote bioenergy while ensuring local production benefits. The state was first in the nation to implement statewide 10 percent ethanol and 2 percent biodiesel blending requirements, as well as a producer payment program to incentivize homegrown ethanol production. Minnesota continues to lead with an increasing goal for biofuel and mandate for biodiesel in future years. Minnesota is also a national leader in E85 infrastructure with more than 350 fueling stations and 84 blender pumps for flex-fuel vehicles in use across the state.[2]

In recent years, the biofuels industry as a whole has enjoyed enormous support—coupled with significant challenges. The federal Energy Independence and Security Act of 2007 established the Renewable Fuel

[2] E85 is a blend of up to 85 percent denatured ethanol and 15 percent gasoline; flex-fuel vehicles are specially designed to run on gasoline or any blend of up to 85 percent denatured ethanol.

Standard (RFS2), which guarantees a market for current and future biofuels by mandating 36 billion gallons of renewable fuels by 2022. [3] Additional federal support for biofuels—such as grants, loans and tax breaks—have demonstrated further optimism at the national level. The national biofuels industry has experienced rapid growth among existing plants seeking to innovate into cellulosic[4] and other advanced biofuel developments.

At the same time, however, public perception of biofuels has waned with the emergence of debates about crops used for food versus fuel, land use, and other potential social and environmental impacts. In addition, cellulosic technology—while continuing to advance—is still not commercially viable or economically feasible at scale. Market and technological feasibility has also been called into question in terms of the availability of blender pumps for mid-level biofuel blends, the reliability of those fuels in conventional vehicles, and the logistics of transporting and storing large amounts of bulky biomass to cellulosic biofuel production sites. Declining perceptions coupled with the U.S. economy's slow recovery has led to a reduction in both state and federal support for biofuels, straining the current industry and hampering the development of advanced biofuels, especially here in Minnesota.

[3] P.L. 110-140.

[4] Cellulose is the main component of the cell walls of plants. Cellulosic materials that can be made into energy products include wood waste, corn stover (leaves, stalks, and cobs), native prairie grasses (switchgrass, miscanthus, etc.) and non-edible parts of plants, among others.

NextGen Energy Board Role and Composition

The Next Generation Energy Board was established in 2007 as part of the Next Generation Energy Act. The Board's role is to research and recommend how the state can invest its resources to most efficiently achieve energy independence, agricultural and natural resources sustainability and rural economic vitality.[5] The Board is specifically tasked with developing recommendations and building consensus for the development of "next generation" biofuels in the state, as defined in statute (see Appendix A).[6] The NextGen Energy Board was formed during a period of relative optimism and with a focus on the Minnesota market. However, the increased attention on biofuels and other biomass-based energy at the national level—both in terms of optimistic support and negative perception—presents a unique opportunity for the Board to hone its strategy and continue working to steer Minnesota in a positive direction.

The Board is comprised of 20 members, eight of whom were appointed by Governor Dayton in 2011:[*]

- Senator Dave Tomassoni
- Senator Dan Sparks
- Senator Torrey Westrom
- Representative Jean Wagenius
- Representative Joe Atkins
- Representative Joe Hoppe
- Commissioner Tom Landwehr, Minnesota Department of Natural Resources
- Commissioner Dave Frederickson, Minnesota Department of Agriculture
- Commissioner Katie Clark Sieben, Minnesota Department of Employment & Economic Development
- Commissioner John Linc Stine, Minnesota Pollution Control Agency
- Commissioner Mike Rothman, Minnesota Department of Commerce
- Teresa Spaeth, Agriculture Utilization Research Institute (AURI)
- Lissa Pawlisch*, Minnesota Institute for Sustainable Agriculture
- Amanda Bilek*, Great Plains Institute
- Thom Petersen*, Minnesota Farmers Union
- Wayne Brandt*, Minnesota Forest Industries
- Dick Hemmingsen*, University of Minnesota Initiative for Renewable Energy and the Environment (IREE)
- John Frey*, Minnesota State Colleges and Universities (MnSCU)
- Neal Feeken*, The Nature Conservancy in Minnesota
- Paul Stark*, Minnesota Farm Bureau

[5] 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 and 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.

[6] MS §41A.105.

[*] Denotes NextGen Energy Board members appointed by Governor Dayton.

NextGen Energy Board Strategic Vision

Strategic Vision

The NextGen Energy Board supports policies and programs for the production and use of bioenergy to replace fossil fuels and provide maximum benefit to the state's economy. Minnesota's bioenergy policies have created prosperity for Minnesota farming communities, improved air quality, reduced carbon emissions, displaced petroleum use and encouraged public acceptance of biofuels for widespread use. The NextGen Energy Board's vision promotes the continued improvement of existing biofuels industries and supports innovation in the next generation of bioenergy feedstocks and technologies while ensuring local benefits and sustainable solutions.

The NextGen Energy Board has identified three high-level goals that guide the objectives and strategies for meeting its strategic vision: 1) increase the use of our state's bioenergy resources; 2) encourage energy self-reliance and security in the state; and, 3) promote environmental and economic sustainability in the production and use of homegrown renewable fuels.

Objectives

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

1) To increase the use of our state's bioenergy resources:
   - Prioritize investments and incentives for fossil fuel replacements that capitalize on Minnesota's resources, talents and technologies while ensuring sustained benefits to the state.
2) To encourage energy self-reliance and security:
   - Strengthen Minnesota's current biofuel industries—including corn-based ethanol and soy-based diesel—to sustain first generation and increase next generation biofuels production;
   - Expand renewable fuel economic opportunities for Minnesota communities and individuals.
3) To promote sustainability:
   - Ensure the efficient, innovative and sustainable use of energy and natural resources as well as continued improvement in air quality;
   - Support the development of bioenergy feedstocks and systems;
   - Increase public awareness about the benefits of developing and maintaining biofuels in Minnesota.

Strategies

To help achieve the stated objectives, the Board adopted the following strategies.

1) To increase the use of our state's bioenergy resources:
   - Promote policies and programs for displacing fossil fuel use with energy conservation and the production and use of homegrown renewable resources.
2) To encourage energy self-reliance and security:
   - Build on existing biofuels industries to increase technological capacity for producing next generation biofuels;
   - Integrate research and development, education initiatives, technology transfer, production incentives and market creation focused on current and next generation fuels;
   - Create and retain local community and other investments in current and new biofuels enterprises;

- Create market-based policies that allow farmers, loggers, landowners, and producers to benefit economically from the next generation of bioenergy production.

3) To promote sustainability:
   - Encourage the evolution of current biofuels production technology toward processes that are more energy efficient, use less water and consume less fossil energy;
   - Develop sustainable production systems for bioenergy crops, crop residues and materials that minimize fossil and other resource inputs while maximizing environmental benefits.

Results of the Biofuels Advisory Task Force Report of 2013

Review of Legislative Charge

In the regular session of 2012, the Minnesota State Legislature directed the creation of an advisory group by the Department of Agriculture with the following charge:

> The NextGen Energy Board, established in Minn. Stat. 41A.105, shall include in its February 2013 report to the legislature an analysis of next generation biofuels that can be blended with gasoline or other energy sources. The report shall analyze research on next generation biofuel blends and information on federal approvals needed and the status of the federal approval for next generation biofuel blends, and make policy recommendations for updating Minnesota's biofuels mandates to reflect current industry practices. The commissioner of agriculture shall convene an advisory group to advise and assist the NextGen Energy Board in the analysis and report. Members of the group may include representatives of the next generation biofuels industry, the ethanol industry, persons with biofuels engineering or other biofuels expertise, suppliers of biofuels feedstocks or inputs, and other persons with applicable knowledge or expertise as designated by the commissioner.[7]

This report was included in the 2012 NextGen Energy Board Report to the Legislature.[8]

2013 Legislative Actions Based on Task Force Report

The major issues addressed by statute revision were the change from an ethanol-blend mandate with gasoline to a "biofuel" mandate, and a revision of the Petroleum Replacement Promotion goals.

Minn. Stat. 239.791 replaced the word ethanol with biofuel throughout. When specifically referencing ethanol the words "conventional biofuel" are now used. An introduction of other biofuels that can now be used to satisfy the blend with gasoline was specified in this table:

(1)	July 1, 2013	90 percent
(2)	January 1, 2015	80 percent
(3)	January 1, 2017	70 percent
(4)	January 1, 2020	60 percent
(5)	January 1, 2025	no minimum

Minn. Stat. 239.7911: Petroleum Replacement Promotion, was also changed based on recommendations of last year's advisory group report. New goals were set specified in the following table:

(1)	2015	14 percent
(2)	2017	18 percent
(3)	2020	25 percent
(4)	2025	30 percent

[7] Laws of Minnesota 2012, Chapter 244, Article 2, Section 81.

[8] The report can still be found in the NextGen Energy Board's page of the Minnesota Department of Agriculture's website: http://www.mda.state.mn.us/~/media/Files/news/govrelations/nextgenreport2013.ashx

In addition to the revision of blending goals, a Biofuels Task Force was created to assist the commissioners of agriculture, commerce, and the Pollution Control Agency in overcoming barriers to using greater biofuel blends with gasoline. This task force was formed with five of the current ten positions on the task force's representation specified in statute. The task force met for the first time December 11, 2013.

Other Legislative Changes in 2013

NextGen Energy Board Statutory Change

The NextGen Energy statute was changed to add language to "examine the opportunity for biobased content and biobased formulated product production at integrated biorefineries or stand-alone facilities using agricultural and forestry feedstocks"[9].

Definitions of "biobased content" and "biobased formulated product were also added to the statute in subdivision 1a.[10]

Change in Scope of NextGen Energy Grant Program

Language was also included in the Laws of Minnesota, Chapter 114, Article 1, Section 3, subdivision 3, to include Minnesota facilities producing biobased content and/or biobased formulated product to the scope of consideration for applications to the Minnesota Department of Agriculture Bioenergy and Biochemical Grant Program (aka NextGen Energy Program) for the funding round for FY2014.

[9] Laws of Minnesota 2013, Chapter 114, Article 2, Section 47.
[10] Minn. Stat. 41A.105 was changed in the Laws of Minnesota for 2013, Chapter 114, Article 1, Section 46 and 47.

NextGen Bioenergy and Biochemical Grant Program

With the upcoming funding cycle for FY2014 NextGen Grant round, the summary of the 2008 Grant Program has been included in this year's report to give historical background for the reader.

The 2008 Grant Program

The 2007 Minnesota Legislature appropriated $3 million for NextGen Energy grants to bioenergy projects. Projects awarded during the first cycle were completed or terminated by June 2011, when the appropriation expired. The following describes the final status of each project.

Central Minnesota Cellulosic Ethanol Partnership – Little Falls

The Central Minnesota Cellulosic Ethanol Partnership (CMCEP) was awarded $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. In September 2010, SunOpta—the primary partner on the project—merged with Mascoma Corp.; Mascoma continued to conduct work and report to MDA in accordance with the grant agreement. CMCEP issued its final report to the Board in May 2011, indicating that the project would be feasible at the Little Falls site. The report included milestones for construction start in May 2012 and production in November 2013; however, the NextGen grant only covered the feasibility study portion of the project.

Chippewa Valley Ethanol Company –Benson

The Chippewa Valley Ethanol Company (CVEC) was awarded $700,000 to introduce new biomass gasification technology to its approximately 48-million-gallon-per-year corn ethanol plant, but commercialization of the process was significantly delayed due to the drastic reduction in natural gas prices beginning in mid-2008. In January 2010, the NextGen Board approved a request from CVEC to reallocate grant funding to studying densification of biomass char, a byproduct of gasification. CVEC began densification trials in 2010, but ultimately determined that the project could not be completed within the grant timeframe. CVEC's grant contract with the State of Minnesota was mutually terminated. Approximately 5 percent of grant funds were expended with the remainder returned to the general fund.

Minnesota Valley Alfalfa Producers –Raymond

The Minnesota Valley Alfalfa Producers (MnVAP) were awarded $400,000 to demonstrate more efficient pelletizing of biomass using specialized technology 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. MnVAP successfully completed their project in June 2011 when the final equipment was delivered and installed/fabricated.

Rick Neuvirth Farm –Elkton

The Rick Neuvirth Farm was awarded $220,000 to construct and install an anaerobic digester and electric generator to produce and use biogas, heat and electricity. Throughout 2009 the Neuvirth Farm conducted feedstock assessments and began preliminary engineering and integration work through site design and equipment specifications. However, due to adverse economic conditions and the loss of several sows from local diseases, Neuvirth Farm suspended the project for an undetermined length of time. The grant contract between the State of Minnesota and the Neuvirth Farm was mutually terminated in August 2010; no grant funds were expended and all were returned to the general fund.

Northern Excellence Seed –Williams

Northern Excellence Seed was awarded $200,000 to construct a 100-kilowatt-per-hour gasifier that demonstrates the viability of burning waste biomass such as grasses to produce electricity. The project was completed in 2010 with an initial startup of the gasifier and successful syngas production. Additional equipment and issues are required for full-time operation of the system.

University of Minnesota Department of Forestry – St. Paul

The University of Minnesota's Department of Forestry was awarded $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 Department of Forestry completed the project and delivered its final report to the NextGen Board in October 2010.

Central Lakes College Ag Center –Staples

The Central Lakes College Ag Center (CLCAC) was awarded $100,000 to establish and evaluate perennial energy crops (four native prairie plants and camelina for biodiesel). CLCAC issued a final report in June 2011, with results indicating that wheatgrass produced the highest yields and miscanthus was most able to withstand cold-weather conditions. Economic modeling on camelina suggested that using the most cost effective strategies would yield a price of $2.39 per gallon of biodiesel. CLCAC has entered into additional partnerships to continue this work with the University of Illinois and SarTec and EverCat fuels.

University of Minnesota Morris

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 was awarded $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. Due to technical difficulties, installation and operation of the biomass gasifier at Morris was put on hold while the campus continued feedstock processing and densification trials. The project was terminated in February 2011 with no grant funds expended and all returned to the general fund.

The 2011 Grant Program

Grant Proposal Development

The Minnesota Department of Agriculture ultimately funded nine projects for a total of $2.4 million. These projects were chosen based on the degree to which they met the eligibility requirements and criteria established in the RFP; by law, the Board and Commissioner are also required to make a "good faith effort" to choose projects that represent a variety of projects and that are widely distributed across the state.

Grant Review and Recommendations

In September 2011, MDA issued the RFP; applications were due on November 4th. Throughout the open application period, MDA received numerous questions that were posted and answered in an FAQ posting on MDA's website. MDA received a total of 18 eligible applications. A technical review team was convened that included one bioenergy staff person from each of the state agencies represented on the NextGen Board (the Minnesota Departments of Agriculture, Employment and Economic Development, Commerce, Natural Resources and the Pollution Control Agency). The members of the technical team spent approximately two weeks reviewing and scoring proposals independently, based wholly on the

criteria set out in the RFP. The team then convened for meetings over a period of three days to review proposals as a group, adjust scores as needed to determine a final group score, and finally rank the proposals in order of those that best met the criteria.

In late November, the technical team provided an electronic summary of its findings to the NextGen Board; Board members then had one week to review the summary and request full proposals for further review. On December 8th, the Board met to hear detailed input from the technical team and make its final recommendation to the Commissioner.[11] The team provided a broad overview of all project proposals, followed by a more detailed presentation on the top-ranking proposals. The team suggested that eight proposals best met the criteria and should be considered by the Board for funding. The Board voted to recommend those eight projects to the Commissioner; then, based on grant negotiations between those eight grantees and MDA, the Board voted to give the Commissioner authority to fund subsequent projects should funds remain. In the end, a ninth project was added by the Commissioner.

FY 2012 Grant Projects

Koda Energy LLC, Shakopee, MN - $480,000

The funds paid for construction of a biofuels staging and processing facility in Scott County. The facility aggregates and processes (drying, size reduction) various biomass fuel stocks for use in Koda's CHP biomass facility located seven miles from this new facility. Fuel stocks include urban wood waste (contracts are place with the cities of Minneapolis and Plymouth), agri-byproducts and potentially dedicated energy crops. Koda completed spending on their project, with all equipment purchased for the staging facility operational by the end of grant period end of June 30, 2013.

West Central Renewable Ammonia Development, Bloomington MN - $450,000

The grant is to fund a second stage feasibility study for a proposed biomass-to-ammonia plant near Willmar, MN. This project is slated to convert 95,000 tons of biomass to 45,000 tons of anhydrous ammonia annually. The feasibility study will encompass the tasks of biomass supply and crop development, site preparation, vendor pricing and selection, process integration, marketing development, and financial analyses. The project was extended to June 30, 2014 before the original close date of June 30, 2013. As of yet no funds have been expended on this project. Project lead Cecil Massie has continues to work on obtaining matching funds for the project before progressing on tasks associated with the project without filing for reimbursement.

SarTec Corporation, Anoka, MN - $438,000

SarTec invented the Mcgyan technology that is used by Ever Cat Fuels, a three million gallon capacity biodiesel production plant in Isanti, Minnesota. SarTec designed and constructed a smaller scale, on-farm processing plant using the existing Mcgyan technology. The unit was tested and operated by SarTec on the pilot site in Isanti, Minnesota. The unit was displayed at the Minnesota State Fair for 2013. The final report was submitted just short of the end of calendar year 2013, with all funds being expended.

Al-Corn Clean Fuel, Claremont, MN - $248,000

Al-Corn researched the integration of second-generation biofuels production within their existing and/or an expanded ethanol plant. In partnership with JetE of St. Paul, the facility would produce on spec renewable jet and/or diesel fuel (made from a mix of crop oil and animal fats) in addition to corn ethanol. The results can be used provide a production roadmap that other ethanol producers can also use. Work

[11] By law, the Board recommends projects to the Commissioner of Agriculture; the Commissioner makes the final decision on projects that receive funding.

was completed for the project on time with 97% of the project funds expended, with the rest returning to the general fund. The recommendation at the time of the report was that the process was not feasible due to the cost of feedstock.

Renville Renewable Energy LLC, St. Paul, MN - $258,000

Funds support the development of Phase 2 costs for an anaerobic digester and associated systems located adjacent to a poultry facility in Renville. The project proposes to use multiple waste streams - both agricultural processing and production wastes - collected from the Renville area as co-digestion material. Biogas is to be cleaned to the standard of pipeline grade natural gas. Also included in the study is the production of nutrient-rich liquid and solid byproduct (crop nutrients) from the digester effluent. Work was completed on the project before the end of calendar year, 2013, with the final request for reimbursement still under advisement. The project showed feasibility for the Renville site, with construction to begin before the close of calendar year 2014.

Northern Excellence Seed LLC, Williams, MN - $200,000

This project builds on the installed 150-kW biomass gasification unit already installed on Northern Excellence's Williams site. The award will help make this system operational using the company's seed screenings. Syngas from the gasifier will provide the energy to produce electric power that will be sold to the grid. On June 29, 2012, Brent Benike, project lead sent notice that the grant money was being returned. A problem securing matching funds was cited as the reason for abandoning the project..

Central Lakes College and Ag Energy Center, Staples, MN - $240,000

This grant award at Central Lakes College is a continuation of previous funding (including NextGen 2008). Various oilseed crops (camelina, spring canola, winter canola, high oil soybeans, sunflowers) or planting methods (camelina/soybean double cropping) were grown and converted to biodiesel at the site using small-scale processing technology. Feed trials were conducted using the meal products created from oil extraction. A commercial planting of miscanthus, the winner of CLC's biomass crop trials, will be established, harvested and processed for biofuel. As of the end of calendar year 2013, the project is complete with the final report and request for reimbursement having been submitted, with final details on project spending still needed before the release of final funds. Once that document requested is received, the entire project fund will be expended.

Jerry Jennissen, Jer-Lindy Farms, Brooten, MN - $137,000

The funds will be used to improve operation of the current anaerobic digestion system on the farm. The system in place has been operational since 2008. Some of the improvements include use of additional substrate to improve gas production, an innovative genset design to improve overall efficiency in output of electricity to the grid, and improved quality of the digester's cattle bedding co-product. Unforeseen technical difficulties have presented obstacle to the achievement of project goals for the dairy, specifically in the task of electrical production. Eighty-six percent of the project funds have been expended. The final project end date was extended to June 30, 2014.

Rural Advantage, Fairmont, MN - $72,000

The grant was to fund a Phase 1 feasibility study and business plan to assist Prairie Skies Biomass Co-op in developing operational procedures, membership policies and feedstock contracts for a 300 ton/day torrefaction facility in Madelia, MN. The facility is to convert raw agricultural biomass to an advanced biofuel to be sold to offsite markets. The project was abandon shortly after the end date of June 30, 2013, with 35% of the project funds returned to the general fund.

University of Minnesota: Natural Resources Research Institute, Duluth, MN - $77,000

Funding was granted to this project at the Board meeting in August, 2012, after reallocation of funds from the withdrawal of the Northern Excellence project was accepted. The project is investigating the use of hydrothermal pretreatment techniques to produce value-added biofuels from Minnesota biomass. Hydrothermal pretreatment makes use of compressed hot water. The process is hoped to improve the characteristics of the biomass in many important, financially advantageous ways. Various Minnesota biomass types, including wood species, ag crops and ag residues are being investigated. Final payment on this project is held pending the submission of the final report.

Grant Management Process

MDA is responsible for overseeing and monitoring the NextGen Energy Grant Program. MDA follows the State of Minnesota's grant monitoring guidelines; it also employs the Department's own policies and procedures.[12]

Progress and Changes in the 2011 Grant Program

On June 29, 2012, Northern Excellence Seed advised the MDA that they would not be pursuing their grant project. Options were drawn up for consideration by the NextGen Board that looked at funding additional projects by going to the next projects from the original scoring ranks, or distributing funds to projects that were not fully funded. At the August 16 meeting, the decision was approved to fund the next two projects on the list, the University of Minnesota – Natural Resources Research Institute and Environmental Technologies. The remaining funds from the Northern Excellence project were given to Central Lakes College Ag and Energy Center, the last project to be funded with additional funds that had remained in February.

On November 21, 2012, Environmental Technologies informed the program administrator that they were unable to secure match funding for their project since conditions had changed since the original request for proposal submission. Because of the late stage of the grant projects (with projects needing to be complete by June 30, 2013) it was suggested to the Board that the funds returned be offered equally to the four projects that were not fully funded. One of those four projects, West Central Renewable Ammonia Development declined the extra funding leaving the funds remaining to be distributed between the other three projects. This decision was affirmed at the January 10, 2013 Board meeting.

As the June 30, 2013 contract deadline approached, six of the nine projects requested extension to the timeline of their contract with the State. In the end, 2 of the projects were extended through September 30, 2013, 2 extended to December 31, 2013, and 2 extended to June 30, 2014, which was the latest time which projects under the original appropriation could be extended.[13]

Progress for individual projects is listed in the previous section. At this writing 40.8% of the total funds encumbered (almost $1 million of the $2.4 million encumbered) have been claimed.

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[12] See the Office of Grants Management's page for Minnesota Grants Management Policies and Statutes.

[13] M.S. 16A.28, Subd. 6, states that "Encumbrances for grants issued by June 30 may be certified for a period of one year beyond the year in which the funds were originally appropriated. Services rendered under grant contracts may occur during the certification period." The NextGen appropriation made in 2011 for the 12-13 biennium said "This [$2.5 million]...appropriation…is available until June 30, 2013" so "the year in which the funds were originally appropriated" would be the year ending June 30, 2013 for those we extended to 6-30-14. They just had to encumbered by 6-30-13 in order to get that extra year.

The 2013 Grant Program

Grant Proposal Development

In the regular legislative session of 2013 the statute for the NextGen Energy program, M.S. 41A.105, was amended to include the biochemical industry. Definitions were added to the statute for "biobased content" and biobased formulated product."[14] Subdivision 3(2) added the duty of "examin(ing) the opportunity for biobased content and biobased formulated product production at integrated biorefineries or stand-alone facilities using agricultural and forestry feedstocks"[15] to the others assigned to the NextGen Energy Board.

Funding for the NextGen Energy Grants was shifted to the Agricultural Growth, Research and Innovation (AGRI) program beginning in FY2014 from a separate allocation in 2008 and 2011. Money allotted from AGRI is to be $2.3 million for the current year. Projects will have through June 30, 2017, to use the money awarded through the current round of grants. The maximum award that can be obtained is $500,000. Grantees must supply a 50% match to their award, with 25% of their match portion needing to be some form of cash. The only exception to the $500,000 maximum grant award is the category for non-governmental entities preparing business planning for bioenergy/biochemical companies - these awards are capped at $150,000.

The Request for Proposals for the current grant round was released November 14, 2013. Submissions were due by January 10, 2014. An interagency technical review team is set to score and rank the submissions, after which the rankings will be supplied to the members of the NextGen Energy Board, which includes the Minnesota Commissioner of Agriculture, who holds the ultimate authority in awarding the grants. The Board is scheduled to meet Thursday, February 20, to make their recommendations to the commissioner of agriculture for the projects to be awarded funds.

Thirty-five applications were received in response to the RFP. After recommendations are made to the NextGen Energy Board, it is expected that the duration of February and March will be spent on educating grantees regarding reporting requirements and negotiations for the final wording of work plans and budgets for the final grant contracts.

[14] Laws of Minnesota 2013, Chapter 114, Article 2, Section 46.
[15] Laws of Minnesota 2013, Chapter 114, Article 2, Section 3, Subdivision 4.

Recommendations and Action Items

In 2010, the NextGen Energy Board adopted new recommendations to meet its strategic vision and objectives.[16] The Board did not update its recommendations in 2011 or 2012 in an effort to focus on the new grant program. The following provides a brief summary of the Board's recommendations and action items. There is no update to these from last year's report.[17]

The Strategic Vision/Recommendations and Action Items are currently under review by a subcommittee of the NextGen Energy Board. Their recommendations for revision will be presented to the Board as a whole in 2014. The subcommittee working on revision met on August 28 and October 2.

Recommendation #1: Coordinate efforts and programs in support of biofuels development

A. Action Item: Work across agencies to create an inventory of state, federal and utility programs and other organizations focusing on bioenergy development; outline roles and responsibilities; identify synergies and/or duplication; recommend potential partnering and/or coordination efforts/programs.

B. Action Item: Research programs and policies for biofuels development in other states and identify potential benchmarks or models for Minnesota.

C. Action Item: Build on and leverage Minnesota's assets and strengths in entrepreneurship and state agency resources.

Recommendation #2: Leverage federal programs that support the Board's strategic vision

A. Action Item: Align federal resources—such as federal Farm Bill grants and loans, and the federal Renewable Fuel Standard—with state programs and policies to capitalize on opportunities for Minnesota.

Recommendation #3: Improve public awareness/perception of biofuels through better and more current information

A. Action Item: Create a catalog of existing, current research and/or data on biofuels development and issues; identify knowledge gaps.

B. Action Item: Undertake research/data collection gaps identified by Action Item A.

[16] The Board's 2008 recommendations are no longer outlined here. Please reference reports from 2008, 2009 and 2010 for details and updates on those recommendations.

[17] Last year's (2013) NextGen Energy Board Report to the Legislature can be found on the MDA website: http://www.mda.state.mn.us/~/media/Files/news/govrelations/legrpt-nextgen2012.ashx. This report contains full updates to the Recommendations and Action Items.

C. **Disseminate current, sound science on biofuels issues such as land use change, energy balance, food and fuel, etc.**

Recommendation #4: Engage in efforts to overcome regulatory barriers in bioenergy development

A. **Action Item: Ensure state agency coordination throughout the permitting process.**

B. **Action Item: Establish outreach efforts to inform bioenergy developers of permitting requirements/processes at an early stage.**

C. **Action Item: Pursue legislative action to accelerate and facilitate the permitting process to avoid hindering bioenergy development in Minnesota.**

Appendix A: NextGen Energy Board Legislation

2013 Minn. Stat. 41A.105
(originally created by Minnesota Session Laws 2007, Chapter 45, Sec. 47, with revisions from 2013 reflected in this text)

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, 2014.

Laws of Minnesota 2013, Chapter 114

Sec. 3. DEPARTMENT OF AGRICULTURE …

Funds in this appropriation may be used for grants under this paragraph. The NextGen Energy Board, established in Minn. Stat. 41A.105, shall make recommendations to the commissioner on grants for owners of Minnesota facilities producing bioenergy, biobased content, or a biobased formulated product; for 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 for 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 materials via gasification or other processes. Grants are limited to 50 percent of the cost of research, technical assistance, or equipment related to bioenergy, biobased content, or biobased formulated product 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 provide certification on the technology and fuel source. Grantees must provide reports at the request of the commissioner. No later than February 1, 2014, and February 1, 2015, the commissioner shall report on the projects funded under this appropriation to the legislative committees with jurisdiction over agriculture policy and finance.

Appendix B: 2013-2014 NextGen Energy Board Activities

January 2013: Drop-in Biofuel Presentations; Review of Biofuels Advisory Task Force Report; Second Reallocation of 2011 Grant Funds.

Three Minnesota companies (all with some connection to current NextGen projects) presented to the Board: Luca Zullo for JetE of Roseville, Greg Kimball of Bepex in Minneapolis and Chris Goralski of Syngas Technology in Elk River. Assistant Commissioner Charlie Poster gave a summary of the Biofuels Advisory Task Force Report. Poster was the chairperson for the four meetings of the group. Kevin Hennessy (MDA) reported on a second redistribution of 2011 grant funds that had received comment from the Board via email.

July 2013: Legislative Update; Presentation from the renewable polymer industry; NextGen Grant Program FY2014 Overview; Request for Revision of Strategic Vision/Recommendations and Action Items.

Assistant Commissioner of Agriculture Charlie Poster reviewed the changes to statute brought about by last year's Biofuels Advisory Group Report and also changes to NextGen statute regarding addition of the Biobased polymer sector. Procedures were review by the Department of Administration's Grant Management team member Naomi Munzner. Tasks were proposed and approved for the formulation and release the Request for Proposal for the FY2014 grant funding cycle. Amanda Bilek, NextGen Energy Board member representing the Great Plains Institute received the Board's support to revisit and revise the NextGen Energy Board Strategic Vision/Recommendations and Action Items.