Green Economy Regulation & Incentive White Paper



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Green Jobs and Iowa's Future Economy: A White Paper

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Executive Summary

Policymakers have at their disposal a variety of tools, including regulation, tax incentives, grants, subsidized loans, and support of industry incentives (such as consumer rebates). This paper outlines federal and state incentives for renewable energy, biofuels, efficiency, brownfields, deconstruction, storm and waste water, and sustainable agriculture.

Renewable energy production incentives target such sources as wind, solar, geothermal, biomass, hydroelectric, and more. The most common incentive is tax credits. Credits outlined include the following:

- Federal Business Energy Investment Tax Credit
- Federal Renewable Electricity Production Tax Credit
- Federal Residential Renewable Energy Tax Credit
- State Renewable Energy Production Corporate Tax Credit
- State Energy Replacement Generation Tax Exemption
- State Wind And Solar Energy Equipment Sales Tax Exemption
- Renewable Energy Property Tax Exemptions
- Renewable Energy Grants
- State Alternate Energy Revolving Loan Programs (AERLP)

Biofuels include a wide range of fuels that are derived from biomass, including solid biomass, liquid fuels, and various biogases. They can often replace or supplement traditional combustible fuels. Biofuels – particularly ethanol – are a significant part of Iowa's agricultural economy.

- Federal Alternative Fuel Tax Exemption
- Federal Alternative Fuel Infrastructure Tax Credit
- Federal Cellulosic Biofuel Producer Tax Credit
- Federal Volumetric Ethanol Excise Tax Credit
- Federal Small Ethanol Producer Tax Credit
- State Biodiesel Retailer Tax Credit
- State E85 Retailer Tax Credit
- State Ethanol Blend Retailer Tax Credit
- Hydrogen Fuel Tax Credits
- State Biofuels Infrastructure Grants
- State and Federal Alternative Fuel Vehicle (AFV) Demonstration Grants
- Federal Vehicle Tax Credits

Efficiency of existing production modes is an important companion to development of new technologies. To that end, there are federal and state tax incentives to help offset taxpayers' investments in efficiency:

- Energy-Efficient Appliance Manufacturing Tax Credit.
- Federal Energy Efficient Commercial Buildings Deduction

- Federal Residential Energy Conservation Subsidy Exclusion
- Federal Residential Energy Efficiency Tax Credit
- Idle Reduction Equipment Excise Tax Exemption

There is an important link between efficiency and sustainability. The following are programs that incentivize both:

- Advanced Energy Research Project Grant
- Tribal Energy Program Grant
- Rural Energy for America Program (REAP) Grants - funds lots at state level
- Iowa Building Energy $mart Program (BE$T)

Brownfields are abandoned or underutilized sites where resale, redevelopment, and reuse have been hindered by environmental contamination concerns. Grayfields are industrial or commercial properties where infrastructure is outdated or otherwise a hindrance, and where improvements are out-of-date. There is a State Brownfield/Grayfield Tax Credit Program (and a recently-expired Federal Brownfields Tax Incentive)

Building deconstruction (as opposed to demolition) refers to a strategic *un*building of a structure, so that materials can be reclaimed and repurposed as appropriate. Two programs highlighted are Iowa Solid Waste Alternatives Program (SWAP) and Iowa Construction and Demolition Debris Recycling program.

Waste and Storm Water management are important in a state with such high potential for agricultural runoff. Cost-sharing measures and grants are common complicated intergovernmental relations (albeit sometimes complex) approaches, including the following:

- State Revolving Fund Loans (SRF)
- Conservation Innovation Grants
- Stormwater Best Management Practices (BMP) Loans
- Watershed Improvement Fund
- Wastewater Treatment Financial Assistance Program
- Community Development Block Grants (CDBG)

Sustainable Agriculture is increasingly emphasized within this highly subsidized sector of the economy. The Iowa Department of Agriculture and Land Stewardship regulates and coordinates dozens of programs to promote conservation of Iowa land, and to promote a sustainable approach to agriculture. Several are discussed:

- Conservation Practices No-Interest Loans
- Conservation Reserve Program (CRP)
- Conservation Reserve Enhancement Program (CREP) Constructed Wetlands
- Conservation Stewardship Program (CSP)
- Debt Cancellation Conservation Contract (Debt for Nature)
- Environmental Quality Incentives Program (EQIP)
- Grassland Reserve Program

- Iowa Financial Incentives Cost Share
- REAP Water Quality Protection Projects
- State Revolving Fund (SRF) Low-Interest Loan Program (Water Quality)
- Watershed Improvement Program
- Watershed Protection Program
- Wetlands Reserve Program (WRP)

Policy Considerations: Federal and state policymakers could work together to make the systems of incentives clearer and easier to understand and access. An area to address would be waste and pollution *prevention*, in addition to management. Iowa policy makers can obviously only address state level issues. To that end, the Iowa Department of Revenue (DOR) studied Iowa's tax incentives, and they made recommendations to the Legislature that bear further consideration. They suggested increasing transparency, ending transferability, conducting more cost-benefit analyses, implementing sunset provisions, capping uncapped credits, eliminating credits no longer serving their intended purpose, and eliminating the refundability provisions of large credits, especially the Research Activities Tax Credit (opting instead for carry-forward provisions). That report, including recommendations, is available here: www.dom.state.ia.us/tax_credit_review/files/TaxCreditStudyReviewReportFINAL1_8_2010.pdf.

Green Jobs and Iowa's Future Economy: A White Paper

Introduction

Because of its abundance of natural resources, human capital, and other assets, Iowa is in a unique position to be a leader in developing a sustainable "green economy." In order to make the most efficient use of these resources – in the forms of renewable energy, raw talent, and otherwise – it is essential to examine what incentives already exist, how they interact, and what can be done to promote strategic alignment of policy goals and approaches.

Here, we will examine the incentives and regulations governing a variety of aspects of "green" economic development. These include renewable energy production methods like wind and solar, as well as biofuels and conservation. Environmental cleanup, building deconstruction, recycling, and water management are also important issues, as is increasing the sustainability of the state's agricultural industries.

Policymakers have at their disposal a variety of tools, including regulation, tax incentives, grants, subsidized loans, and support of industry incentives (such as consumer rebates). Tax deductions or credits are subtractions from the amount of taxes owed, based on expenditures. They can be used to encourage businesses or individuals to spend money to grow the green economy. These tax credits reduce *taxes* directly (rather than reducing the amount of *income* that is taxed), which makes them powerful economic tools. Tax exemptions are reductions taken from taxable income *before* taxes are calculated, based on certain conditions being met. They typically represent exceptions to a rule, rather than a lack of taxation.

Iowa offers both "awarded" and "automatic" tax credits – a total of 35 tax credits, overseen by six state agencies. Awarded credits require application and approval for a specific award; automatic credits may be claimed by any eligible taxpayer. The Iowa Department of Revenue, in 2009, reported that tax credit awards increased between 2001 and 2007, but then declined again. That six-year increase was due to increased participation, new tax credit programs, and increased caps for some existing programs. A sizable part of the increase was also attributed to awards made to biofuel producers. The single largest corporate tax credit is the Research Activities Tax Credit, which will be discussed later.

The primary focus of this paper will be on tax-related incentives, but there are also grants and subsidized loans, as well as subsidies for industries to support incentives at the consumer level. Grants, of course, are money given to individuals, organizations, or businesses, conditional upon meeting certain criteria; often, they support conservation or research and development efforts. Loan programs seek to bring investments within reach by making credit available to those wishing, for example, to increase efficiency or update technology.

Financial incentives are not only from government to businesses; they are often extended to consumers by businesses. Energy and utility companies offer many types of incentives and rebates to promote investment in energy efficiency, and to offset the cost of new equipment. Dozens of cooperative and municipal utilities offer rebates for energy efficiency measures on new and existing buildings, including design elements, appliances, weatherproofing, and adding features like wind turbines and solar cells. There are also utility loan and grant programs available from municipal utilities and private companies.

Other tools, such as loan guarantee programs, are also widespread. They are beyond the scope of this paper, since they *indirectly* incentivize targeted economic activity by securing a loan, rather than by providing it, but they are popular, as well. The US Department of Agriculture and Department of Energy are among the agencies that participate in such programs.

There are many aspects to Iowa's green economy, most of them interrelated. While it isn't possible to truly separate energy production from efficiency, for example, or agriculture from biofuels, this paper has been organized primarily by activity incentivized, then by policy tool. Discussed here are renewable energy production (solar, wind, etc.), biofuels, energy conservation/efficiency, environmental cleanup (brownfields), building deconstruction and recycling, waste and storm water, and sustainable agriculture. After discussing these areas of regulation and incentive, we will conclude with potential gaps and other policy considerations.

Renewable Energy Production (Solar, Wind, Etc.)

"Renewable Energy" and "Alternative Energy" are functionally interchangeable terms that are generally understood to mean energy (electricity) derived from non-fossil fuel sources like coal and natural gas. Common examples are solar, wind, and geothermal (there are also several others). Tax incentives for businesses are commonly used to promote production of energy for use by consumers. They are also employed to encourage builders, landowners, and others to purchase and use devices like wind turbines or solar cells.

Federal Business Energy Investment Tax Credit. Also known as the ITC, this credit applies to a variety of renewable energy devices, including solar, wind, biomass, geothermal, fuel cells, combined heat and power (CHP)/cogeneration, etc. The credit is capped at 30% for solar, fuel cells and small wind, and at 10% for geothermal, microturbines and CHP. The taxpayer receiving the credit must be the *original* user or builder of the equipment. Further, the equipment must meet any performance and quality standards in effect at the time of purchase, and the energy property must be operational in the year in which the credit is first taken.

This credit was affected by the expansion of credits the Energy Improvement and Extension Act of 2008 (H.R. 1424), enacted in October 2008. That bill extended several existing credits, increased others, and established some new credits.

The American Recovery and Reinvestment Act of 2009 allows taxpayers eligible for the federal renewable electricity production tax credit (PTC) to take the federal business

energy investment tax credit (ITC) or to receive a grant from the U.S. Treasury Department instead of taking the PTC for new installations. The new law also allows taxpayers eligible for the business ITC to receive a grant from the U.S. Treasury Department instead of taking the business ITC for new installations. The Treasury Department issued Notice 2009-52 in June 2009, giving limited guidance on how to take the federal business ITC instead of the federal renewable electricity production tax credit.

Federal Renewable Electricity Production Tax Credit. The federal renewable electricity production tax credit (PTC) is a per-kilowatt-hour corporate tax credit for electricity generated by qualified energy resources and sold during the taxable year (such sources include landfill gas, municipal waste, biomass, geothermal, wind and several types of hydroelectric). Originally enacted in 1992, the PTC has been renewed and expanded numerous times, most recently in October 2008 and again in February 2009.

The 2008 legislation extended deadlines, expanded the list of qualifying resources, and changed the definitions of some resources and facilities. The 2009 legislation extended the in-service deadline for most eligible technologies by three years and allowing facilities that qualify for the PTC to opt instead to take the federal business energy investment credit (ITC) or an equivalent cash grant from the U.S. Department of Treasury. The ITC or grant for PTC-eligible technologies generally amounts to 30% of eligible costs.

The tax credit amount is 1.5¢/kWh in 1993 dollars (indexed for inflation) for some technologies, and half of that amount for others. Right now, that means 2.2¢/kWh for wind, geothermal, closed-loop biomass; 1.1¢/kWh for other eligible technologies. The credit applies to first 10 years of a facility's operation.

Federal Residential Renewable Energy Tax Credit. This federal tax credit for residential property applies to several different types of systems: solar-electric, solar water heating, fuel cells, small wind-energy, and geothermal heat pumps. Each of these has different specific rules (see http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=US37F&re=1&ee=1 for more details). The credit covers up to 30% of qualified expenditures. If that credit amount exceeds taxes owed, the excess may be carried forward to the next tax year. ARRA does not allow taxpayers eligible for the residential renewable energy tax credit to receive a U.S. Treasury Department grant instead of taking this credit.

State Renewable Energy Production Corporate Tax Credit. The state of Iowa offers per-kilowatt-hour (kWh) credits to qualifying facilities for energy production using wind, solar thermal electric, photovoltaics, landfill gas, wind, hydrogen, biomass, and anaerobic digestion. This tax credit is really two tax credits. One (§ 476B) exists for wind-only facilities, and another (§ 476C) for wind and other types of facilities (a facility can only qualify for one of these two programs). For further information, see http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=IA13F&re=1&ee=1.

- *§ 476B* offers a production tax credit of 1.0¢ per kilowatt-hour for electricity generated by eligible wind energy facilities, including electricity used for on-site consumption. The tax credit may be applied toward the state's personal income

tax, business income tax, financial institutions tax, sales and use tax, or energy replacement generation tax. This credit was formerly not available to facility owners that received the state's property tax exemption for renewable energy systems, the local option special assessment of wind energy devices, or the sales tax exemption for wind energy equipment. However, the April 2009 legislation removed this restriction effective for the 2008 tax year and thereafter. To qualify for the credit, a wind energy facility must be approved as eligible by the IUB, and must go into production between 2005 and 2012. There are no specific ownership criteria for individual projects

- *§ 476C*, however, does have ownership criteria. To qualify for the credit, a renewable energy facility must be at least 51% owned by specifically defined qualifying owners (mainly schools and hospitals), and must be approved as eligible by the IUB. As above, eligible facilities must be placed into service between 2005 and 2012. A production tax credit of 1.5¢ per kilowatt-hour is available for energy generated and sold by eligible wind energy generators and other renewable energy facilities, including biomass and solar.

Under the same law, Iowa offers $4.50 per million BTUs of biogas used to generate either electricity or heat for commercial purposes, or $1.44 per thousand cubic feet of hydrogen fuel generated and sold by an eligible renewable energy facility. These credits may be applied toward the state's personal income tax, business tax, financial institutions tax, or sales and use tax.

State Energy Replacement Generation Tax Exemption: This exemption promotes the production of electricity from landfill gas, wind, hydroelectric, and self-generators (a "self-generator" is an entity besides an energy or utility company that produces energy solely for its own use). The credit amounts to a 100% exemption for self-generators, landfill gas, and wind; and a reduced rate for large hydro.

Rather than imposing a property tax on energy generation facilities (power plants), Iowa imposes a replacement generation tax of 0.06 cents ($0.0006) per kWh on many forms of electricity generated within the state. However, under this tax credit, the Energy Replacement Generation Tax Exemption (regulations are contained in the Iowa Administrative Code (IAC) § 437A.6, § 437A.3(27), all energy generated by methane gas conversion property associated with a publicly owned sanitary landfill (i.e., landfill gas) and wind energy conversion property is exempt from the replacement generation tax, as are facilities controlled by self-generators (large hydroelectric generators also pay significantly less).

State Wind And Solar Energy Equipment Sales Tax Exemption. The total cost of wind energy equipment and all materials used to manufacture, install or construct wind energy systems are exempt from state sales tax (the exemption does not apply to equipment used to construct a plant to manufacture wind energy systems). The same is true for solar energy equipment. Iowa's sales tax is currently 6%. This exemption would not apply to local-option sales taxes assessed by local governments.

Renewable Energy Property Tax Exemptions. To promote more facilities generating renewable energy, the state and many local governments have opted to decrease taxes on property being used for that purpose.

- *Methane Gas Conversion*. Property that is used to convert waste to usable methane gas is exempt from the property tax (this means anything used to decompose waste and convert the waste to gas, collect the methane or other gases, convert the gas to energy, or to collect waste for these purposes). If other fuels in addition to methane are burned, the exemption is equal to the ratio of methane in the overall fuel mix. The claimant must file an application annually with the local assessor in order to claim the exemption. This is a 100% exemption for 10 years (or proportionate to methane burning).
- *Renewable Energy Systems*. The market value added to a property by a solar or wind energy system is 100% exempt from Iowa's property tax for five years. Eligible systems include active and passive solar (so long as the systems' "primary purpose" is to provide electricity for use on-site, even if they periodically export electricity).
- *Special Assessment Of Wind Energy Devices (Local Option)*. Any city or county may pass an ordinance assessing wind energy conversion equipment at a special valuation for property tax purposes. The taxpayer must also file for the special valuation. The amount varies by locale.

Renewable Energy Grants. The US Treasury makes cash grants available to taxpayers who would otherwise file for the federal business energy investment tax credit (ITC), but pursuant to ARRA conditions, opt not to do so. The grant amount is up to 30% of property that is part of a qualified facility, fuel cell property (up to $1,500 per 0.5 kW), solar property, or small wind property (up to $200 per kW), and 10% of all other property. Eligible projects include various solar, wind, biomass, waste fuel cells, geothermal, CHP, hydroelectric, and others. Only tax-paying entities are eligible for this grant; government bodies, non-profits, qualified energy tax credit bond lenders, and cooperative electric companies are not eligible to receive this grant. Partnerships or pass-thru entities for the organizations described above are also not eligible to receive this grant.

State Alternate Energy Revolving Loan Programs (AERLP): AERLP is funded by state's investor-owned utilities and administered by the Iowa Energy Center. It loans money to individuals and organizations to build renewable energy production facilities in the state. Eligible renewable energy technologies include solar, biomass, wind and small hydro. Participants receive a single, low-interest loan that consists of a combination of AERLP funds and matching lender-provided funds. Loans are available for up to 50% of project cost, up to $1,000,000 for most applicants, but $500,000 for non-rate regulated gas and electric utilities. Loans are 0% interest and have a maximum term of 20 years.

Biofuels

Biofuels like ethanol are a significant part of Iowa's agricultural economy. Biofuels

include a wide range of fuels that are derived from biomass, including solid biomass, liquid fuels, and various biogases. Bioethanol is an alcohol made by fermenting the sugar components of plant materials and is made mostly from sugar and starch crops. Cellulosic biomass, such as trees and grasses, are also used as feedstocks for ethanol production. Ethanol usually is used as a gasoline additive to increase octane and improve vehicle emissions. Biodiesel is made from vegetable oils, animal fats, or recycled grease. Biodiesel usually is used as a diesel additive to reduce levels of particulates, carbon monoxide, and hydrocarbons from diesel-powered vehicles. Biodiesel is produced from oils or fats using transesterification.

Federal Alternative Fuel Tax Exemption: Certain alternative fuels can be 100% exempt from federal fuel taxes, if they are used in a way the Internal Revenue Service (IRS) considers nontaxable. Examples include farm use, school buses, nonprofits, and state government. The IRS does, however, specifically exclude "liquid hydrocarbons derived from biomass" such as ethanol, biodiesel, and renewable diesel from the definition of an alternative fuel.

Federal Alternative Fuel Infrastructure Tax Credit: A credit is available to offset the cost of installing alternative fueling equipment. The credit can be up to 50% (to a maximum of $50,000), for each location. Consumers may receive up to $2,000. The maximum credit amount for hydrogen fueling equipment placed into service until 2015 is $200,000. In this case, qualified alternative fuels are natural gas, liquefied petroleum gas, hydrogen, electricity, E85, or diesel fuel blends containing a minimum of 20% biodiesel.

Federal Cellulosic Biofuel Producer Tax Credit: Biofuel producers are eligible for a tax incentive for each gallon of cellulosic biofuel sold (that term is defined as liquid fuel produced from any lignocellulosic or hemicellulosic matter that is available on a renewable basis, and meets U.S. Environmental Protection Agency fuel and fuel additive registration requirements). The credit varies per fuel, but is capped at $1.01 per gallon for cellulosic biofuel; $0.46 per gallon for ethanol, and $0.41 per gallon if the biofuel is not ethanol (if the cellulosic biofuel also qualifies for alcohol fuel tax credits). This incentive is allowed as a credit against the producer's income tax liability.

Federal Volumetric Ethanol Excise Tax Credit (VEETC). Ethanol blenders may be eligible for a $0.45 tax incentive per gallon of pure ethanol they mix with gasoline (as long as it also then sold or used). The incentive must first be taken as a credit against the blender's fuel tax liability; any excess over this tax liability may be claimed as a direct payment from the IRS. This credit expires at the end of 2010.

Federal Small Ethanol Producer Tax Credit. Small producers (less than 60 million gallons) can take a smaller per-gallon credit: $0.10 per gallon of ethanol sold. The incentive applies only to the first 15 million gallons of ethanol produced in a tax year and is allowed as a credit against the producer's income tax liability. This credit, like the other ethanol credit, is expires at the end of 2010.

State Biodiesel Retailer Tax Credit. Through 2011, retailers whose diesel sales consist of at least 50% biodiesel blends containing a minimum 2% biodiesel are eligible for

a $0.03 per gallon tax credit on each gallon of biodiesel sold.

State E85 Retailer Tax Credit. "E85" is the term used to denote a mixture that is 15% gasoline and 85% ethanol. A tax credit is available to retail stations dispensing E85 for use in motor vehicles (taxpayers claiming the E85 tax credit may also claim the tax credit available for retail ethanol blends for the same gallon of fuel and tax year). The credit is $0.20 per gallon in 2010 and $0.10 per gallon in 2011. After 2011, the credit decreases by $0.01 each year to expire after 2020.

State Ethanol Blend Retailer Tax Credit. A counterpart to the biodiesel credit, this provides a credit for each gallon of *ethanol* that has been blended into gasoline sold (note that it is not per gallon of gas sold, but per gallon of ethanol blended into that gas, most often blended at 10%). Currently, the credit is $0.025-$0.065 per gallon of ethanol blended into gasoline, depending on volume. Retailers must meet annual renewable fuel goals to be eligible for the $0.065 credit (starting at 10% in 2009, increasing to 15% by 2014, and reaching 23% by 2018). The schedule is delayed by two years for retailers of gasoline with sales of less than 200,000 gallons annually (of any combination of biodiesel and ethanol). For retailers within 2% and 4% of meeting these goals, the tax credit will be $0.045 and $0.025, respectively, for every gallon of ethanol-blended gasoline sold.

Hydrogen Fuel Tax Credits. Ethanol, of course, is hardly the only alternative fuel for vehicles. Hydrogen fuel is also incentivized.

- *Hydrogen Fuel Excise Tax Credit*: A $0.50/gallon tax credit is available for liquefied hydrogen that is sold for use or used as a fuel to operate a motor vehicle. The incentive must first be taken as a credit against the entity's alternative fuel tax liability; any excess over this fuel tax liability may be claimed as a direct payment from the IRS. Eligible entities must be registered with the IRS.
- *Hydrogen Fuel Mixture Excise Tax Credit*: In addition to pure hydrogen, mixed hydrogen is also available for a $0.50/gallon tax credit. The same restrictions apply: it must first be taken as a credit against the alternative fuel tax liability, the blender must be registered, and excess over this fuel tax liability may be claimed as a direct payment.

State Biofuels Infrastructure Grants. The Renewable Fuel Infrastructure Program provides financial assistance to E85 and biodiesel retailers. Biodiesel distributors may apply for a cost-share grant for infrastructure upgrades and installations at biodiesel facilities. For the most common project, upgrading or installing E85 or biodiesel infrastructure, grants are capped at 70% of the project cost, or $50,000, whichever is lower. Amounts vary for other projects (see http://www.iowalifechanging.com/business/renewablefuels.aspx for more details).

State Alternative Fuel Vehicle (AFV) Demonstration Grants: The Iowa Department of Natural Resources awards demonstration grants to individuals who purchase vehicles that operate on alternative fuels, such as E85, biodiesel, compressed natural gas, electricity, solar energy, and hydrogen. Individuals may use grants to conduct

research connected with the fuel or the vehicle, and to purchase the vehicle if the Department of Natural Resources retains the title of the vehicle, the vehicle is used for research, and the proceeds from the eventual sale of the vehicle are used for additional research. Amounts vary. For further information, see http://www.afdc.energy.gov/afdc/laws/laws/IA.

Federal Vehicle Tax Credits. In addition to the tax credits for alternative energy production in buildings, there are several for alternative-fuel and high-efficiency vehicles.

- *Qualified Alternative Fuel Motor Vehicle (QAFMV) Tax Credit*: This credit incentivizes the purchase of alternative fuel vehicles, either new or converted to operate on an alternative fuel. Qualifying fuels include natural gas, liquefied petroleum gas, hydrogen, and fuel containing at least 85% methanol. Amounts are determined by the IRS when applicants file for the credit.
- *Light-Duty Hybrid Electric Vehicle (HEV) and Advanced Lean Burn Vehicle Tax Credit*: This tax credit, which expires at the end of 2010, is available for qualified light-duty HEVs and advanced lean burn technology vehicles. "Lean-burn technology vehicles" are passenger cars or light trucks with an internal combustion engine designed to operate using more air than is necessary for complete combustion of the fuel; they run on diesel fuel and injection. Credit amounts are determined by the IRS when applicants file for the credit.
- *Fuel Cell Motor Vehicle Tax Credit*: A tax credit is also available for fuel cell vehicles (including some medium- and heavy-duty vehicles). Credit amounts are up to $4,000 for light-duty; other weight classes, credits depend on vehicle weight.
- *Qualified Plug-In Electric Drive Motor Vehicle Tax Credit*: Purchases of plug-in electric drive motor vehicles are supported with this credit (the vehicles must draw propulsion using a traction battery with at least four kilowatt hours of capacity, use an external source to recharge the battery, weigh less than 14,000 pounds, and meet specified emission standards). A phase-out of the credit will begin in the second quarter following the calendar quarter in which a minimum of 200,000 qualified plug-in electric drive vehicles have been sold by a given manufacturer for use in the U.S. Currently (through 2011), conversions to electric are eligible for 10% of conversion cost up to $4,000. Additionally, a tax credit of up to 10% of the cost of qualified low-speed electric vehicles, electric motorcycles, and three-wheeled electric vehicles, not to exceed $2,500, is available through 2011.

Federal Value-Added Producer Grants (VAPG). These grants are available to help independent agricultural producers enter into or expand value-added activities, including innovative uses of agricultural projects, such as biofuels production (the most common use of the grant). Eligible applicants include independent producers, farmer and rancher cooperatives, agricultural producer groups, and majority-controlled producer-based business ventures. Participants may apply for either a planning grant or a working capital

grant, but not both. In addition, no more than 10% of program funds may be awarded to majority-controlled producer-based business ventures. Grants are awarded to projects determined to be economically viable and sustainable.

Conversations about sustainability necessarily intermingle energy source with energy use. Not only must we find ways to use less energy from toxic fossil fuels, we must find ways to use less energy, period. So discussion of incentives for alternative or renewable energy sources is nearly impossible to separate from discussions of increased efficiency. In addition to the narrowly focused grants and loans discussed with tax credits, there are many such programs aimed at promoting alternative energy side-by-side with energy efficiency.

Advanced Energy Research Project Grant. The U.S. Department of Energy established the Advanced Research Projects Agency - Energy (ARPA-E) in 2007. It received funding in 2009, via the American Recovery and Reinvestment Act (ARRA). It was created to fund projects that will develop transformational technologies and reduce the nation's dependence on foreign energy imports, reduce U.S. energy related emissions, improve energy efficiency, and ensure that the U.S. maintains its leadership in advanced energy technologies. ARPA-E addresses many program areas including vehicle technologies, biomass energy, and energy storage. Grant amounts vary by project. According to http://arpa-e.energy.gov/, there are currently no funding opportunities.

Tribal Energy Program Grant. The U.S. Department of Energy's (DOE) Tribal Energy Program promotes the development of renewable energy and energy efficiency technologies. The program provides financial and technical assistance, education and training for the evaluation and development of renewable energy resources and energy efficiency measures. The grant award may be used for household appliances, lighting, temperature controls, weatherproofing, solar systems, wind, biomass, geothermal systems, and more. The funding amount varies, and is awarded through a competitive process; however, no funding is currently available, according to DOE. Regarding DOE authority on tribal lands, the story at http://www.npr.org/templates/story/story.php?storyId=129303545 is timely.

Rural Energy for America Program (REAP) Grants. USDA's REAP promotes energy efficiency and renewable energy for agricultural producers and rural small businesses through grants and loan guarantees. Almost 90% of REAP funding is dedicated to competitive grants and loan guarantees for energy efficiency improvements and renewable energy systems. These incentives are available to agricultural producers and rural small businesses to purchase renewable energy systems (including systems that may be used to produce and sell electricity) and to make energy efficiency improvements. There are also grants for feasibility studies, energy efficiency, and energy technical assistance. Awards vary, but are limited to 25% of project cost, and loan guarantees may not exceed $25 million. The combined amount of a grant and loan guarantee may not exceed 75% of the project's cost. At least 20% of the funds available for these incentives will be dedicated to grants of $20,000 or less, to help smaller producers and smaller businesses.

Iowa Building Energy $mart Program (BE$T): Previously known as the "Iowa Energy Bank," this program loans money to public agencies and some non-profit organizations (schools, hospitals, local governments, and state agencies, for example). The program seeks to make budget-neutral energy improvements, by financing projects that can pay for themselves and repay the loans with savings. Eligible projects include solar systems, wind biomass, geothermal, weatherproofing, temperature and lighting controls, etc. The program *does not* provide direct project loans to participants; the financing of project costs takes place through an outside lender. To date, the majority of Iowa's school districts have participated, as have dozens of hospitals, private colleges, local governments, and state agencies.

Energy Efficiency/Conservation

Because of their efficiency, many new energy technologies go hand-in-hand with energy conservation. However, the practicability of widespread implementation of those technologies is limited. In the meantime, it will be important for existing structures to increase efficiency as much as possible. To that end, there are federal and state tax incentives to help offset taxpayers' investments in efficiency.

Energy-Efficient Appliance Manufacturing Tax Credit. This corporate tax credit is another that was established by the Energy Policy Act of 2005, and it was extended by the Energy Improvement and Extension Act of 2008. It applies to high-efficiency residential clothes washers, dishwashers, and refrigerators, produced in the U.S. Manufacturers may only receive these credits for the increase in production of qualifying appliances over a two-year rolling baseline. The credit is worth $45-$250, depending on appliance type and energy rating (see http://www.irs.gov/businesses/corporations/article/0,,id=208024,00.html for more detail).

Federal Energy Efficient Commercial Buildings Deduction. The federal Energy Policy Act of 2005 established a tax deduction for energy-efficient commercial buildings, which has been extended through 2013. The deductions are intended for building owners (new or existing), although tenants who make construction expenditures may also qualify. The credit covers efficiency measures, such as equipment and building insulation, water heaters, lighting and controls, chillers, furnaces, boilers, heat pumps, central air conditioners, caulking/weather-stripping, duct/air sealing, windows, doors, siding, roofs, and comprehensive measures. The amount of the deduction varies from $0.30 to $1.80 per square foot of building, depending on technology and amount of energy reduction. More information is available at http://www.efficientbuildings.org/about_the_provision.html.

Federal Residential Energy Conservation Subsidy Exclusion. This exemption is meant to promote energy conservation subsidies by utilities to consumers. This covers solar systems: water heating, space heating, and photovoltaics (which generate voltage, converting solar energy into electricity).

Energy conservation subsidies (direct or indirect; see http://codes.lp.findlaw.com/uscode/26/A/1/B/III/136) provided to customers by public utilities are non-taxable. If a taxpayer claims federal tax credits or deductions for the energy conservation property, the investment basis for the purpose of claiming the deduction or tax credit must be reduced by the value of the energy conservation subsidy (i.e., a taxpayer may not claim a tax credit for an expense that the taxpayer ultimately did not pay). The amount of this exemption is therefore equal to 100% of the subsidy extended to utility customers.

Federal Residential Energy Efficiency Tax Credit. The federal tax credit for energy-efficient home improvements was established by the Energy Policy Act of 2005 and was extended by subsequent legislation (including ARRA in 2009) to expire in 2010. The credit applies to energy efficiency improvements in the building envelope of existing homes and for the purchase of high-efficiency heating, cooling and water-heating equipment (for example, water heaters, furnaces, heat pumps, central air conditioners, insulation, windows, biomass-burning stoves, etc.). The credit is valid for 30% of all technologies, up to a maximum of $1,500.

Idle Reduction Equipment Excise Tax Exemption. Fuel will be conserved when engines idle less. The exemption applies to equipment that was determined by the Administrator of the EPA, in consultation with the Secretary of Energy and the Secretary of Transportation, to reduce the idling of the tractor at a motor vehicle rest stop or other location where such vehicles are temporarily parked or remain stationary. The devices and insulation are exempt from the federal excise tax imposed on the retail sale of heavy-duty highway trucks and trailers. The exemption also applies to the installation of qualified equipment on vehicles after the vehicles have been placed into service.

Environmental Cleanup (Brownfields)

Brownfields are abandoned or underutilized sites where resale, redevelopment, and reuse have been hindered by environmental contamination concerns. Grayfields are industrial or commercial properties where infrastructure is outdated or otherwise a hindrance, and where improvements are out-of-date. Acquisition of these sites can represent meaningful economic opportunity, particularly in community development, job creation, and increasing tax revenue.

Federal Brownfields Tax Incentive. This program expired in 2009. It was originally enacted as part of the Tax Relief Act of 1997 (more information is available from the EPA, including this factsheet: http://www.epa.gov/swerosps/bf/tax/ti_factsheet.pdf). While few federal programs explicitly target brownfields, several are readily applicable (see http://www.epa.gov/swerosps/bf/partners/2009_fpg.pdf), including the Brownfields Expensing Tax Incentive, New Markets Tax Credits, Low Income Housing Tax Credits, and Historic Rehabilitation Tax Credits.

State Brownfield/Grayfield Tax Credit Program. The Iowa Department of Economic Development's Brownfield Site Redevelopment Program provides assistance for

acquisition and cleanup of brownfield and grayfield sites. Qualifying projects can get tax credits for 24% of qualifying costs of a brownfield project (or 30% if the project meets green building requirements). Grayfield projects can get tax credits for 12% of qualifying costs (or 15% if the project meets green building requirements). Tax credits are available on a first come first served basis, with a maximum tax credit per project of $100,000. A 50% cost-share (up to $25,000) for environmental cleanups is also available. More information is available from the IDED at http://www.iowalifechanging.com/business/brownfields.aspx.

Building Deconstruction and Recycling

From time to time, it is necessary to do away with old buildings and reclaim the space for another purpose. Unfortunately, common approaches to demolition can create unnecessary environmental and health problems (from landfill waste, for example, or chemical contaminants). *Deconstructing* a building, rather than *demolishing* it, refers to a strategic *un*building of a structure, so that materials can be reclaimed and repurposed as appropriate. While this task is not easy, some government programs offer incentives and assistance.

Iowa Solid Waste Alternatives Program (SWAP). This DNR program aims to decrease the amount of solid waste generated and landfilled in Iowa. It does so, in part, by providing financing for building deconstruction, waste reduction, recycling, and education. The financial assistance takes the form loans: forgivable loans, 0% interest, and 3% interest. A 50% cost share is required through cash match and in-kind match. Any unit of local government, public or private group or individual is eligible to apply for program funds. Projects are selected through a quarterly competitive process, with emphasis placed on waste reduction, sustainability, and ability to replicate. Eligible projects would include waste reduction equipment and installation; recycling, collection, processing, or hauling equipment (including installation); development, printing and distribution of educational materials; planning and implementation of educational forums, workshops, etc.; purchase and installation of recycled content products; and salaries directly related to the project. Extra consideration is given to applications addressing large or hard-to-manage targeted waste streams, such as lumber, drywall, shingles, and carpet.

Iowa Construction and Demolition Debris Recycling. The state has begun more proactive measures to address the waste generated by construction and demolition (C&D) debris (wood, insulation, concrete, asphalt, brick, drywall, metal and shingles). This waste is responsible for a large portion – 16% (450,000 tons) – of landfilled material in Iowa each year. The Iowa DNR encourages project managers to set specific waste reduction goals for each project, and to engage a team of professionals experienced in environmentally sound design and construction practices. To minimize expense and environmental impact, they promote "Four R's": Reduce, Reuse, Recycle, and Renew. Activities included in "Reduce" are centered on design and planning: avoid waste, plan for flexibility, design with deconstruction in mind. "Reuse" is relatively straightforward: find used materials to incorporate into new projects, and salvage used materials prior to demolition. "Recycle" is

also straightforward: recycle as much of the remaining debris as possible. Finally, the "Renew" step calls upon designers to see if they can bring a "new life" to old materials by repurposing them for art, landscaping, etc.

The DNR has published model ordinances for local governments to use or adapt when regulating these activities. The model ordinances address deconstruction, relocation, demolition (after salvage efforts), demolition (ideally after recycling efforts), and new construction (emphasizing waste minimization).

Incentives -- A list of *potential* incentives (local and state, as well as business-oriented) is included in a Task Force report to the Legislature: http://www.iowadnr.gov/waste/pubs/files/taskfinal.pdf.

LEED Certification: Builders' efforts to manage waste materials qualify them for green building certification programs: LEED™ (Leadership in Energy and Environmental Design) awards projects one, two or three points for achieving a 50%, 75% or 90% recycling rates, respectively. A project can also earn one or two points for using salvaged, refurbished or reused materials for 5% or 10% of building materials respectively. Some waste reduction and recycling strategies (e.g., returning wastes to the site in the form of new products - renewing) can also qualify for additional innovation points if it has an educational component.

Storm and Waste Water

The main problem affecting Iowa's water quality is nonpoint source (NPS) pollution, and it is a serious challenge. Nonpoint source pollution happens when rainfall, snowmelt or irrigation water runs over land or through the ground and picks up pollutants and deposits them into streams, lakes or groundwater. Those pollutants include soil, bacteria, and nutrients (from farm fertilizers and manure). The area that nonpoint source pollution comes from is called a "watershed," which is an area of land that drains into a lake or stream. NPS control projects are primarily aimed at preventing and reducing agricultural pollutants (although there are also several projects addressing urban NPS issues).

Water regulation aims to improve water quality by controlling contaminants – for example, oil, fertilizers, construction sediment, lead, and solvents. The main regulation tool is discharge permits, which are required for facilities likely to affect runoff (for example, industrial, mining, and manufacturing facilities, water treatment facilities, waste treatment, storage, and disposal facilities, construction areas, etc.). In addition to regulation, there are also grants, loans, and other assistance for improving water quality by tending to these issues.

The federal Clean Water Act was amended in 1987 to include Section 319, which established the NPS Pollution Management Program. The Environmental Protection Agency (EPA), through the Section 319 program, provides states with grants to carry out NPS pollution control programs and projects. In Iowa, the DNR administers these funds.

State Revolving Fund Loans (SRF). Through a collaboration between the Iowa Department of Natural Resources and the Iowa Finance Authority (http://www.iowafinanceauthority.gov/en/water_quality_programs/wastewater_treatment_financial_assistance_program/), low interest loans are available for drinking water and wastewater treatment infrastructure improvements and non-point source water quality projects. These loans can be used in conjunction with other programs, and many are co-funded with Community Development Block Grants, IFA wastewater assistance grants, or federal grants. There are four types of SRF loans: Planning & Design Loans, Construction Loans, and Source Water Protection Loans.

- *Planning and design (P&D) loans*: 0% interest for up to three years to cover engineering and project development costs. These can be rolled into an SRF construction loan, or paid off with other permanent financing.
- *Construction loans*: 3% interest rates, for up to 30 years.
- *Source water protection loans*: 0% interest. These loans may be used to acquire land and conservation easements, or fund source water protection practices.
- *Non-point source loans*: Available to public and private borrowers to address stormwater management, inadequate septic systems, landfill closure, lake restoration, soil erosion control, manure management, etc. Loan terms can be up to 10 years.

Conservation Innovation Grants. The Conservation Innovation Grant (see http://www.ia.nrcs.usda.gov/programs/2008Agreements.html#ConservationInnovation) program (CIG) is a 50-50 matching grant program administered by NRCS and IDALS. These grants use Environmental Quality Incentives Program (EQIP) funds at both state and national levels. The program is intended to stimulate the development and adoption of innovative conservation approaches and technologies. The program is promoted as benefiting agricultural producers by providing more options for environmental enhancement and compliance with Federal, State, and local regulations. Government organizations (non federal), nonprofits, Tribes, and individuals can apply.

Stormwater Best Management Practices (BMP) Loans. The Iowa Department of Agriculture and Land Stewardship (IDALS) Stormwater Best Management Practices (BMP) Loans are intended to encourage developers and cities to address non-point source pollution of Iowa streams and lakes through implementing stormwater quality BMPs (included in the Iowa Stormwater Management Manual, http://www.intrans.iastate.edu/pubs/stormwater/index.cfm). Eligible practices include the following: infiltration practices, soil quality restoration, native landscaping, detention basins, pond and wetland systems, grassed waterways, pervious concrete or asphalt, and modular paving systems. The loans are available to developers, cities, businesses and homeowners, starting at $5,000.

USDA Rural Development Water and Waste Loans. Administered by IDALS, the Rural Development program provides loans, grants and guarantees for drinking water, sanitary sewer, solid waste and storm drainage facilities in rural areas and towns of 10,000 people or less. Government organizations (non-federal), nonprofits, and Tribes may quality for assistance. Amounts, terms, and other specifics are determined by project details;

projects will be evaluated by population, economic need, and nature of work. More information about these loans is available at http://www.rurdev.usda.gov/ia/cp_util_ww-Dir.html).

Watershed Improvement Fund. The Watershed Improvement Review Board (housed in IDALS) offers grants to support for improving water quality. They target projects like municipal and industrial discharge, unsewered communities, and runoff from livestock, agriculture, storm water, and erosion. There is no minimum amount for local watershed improvement grants, and they are relatively short-term: up to three years.

Wastewater Treatment Financial Assistance Program. The Iowa Finance Authority administers this program, which provides grants to small communities affected by recent changes in the water quality standards. Also known as disadvantaged community grants, the money may be used to construct or upgrade wastewater treatment facilities. Eligible communities must be less than 3,000 in population and meet the current disadvantaged community criteria (where 51% of the population has low to moderate income).

Community Development Block Grants (CDBG). These grants are available to projects that seek to improve community services and promote long-term sustainability. CDBG funds are distributed through the Iowa Department of Economic Development's (IDED) Water and Sewer Fund, and can be used for a variety of projects including projects dealing with sanitary sewer system improvements, water system improvements, water and wastewater treatment facilities, storm sewer projects related to sanitary sewer system improvements, and rural water connections. Amounts and other details vary, but approximately $5 million dollars of federal CDBG funding is available annually.

Sustainable Agriculture

Agriculture is a policy area notorious for the amount of regulations, subsidies, and other incentives that influence production inputs, methods, and finances. The dollar amounts associated with each of these are difficult to calculate, because of their detailed, technical, and intertwining nature (many are also depend upon how much land is owned or cultivated).

The Iowa Department of Agriculture and Land Stewardship regulates and coordinates dozens of programs to promote conservation of Iowa land, and to promote a sustainable approach to agriculture. Their authority includes animal agriculture, grain, organic certification, soil conservation, and watershed protection, just to name a few. Many of the sustainability measures promoted are not directly agricultural in nature, but involve maintenance of the land on and near which farmers work. Conservation programs are often administered by Soil and Water Conservation Districts (SWCDs), which are governmental entities tasked with soil and water protection, public education, farmer and community assistance, wildlife preservation, and fund management.

An extensive (although not comprehensive) list of conservation practices incentives is available from IDALS (www.iowaagriculture.gov). Several programs are highlighted here.

Conservation Practices No-Interest Loans. In order to promote permanent soil conservation practices, IDALS facilitates 0% interest loans to cover the costs of terrace construction, waterways, erosion control, and other practices. The loan amount is capped at $10,000 for a 10-year period.

Conservation Reserve Program (CRP). This popular federal program seeks to implement conservation plans, in order to reduce erosion, increase wildlife habitat, and improve water quality. The program is funded through the Commodity Credit Corporation (CCC). CRP is administered by the Farm Service Agency, with NRCS providing technical land eligibility determinations, conservation planning and practice implementation. It provides assistance to farmers and ranchers to undertake conservation practices. It encourages farmers to convert highly erodible cropland or other environmentally sensitive acreage to vegetative cover with such practices as terracing, buffer strips, field borders, grassed waterways, adding trees and native grasses to land, and restoring wetland and prairie areas. Farmers receive an annual rental payment for the term of the multi-year contract. Cost sharing is provided to establish the vegetative cover practices. Eligibility, according to IDALS, varies by soil type and crop history. Participation is transferable with change in ownership. A Memorandum of Agreement provides for the implementation, cooperation, expectations, and responsibilities between the Natural Resources Conservation Service (NRCS), Farm Service Agency (FSA), and CCC in carrying out the CRP. This agreement is in effect until December 31, 2012. For further information, see http://www.nrcs.usda.gov/programs/crp/.

Conservation Reserve Enhancement Program (CREP) Constructed Wetlands. This program provides financial incentives to private landowners to develop and restore wetlands. Research indicates that CREP wetlands are effective at removing nitrates and the herbicides in tile drainage water from upper-lying croplands. Wetlands for CREP are strategically located and designed to remove agricultural runoff nitrate from cropland areas. Eligible sites must intercept significant tile flow without obstructing normal drainage. Landowners receive annual land payments for up to 15 years and reimbursement for costs of establishing wetlands and buffers. Easements to maintain the wetlands and buffers are required for at least 30 years.

Conservation Stewardship Program (CSP). This is a program to encourage environmental conservation by agricultural and forestry producers. CSP is a performance-based initiative. Two payment types are available: annual payment is available for new and existing conservation activities, and a supplemental payment is available to participants who also adopt a resource- conserving crop rotation. Eligible lands include cropland, grassland, prairie land, improved pastureland, rangeland, and nonindustrial private forestland. CSP is available to all producers (individuals, legal entities, joint operations, or Indian tribes), regardless of operation size or crops produced. It is possible to have more than one CSP contract but, no one may receive more than $40,000 per year or more than

$200,000 during a five-year period, for all combined CSP contracts. The contract limit is the same as the payment limit except in the case of joint operations, for which the contract limit is $80,000 per fiscal year and $400,000 over the life of the contract.

Debt Cancellation Conservation Contract (Debt for Nature). This program incentivizes conservation by partial debt cancellation (a potentially effective tool, since agricultural debt loads can be high). Producers with debt to the Farm Service Agency (FSA) can exchange their debt for a conservation easement (a legal agreement that restricts the type and amount of development allowed on the land). These easements may last for 10, 30, or 50 years. The amount of canceled debt depends on the length of agreement, market value, and acres involved in the agreement.

Environmental Quality Incentives Program (EQIP). Another popular program, EQIP, is a voluntary conservation program of the USDA Natural Resources Conservation Service (NRCS) that provides funding assistance to landowners to address environmental concerns. Funds are administered by NRCS, FSA, and SWCDs. Projects address issues such as agricultural and livestock runoff, manure management, pasture management, erosion control, and water quality improvement. For further information, see http://www.ia.nrcs.usda.gov/programs/stateeqip.html. For practices and payment rates, see ftp://ftp-fc.sc.egov.usda.gov/IA/Programs/2010IowaEQIPPracticeDescriptionsPaymentRates.pdf.

The majority of EQIP funds in Iowa will be distributed through the state's 100 NRCS field offices; to apply, potential participants contact local USDA offices. Low-income and beginning farmers, tribal farmers, and socially disadvantaged producers are eligible for a higher payment rate. Contract length is one year after the implementation of the last scheduled practice (up to ten years).

- *Organic Initiative*. The Food, Conservation & Energy Act of 2008 authorizes the United States Department of Agriculture (USDA) to provide $22 million in cost share assistance to producers and handlers of agricultural products in obtaining certification under the USDA National Organic Program. The Iowa Organic Program of the Iowa Department of Agriculture and Land Stewardship (IDALS) will administer the dissemination of these funds to eligible Iowa organic producers and processors. EQIP subsidizes transition to organic agriculture with special assistance for meeting conservation goals. In addition, producers who are already certified organic can receive assistance for applying new conservation practices, such as cover crops, nutrient and pest management, prescribed grazing, residue and tillage management, and seasonal high tunnel systems for crops.
- *Conservation Activity Plan (CAP)*. The Food Conservation and Energy Act of 2008 (FCEA) provides authority to use EQIP funds for comprehensive nutrient management plans and other plans that further the intent of the program. EQIP payments may be up to 75% of the estimated incurred cost of practice implementation, which for a CAP practice will be the development of a conservation plan meeting agency standards and requirements. Eligible producers may apply for CAPs that are available in their State through

application at their local NRCS office. EQIP payments are made directly to program participants for development of a CAP by a Technical Service Provider.

Grassland Reserve Program. This program seeks to protect grasslands, as well as to promote biodiversity. Participants voluntarily limit certain uses of the land while still grazing animals and producing some forage and seed. Private land is eligible for participation. This year, USDA is providing approximately $1 million to Iowa for GRP enrollments; application criteria weigh grazing operations, threat level to land, acreage, CRP participation, and biodiversity.

Iowa Financial Incentives Cost Share. SWCDs fund landowners' efforts to implement soil and water conservation measures to control erosion and reduce sediment. Examples include terraces, waterways, and erosion control structures. Agricultural producers on agricultural land who are SWCD cooperators are eligible. The participants must own a minimum of 10 acres and have a $2500 agricultural production income. SWCDs may fund up to 75% cost-share with up to a 20-year maintenance agreement.

REAP Water Quality Protection Projects. Resource Enhancement and Protection (REAP) provides funding for IDALS to work with SWCDs to improve water quality. The program provides cost-sharing to landowners for practices to target and prevent pollution problems. The SWCDs administer funding and set priorities for incentivized practices, including traditional erosion control practices, tree planting, forestry and native grasses, buffers, waste management, etc. This program, too, provides up to 75% cost-share and up to a 20-year maintenance agreement.

State Revolving Fund (SRF) Low-Interest Loan Program (Water Quality). The Revolving Loan Fund is an alternative to the traditional cost share programs. It allows a landowner to put a conservation practice on the ground today, with payments extended out over a longer period. These low-interest loans are available (from private lenders) for water quality projects in Iowa waterways. As with other water quality policies, practices include terraces, waterways, filter strips, buffers, field borders, windbreaks, erosion control structures, storm water management, and other conservation practices. Loan funds cannot be used for projects in concentrated animal feeding operations (CAFOs). The state policy limits loan terms to 15 years, and amounts range from $5,000- $500,000. For further information, see http://www.agriculture.state.ia.us/FieldServices/noInterestLoans.asp.

The state also has conservation-oriented Revolving Loan Fund. The 1983 State Legislature established the conservation practices revolving loan fund to provide loans to eligible landowners at no interest for the construction of permanent soil conservation practices. Authorized in Iowa Code Section 161A.71, eligible landowners may borrow up to $10,000 for a 10-year period. Repayment is made in 10 annual payments equal to 10% of the initial loan amount.

Watershed Improvement Program. Iowa's DNR provides funding for local groups to form Watershed Improvement Review Boards (WIRBs) and develop Watershed Management Plans, which identify water quality problems and potential solutions. These

groups also administer DNR Watershed Implementation Grants and provide resources to implement the plans (also see http://www.ia.nrcs.usda.gov/programs/guide.html). U.S. EPA funding for these grants is made available through Section 319 of the Clean Water Act. Funding for planning and/or conservation practices may be administered through contracts with IDALS Division of Soil Conservation, local SWCDs, or other agencies. SWCDs, County Conservation Boards, RC&Ds, cities, counties, utilities, colleges, solid waste agencies, and other nonprofits are eligible for participation.

Watershed Protection Program. This DNR program awards "Development Grants" to SWCDs for planning and increasing watershed management; it also awards "Implementation Grants" to assist in implementing the planned local watershed initiatives. Goals are to reduce soil erosion, protect drinking water, control flooding, and protect resources. Common practices include permanent soil and water conservation practices (terraces, basins, etc.), temporary management practices (no-till, nutrient management, etc.) as well as urban erosion and storm water management practices (silt fences, bio-swales, etc.). Funding of projects is provided through the Resource Enhancement and Protection (REAP) Program and the Watershed Protection fund with additional funding is available through the Iowa Department of Natural Resources from US Environmental Protection Agency, Section 319 funds. Local SWCDs administer the contracts. Amounts vary, with up to 75% cost-share (with up to a 20-year maintenance agreement). For more information, see http://www.agriculture.state.ia.us/FieldServices/waterQualityProtectionProjects.asp.

Wetlands Reserve Program (WRP). Aside from its human benefits, wetlands provide habitat for wildlife. This program seeks to restore wetlands previously altered for agricultural use by developing and implementing conservation plans. Landowners may restore wetlands with permanent easements, 30-year easements or 10-year contracts. Permanent easements pay 100% of the easement value of the land and 100% cost-share for restoration; 30-year easements pay 75% of the agricultural value and 75% cost-share for restoration; 10-year contracts pay 75% cost-share of restoration only. Permanent or 30-year easements are recorded with property easement deeds. To be eligible, land must be restorable to wetland conditions.

Further Policy Considerations

The review of incentives and regulations here, while thorough, is not exhaustive. There are tangles of programs, initiatives, and incentives to promote environmental responsibility and sustainability. There are several agencies at federal, state, and local levels with ambiguously-related jurisdictions (SWCDs, DNR, and IDALS, for example), administering funds through sometimes-complementary, sometimes-redundant programs (this is to say nothing of the cumbersome application process for *receiving* this assistance, and the staff time spent assisting applicants).

Perhaps the most important policy consideration regarding incentives is how incentives align with priorities. Are we offering the strongest incentives to work toward our highest priorities?

One area that appears to be experiencing an "incentive gap" is brownfield reclamation and building deconstruction. Because construction waste is such a high proportion of landfill waste, incentives in this area have the potential to be very effective at not just *managing* waste, but *preventing* it. Therefore, it would be a relatively more effective use of public resources to address waste and sustainability issues. Unfortunately, however, this is a somewhat new focus, and there is comparatively little policy promoting it (compared to, say, clean water). The federal incentives expired last year, and while there is financial assistance available on such projects, it is not *for* those purposes, per se, and therefore may not be as effective an incentive as a targeted one. Policymakers may want to consider implementing stronger incentives than cost-sharing – perhaps tax credits and/or exemptions – for such projects (the DNR has published recommendations from a related task force at http://www.iowadnr.gov/waste/pubs/files/taskfinal.pdf).

Before implementing any new incentives, though, a critical look at existing ones may be in order. In 2009, the Department of Revenue (DOR) studied Iowa's tax incentives, and they made recommendations to the Legislature that bear further consideration. They suggested increasing transparency, ending transferability, conducting more cost-benefit analyses, implementing sunset provisions, capping uncapped credits, eliminating credits no longer serving their intended purpose, and eliminating the refundability provisions of large credits, especially the Research Activities Tax Credit (opting instead for carry-forward provisions). That report, including recommendations, is available here: www.dom.state.ia.us/tax_credit_review/files/TaxCreditStudyReviewReportFINAL1_8_2010.pdf. What follows is a brief recap of the DOR's main recommendations:

- Transparency: Without knowing the details of the credits, it is difficult for taxpayers and lawmakers to know how effective tax credits are, and what their budgetary impacts are likely to be.
- Cost/benefit analyses: The state doesn't have a consistent method of calculating the likely return on their investments in tax credits. That would be one good way to make sure credits were doing more good than harm to the state's bottom line.
- Transferability: The DOR argues that it complicates the process and interferes with transparency to be able to transfer credits from one taxpayer to another. Currently transferable credits include Brownfield/Grayfield, Renewable Energy, and Wind Energy.
- Sunsetting: Most credits have no expiration date, but such a provision would facilitate periodic review for effectiveness, accountability, etc.
- Refundability: In some cases, taxpayers may receive refunds even without any taxes paid to the state. This may not benefit the state's budget. The DOR suggests eliminate this provision of Iowa's Research Activities Tax Credit for large companies.

- Caps: Many tax credits are uncapped and/or exempt from inclusion in the statewide cap, including Biodiesel Blended Fuel Tax Credit, E85 Gasoline Promotion Tax Credit, Ethanol Promotion Tax Credit, and the Research Activities Tax Credit. DOR suggests that all business-related tax credits currently not capped be included under the recently-implemented global budget cap.

These recommendations represent the views of the DOR's panel, which included representatives from several state agencies. They may not represent the only perspective, but they do warrant serious consideration by lawmakers.

APPENDIX 1: ARRA

ARRA is certainly the best-known recent example of green economy incentives. A far-reaching spending package created some new incentives, funded some existing ones, and drew additional attention to the practice of providing tax incentives to stimulate a desired direction of economic growth. One notable change is found in ARRA's section 1603, which allows some firms and individuals to receive payments in lieu of tax credits through 2013-14. Both within and outside of ARRA, there are several types of financial incentives to promote various aspects of the "green economy," most of which are offered by both state and federal governments – some are new as of this year (2010), with others dating back to the 1970s. These incentives include tax deductions, exemptions, and credits for corporations and individuals, as well as a wide variety of grant and loan programs. The focus of this white paper is government incentive and regulation, but it should be noted that incentives are not only government-to-business; utility companies are also extending incentives to consumers, for example, to buy more efficient appliances or to farmers for accommodating wind turbines on their land.

ARRA 2009 creates billions of dollars of grants for which states and other agencies can apply, for such things as:

- school renovation according to green building standards
- workforce employment & training (may or may not be "green" jobs)
- dislocated worker training in high growth and emerging industry sectors (efficiency and renewable energy are earmarked for 2/3 of the $750 million allocated)
- **Local Government Energy Efficiency Block Grants (EEBG):** $3.2 billion to help state and local governments make investments that make them more energy efficient and reduce carbon emissions. Of the $3.2 billion, $2.8 billion shall be distributed according to formula. 12% of these funds are given to the State Energy Programs. The remaining $400 million shall be awarded on a competitive basis.
- research and development of energy efficiency and renewable energy
- research to reduce energy imports
- home weatherization and related efficiency measures (through state and local programs)
- funding consumer rebates for higher-efficiency appliances
- manufacturing advanced batteries
- developing electric vehicles
- environmental cleanup and habitat restoration
- upgrade wastewater treatment facilities [these are actually revolving fund loans]
- brownfield cleanup
- hazardous waste site cleanup
- underground petroleum storage tank cleanup
- diesel emissions reduction
- rural water and waste disposal [grants and loans]
- wildland fire management, including forest health and urban forests
- watershed improvement/rehabilitation and flood prevention measures

- US Forest Service restoration and maintenance projects
- research for Department of Defense to use more renewable energy technologies
- high performance green buildings
- increasing efficiency of vehicle fleets
- ARRA also distributes extra money to existing programs/formulas.

Other ARRA "green economy" tax provisions

- **Advanced Energy Investment Credit.** The proposal establishes a new 30% investment tax credit for facilities engaged in the manufacture of advanced energy property. Credits are available only for projects certified by the Secretary of Treasury, in consultation with the Secretary of Energy, through a competitive bidding process.
- **New Markets Tax Credit.** Under current law, there are $3.5 billion of New Markets Tax Credits (NMTC) available for each of 2008 and 2009. The provision increases the available credits for 2008 to $5 billion and the available credits for 2009 to $5 billion.
- **Tax Credits for Energy-Efficient Improvements to Existing Homes.** The bill would extend the tax credits for improvements to energy-efficient existing homes through 2010. For 2009 and 2010, the bill would increase the amount of the tax credit to 30% of the amount paid or incurred by the taxpayer for qualified energy efficiency improvements during the taxable year. The bill would also eliminate the property-by-property dollar caps on this tax credit and provide an aggregate $1,500 cap on all property qualifying for the credit.
- **Plug-in Electric Drive Vehicle Credit.** The bill modifies and increases a tax credit passed into law at the end of the 110th Congress for each qualified plug-in electric drive vehicle placed in service during the taxable year. The credit is allowed against the alternative minimum tax (AMT). The bill also restores and updates the electric vehicle credit for plug-in electric vehicles that would not otherwise qualify for the larger plug-in electric drive vehicle credit and provides a tax credit for plug-in electric drive conversion kits.
- **Production Tax Credit.** Extends the placed-in-service date for wind facilities for three years (through December 31, 2012). The bill would also extend the placed-in-service date for three years (through December 31, 2013) for certain other qualifying facilities: closed-loop biomass; open-loop biomass; geothermal; small irrigation; hydropower; landfill gas; waste-to-energy; and marine renewable facilities.
- **Temporary election to claim the investment tax credit in lieu of the production tax credit.** Under current law, facilities that produce electricity from solar facilities are eligible to take a 30% investment tax credit in the year that the facility is placed in service. Facilities that produce electricity from wind, closed-loop biomass, open-loop biomass, geothermal, small irrigation, hydropower, landfill gas, waste-to-energy, and marine renewable

facilities are eligible for a production tax credit. The production tax credit is payable over a ten-year period. The bill would allow facilities that are placed-in-service in 2009 and 2010 to elect to claim the investment tax credit in lieu of the production tax credit.

- **Repeal subsidized energy financing limitation on the investment tax credit.** The bill would repeal this subsidized energy financing limitation on the investment tax credit to allow those that were financed with industrial development bonds or other federal, state or local financing program.
- **Removal of dollar limitations on certain energy credits.** The bill would repeal the individual dollar caps for qualified small energy property, qualified solar water heating property, and qualified geothermal heat pumps, making them eligible for an uncapped 30% credit.
- **Clean Renewable Energy Bonds ("CREBs").** The bill authorizes an additional $1.6 billion of new clean renewable energy bonds to finance facilities that generate electricity from the following resources: wind; closed-loop biomass; open- loop biomass; geothermal; small irrigation; hydropower; landfill gas; marine renewable; and trash combustion facilities. Of the total funding, 1/3 will be available for qualifying projects of state/local/tribal governments.
- **Qualified Energy Conservation Bonds.** The bill authorizes an addition $2.4 billion of qualified energy conservation bonds to finance state, municipal, and tribal government programs and initiatives designed to reduce greenhouse gas emissions.
- **Tax credits for energy-efficient improvements to existing homes.** The bill would extend the tax credits for improvements to energy-efficient existing homes through 2010. Under current law, individuals are allowed a tax credit equal to 10%)of the amount paid or incurred by the taxpayer for qualified energy efficiency improvements installed during the taxable year.
- **Tax credits for alternative fuel pumps.** The bill will increase the alternative refueling property credit for businesses that install alternative fuel pumps. For 2009 and 2010, the bill would increase the 30% alternative refueling property credit for businesses (capped at $30,000) to 50% (capped at $50,000). Hydrogen refueling pumps would remain at a 30% credit percentage, but will be increased to $200,000. In addition, the bill would increase the 30% alternative refueling property credit for individuals (capped at $1,000) to 50% (capped at $2,000).
- **Addition of Permanent Sequestration Requirement to CO2 Capture Tax Credit.** In 2009, Congress provided a $10 credit per ton for the first 75 million metric tons of carbon dioxide captured and transported from an industrial source for use in enhanced oil recovery, and a $20 credit per ton for carbon dioxide captured and transported from an industrial source for permanent storage in a geologic formation. Facilities were required to capture at least 500,000 metric tons of carbon dioxide per year to qualify. The bill would require that any taxpayer claiming the $10 credit per ton for carbon dioxide captured and transported for use in enhanced oil recovery

must also ensure that such carbon dioxide is permanently stored in a geologic formation.

- **Parity for Transit Benefits.** This provision would equalize the tax-free benefit employers can provide for transit and parking. The proposal sets both the parking and transit benefits at $230 a month for 2009, indexes them equally for 2010, and clarifies that certain transit benefits apply to federal employees.
- **Treasury Department Energy Grants in Lieu of Tax Credits.** The bill would allow taxpayers to receive a grant from the Treasury Department in lieu of tax credits. This grant will operate like the current-law investment tax credit. The Treasury Department will issue a grant in an amount equal to 30% of the cost of the renewable energy facility within sixty days of the facility being placed in service or, if later, within sixty days of receiving an application for such grant.
- **Innovative Technology Loan Guarantees:** $6 billion for loan guarantees that fund a variety of energy projects including next generation nuclear, clean coal, and renewables. The Secretary may limit the funding to only transmission, advanced biofuels, and renewable energy projects that can commence construction no later than 9/30/11. The biofuels projects must be at a pilot or demonstration scale and reduce life-cycle greenhouse gas emissions. Further, no more than $500 million can be spent on biofuels projects. The Secretary may consider the viability of, incentives for, and the importance of transmission projects, as well as whether it would help meet a state or region's environmental goals, when deciding whether to fund them. $10 million shall be transferred to the Advanced Technology Vehicles Manufacturing Program for administrative expenses.

APPENDIX 2: Utility Rebate and Loan Programs

Utility Loan Programs

- Interstate Power and Light (Alliant Energy) - Low Interest Energy Efficiency Loan Program
- MidAmerican Energy (Gas and Electric) - Residential EnergyAdvantage Loan Program

Utility Rebate Programs

- Energy Efficiency Rebate Programs
  - Combined Commercial/industrial and residential
    - Ames Electrical Department
    - Black Hills Energy
    - Cedar Falls Utilities
    - Interstate Power and Light (Alliant Energy)
    - Indianola Municipal Utilities
    - Linn County Rural Electric Cooperative
    - MidAmerican Energy (Gas and Electric)
    - Muscatine Power and Water
  - Commercial/industrial
    - Missouri River Energy Service Member Utilities
    - MidAmerican Energy (Gas and Electric) EnergyAdvantage
  - Residential rebates
    - Waverly Light & Power
- New Construction
  - Commercial/industrial
    - MidAmerican Energy (Gas and Electric)
    - provider ex 2
  - Residential
    - Back Hills Energy
    - Cedar Falls Utilities
    - Interstate Power and Light (Alliant Energy)
- Renewable Energy (rebates/rates are for both commercial/industrial and residential consumers)
  - Farmers Electric Cooperative (Kalona)
  - Independence Light & Power
  - Maquoketa Municipal Electric Utility
  - Preston Municipal Electric Utility
- Farm Equipment
  - Interstate Power and Light (Alliant Energy)

Sources

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