



# HARVESTING CLEAN ENERGY

## Federal Incentives & Resources for Renewable Energy Projects

**January 28, 2008**

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# State of the Renewable Energy Industry Nationally

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- **Drivers**

- High Fossil Fuel Prices
- Domestic Energy Security Concerns
- Environmental Protection
- Global Warming
- 2005 and 2007 Energy Bills
- Agricultural Bills have an Energy Angle
- Tax Incentives
- Renewable Portfolio Standards / RECs
- Green House Gas Legislation



# State of the Renewable Energy Industry Nationally *(Cont)*

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- **Challenges**

- Credit Crunch – Getting Financing
- Recession/Slow Down – Economic Stimulus Plan
- Construction Constraints/Opportunities
- Food vs. Fuel
  - **Corn based ethanol vs. cellulosic**
  - **Oil based biodiesel vs. algae based biodiesel**
- Infrastructure
- NIMBY
- Government Risk



# State of the Renewable Energy Industry Nationally *(Cont)*

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- **Outlook**

- Overall Public Perception is Positive/Everyone is Discussing
- Financing is available for good projects
- Tax & Government Incentives are available
- If it were easy, everyone would do it



# Overview of Federal Programs

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- **Financial and Other Incentives for Renewable Energy Projects**
  - Renewable Fuel Standard (2007 Energy Act)
  - Clean Renewable Energy Bonds (CREBs)
  - Modified Accelerated Cost-Recovery System (MACRS)
  - Production Tax Credit (PTC)
  - Renewable Energy Production Incentive (REPI)
  - Alternative Fuel Infrastructure Tax Credit
  - Volumetric Ethanol Excise Tax Credit (VEETC)





# Overview of Federal Programs

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- **Other Federal, Agricultural and Rural Programs which may Apply to Renewable Energy Projects**
  - **Business and Industry Guaranteed Loan Program**
  - **Rural Business Enterprise Grants (RBEG)**
  - **Rural Economic Development Loan and Grant (REDLG)**
  - **Section 9006 Guaranteed Loan**
  - **New Market Tax Credits (NMTC)**



# Energy Independence and Security Act of 2007

## *RFS by Year*

Year	Conventional Biofuel	Advanced Biofuel	Cellulosic Biofuel	Biomass-based Diesel	Undifferentiated Advanced Biofuel	Total RFS
2008	9.0					9.0
2009	10.5	.6		.5	0.1	11.1
2010	12	.95	.1	.65	1.2	12.95
2011	12.6	1.35	.25	.8	1.3	13.95
2012	13.2	2	.5	1	0.5	15.2
2013	13.8	2.75	1		1.75	16.55
2014	14.4	3.75	1.75		2	18.15
2015	15	5.5	3		2.5	20.5
2016	15	7.25	4.25		3.0	22.25
2017	15	9	5.5		3.5	24
2018	15	11	7		4.0	26
2019	15	13	8.5		4.5	28
2020	15	15	10.5		4.5	30
2021	15	18	13.5		4.5	33
2022	15	21	16		5	36





# Energy Independence and Security Act of 2007 *(cont.)*

- **Focus on Baseline Lifecycle Greenhouse Gas Emissions**
  - Means the average lifecycle greenhouse gas emissions for gasoline or diesel (which ever is being replaced by the renewable fuel) sold or distributed as transportation fuel in 2005
  - Lifecycle greenhouse gas emissions means the aggregate quantity of GHG emissions (including direct emissions and significant indirect emissions such as significant emissions from land use changes) related to the full fuel lifecycle.
- **Focus on Advanced Biofuels**
  - Non-corn starch based ethanol, derived from renewable biomass, and achieves a 50% GHG reduction
  - Cellulosic biofuels: renewable fuel derived from any cellulose, hemicellulosic, or lignin, that is derived from renewable biomass, and achieves a 60% GHG emission reductions
- **Incentives promoting energy efficiency and renewable energy equipment purchases**
  - Loans and grants for energy sustainability and grants for academic institutions (\$250 million in grants for each year 2009-2013, and \$500 million in loans for each year 2009-2013)
  - Loans for small businesses to purchase renewable energy systems (approx. \$15 million authorized)
  - Larger loans to help businesses develop energy efficient technologies and purchases



# Energy Independence and Security Act of 2007 *(con't)*

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- **Biofuels Grants**

- Grants for production of advanced biofuels (\$500 million available over period (2008-2015))
- Grants for biofuel production research and development in certain states (\$25 million for each of the years 2008-2010)
- University based research and development program relating to biofuels
- Renewable fuel infrastructure grants

- **Uncategorized Grants**

- EPA demonstration grant for local governments
- Energy efficiency and conservation block grants
- Solar energy curriculum development and certification grants
- High cost region geothermal energy grant program
- University based research and development program relating to carbon sequestration





# Clean Renewable Energy Bonds

- Established by 2005 Energy Act, CREBs as a financing mechanism for public sector/tax-exempt renewable energy projects (munis and electric co-ops).
- 0% interest rate - the borrower pays back only the principal of the bond, and the bondholder receives federal tax credits in lieu of the traditional bond interest.
- Tax credit funds are allocated by the Secretary of the U.S. Treasury Department.
- Original Allocation (Jan 1, 2006 – Dec. 31, 2007) - \$800 million. Over 786 applicants from 40 states applied for \$2.5 billion funds.
- 2008 Allocation, \$400 million of CREBs are allocated: \$250 million for cities/counties/tribes, and \$150 million for co-ops
- No funds for CREBs are currently allocated for 2009; however, Congress is considering allocating \$2.0 billion



# MACRS Depreciation

- Under the Modified Accelerated Cost-Recovery System (MACRS), business can recover investments in certain property through depreciation deductions.
- The MACRS establishes a set of class lives for various types of property, ranging from three to 50 years,.
- For solar, wind and geothermal property placed in service after 1986, the current MACRS property class is five years.
- 2005 Energy Act : fuel cells, microturbines, and solar hybrid lighting technologies are now classified as 5-year property.
- Ethanol plants typically claim “5 year property” lives; IRS may be challenging (seeking “7 year property” classification”).



# Production Tax Credit

- **The PTC now applies to the following resources:**
  - **Wind**
  - **Closed-loop biomass**
  - **Open-loop biomass**
  - **Geothermal energy**
  - **Small irrigation power (150 kW – 5 MW)**
  - **Municipal solid waste (burns fuel; not gasifies)**
  - **Landfill gas**
  - **Refined coal**
  - **Hydropower**
  - **Indian Coal**





## Production Tax Credit *(con't)*

- **Section 45 credit against federal income taxes for electricity produced from certain renewable energy projects and sold to an “unrelated person”. Includes wind (\$0.02/kWh) for 10 years from being placed in service.**
- **Electricity from open-loop biomass, small irrigation hydroelectric, landfill gas, municipal solid waste resources, and hydropower receive half that rate -- currently 1.0¢/kWh.**
- **Must be placed in service by January 1, 2009 Likely to be extended, but until it is, all project agreements will need to address the risk that it won't be or that it will change**
- **Duration is 10 years. Except certain only for 5 years (open-loop biomass, geothermal, small irrigation hydro, landfill gas, and municipal solid waste combustion facilities placed into service between Oct 2004 and Aug. 2005.**
- **Cutback for Other Grants and Credits: certain grants, tax-exempt bond proceeds and subsidized energy financing (certain state loans, but potentially not traditional property tax incentives)**
- **Requires a “Tax Appetite” – often results in bringing a tax equity investor to the project**



# Renewable Energy Production Incentive

- **The Renewable Energy Production Incentive (REPI) provides financial incentive payments for electricity produced and sold by new qualifying renewable energy generation facilities.**
  - 2¢ per kilowatt-hour
  - 10-year duration subject to the availability of annual appropriations
- **Eligible owners:**
  - Not-for-profit electrical cooperatives
  - Public utilities
  - State governments
  - Commonwealths, territories, possessions of the U.S., the District of Columbia
  - Indian tribal governments, or a political subdivision thereof
  - Native Corporations that sell the project's electricity to someone else.





# Renewable Energy Production Incentive *(con't)*

- **Qualifying facilities:**
  - Solar
  - Wind
  - Geothermal (with certain restrictions as contained in the rulemaking)
  - Biomass (except for municipal solid waste combustion)
  - Landfill gas
  - Livestock methane
  - Ocean (including tidal, wave, current, and thermal)
  - Fuel cells using hydrogen derived from eligible biomass facilities
- **If insufficient appropriations in any fiscal year:**
  - 60% of appropriated funds are to be assigned to facilities that use solar, wind, ocean (including tidal, wave, current, and thermal), geothermal, or closed-loop biomass technologies
  - 40% of appropriated funds for the fiscal year to other projects.



# Renewable Energy Production Incentive *(con't)*

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- Under Current Law, Payments are to be made through FY 2013
- Example Projects for FY 2006 in MN receiving payments through REPI
  - Worthington Community Wind Projects received approximately \$75,000
  - Lac qui Parle Valley High School received \$2,200 for a single wind turbine supplying 1/3 of the schools electrical needs
  - SMMPA Wind Farm Phases 1&2 received approx. \$122,000



# Alternative Fuel Infrastructure Tax Credit

- 2005 Energy Act provides 30% of the of cost alternative refueling property, up to \$30,000 for business property.
- Qualifying alternative fuels: natural gas, propane, hydrogen, E85, or biodiesel mixtures of B20 or more.
- Buyers of residential refueling equipment can receive \$1,000 tax credit. For non-tax-paying entities, the credit can be passed back to the equipment seller.
- The credit is effective on equipment put into service after December 31, 2005. It expires December 31, 2009 (hydrogen property credit expires in 2014).
- The 2007 Energy Act prohibits the use of certain restrictions on renewable fuel sales in franchise agreements.
- Ford, General Motors and Chrysler have sold over half a million flex fuel cars in the past 10 years.
- Approximately 1,457 stations with E85 across the United States (303 in MN; 88 in Iowa; 7 in Oregon and 6 in Washington).



# VEETC Tax Credit for Biodiesel and Ethanol Blenders

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- The American Jobs Creation Act of 2004 created tax incentives for biodiesel fuels and extended the tax credit for fuel ethanol.
- The Volumetric Ethanol Excise Tax Credit (VEETC)
  - ethanol blenders/retailers - \$.51 per pure (190 or greater proof) gallon of ethanol blended or \$.0051 per percentage point of ethanol blended (i.e., E10 is eligible for \$.051/gal; E85 is eligible for \$.4335/gal).
  - The incentive is available until 2010.
  - \$1.00 per gallon of agri-biodiesel
  - \$.50 per gallon of waste-grease biodiesel.





# Other Federal Energy Programs

- **Small agri-biodiesel producer credit**
  - The 2005 Energy Act allows a tax credit of \$.10 per gallon to small agri-biodiesel producers (or its owners in pass through entities) for up to 15 million gallons. To be eligible, a producer must make less than 60 million gallons of biodiesel per year.
- **Small ethanol producer credit**
  - The 2005 Energy Act changes the definition of a "small ethanol producer" to include a production capacity of up to 60 million gallons (instead of the up to 30 million gallons originally established by Congress in 1990). The tax credit also equals \$.10 per gallon to the small ethanol producer (or its owners in pass through entities).
- **DOE State Energy Program Funding**
  - DOE's State Energy Program (SEP) provides funding to states and U.S. overseas territories for them to address their energy priorities. State energy offices manage all SEP-funded projects, and many of them use this funding for alternative fuels projects.



# USDA Business and Industry Guaranteed Loans

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- **Eligible Recipients:** Cooperatives, corporations, partnerships, Indian Tribe, public body or individual.
- **Purpose:**
  - To improve, develop, or finance business, industry, and employment and improve the economic and environmental climate in rural communities.
  - Guaranty quality loans bolster the existing private credit structure which will provide lasting community benefit.
  - Not marginal or substandard loans or for relief of lenders having such loans



# USDA Business and Industry Guaranteed Loans (cont')

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- **Loan Amounts:**
  - Up to \$10 million typical Limit
  - Between \$10 and \$25 million require Administrator's approval
  - Between \$25 and \$40 million require Secretary Approval for rural cooperative organizations that process value-added agricultural commodities.
- **Guarantee Amount:**
  - Negotiation with Lender
  - Up to 80% of loans of \$5 million or less
  - Up to 70% of loans between \$5 and \$10 million
  - Up to 60% of loans exceeding \$10 million
- **Example:** In 2007, Clean Burn Fuels LLC, in Hoke county North Carolina, was approved to receive a \$25 million B&I loan guarantee to construct a new ethanol plant that is expected to produce 60 mgy of ethanol



# USDA Rural Business Enterprise Grants (RBEG)

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- **Eligible Recipients:** Rural public entities (towns, communities, state agencies and authorities), Indian tribes and rural private, non-profit corporations.
- **Purpose:** to benefit small and emerging private businesses in rural areas, defined as those that will employ 50 or fewer new employees and have less than \$1 million in projected gross revenues.
- Eligible funds in 2007 (\$40 million). To be used for:
  - Acquisition or development of land, easements, or rights of way
  - Construction, conversion, renovation, of buildings, plants, machinery, equipment, access streets and roads, parking areas, utilities
  - Pollution control and abatement
  - Capitalization of revolving loan funds including funds that will make loans for start ups and working capital
  - Training and technical assistance
  - Distance adult learning for job training and advancement
  - Rural transportation improvement; and project planning.



# USDA Rural Economic Development Loan and Grant (REDLG)

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- **The REDLG Program:**
  - Provide funding to rural projects through local utility organizations
  - USDA provides zero interest loans to local utilities which they, in turn, pass through to local businesses (ultimate recipients) for projects that will create and retain employment in rural areas.
  - The ultimate recipients repay the lending utility directly. The utility is responsible for repayment to the Agency
  - Grants are awarded on a competitive bases, and for FY2007, could be up to \$300,000





# USDA Section 9006 Guaranteed Loan

- **Eligible Applicants:** Agricultural producers and small rural businesses
- **Purpose:** makes available competitive grant funds and guaranteed loans for the purchase of renewable energy systems and energy improvements.
  - The project must occur in a rural area and implement pre-commercial or commercially available and replicable technology.
  - No research and development.
  - The applicant must provide at least 75% of eligible project costs, and grant assistance to a single individual or entity can not exceed \$750,000.
  - Eligible projects include biofuels, hydrogen, and energy efficiency improvements, as well as solar, geothermal, and wind.
- Project developers will work with local lenders, who in turn can apply to USDA Rural Development for a loan guarantee up to 85 percent of the loan amount.
  - Maximum of \$10 million per project, minimum of \$5,000
  - Loans up to 50% of the project's cost
- Example: In 2007, National Trail Biodiesel, Newton, IL, was approved to receive a \$10 million Section 9006 guaranteed loan to build and operate a 30 mgy biodiesel production facility



# USDA Value-Added Producer Grants

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- **Eligible applicants:** independent producers, farmer and rancher cooperatives, agricultural producer groups, and majority-controlled producer-based business ventures
- **Purpose:** Grants may be used for planning activities and for working capital for marketing value-added agricultural products and for farm-based renewable energy.
- **Example:** In 2006, Crosswind Energy, LLC in Iowa received a \$215,000 VAP Grant



# New Market Tax Credits

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- The New Markets Tax Credit (NMTC) Program permits taxpayers to receive a credit against Federal income taxes for making qualified equity investments in designated Community Development Entities (CDEs).
- CDE must invest substantially all funds in low-income communities.
- Credit = 39% of the investment over a seven-year credit allowance period.
  - 5% each of the first three years
  - 6% each of the last four years
- Investors may not redeem their investments in CDEs prior to the conclusion of the seven-year period.
- New Rule requires significant level of 2008 NMTC allocations to be invested in rural communities, so good potential for renewable energy investment.





# Challenges with Getting the \$\$\$

- **Timing**
  - Many grant/loan programs are available on an “as funds are available” basis which makes planning around the receipt of such grants difficult.
- **Eligibility**
  - Many of the grant/loan programs have eligibility requirements which might not make sense for a professional developer of renewable energy projects.
  - Tax credits require an owner of a renewable energy project to have a tax appetite, which may require a third-party tax investor.
- **Complexity**
  - Many applications are fairly complex, and a simple technical error in an application can destroy one’s chances for receiving funds in a given allocation.



# Challenges with Getting the \$\$\$<sub>(con't)</sub>

- **Anti-double-dipping provisions**
  - Certain government incentives, most notably the PTC, have anti-double dipping provisions which require a party who receives other government incentives to offset the PTC by the amount of all or some of the other incentives.
- **Expiration**
  - Certain of the incentives, again most notably the PTC are set to expire in the near future (end of 2008 for the PTC). This hinders developers in planning projects.
- **Competition**
  - The larger the scarce incentive is, the more competition one can expect in pursuit of it. For example, 1 in 7 CDE applicants for New Market Tax Credits ultimately received an allocation. Successful application and receipt for the most significant incentives often requires a bit or more of political savvy.





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