



Renewable Energy Project Funding and Development



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Overview



- Project Funding Options
 - Traditional Funding Mechanisms
 - Public Private Partnerships
 - Clean Renewable Energy Bonds (CREBs)
 - Grants and Incentives
- Michigan's Energy Law
- Economic Feasibility
 - Cost Trends and Payback Periods
 - Generating Project Income

Renewable Energy Defined...

Energy generated from natural resources ... such as sunlight, wind, rain, tides and geothermal heat - which are renewable (naturally replenished). -Wikipedia

- ❑ **Solar**- thermal/heat or photovoltaic (PV).
- ❑ **Wind**- the conversion of wind energy into electricity using wind turbines.
- ❑ **Geothermal** - energy generated from heat stored in the earth, or the collection of absorbed heat derived from underground.
- ❑ **Biomass**- living and/or recently dead biological material that can be used as fuel or for industrial production.
- ❑ **Biofuel**- solid, liquid or gaseous fuel derived from relatively recently dead biological material.
- ❑ **Tidal and Wave** - a form of hydropower that converts the energy of tides or waves into electricity.
- ❑ **Hydropower or hydroelectricity** - power that is derived from the force or energy of moving water.

Traditional Funding Mechanisms

- ◆ Proceeds of voted or non-voted bonds
- ◆ Proceeds of an installment purchase agreement (IPA)
- ◆ Sinking Funds




Voted Bonds

- ◆ Issued pursuant to Section 1351a of the Revised School Code, MCL 380.1351a.
- ◆ Use of proceeds:
 - Permissible expenditures: purchasing, erecting, completing, remodeling, or equipping or reequipping school buildings or other facilities; furnishing or refurbishing new or remodeled school buildings; acquiring, preparing, developing or improving sites; purchasing school buses; acquiring, installing or equipping or re-equipping school buildings for technology
 - Impermissible expenditures: 1) maintenance and repair costs; 2) operating costs; 3) upgrades to operating system or application software; 4) training, consulting or software support; 5) most computer media.




Non-Voted Bonds

- ◆ Issued pursuant to Section 1351a of the Revised School Code, MCL 380.1351a.
- ◆ Borrowing limitation: 5% of SEV (not taxable value) including total outstanding indebtedness
- ◆ Debt service payable from general fund
- ◆ Use of proceeds- same as voted bonds




Installment Purchase Agreements

- ◆ Entered into pursuant to PA 99 of 1933, as amended.
- ◆ A school district may purchase real or personal property for “public purposes” including:
 - Land
 - Equipment and technology
 - Buses
- ◆ Treasury approval is not required



IPA Limitations

- ◆ The payback period cannot exceed useful life of purchased item
- ◆ Maximum 15 year borrowing period
 - * The useful life of a wind and/or solar project typically exceeds 20 years
- ◆ Total outstanding balance not to exceed 1.25% of school district’s taxable value (real and personal property)



Sinking Funds

- ◆ Authorized by Section 1212 of the Revised School Code, MCL 380.1212
- ◆ Permitted to levy up to 5 mills for 20 years
- ◆ Voter approval is required
- ◆ Use of funds:
 - Treasury guidelines rescinded in 2004
 - Review MSBO website for Treasury approval letters
 - Can be used for same purposes as voted bonds except for:
 - ◆ Technology equipment
 - ◆ Equipment/furnishings
 - ◆ School buses

Public Private Partnerships

Private partner

- Fronts the capital outlay
- Owns the renewable energy equipment, the energy generated and the renewable energy certificates (RECs)
- Utilizes the production tax credit (PTC) and accelerated depreciation benefits to offset a portion of the capital outlay

Public Entity

- Agrees to purchase the renewable energy generated through a power purchase agreement
- May simply act as a landlord

Ownership "Flip"

- Once the private investor has recouped its capital outlay *and a profit* -- ownership is usually flipped to the public entity
- Change in ownership does not take place for *at least 10 years* (until after the PTC is exhausted).

Public Private Partnerships

Advantages:

- Least amount of effort/risk
- Minimal (or zero) capital outlay required

Disadvantages:

- Lack of control/ownership in project
- Minimal (or zero) realization of post-construction revenue

Conclusion

**Typically no longer advantageous due to CREBs and/or traditional self-funding methods available to school districts.

**The utility savings and other post-construction revenue now *usually exceed* the annual cost of financing (resulting in annual operational savings to the district.)

Clean Renewable Energy Bonds

- Initially authorized by the Energy Policy Act of 2005, P.L. 109-58 (“EPAct”) with an allocation of \$800 million.
- Tax Relief and Health Care Act of 2006 (the “Extenders Act”)
 - Additional allocation of \$400 million
 - CREBs deadline extended to 12/31/08
- Governed by IRC §54
- Previous applications were governed by IRS Notice 2007-26 and IRS Notice 2006-7

CREB Basics

- The purpose is to provide a comparable incentive to the Production Tax Credit (PTC) enjoyed by private entities.
- Modeled after the Qualified Zone Academy Bond (QZAB) program.
- Tax Credit Bond- the bondholder receives an annual tax credit on its federal income taxes in lieu of tax-exempt interest income.

The Benefits of CREBs

- Designed to allow the school district to borrow at zero interest.
- The utility cost savings and other revenue from the renewable system is utilized to pay off the bond principal.
- The school district typically must only repay the principal amount borrowed, however...
- In some instances a nominal interest rate may apply:
 - Example #1: the lending institution may require a school district pay interest (depending on factors such as credit rating).
 - Example #2: the bonds may sell at a discount creating an effective nominal interest rate.

New CREBs

- In October 2008 Congress created “new CREBs” and approved **\$800 million** in allocations under the Emergency Economic Stabilization Act of 2008 (“EESA”).
- An additional **\$1.6 billion** was allocated under the American Recovery and Reinvestment Act of 2009 (February 17, 2009).
- New CREBs are governed by IRC §54C.
- Total allocation of new CREBs is currently **\$3.2 billion**.
- *The 2009 application deadline has not been announced by the IRS.*

Qualified Projects

Qualified facilities under IRC Section 45(d):

- Solar -thermal and Photovoltaic (“PV”)
- Wind
- Geothermal
- Biomass- closed loop and open loop
- Landfill gas
- Small irrigation power facilities

*New CREBs cannot be used to finance refined coal facilities.

An engineer must certify that the project will generate energy.

Qualified Issuers

- Public Power Providers
- Governmental bodies
 - State, political subdivision (including school districts), Indian tribal governments
- Cooperative electric companies
 - 501(c)(12) or 1381(a)(2)(C)
 - Not-for-profit electric utility with loan or loan guarantee under Rural Electrification Act (added in October 2008)
- Clean renewable energy bond lenders (CoBank, ACB)

Qualified Borrowers

- A mutual or cooperative electric company
- A governmental body



Allocations

- CREBs allocations previously were awarded from smallest to largest
- New CREBs- subject to Treasury's discretion
- Funds requested in 2006 and 2007 *far exceeded* the available volume cap
- New CREB allocations:
 - 1/3 of the \$3.2 billion total allocation will be available to each of the following groups:
 - Public Power Provider
 - Governmental Body
 - Cooperative Electric Company

Previous Allocations

- | <u>2006</u> | <u>2007</u> |
|--|---|
| <ul style="list-style-type: none"> ■ Application deadline was April 26, 2006 ■ 786 CREB applications from 40 states were received ■ \$2.5 billion in requested funds (only \$800 million available) ■ Governmental borrowers submitted applications totaling appx. \$2 billion ■ 610 total projects approved on November 20, 2006 ■ 532 governmental applications approved-- ranging from \$25,000 to \$3.2 million ■ Governmental projects receiving allocations: 401 solar, 99 wind, 22 landfill gas, 9 hydropower, 1 open-loop biomass | <ul style="list-style-type: none"> ■ Application deadline was July 13, 2007 ■ 342 CREB applications from 33 states were received ■ \$897 million in requested funds (only \$477 million available) ■ Governmental borrowers submitted applications totaling \$728 million ■ 312 total projects approved on February 8, 2008 ■ 286 governmental applications approved-- ranging from \$15,000 to \$2.95 million ■ Governmental projects receiving allocations: 138 solar, 88 wind, 41 landfill gas, 12 hydropower, 3 closed-loop biomass, 3 trash combustion, and 1 open-loop biomass |

Mechanics of New CREBs

- Taxable bond, but subject to some tax exempt bond provisions:
 - Arbitrage/rebate under IRC §148
 - Reporting requirements under IRC §149

- Heartland, Habitat, Harvest, and Horticulture Act of 2008:
 - Created a new tax credit bond framework under IRC §54A
 - Framework governs new CREBs, QZABs and other tax credit bonds

- New CREBs are subject to the “available project proceeds” concept...

Mechanics of New CREBs (cont'd)

- Available Project Proceeds (APP) = sales proceeds less financed costs of issuance (not to exceed 2% plus earnings thereon).

- Spend Down Requirements:
 - 10% of APP within 6 months
 - 100% of APP within 3 years
 - Limited exceptions apply (*i.e.* IRS may extend for reasonable cause)
 - Failure to comply results in redemption of nonqualified bonds within 90 days
 - Exception created for reserve fund

Mechanics of New CREBs (cont'd)

- Other modifications for new CREBs:
- No ratable amortization (required with CREBs)
 - Issuer must certify that there is no conflict of interest with state or local laws or with Treasury rules and regulations
 - Tax Credit: 70% of existing CREBs tax credit
 - No sunset date

Grants and Incentives

- Database of State Incentives for Renewable Energy
<http://www.dsireusa.org/>
- Michigan Public Service Commission's energy-efficiency grant program (under 2000 PA 141)
 - Funded by the state's Low-Income and Energy Efficiency Fund
 - Supports the implementation of energy-efficiency projects and renewable-energy projects in Michigan
- American Recovery and Reinvestment Act of 2009...?

Michigan Incentives

Michigan's Energy Law (2008 PA 295)

- On October 6, 2008 Gov. Jennifer Granholm signed the Clean, Renewable and Efficient Energy Act ("PA 295")
- Key Provisions:
 - Renewable portfolio standard (RPS) -mandates 10 percent of the State of Michigan's energy come from renewable sources by 2015.
 - Net-Metering
 - Renewable Energy Certificates

Net Metering in General

- A method of measuring the difference between the electricity supplied by a utility and the electricity generated by a customer that is fed back into the power grid.
- A consumer-based renewable energy incentive.
- As defined under the Energy Policy Act of 2005, §1251:
NET METERING—... the term 'net metering service' means service to an electric consumer under which electric energy generated by that electric consumer from an eligible on-site generating facility and delivered to the local distribution facilities may be used to offset electric energy provided by the electric utility to the electric consumer during the applicable billing period.



Net Metering in Michigan

- Previously based on a voluntary consensus agreement between Michigan Public Service Commission (MPSC) and the state's utilities.
- Under PA 295 the MPSC is required to establish a statewide net metering program.
- MPSC released Proposed Net Metering and Interconnection Rules on February 4, 2009 for public comment.

Renewable Energy Certificates

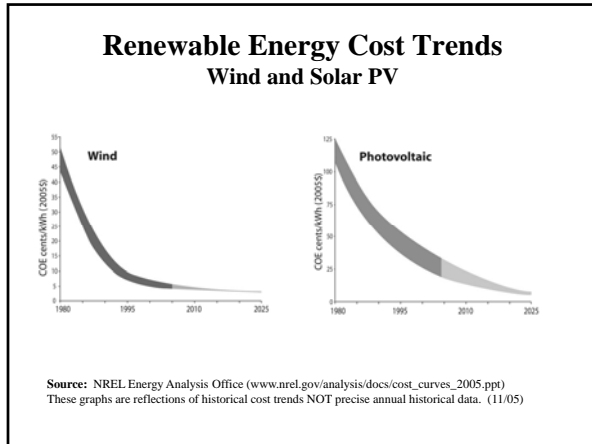
- To help facilitate the sale of renewable electricity--- a system was established that separates renewable electricity generation into two parts:
 - the electrical energy produced by a renewable generator; and
 - the renewable "attributes" of that generation.
- One REC is issued for each megawatt-hour (MWh) unit of renewable electricity produced.
- The value of a REC varies *significantly* between states and between different sources of renewable energy.
- The value of a REC is generally higher in "compliance" states (*i.e.* those with an RPS).

Economic Feasibility

Cost Trends and Payback Periods

- The cost of renewable energy technology has rapidly declined in the last 20 years (by approximately 80%)
- The cost is expected to decline further as a result of continued R&D and improved manufacturing processes.
- Declines in the cost of technology = shorter payback periods.
- The technology is more affordable, efficient and reliable.





Payback Period

Project Cost Variables:


- Equipment costs
- Installation/labor costs
- Average wind speed / solar variation
- Local electricity costs
- Financing costs

Current Average Payback Periods:

- Wind- 6 to 10 years
- Solar PV- 15 to 20 years
- Solar thermal- 3 to 7 years

Generating Project Income

- ❖ Utility savings (realized through net-metering)
- ❖ Sale of excess electricity (via a power purchase agreement)
- ❖ Sale of renewable energy certificates
- ❖ Sale of “carbon offsets”
 - a financial instrument representing a reduction in greenhouse gas emissions

Thrun Law Firm 

- Nationally-recognized bond counsel with seven attorneys specialized in finance/municipal bond practice and highly experienced in tax credit bonds.
- Extensively familiar with the recently enacted Clean, Renewable and Efficient Energy Act (PA 295 of 2008).
- Representing municipal clients on all aspects of renewable energy project development, including:
 - Initial project structuring and financing
 - Equipment procurement
 - Zoning and land use regulations
 - Negotiation of power purchase agreements
 - Negotiation of interconnection agreements; and
 - Operation and maintenance agreements.

Questions?



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