Part V
Finance: Incentives and ROI

- Financial Incentives – utility rebates, tax incentives and other rebates
- The National Database for State Incentives for Renewable Energy - “DSIRE”
- Methods of determining financial “bottom line”
Financial Incentives

1. Grants, Rebates & Loans
2. Income Tax Credits and Deductions
3. Sales Tax Incentives
4. Property Tax Incentives
5. Utility Leasing Programs
7. Production Incentives
Energy Policy Act of 2005:
Federal Tax Deduction for Energy Efficient Commercial Buildings

• On August 8, 2005 President George W. Bush signed H.R. 6, the Energy Policy Act of 2005 which provides a tax deduction for investments in commercial building energy efficiency.

• The deduction is for energy-efficient commercial property expenditures made by the taxpayer, up to $1.80 per SF (for 50% or more energy savings)

• Where the 50% reduction is not met a partial deduction of up to $0.60 per SF is allowed (for $\frac{5}{3}$% or more energy savings plus other requirements)
Energy Policy Act of 2005:
Federal Tax Deduction for Energy Efficient Commercial Buildings

In Public Architecture the Designer benefits

• For energy-efficient commercial property expenditures made by a public entity, such as public schools, the regulations allow the deduction to be allocated to the person primarily responsible for designing the property in lieu of the public entity.
Congress Extends Federal Solar Energy Tax Credits Through End of 2008

- Residential Solar 30-percent tax credit extended (limited to $2,000)

- Business Solar Tax Credit and Fuel Cell Tax Credit of 30-percent extended. (NO LIMIT – but after December 31, 2008, the credit reverts to a permanent 10-percent level)
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Design Guidelines for Integrating Renewable Energy in Commercial Buildings

Business Tax Credits, Rebates and Production Incentives

**Tax Incentives**

- **Federal Tax Credit:** Thirty (30) percent of the cost of solar thermal and PV systems.

- **State Sales Tax Exemption:** Solar & Wind RE Systems are exempt from MN State sales tax.

**Rebates**

- **Minnesota Department of Commerce Rebate:** $2,000 per Kilowatt (KW) of capacity, up to $20,000 (10 KW). Contact: [www.commerce.state.mn.us](http://www.commerce.state.mn.us), (651) 296-5175

- **Minnesota Power Solar Electric Rebate Program (MN Power customers only):** $2,000 per KW up to $4,000 (20 KW). Contact: [www.mnpower.com](http://www.mnpower.com), 1-800-228-4966 x2843

- **Great River Energy Solar Electric Rebate Program (Customers of GRE or GRE-member coops only):** $2,000 per KW of capacity, up to $4,000 (2 KW). Contact: [www.greatriverenergy.com](http://www.greatriverenergy.com), (763) 441-3121

**Production Incentives**

- **Net Metering:** Minnesota utilities must purchase excess power from small renewable energy producers at the same price that they charge.

- **Solar Choice Program:** Three municipal utilities offer a production credit (over and above the retail rate) instead of a rebate ([Austin](http://Austin.com), [Owatonna](http://Owatonna.com), and [Rochester](http://Rochester.com) municipal utilities. The credit can vary.
Minnesota Solar Rebate Program Summary

- Average installation size: 3.9 kW
- Median installation size: 2.5 kW
- The program is out of funds until restored by legislative action
- Currently there are 71 projects on a waiting list

Installations funded through 12/31/06:

<table>
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<th>Year</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>In progress</th>
<th>Total</th>
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<tbody>
<tr>
<td>Count</td>
<td>1</td>
<td>12</td>
<td>35</td>
<td>22</td>
<td>34</td>
<td>33</td>
<td>137</td>
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<tr>
<td>kW</td>
<td>1.7</td>
<td>29.9</td>
<td>104.9</td>
<td>68.9</td>
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The Database of State Incentives for Renewable Energy (DSIRE) is a comprehensive source of information on state, local, utility, and selected federal incentives that promote renewable energy. To access information, use the menu to the left or click on the maps below.
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The National Database for State Incentives for Renewable Energy
www.desireusa.org

What DSIRE Offers:
1. Current, accurate information on incentives, programs & policies for various renewables
2. Program summaries
3. Incentive program contacts
4. Links to program web sites
5. Search capabilities (by various criteria)
6. Access to relevant legislation & policies
7. Other related information

Source: IREC
Interstate Renewable Energy Council
Financial Incentives for Minnesota on DSIRE

State Loan Programs

- Agricultural Improvement Loan Program
- Energy Investment Loan Program
- Home Energy Loan Program
- MHFA Rental Rehabilitation Loan Program
- Rental Energy Loan Fund
- Value-Added Stock Loan Participation Program
Financial Incentives for Minnesota on DSIRE

Utility Grant Programs

- [Dakota Electric Association - Commercial and Industrial Custom Energy Grant Program](#)
- [Minnesota Power - Power Grant Program](#)
- [Minnesota Valley Electric Cooperative - Commercial and Industrial Grant Program](#)
- [Otter Tail Power Company - Grants for Conservation](#)
- [Otter Tail Power Company - Hot Pack Energy Efficiency Program](#)
- [Otter Tail Power Company - House Therapy Program](#)
- [Xcel Energy - Renewable Development Fund Grants](#)
Utility Rebate Programs

Alexandria Light and Power - Commercial Energy Efficiency Rebate Program
Alexandria Light and Power - Energy Efficient Water Heater Rebate Program
Alexandria Light and Power - Residential Energy Efficiency Rebate Program
Alliant Energy-IP&L - Business Energy Efficiency Rebate Programs
Alliant Energy-IP&L - Farm Equipment Energy Efficiency Incentives
Alliant Energy-IP&L - Residential Energy Efficiency Incentives
Anoka Municipal Utility - Commercial Energy Efficiency Rebate Program
Anoka Municipal Utility - Residential Energy Efficiency Rebate Program
Austin Public Utilities - Commercial and Industrial Energy Efficiency Rebate Program
City of North St. Paul Electric Utility - Commercial and Industrial Energy Efficiency Rebate Program
City of North St. Paul Electric Utility - Residential Energy Efficiency Rebate Program
Crow Wing Power - Residential Energy Efficiency Rebate Program
Dakota Electric Association - Commercial and Industrial Energy Efficiency Rebate Program
Dakota Electric Association - Residential Energy Efficiency Rebate Program
East Central Energy - Residential Energy Star Rebate Program
Elk River Municipal Utilities - Residential Energy Efficiency Rebate Program
Great River Energy - Solar-Electric (PV) Rebate Program
Lake County Power - Residential Energy Efficiency Rebate Program
More Utility Rebate Programs

- Marshall Municipal Utilities - Residential Energy Efficiency Rebate Program
- Minnesota Power - Energy Star Lighting and Fixture Program
- Minnesota Power - Energy Star Qualified Appliance Program
- Minnesota Power - HVAC Energy Efficiency Incentives Program
- Minnesota Power - Power Grant Energy Efficiency Rebate Program
- Minnesota Power - Solar-Electric (PV) Rebate Program
- Minnesota Valley Electric Cooperative - Commercial and Industrial Energy Efficiency Rebate Program
- Minnesota Valley Electric Cooperative - Residential Energy Efficiency Rebate Program
- Moorhead Public Service Utility - Lighting and Custom Energy Efficiency Rebate Program
- New Ulm Public Utilities - Energy Efficiency Rebate Program
- Otter Tail Power Company - Energy Efficiency Rebate Program
- Owatonna Public Utilities - Commercial and Industrial Energy Efficiency Rebate Program
- Owatonna Public Utilities - Residential Conserve and Save Rebate Program
- Rochester Public Utilities - Commercial and Industrial Energy Efficiency Rebate Program
- Shakopee Public Utilities - Commercial and Industrial Energy Efficiency Rebate Program
- Shakopee Public Utilities - Residential Energy Efficiency Rebate Program
- Willmar Municipal Utilities - Residential Energy Efficiency Rebate Program
- Wright-Hennepin Cooperative Electric Association - Energy Efficient Lighting Rebate Program
- Wright-Hennepin Cooperative Electric Association - Residential Energy Efficiency Rebate Program
- Xcel Energy - Business Energy Efficiency Rebate Programs
- Xcel Energy - Residential Conservation Programs
General rules and recommended practice

Solar PV Financial Analysis Example

- **Project Cost**
  - Initial Investment
    - 10 kw Solar Electric System: $85,000
    - MN Buy-down Rebate ($2.00 per Watt up to the first 10 kw): $20,000
    - MN Power Rebate ($2.00 per Watt up to 2 kw): $4,000
    - Federal Tax Credit (30% of total out of pocket expense): $18,300
    - End Cost to Business: $42,700

- **Project Generation**
  - Based on the average output of a PV system located in MN Power service area, a 10 kilowatt AC (kWhAC) PV system will generate approximately 16,000 kWh-AC of electricity in the first year.*

- **Project Savings**
  - In this example, the PV system offsets electricity costs of approximately $1,850 per year including peak energy charges. These savings will increase as electricity prices increase in future years resulting in a **payback** of about **15 years**.
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Summary of Financial Incentives Available

1. Federal Tax Credit 30% RE cost – no max.
2. Income Tax Deductions Up to $1.80/sf max., plus Accel. Deprec., Alt. Fuels Credit, etc.
3. Sales Tax Incentives Exempt (>5% savings)
4. State Buy-down $2/W for PV and wind – $20,000 max.
5. Financing Incentives Low interest loans may be available
6. Utility Rebate Programs Up to $4,000 or more D.O. Utility
7. Production Incentives Net Metering plus local supplements
8. Grants available OEA, DNR, DOE, NSF, etc.

(go to: www.grants.gov)
Re-Arch: The Initiative for Renewable Energy in Architecture

Figure 4.8 People witnessing a breakthrough without knowing it.

Source: The Return of the Solar Cat Book by Jim Augustin, illust. By Hildy Paige Burns