

## **Are You Considering Installing Generation Equipment?**

### **Compare the Annual Cost of Self Generation vs. The Cost of Power from Your Cooperative**

If the Total Annual Operating Cost per kilowatt-hour (kWh) for generation equipment (last entry on Line 16) is less than the Co-Op Average Cost per kWh (Line 17) then you have the opportunity to realize savings by using your generation equipment.

However, if the Total Annual Operating Cost per kWh for generation equipment (Line 16) is greater than the Co-op Average Cost per kWh (Line 17), there will not be a savings by using your own equipment.

### **Other Considerations**

This analysis is purely for determining whether a given generation system will result in savings to the member as opposed to the member purchasing power from your cooperative. Back up power service, environmentally friendly generation and future power generation costs should also be considered when deciding whether self generation of electricity is right for you. Your cooperative staff is always available to assist you in determining what is best for you.

Environmental concerns and increases in electric rates have caused some members to consider purchasing generation equipment to replace all or a portion of the electricity provided by their utility. Your electric cooperative encourages member generation of electricity (also known as distributed generation) if it can be done in a safe, inexpensive and environmentally friendly manner.

However, before making the decision to purchase generating equipment, members should consider the economics of purchasing the equipment and determine whether generating electricity will lower their own monthly power costs. The following is a Capital Cost Recovery Analysis that will allow you to determine the annual operating cost of the generating equipment and compare that cost to the cost of the energy purchased from your cooperative. Your cooperative member services representative and/or the vendor of the generation equipment can assist in completing this analysis.

### **Working Together**

Electric co-ops are working together on a local, state and national basis to support increased investment in renewable energy, energy conservation and clean-coal technology. We must be innovative and at the same time act with integrity, accountability and commitment to our communities.

One of Illinois' electric co-ops was the first utility in Illinois to own and operate a wind turbine. Many are involved in bio-fuel projects. Several co-ops sell renewable energy certificates from the Crescent Ridge Wind Farm. Others have helped with wind speed monitoring projects. Co-ops are leading the way in developing methane digester and landfill gas projects.

Working together we can make the right decisions that continue our commitment to safe, reliable and affordable electricity. Please contact us if you have any questions.

## Information Required For the Capital Cost Recovery Analysis

<p>(1.) Enter the total cost of purchasing and installing the generating equipment. <i>(Be sure to include any interconnection and insurance costs)</i></p>	<p style="text-align: right;">\$ _____</p>
<p>(2.) Enter the amount of grants, tax credits or other funding not required to be repaid by the member for the purchase and installation of the generating equipment.</p>	<p style="text-align: right;">\$ _____</p>
<p>(3.) Subtract Line 2 from Line 1 to determine the net cost of the equipment.</p>	<p style="text-align: right;">\$ _____</p>
<p>(4.) Enter the estimated amount of annual maintenance cost of the generating equipment.</p>	<p style="text-align: right;">\$ _____</p>
<p>(5.) Enter from Table 1 either: (a) the interest borrowed funds to purchase the generating equipment, or (b) the interest rate that would be received on the money used to purchase the generating equipment: <i>(Pick the closest interest rate from the table)</i></p>	<p style="text-align: right;">\$ _____</p>
<p>(6.) Enter from Table 1 the number of years the generating equipment can be expected to operate or the number of years for the loan: <i>(Pick the closest number of years from the table)</i></p>	<p style="text-align: right;">_____ years</p>
<p>(7.) Enter the capital cost recovery factor from Table 1. <i>(Locate the interest rate in the top row of the Table 1 that you entered on Line 5. Proceed down that column to the number of years corresponding to the entry on Line 6. Enter the Capital Recovery Factor indicated in that box on Line 7.)</i></p>	<p style="text-align: right;">_____</p>
<p>(8.) Enter the estimate percent of time the generating equipment will operate (enter as a whole number) <i>(A wind turbine may operate 12 to 30% of the time depending upon your geographic location, however, you should confirm by independent analysis the percent of time your specific generating equipment is likely to operate.)</i></p>	<p style="text-align: right;">_____ %</p>
<p>(9.) Multiply (8) x 8760/100 = The number of hours per year of operation</p>	<p style="text-align: right;">_____</p>
<p>(10.) Enter the rated capacity of the generating equipment in kW</p>	<p style="text-align: right;">_____</p>
<p>(11.) Multiply (9) x (10) = kWh per year generated</p>	<p style="text-align: right;">_____</p>
<p>(12.) Enter your cooperative's average cost per kwh for the energy you purchasing during the last 12 months (\$/kWh) <i>(Excluding any monthly Service Charge)</i></p>	<p style="text-align: right;">\$ _____/kWh</p>

## Calculation of Annual Operating Cost of Equipment

**The total annual operating cost of equipment is calculated by:**

(13.) Multiply the net cost of the generating equipment (Line 3) by the capital recovery factor from Line 7	\$ _____
(14.) Add the annual maintenance cost of the equipment (Line 4) +	\$ _____
(15.) To determine the total annual operating cost (TOC) of the equipment, add Lines 13 and 14 =	\$ _____
(16.) Divide Line 15, the total annual operating cost of the equipment by Line 11, the kWhs to be generated each year <b>(Line 16 is the total annual operating cost for the generating equipment per kWh):</b>	\$ _____ Per kWh
(17.) Co-op Average Cost oper kWh from Line 12.	\$ _____ Per kWh

**Table 1**

Years	7.5% Capital Recovery Factor	6.5% Capital Recovery Factor	5.5% Capital Recovery Factor	4.5% Capital Recovery Factor	3.5% Capital Recovery Factor
1	1.0750	1.0650	1.0550	1.0450	1.0350
3	0.3845	0.3776	0.3707	0.3638	0.3569
5	0.2472	0.2406	0.2342	0.2278	0.2215
10	0.1457	0.1391	0.1327	0.1234	0.1202
15	0.1133	0.1064	0.0996	0.0931	0.0868
20	0.0981	0.0908	0.0837	0.0769	0.0704
25	0.0896	0.0820	0.0745	0.0674	0.0607
30	0.0847	0.0766	0.0688	0.0614	0.0544
35	0.0815	0.0731	0.0650	0.0573	0.0500
40	0.0794	0.0707	0.0623	0.0543	0.0468