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Glossary of Terms:

- **Annualized Cost**– The Cost, each year, of owning something over its entire life. This enables a company to compare the cost effectiveness of various capital investments, especially when those projects have different life spans.

$$\text{Annualized cost (PMT)} = \frac{i(1+i)^n}{[(1+i)^n]-1} \quad \begin{array}{l} i = \text{cost of capital and discount rate for future cash flows} \\ n = \text{economic life of project} \end{array}$$

- **Benchmarking**-Facilitates energy accounting, comparing a facility's energy use to similar facilities in order to assess opportunities for improvement, and quantifying/verifying energy savings
- **Carbon Offset Credits**-Financial instrument aimed at a reduction in greenhouse gas emissions by paying money to take into account the amount of CO₂ that a persons actions create.
- **Capital Costs**-The initial costs of implementing renewable energy systems and energy efficiency measures. Including the costs of the system itself and any installation fees.
- **Energy Conservation**-Achieved through efficient energy use, in which case energy use is decreased while achieving a similar outcome. This may come from simply using less energy (i.e. turning off lights) or from implementing more energy efficient practices and policies.
- **Energy Modeling**-Using computer-based tools to simulate the energy use of a building throughout an entire year of operation. This is commonly referred to as "annual energy use simulation." The U.S. Green Building Council's Leadership in Energy and Environmental Design Rating System (LEED™) requires energy modeling to assess the energy use of a building and to quantify the savings attributable to the proposed design.
- **Energy Monitoring**-Refers to the process of monitoring the energy use in your home or business. This is beneficial when determining the value of energy efficiency projects. There are many different ways to monitor energy in your business or home, for example, using computer software that tracks energy use in the building and displays real-time information on a dashboard.
- **Energy Profile**-The basic building block of information needed to begin evaluating a property's potential for energy savings. This information also helps determine baseline energy performance and can be used to benchmark a building's performance against comparable properties. It includes: Annual energy use and cost, as given in utility bills from the previous year, Year of construction, General location, Total floor space, and Facility Type.
- **Energy Star Program**-An international standard for energy efficient consumer products and buildings. It was first created in the United States by the Clinton Administration but has since been adopted worldwide. Products carrying the energy star logo typically use 20%-30% less energy than required by federal standards.
- **Grid Connected**– Home or business using renewable energy is also connected to larger electricity grid. This allows for excess energy to be sold back to the grid, and for energy from the grid to be used when the renewable energy system does not meet the buildings needs.
- **Operating Costs**- The costs associated with operating a renewable energy system over its lifetime. This includes any maintenance issues or parts needing replaced.
- **Payback Period**-Refers to the period of time required for the return on an investment to "repay" the sum of the original investment.
Payback period = Investment required / Net annual cash inflow
- **Renewable Energy Credits**– Tradable, non-tangible energy commodities in the United States that represent proof that 1 megawatt-hour (MWh) of electricity was generated from an eligible renewable energy resource (renewable electricity).
- **Renewable Energy and Energy Efficiency Portfolio Standard (Senate Bill 3)**-Under this new law, investor-owned utilities in North Carolina will be required to meet up to 12.5% of their energy needs through renewable energy resources or energy efficiency measures. Rural electric cooperatives and municipal electric suppliers are subject to a 10% REPS requirement.
- **Return On Investment**-One of several approaches to evaluating and comparing investments. With ROI, decision makers evaluate investments by comparing the magnitude and timing of expected gains to the magnitude and timing of investment costs. A good ROI means that investment returns compare favorably to investment costs. In terms of energy, ROI compares the initial investment for a renewable energy system, with the overall savings over the systems lifetime.
- **Solar Resources**– The amount of sunlight that a specific geographical location receives.
- **Common Energy Efficiency Measures**

- **Lighting Upgrades**

- **T12**- Tubular fluorescent (TFL) light bulb with a 12/8ths in. diameter, most common and least expensive fluorescent bulb
- **T8**- TFL light bulb with 1 in diameter, more expensive than T12 but much more energy efficient
- **T5**- An even smaller TFL bulb, with even higher energy efficiency, but also the most expensive of the three
- **LED**- LED Light bulbs use several white LEDs to create a bulb that mimics incandescent and fluorescent bulbs, they can last for over 50,000 hours of useful time, more than three times as long as fluorescent lights, and thirty times as long as standard incandescent bulbs.
- **Daylighting**- Practice of placing windows or other openings and reflective surfaces so that during the day natural light provides effective internal lighting. Energy savings can be achieved either from the reduced use of artificial (electric) lighting or from passive solar heating or cooling.
- **On Demand Hot Water**- Provide hot water only as it is needed. They don't produce the standby energy losses associated with storage water heaters, which can save you money



Helpful Websites for Reference

Online Resources for Renewable Energy and Energy Efficiency Information

- Energy Star Products Information (<http://www.energystar.gov>)- Home page of the Energy Star program, provides information on measuring current energy performance, setting goals, tracking savings, and rewarding improvements.
- Database of State Incentives for Renewables & Energy (DSIRE) (www.dsireusa.org) DSIRE is comprehensive source of information on state, local, utility and federal incentives and policies that promote renewable energy and energy efficiency.
- ECU's Center For Sustainable Tourism (www.sustainabletourism.org)- Provides resources and links for businesses. Links to many online resources, tip sheets, industry partners, and much more.
- Environmental Protection Agency (EPA) Clean Energy (www.epa.gov/cleanenergy/)- This website contains information on clean energy technologies, partnerships, government programs, Energy Star, and clean energy resources.
- Proximity Hotel, Greensboro, NC-First hotel with LEED Platinum Rating (www.proximityhotel.com)
- Calculate Energy Savings from Energy Star (<http://www.business.gov/manage/green-business/energy-efficiency/calculate-savings/>) Features information on calculating potential energy savings from renewable energy and energy efficiency projects.
- Financing information for Energy Efficiency Projects (www.business.gov/manage/green-business/energy-efficiency/get-started/financing.html) Features information related to financing energy projects. Valuable information for small business owners looking to develop an energy project.
- Life-Cycle Energy Costs for Commercial Kitchens (www.fishnick.com/saveenergy/tools/calculators/) Great resource for restaurant owners looking to invest in new energy efficient appliances.
- NC Solar Center (www.ncsc.ncsu.edu/calculators.php) Provides energy calculators for solar, wind, and lighting projects.
- More energy calculators (www1.eere.energy.gov/calculators/buildings.html) An extensive list of energy calculators from the US Dept of Energy.
- RETI website (www.sustainabletourism.org/RETI/About.cfm) The home page for the Renewable Energy in Tourism Initiative.