

Investing in Solar Energy

Renewing Facilities Through Clean Energy Strategies – Solar

June 27, 2013



Overview

- Discuss **economic benefits** of investing in solar energy from both an investment and a tax perspective.
- Discuss **corporate benefits** of going green.
- Review a **case study** – i.e. take you through an actual proposal and financial analysis for a commercial building.

About Us

- Renewable Resources, Inc. is based in Stamford, Connecticut , opened US operations in May 2012
- Owned by Renewable Resources, Ltd., the largest solar installer in the U.K.
- ***Core Values***— *Our corporate mission is to provide our clients with an honest and accurate solar assessment, first-in- class quality components and installation techniques.*



About Us

- **Since beginning operations in 2008, we have achieved;**
 - **Over 17 MW installed**
 - **Over 15 MW under contract**
 - **Over 440 Residential Installations**
 - **Over 220 Commercial Installations**

Fuel For Thought: World Energy Outlook by 2035

- World primary energy demand will **increase** 36%
- The US is now the **second largest** energy consumer behind China
- The use of clean renewable energy will **triple**
- Renewables (currently account for 7% of all energy) will **rise** to 14%

Electricity Rates

- On average, CT electric rates have **increased 5%** per year, over the last 10 years. (Source: US Energy Information Administration)
- Currently, the average commercial cost is between **\$0.16 - \$0.17/kWh** in CT
- Straight line projection of 5%/year = **\$0.27/kWh in 2023**

Why Solar Power?

- Solar is a **clean** and **renewable** energy source
- Every hour, enough sunlight shines on the earth to meet global energy needs for an entire year



Going Solar is Good Business

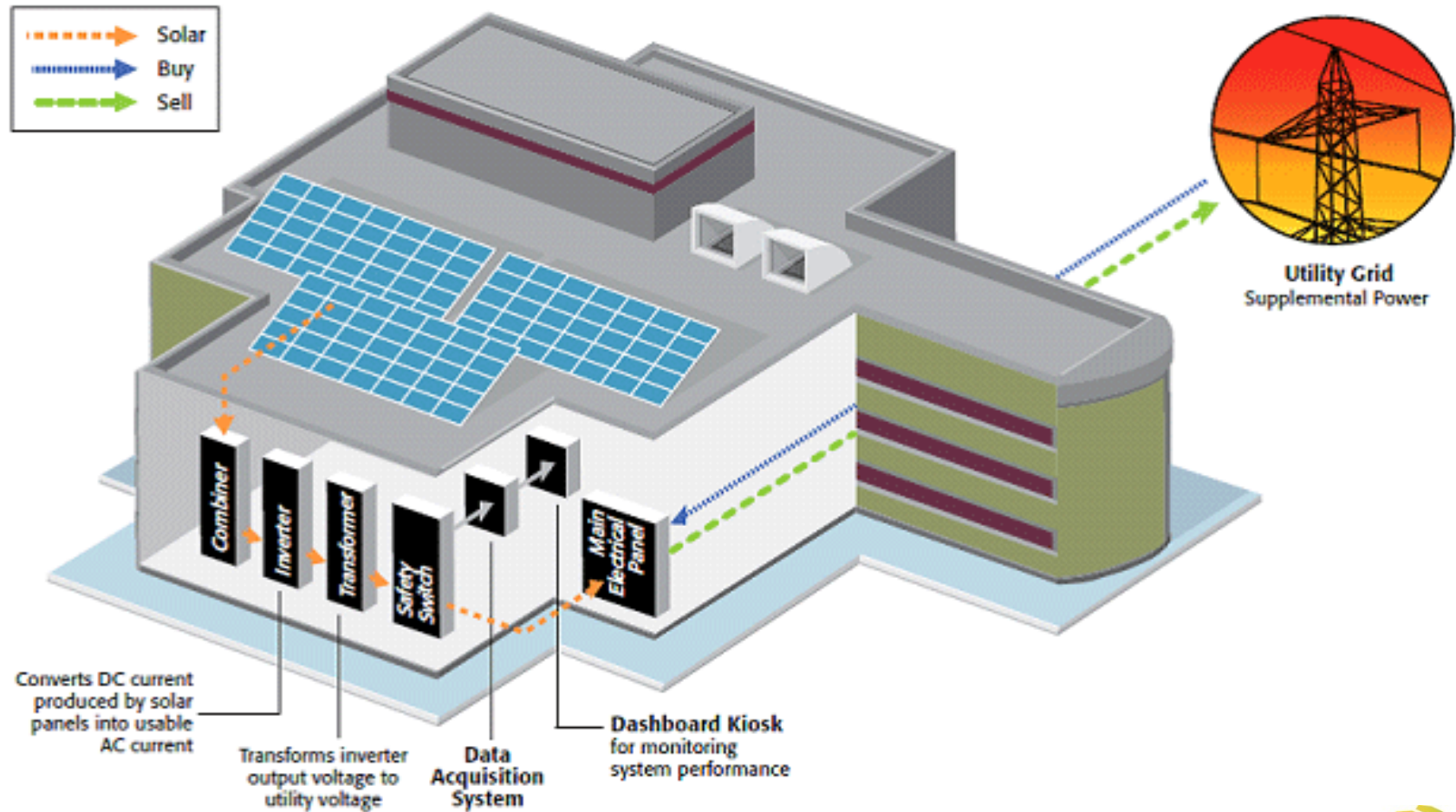
- It speaks volumes to customers, employees and stakeholders that your company is committed to implementing “green” practices while still making economically sound decisions.
- The terms “sustainability” and “profitability” are no longer odd bedfellows. The new view of Corporate Sustainability aims to ensure compliance with environmental standards and to safeguard natural resources.



Build Demand and Lower Costs

- Reputation – People are attracted to companies who care about the environment.
- Customers – Consumers are no longer looking at “going green” as an added effort, but they are actually demanding it.
- Employees – Today, employees seek companies that are environmentally responsible. Not only is it easier to attract and retain talented employees, studies show that these companies enjoy a more motivated and productive workforce.

PV System on Building



The Economics of Solar

- Avoided Cost of Electricity equals Lower Operating Expenses – 30+ Years
- Federal Tax Benefits – 30% ITC through 2016
- MACRS accelerated depreciation:
 - 20%, 32%, 19.2%, 11.52%, 11.52%, 5.76% of **Basis** by year (years 1 – 6)

The Economics of Solar (cont'd)

➤ State/Utility Incentives - ZREC

- Zero Emission Renewable Energy Credit
- Each megawatt hour (1,000 kWh) of energy produce = 1 ZREC
- RECs have a value (commodity) and are used by electric companies to satisfy regulatory requirements (RPS)
- Not Guaranteed

➤ CT Public Act 13-61

CT Public Act 13-61 (Senate Bill 203)

AN ACT CONCERNING PROPERTY TAX EXEMPTIONS FOR RENEWABLE ENERGY SOURCES. (Approved June 3, 2013)

Be it enacted by the Senate and House of Representatives
in General Assembly convened:

That section 12-81 of the general statutes is repealed to
exempt from property tax any Class I renewable energy
source installed for the generation of electricity for
commercial and **industrial** use (*Effective from
passage and applicable to assessment years
commencing on or after October 1, 2013*).

Project Finance

- **Direct Purchase – Conventional financing**
- **Capital Lease – 7-10 year term with \$1 Buyout**
- **C-PACE – Property Assessed Lending**



Commercial Case Study



Commercial Business Case Study

Building Overview

- Building Type: 2 story structural steel frame
- Roof Type: Flat, EPDM
- Electric Company: CL&P
- Electric Rate: \$0.17/kWh
- Electric Consumption: Approx. 63,281 kWh/ yr.
- Anticipated Utility Rate Escalation: 3%

Commercial Business Case Study

Solar Installation

- System Size— 50.16 kW
- Panels— 209 @ 240 watts
- System Production— 59,748 kWh (Year 1)
- Percentage of Electricity Produced by Solar— 95%
- System Degradation— 0.8%/year
- System Mounting— 10° Ballasted, Non-penetrating
- System Warranty— 25 year manufacturer's warranty

Investment - Financial Evaluation

Investment analysis considers 'at-risk' rule, therefore the project is financed at 80% maximum. Balance of system cost is invested by owner. Also, a 35% corporate tax rate is assumed.

Considerations

- Project Cost— \$177,065
- Cost/Watt— \$3.53
- Avoided Electric Costs Savings— \$293,506 over 25-year system life
- 30% ITC Value— \$53,119
- MACRS Value— \$150,505
- Loan Value— \$141,652
- Loan Term— 10 years
- Loan Rate— 6%
- Annual Loan Payment— \$19,246 (assumes 1 yearly payment)

Investment - Financial Evaluation

Evaluation without ZREC Income

- **Avoided Electric Cost Savings over 25 years – \$293,506**
- **\$53,119 ITC—Year 1**
- **\$150,505 available MACRS**
- **ROI— 86%**
- **IRR— 11.87%**

Investment - Financial Evaluation

Evaluation with ZREC Income

- Avoided Electric Cost Savings over 25 years – \$293,506
- ZREC Income— \$139,214; ZREC Value = \$164.22
- \$53,119 ITC— Year 1
- \$150,505 available MACRS
- ROI— 138%
- IRR— 25.92%

Thank you!

