namasté SOLAR

An Introduction to Solar Electricity

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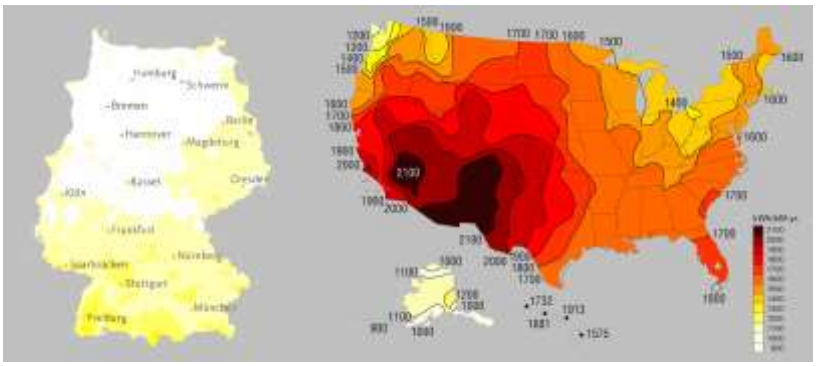
Presentation Outline

- About Namaste Solar
- Solar in Colorado
- Solar PV Design
- Project Examples
- Financial Incentives
- Financing
- Market Trends
- Questions

About Namaste Solar

- Founded February, 2005
- 72 team members
- Offices in Boulder & Denver
- Employee-owned
- Largest Market Share
- Profitable
- 1,400+ Systems - 13MW

Colorado's Solar Resource



Solar Energy kWh/kW-yr

Sources: NREL, Fraunhoffer Institute and SEIA.

How Solar Works

Two main types of solar energy technology:

1) **Solar Thermal**

2) **Solar Photovoltaics (PV)**

How Solar Works

Solar Thermal

Harnessing solar energy to heat fluids

How Solar PV Works

Solar Photovoltaics (PV)

Converting sunlight directly into electricity

How Solar PV Works

- Basic Components of a Solar PV System:
  - Solar panels

How Solar PV Works

- Basic Components:
  - Solar inverters

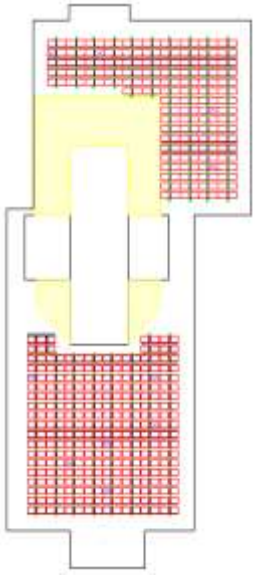
How Solar PV Works

Solar panel mounting structure

Flat Roof Ballasted Systems

- No roof connections
- Lightweight - ~3-8 pounds psf
- Fixed-Tilt
- Simple, streamlined product
- Will not void roof warranty

Design for Success



- Maximize roof space
  - Roof top equipment
  - Parapet Wall
  - Equipment Screens
- Design for Additional Roof Capacity
- Building Height
  - Less than 60’
- Coordination with other trades
- Inverter Location
  - Indoor/outdoor
- Include PV early in the budget

Project Examples

Colorado Convention Center
System Size: 300kW
Solar Panels: SunPower 230-watt modules
Mounting Type: SunPower T-10 Solar Roof Tile

Project Examples

Denver Museum of Nature and Science
System Size: 100kW
Solar Panels: SunPower 230-watt modules
Mounting Type: SunPower T-10 Solar Roof Tile

Project Examples

New Belgium Brewing
System Size: 200kW
Solar Panels: Sharp 216-watt modules
Mounting Type: SunLink Ballasted Racking

Built In Photovoltaics (BIPV) Options

Carport Structures

Built In Photovoltaics (BIPV) Options

Awning Systems

Built In Photovoltaics (BIPV) Options

Vertically Mounted

Built In Photovoltaics (BIPV) Options

Semi Transparent PV

Environmental Benefits – 100kW System

Annual electricity production:	**134,000kWh per year**
Annual CO2 emissions reduced:	**274,432 lbs per year**
Equivalent reduction in vehicle miles driven:	**300,178 per year**
Equivalent number of trees planted (total):	**10,055**

Financial Incentives

- Renewable Energy Credit payments from Xcel Energy – based on actual production
- 30% Federal Investment Tax Credit/Treasury Grant
  - ✓ITC can be used immediately or carried forward 20 years and back 1 year.
  - ✓*Treasury Grant is taken as a one time payment – paid within 60 days of the system being installed. Project must start before December 31, 2010.*
- Accelerated Depreciation (MACRS 5-year property)
- No state sales tax

Other Benefits

- Helps you meet the company's sustainability goals
- Hedge against rising costs of electricity
- Transforms unused roof space into an asset that produces clean, renewable electricity
- Leverage the marketing potential of the investment to enhance company image

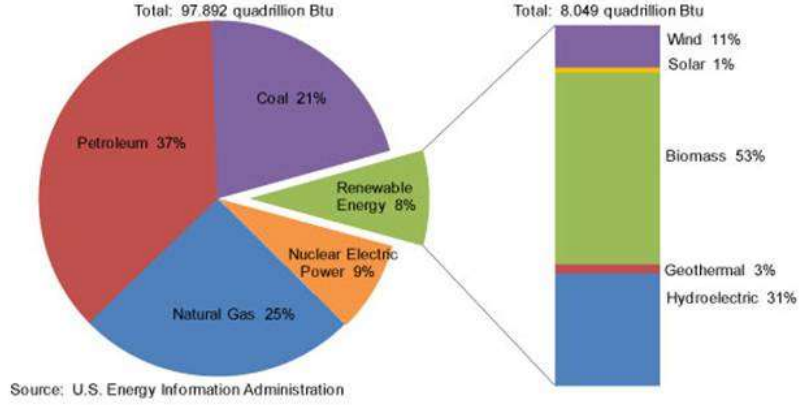
System Financing

- Cash/Internal Debt financing
- Leases
  - ✓ Operating Lease
  - ✓ Capital Lease
- Power Purchase Agreements (PPA's)
  - ✓ Non-profits
  - ✓ School Districts
  - ✓ Municipal Entities

Market Trends

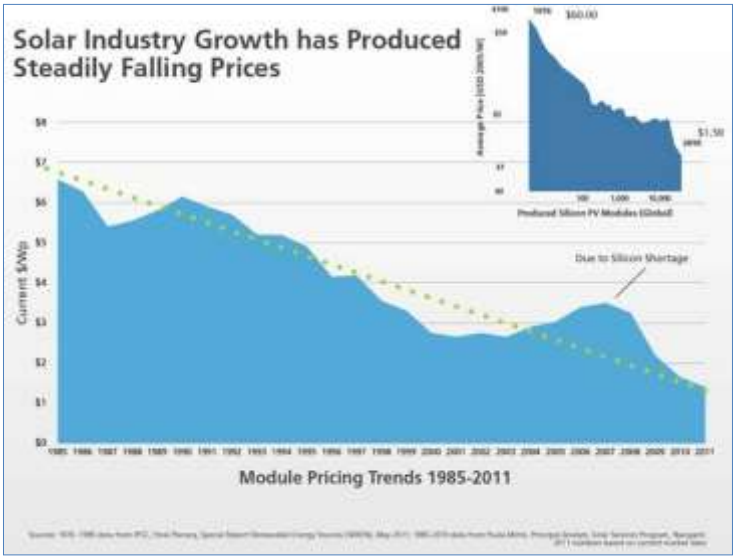
Market Trends

Figure 1. Renewable energy consumption in the nation's energy supply, 2010



Source: U.S. Energy Information Administration

Market Trends



Questions

Thank you!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