Solar Solutions

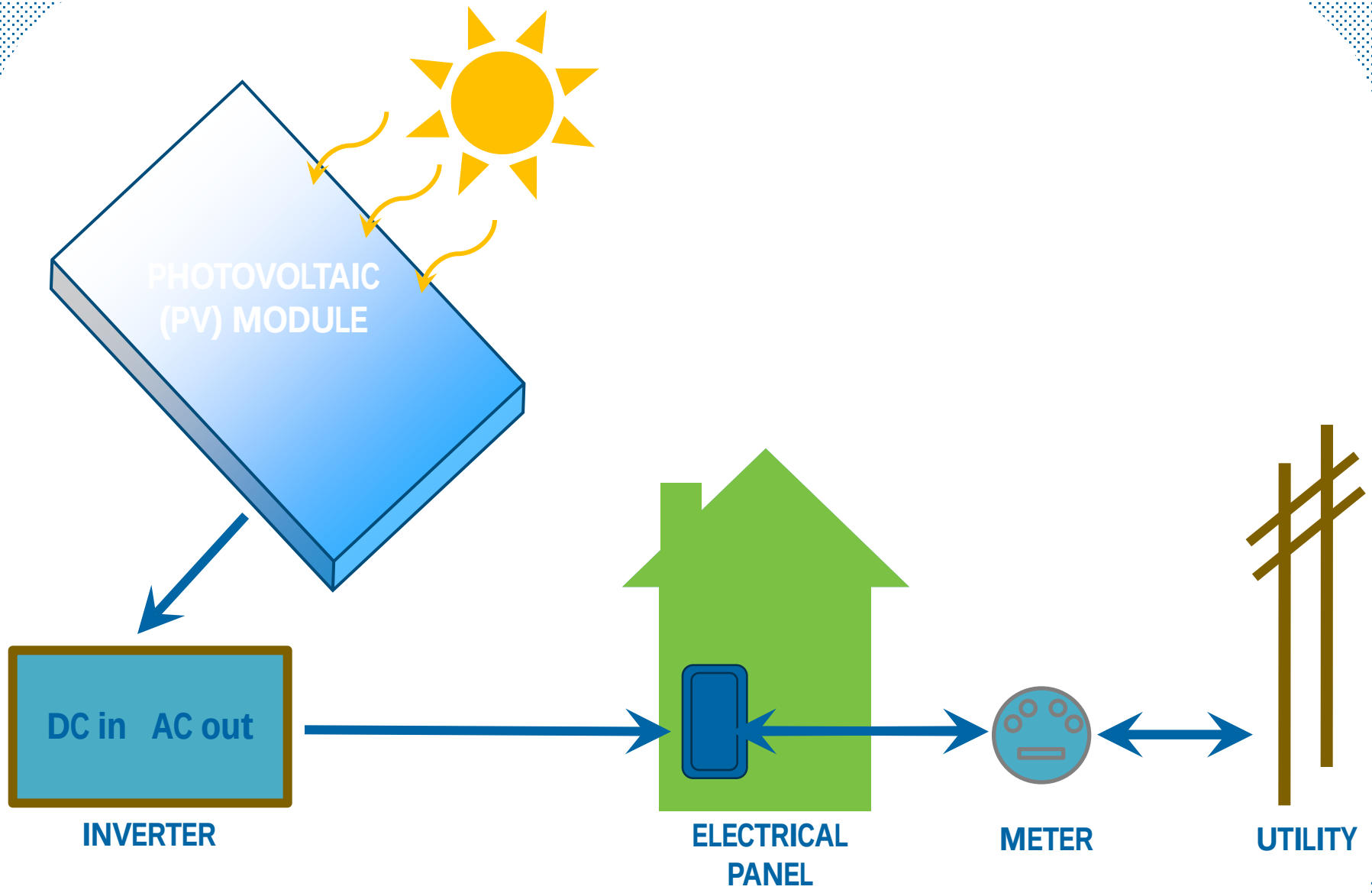
Welcome the Rain! 2010

Mark Farrell
Solar Sales Consultant
Sustainable Solutions Unlimited
Mark.ferrall@solutions21st.com
(503) 227-2047

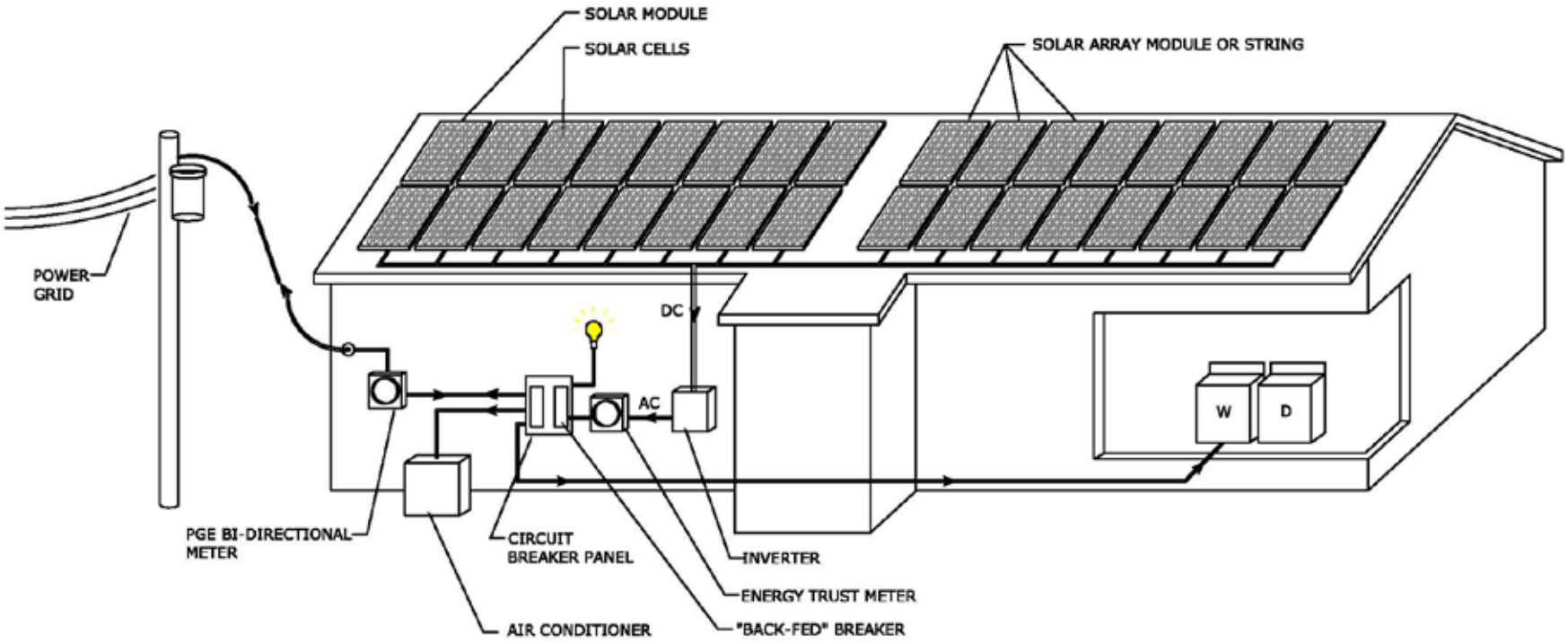
Sustainable Solutions Unlimited

Agenda

- How solar works
- Basics of sizing a system
- Determining your annual electrical usage
- The available incentives programs for solar
- Cost examples of residential sized systems
- Resources for more information


PHOTOVOLTAIC
(PV) MODULE
DC in AC out
INVERTER
ELECTRICAL
PANEL
METER
UTILITY

Net Metered System



Solar Payment System

The Real Thing

Q: How many modules?

A: 32

What size is that System?

of modules * wattage of modules = Size

32 modules * 250 watts = 8000 watts, or 8 kW

How much electricity will it make?

watts * local production capacity * TSRF = Annual kWhs produced

8000 * 1.08 * 75% = 6480 kWh per year

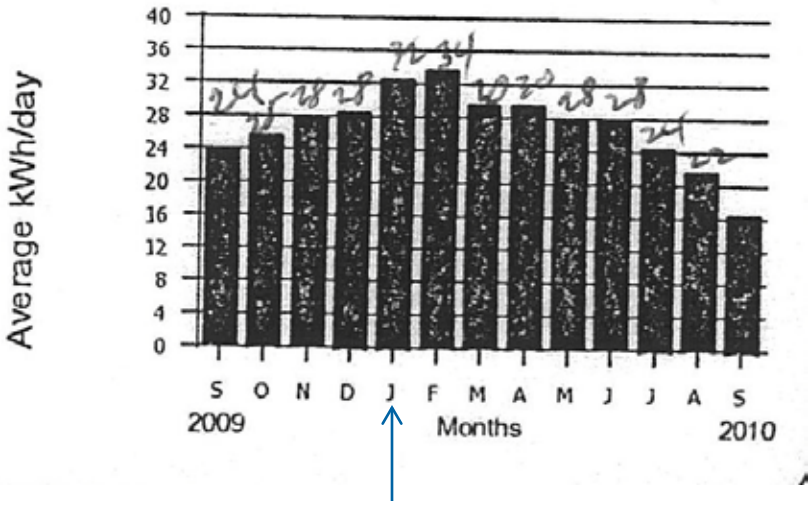
How Much Electricity Do I Use?

Month	Daily AVG * days	= Monthly kWh
Jan	___ * 31	
Feb	___ * 28	
March	___ * 31	
April	___ * 30	
May	___ * 31	
June	___ * 30	
July	___ * 31	
Aug	___ * 31	
Sep	___ * 30	
Oct	___ 31	
Nov	___ * 30	
Dec	___ * 31	
Total Annual kWh used:		_____

Graph on your electricity bill

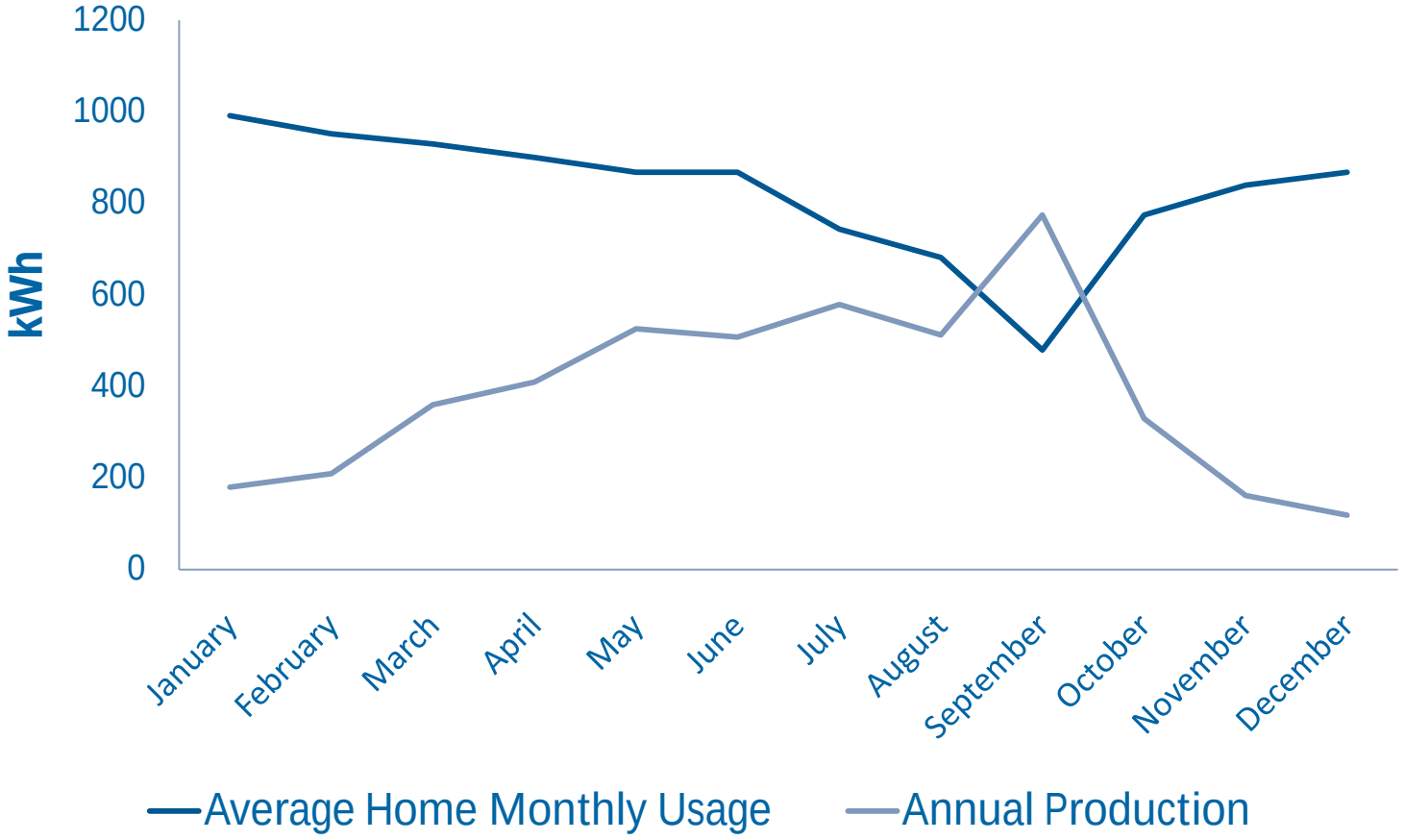
Period Ending	Avg Daily Temperature*	Avg kWh Per Day	Avg Cost Per Day
Sep 2010	67	16.8	1.78
Sep 2009	68	23.8	2.43

*Temperature source: Portland International Airport



PGE says the average home uses 10,000 kWhs per year.

4 kW System vs Average Electricity Usage



Net Metered Incentives

- Energy Trust of Oregon
  - Current: $1.75 per watt
  - September 2009: $2.00 per watt
- Oregon Department of Energy
  - $3.00 per watt, up to $6000 tax credit, no more than 50% of eligible cost… it's a little complicated
  - Usually maxes out in the 4kW range
- Federal Tax Credit
  - 30% installed Cost

Based on size.

Solar Payment Incentive

- Federal Tax Credit
  - 30% of installed cost
- 15 Year Power Production Contract
  - July 1st rate: $0.65 per kWh produced
  - October 1st rate: $0.585 per kWh produced
  - March 1st rate: $0.5265 per kWh produced (TBD)
- Annual Payment
  - (6480 kWh/Year) X $0.585 = $3,790/year

Based on production.

4 kW Cost Example

$6.50 * 4000 watts = $26,000

Net Metered

$26,000

– $7000 Energy Trust

– $6000 State Tax Credit

– 7,800 Federal Tax Credit

$5,200 net cost

Annual Savings= 4000 watt * 1.08 * .75 * $0.10

= $324

Solar Payment Option

$26,000

– $7,800 federal

$18,200 net cost

Annual Payment = 4000 watt * 1.08 * .75 * $0.585

= $1,895.40

Ability to take advantage of tax credits depends on an individual's tax liability. Please consult a tax advisor to determine your ability to use tax credits.

4 kW Cost Example Investment Analysis

Net Metered

Out of Pocket Cost

- $19,000

Net Cost

- $5,200

Annual Savings*

- $324 per year

Simple payback

- 16 years

Solar Payment Option

Out of Pocket Cost

- $26,000

Net Cost

- $18,200

Annual Payment*

- $1,895

Simple Payback

- 9.6 years

*Simple payback = net cost / annual savings

Resources

- Energy Trust of Oregon
  - http://energytrust.org/
- Solar Oregon
  - http://solaroregon.org/
- Oregon Department of Energy
  - oregon.gov/ENERGY/RENEW/index.shtml
- Database of State Incentives for Renewables and Efficiency
  - http://www.dsireusa.org/
- Sustainable Solutions Unlimited
  - http://sustainablesolutionspdx.com