

Solar Update

Fort Collins

Residential Environmental Program Series

April 3, Agenda:

Solar Friendly Communities Gold Level

Recognition Award

7 to 7:30 PM

Rebecca Cantwell, Edward Stern, Bruce Hendee

Solar Update

7:30 to 8:15 PM

Norm Weaver, FC Utilities

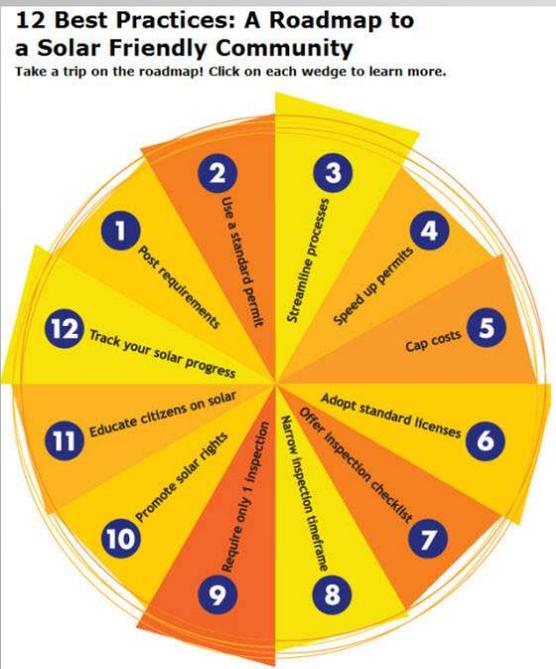
Questions

8:15 to 8:30 PM

Moving towards Best Practices



A recognition program developed by the Colorado Solar Energy Industries Assoc.



In Fort Collins

- Consolidated Webpages
 - fcgov.com/solar
- Updated policies
- Accessible checklists
- Simplified permit path
- Single inspection

Solar Update

Fort Collins

Residential Environmental Program Series

Norm Weaver

Fort Collins Utilities

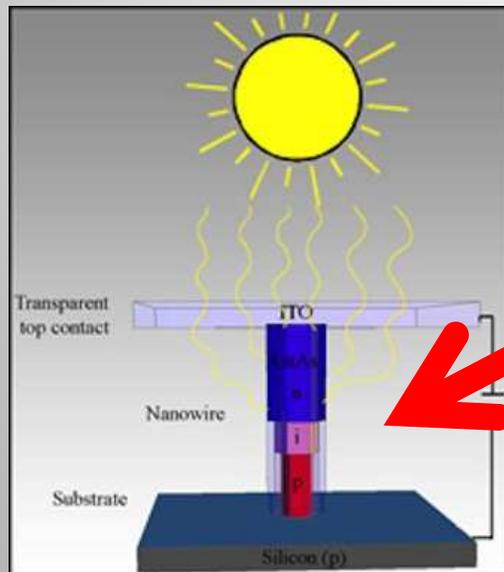
REPS, April 3, 2013

... anything new under the Sun ?

Nanowires could boost solar power 15X

Discovery breaks former theoretical limits

24 March, 2013



1/10,000th the
Size of a
Strand of
Hair

“New” ... but not likely available for years!

Tonight's Outline:

Sizing a System

Solar Trends

Cost Trends (Grid Power vs. Solar Power)

Leasing

On-bill Finance

Solar Programs

Rebates

Solar Gardens

Solar Power Purchase Program

Resources and Links

... can you spot the message?

“Reduce electric usage as you can,
then invest in solar.”

... at the community level

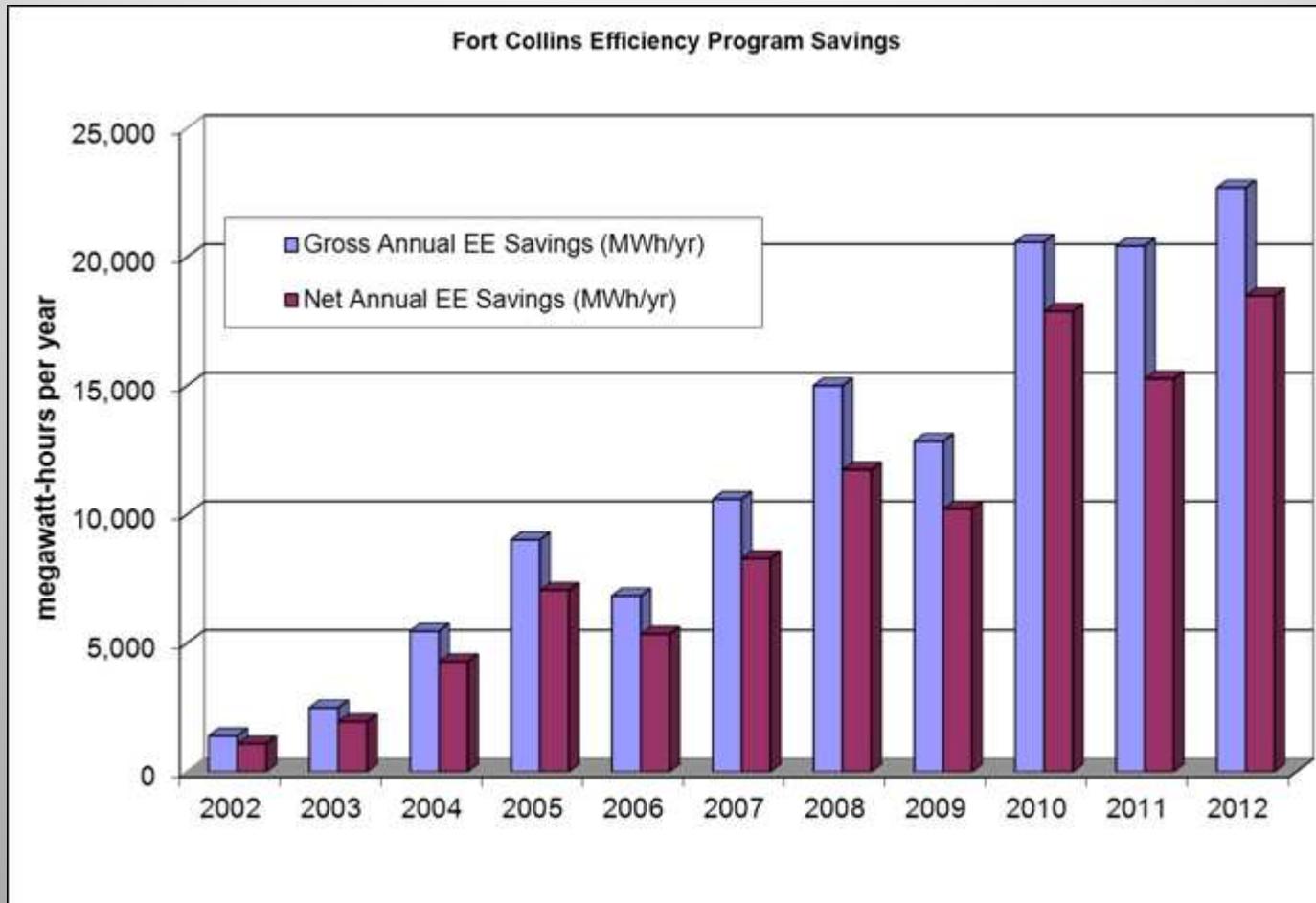
... and at the household level

Climate Action ...

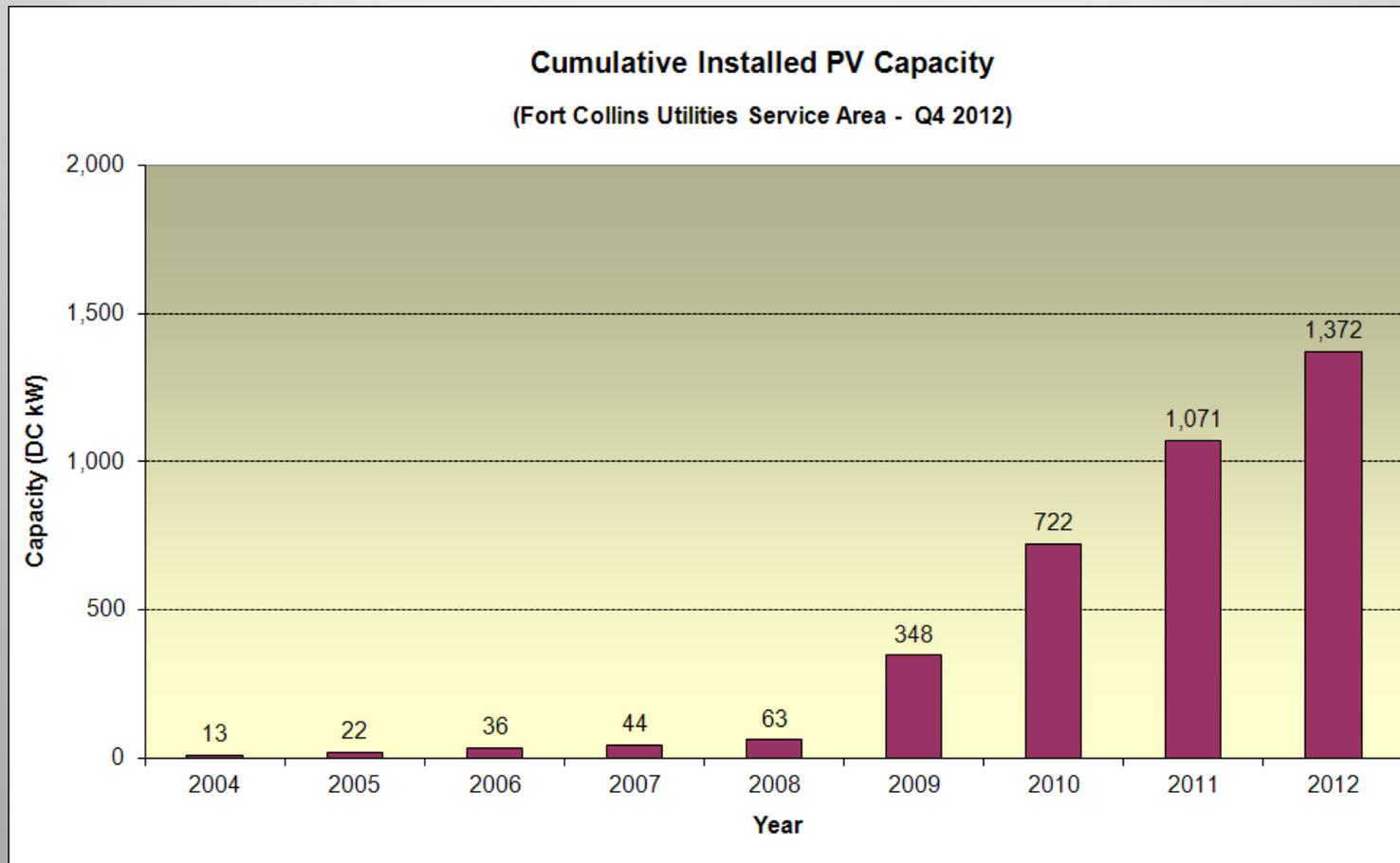


Community Trends

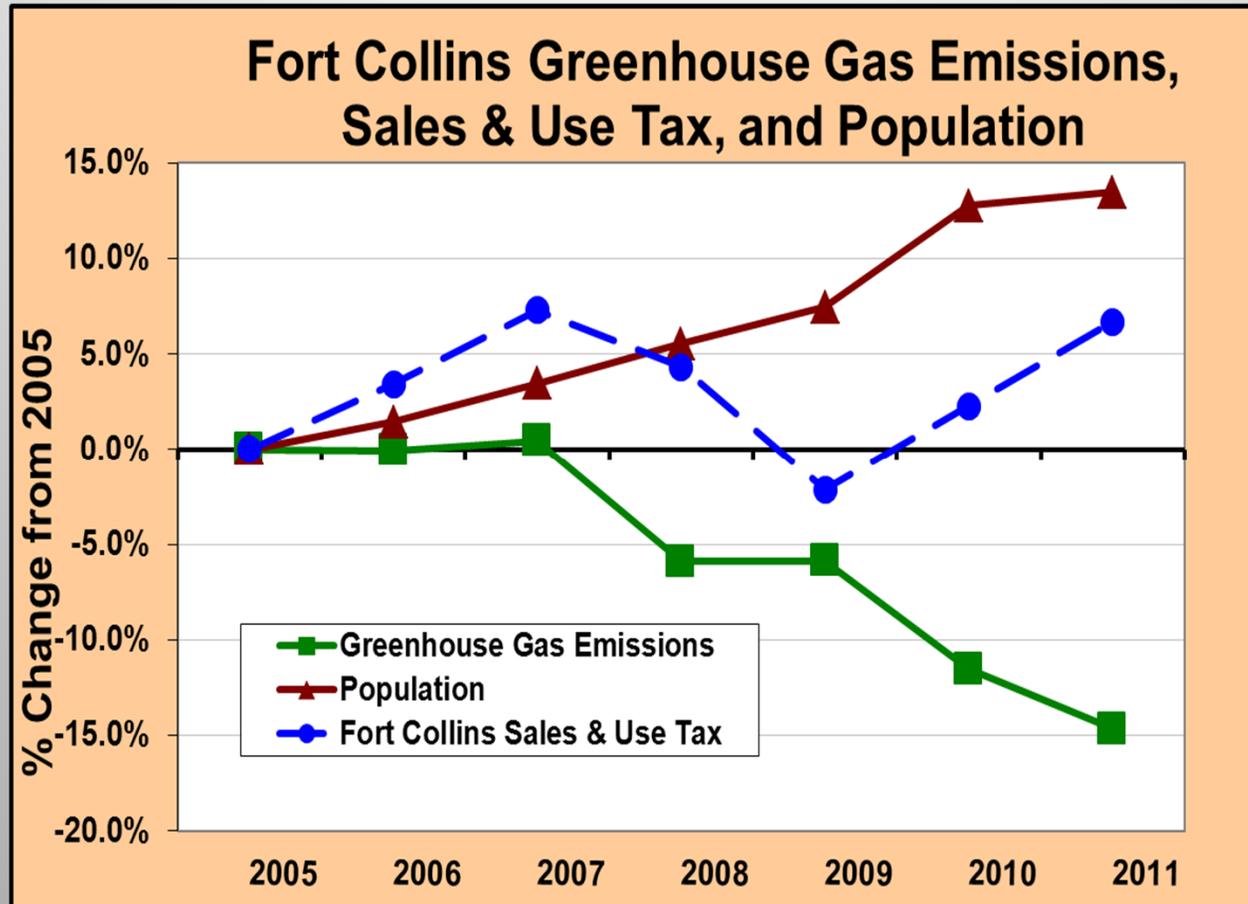
Energy Efficiency – Progress!



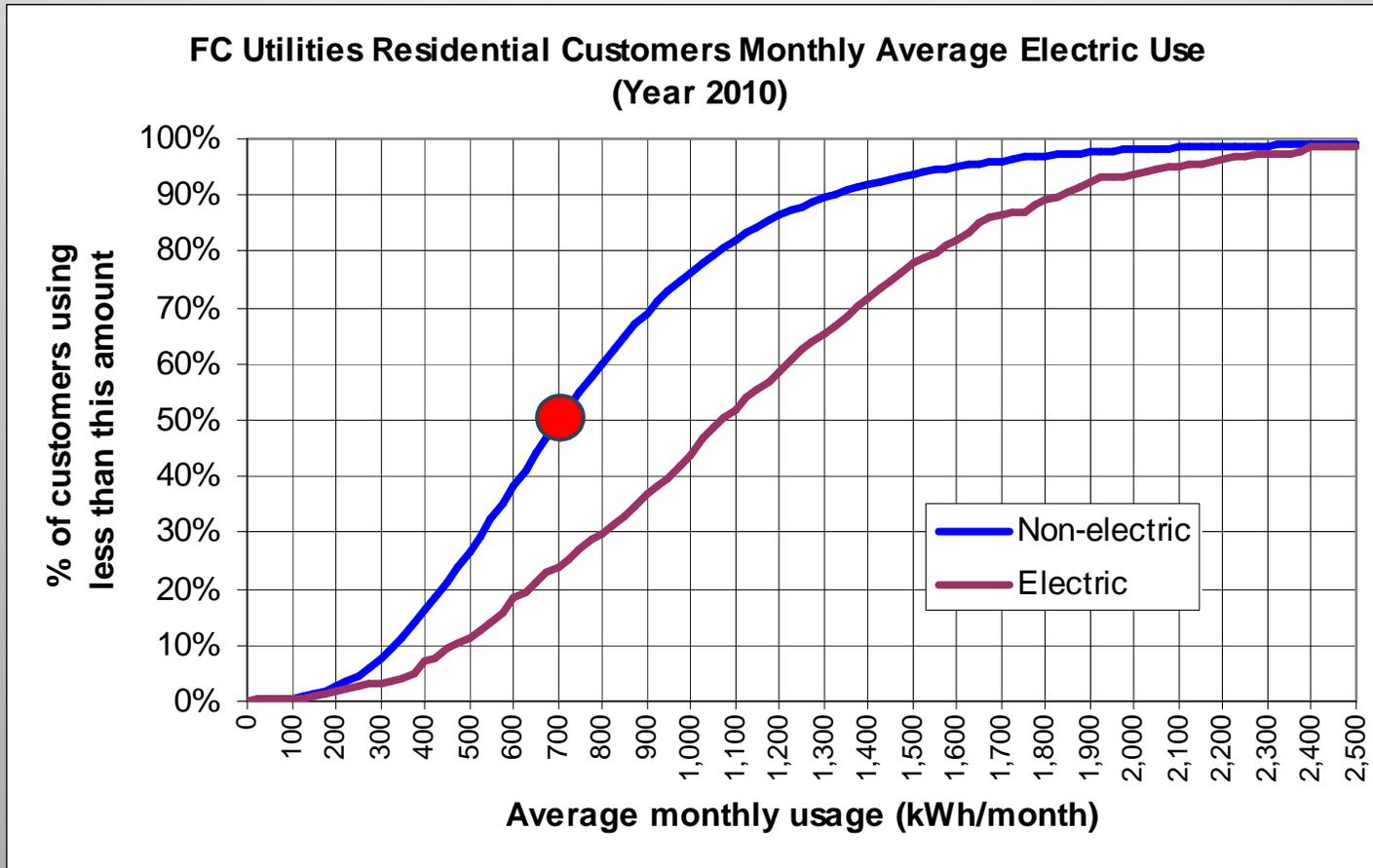
Installed Solar in Fort Collins



Trends at the Community Level

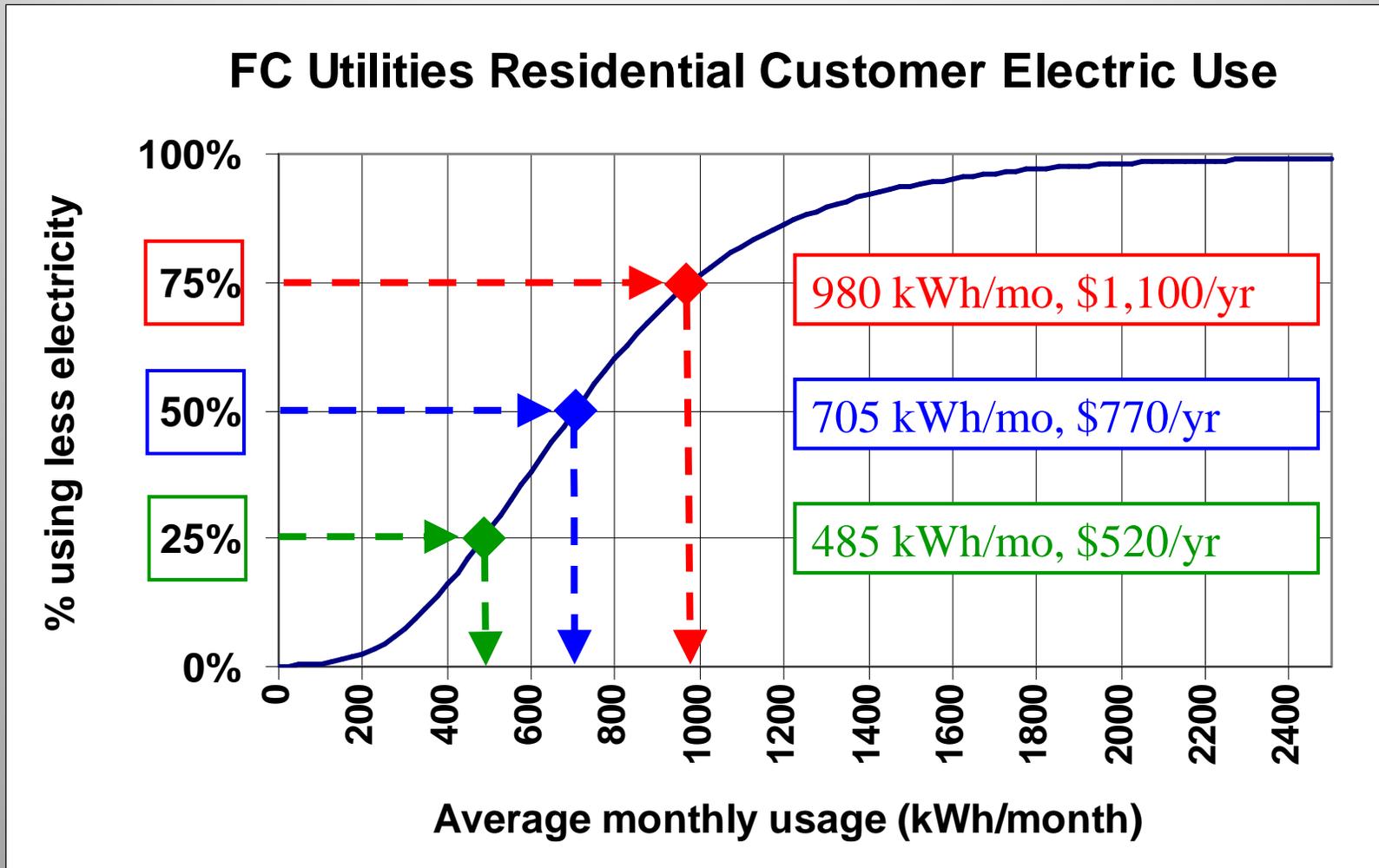


Trends: At the Household Level

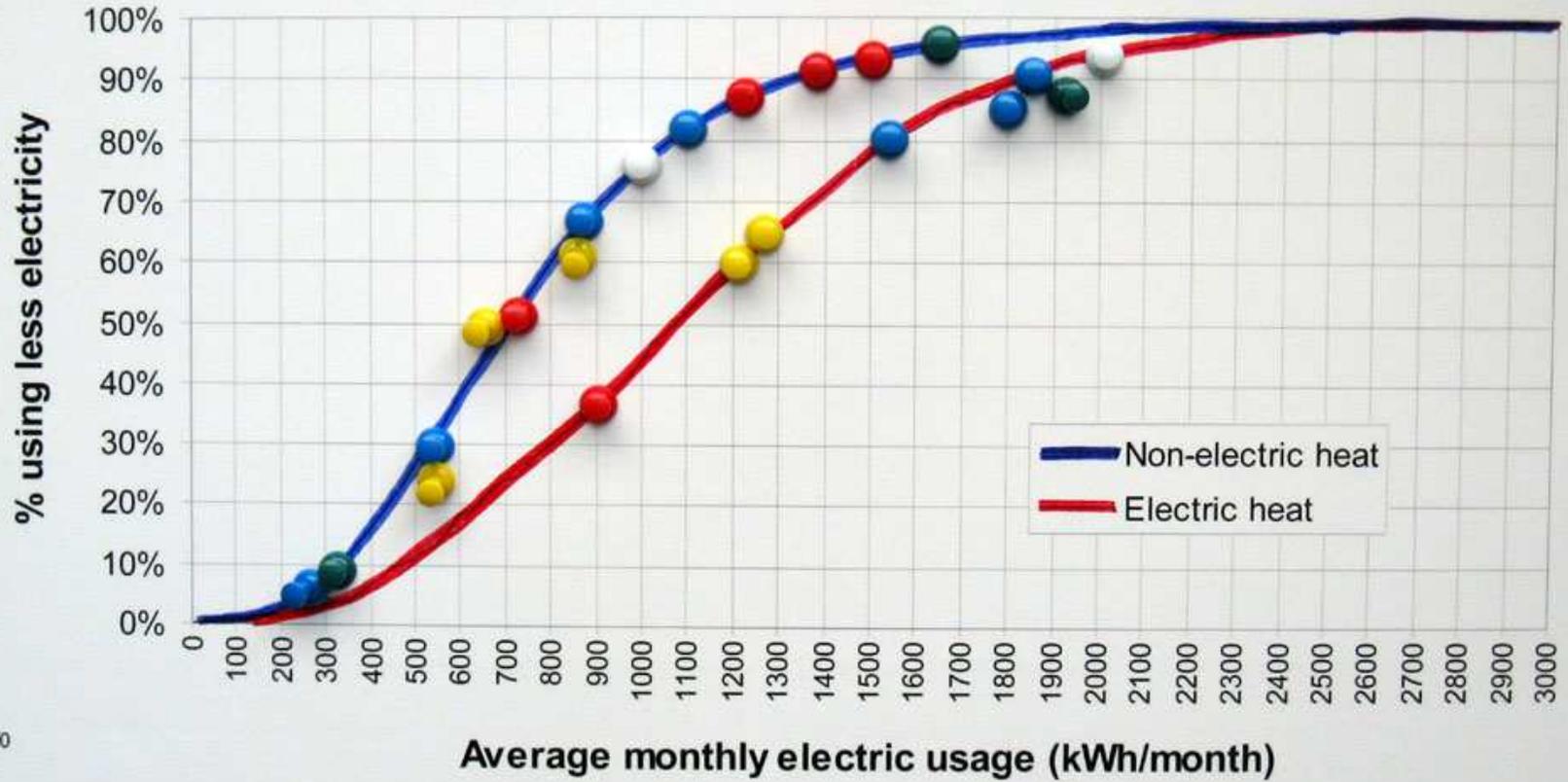


Where do you fall on the curve?

Benchmark Data



Fort Collins Utilities Residential Electric Use



2010

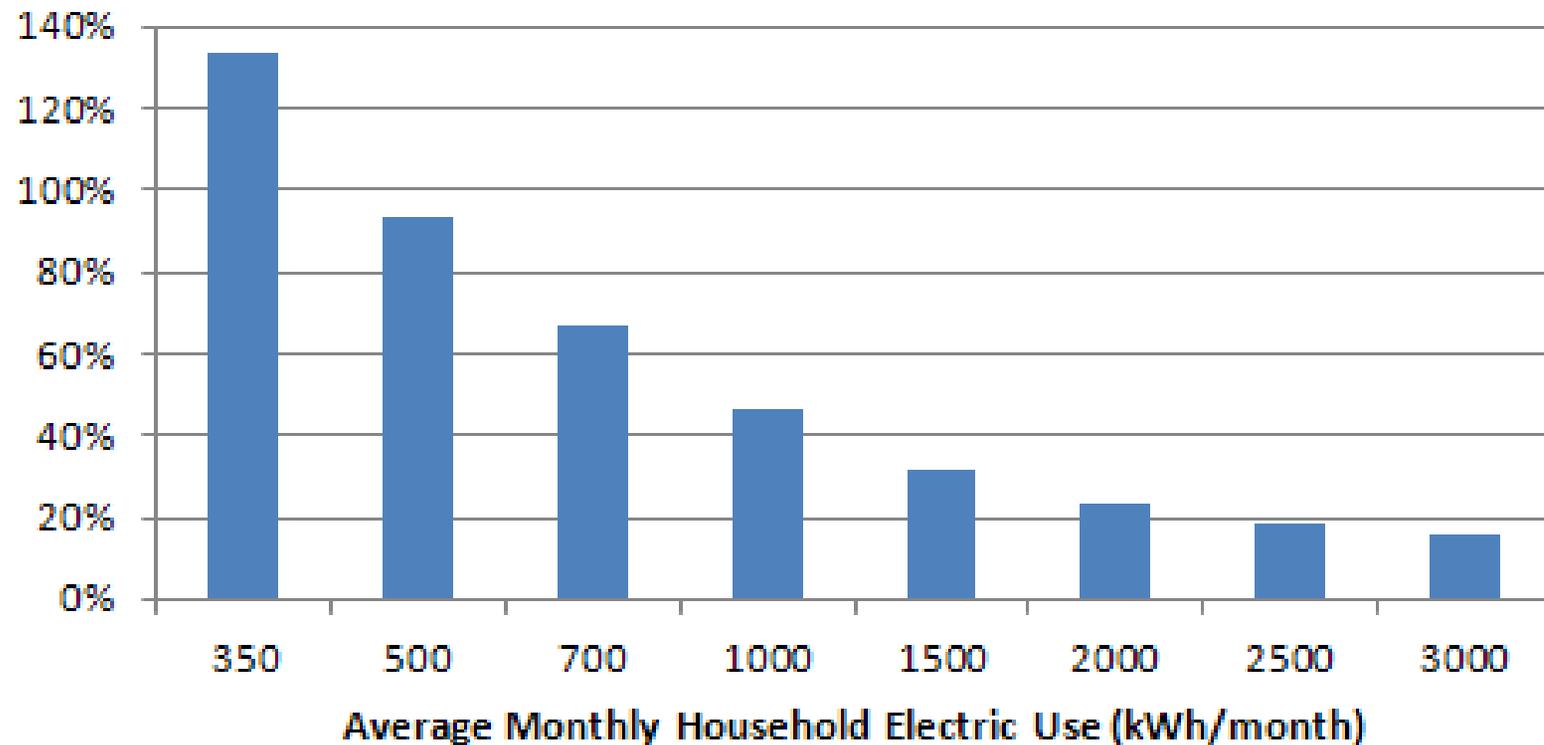
PV – How Much?

In Fort Collins, average residential PV system size is roughly

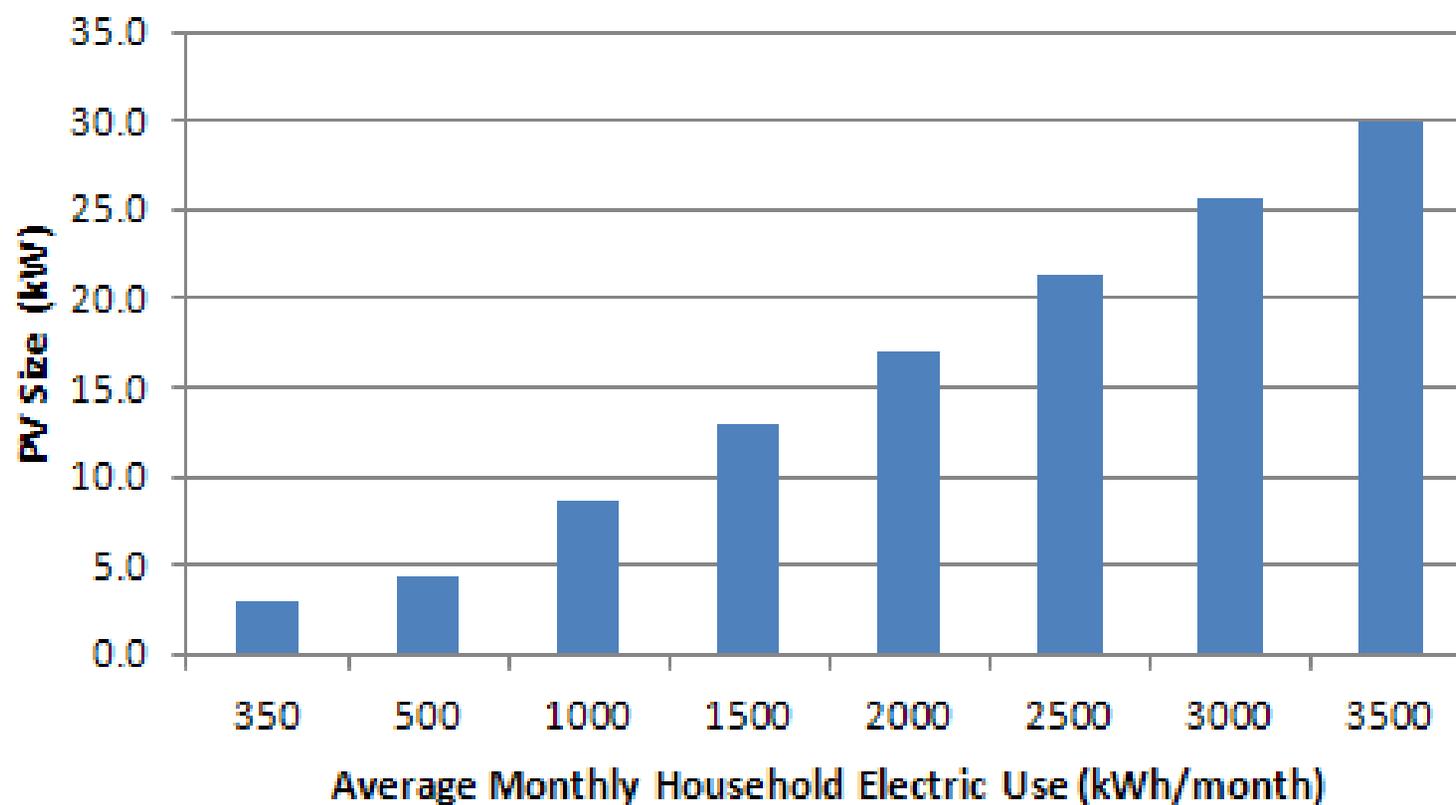
4 kilowatts

How much of your bill does that offset?

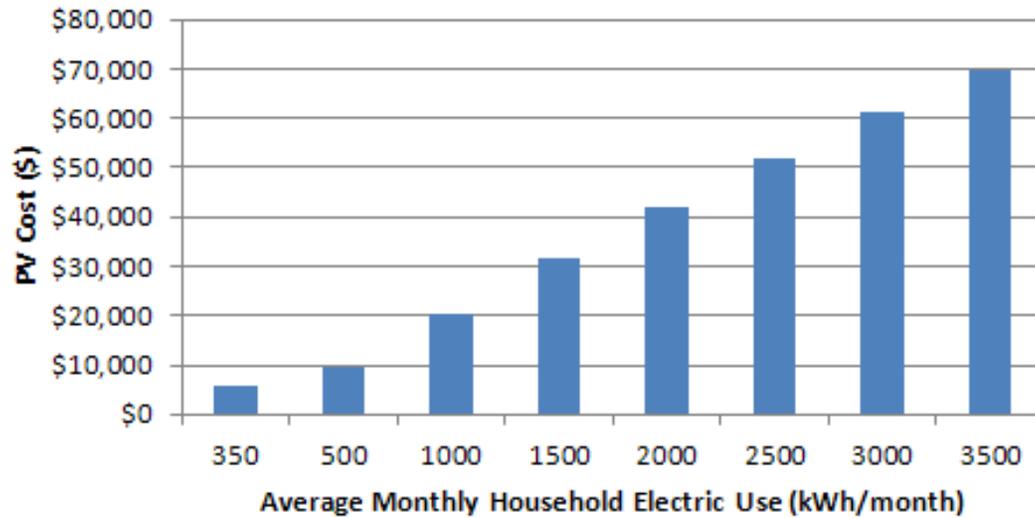
Electric Offset - 4kW PV System



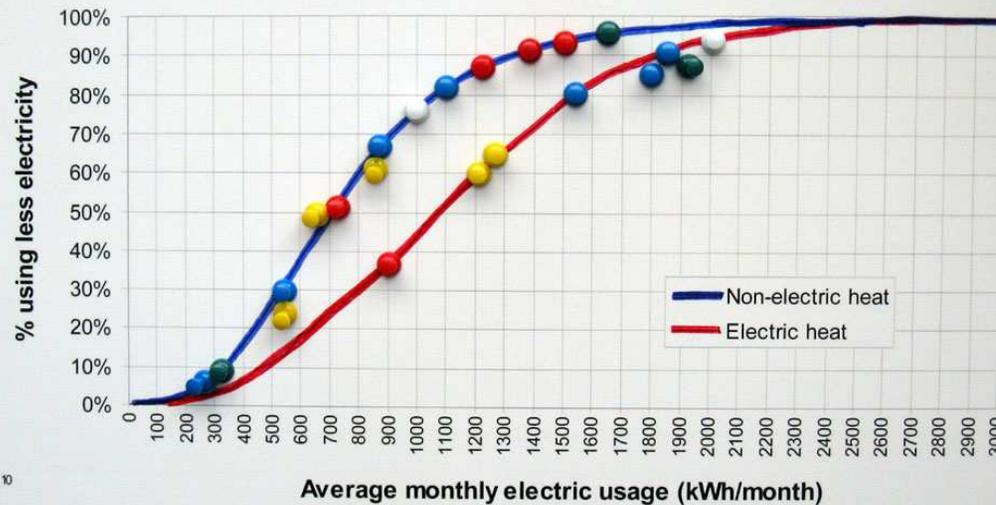
PV System Size for 100% Offset



PV System Cost for 100% Offset



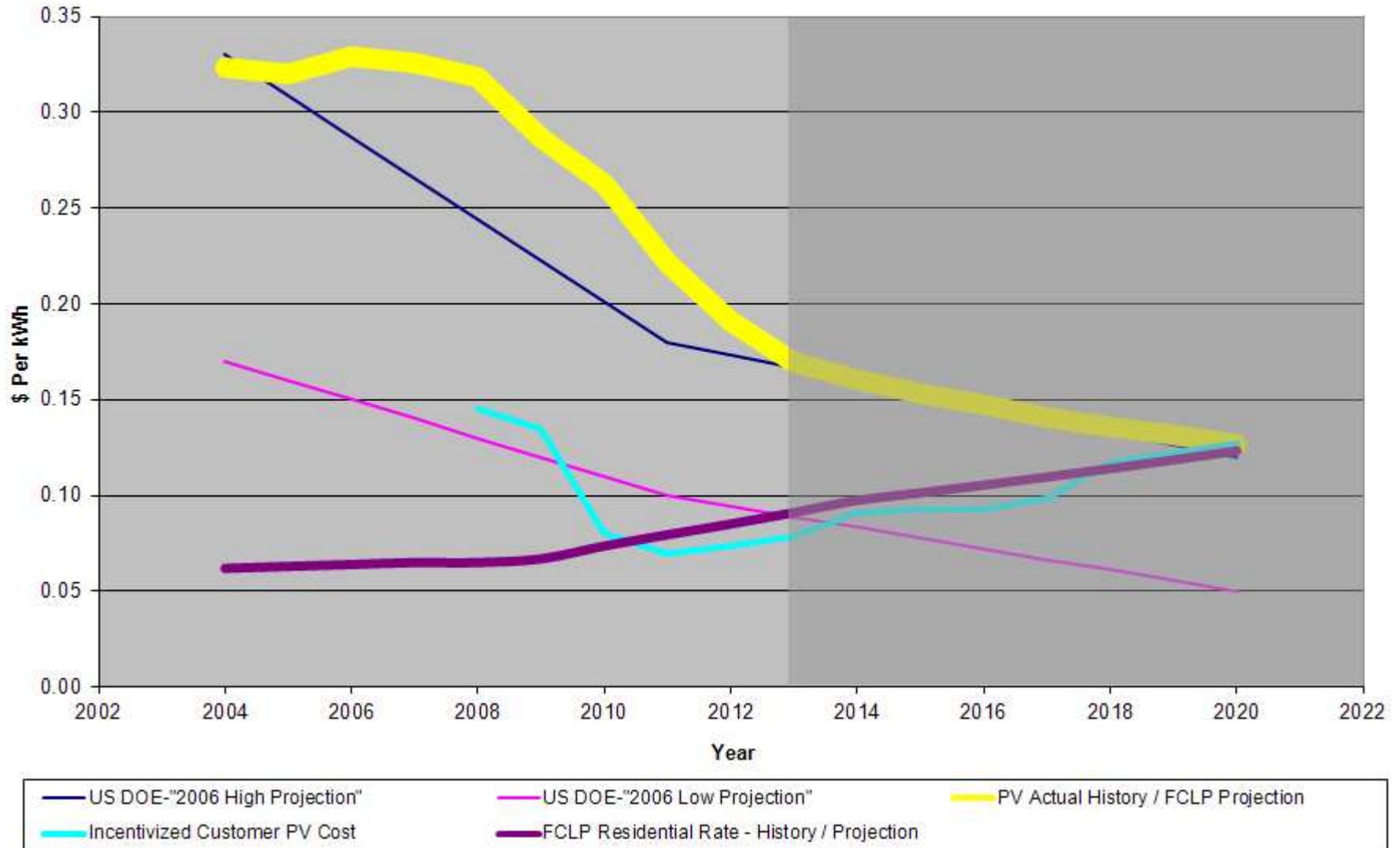
Fort Collins Utilities Residential Electric Use



2010

PV Cost - Financing

PV Cost Trends



PV Cost - Financing

Average cost of grid power in Fort Collins:	9.1 ¢/kWh
Summer high tier cost:	13.8 ¢/kWh
Currently, with incentives, 20 year average	
Cost of PV output:	~8.0 ¢/kWh
Installed Cost (4kW):	~ \$9000
(... not just pocket change)	

PV Cost - Financing

- Savings, Consumer Loans, ...
- Leasing
- On-bill financing

Solar Leasing

- Leasing Company installs and maintains PV on your roof
- Leasing Contract – 10 to 20 years typically
- Variations on the theme:

• Pay all up-front	Lower than cost to own	=> 6 ¢/kWh
• Pay less up-front		
• Pay none up-front	Roughly same as cost to own	=> 11 ¢/kWh



Solar Leasing

- **Pros:**

- Someone else maintains the system
- Low up-front cost

- **Cons:**

- Unexpected costs – reroofing, for example
- End-of Lease ?
- 20 year relationship with leasing company

- **Do your “due diligence”**

- Do the math
- Read and Ask - transfer of ownership?, output guarantees? ...

On-Bill Financing

Strategy: Reduce barriers to achieve

- Efficient built environment
- Conservation behavior
- Renewable supplies



Home Efficiency Program



On-Bill Financing Pilot “in a nutshell”

Address the up-front cost barrier to increase the number of residential efficiency & renewable energy projects

Key elements for success

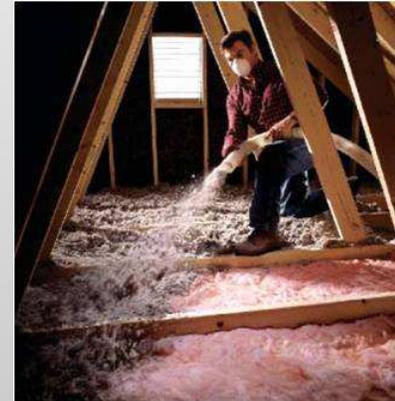
- Simple application and approval processes
- Finance 100% of project cost
- Repayment of loans on the utility bill



On-Bill Financing: Project Types

Home Efficiency

- HVAC (furnace, air conditioner, whole house fan, water heater)
- Insulation and air sealing
- Windows



Solar PV



Water service line repair or replacement

On-Bill Financing: Eligibility

- Residential property owners of single-family homes in Fort Collins (rental properties are eligible when loan application is submitted by property owner)
- Current Utilities electric customer for energy efficiency and/or solar loans
- Current Utilities water customer for water conservation loan

On-Bill Financing: Loan Details

- Loan amounts: \$1,000 to \$15,000
- Application fee = \$25
- Origination fee = \$150



Interest Rate and Loan Term Schedule (term and interest rate vary by loan amount and credit score)			
Term	5-year	7-year	10-year
Amount	\$1,000 - 2,500	\$2,501 - 7,500	\$7,501 - 15,000
Interest Rate	5.25 - 7.25%	5.25 - 7.25%	5.25 - 7.25%

APRs may range as low as 5.47 to 14.32% based on your creditworthiness, loan amount, term, and income verification type, and is subject to our credit qualifications. APRs are subject to change without notice.

Service may be discontinued for nonpayment of past-due accounts, including on-bill loan payments, in accordance with the municipal code.

fcgov.com/finance

On-Bill Financing: Process

- Applications and qualifications by Energy Smart Partners
www.energy-smart-partners.com
- Follow rules of existing programs for Home Efficiency and Solar Rebates
 - i.e. audit requirements, participating contractors, interconnection, etc.
- Loan closing after projects are completed
- Payments made directly to contractors

Solar Gardens



Solar Gardens

- An alternative for homes and businesses without good solar sites
- Customer owns a share of the garden and receives credit on their utility bill similar to have a rooftop PV system.
- The pilot solar garden project is currently at an early planning stage
 - Review of possible sites
 - RFP process for a third-party operator
 - Initial plan for a 250kW “phase 1” with room to grow

Commercial Solar Power Purchase Program

- Target is 5 megawatts of new solar
- Commercial Customers only
- PV systems 10 to 1000 kW
- 20 year purchase contracts
- Program under development – rolling out 3rd Quarter 2013



Online Resources:

- fcgov.com/solar - rebates and other program information
- fcgov.com/finance – on-bill financing
- fcgov.com/homeefficiency – energy audit and rebates
- fcgov.com/utilities/what-we-do - policy
- fcgov.com/reps – environmental program series

Thank you!

