

# Steps to Going Solar

Longmont Power & Communications

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# Steps to Going Solar in Longmont

- Longmont Power & Communications (LPC) is a community owned, non profit, electric distribution utility
- LPC supports distributed renewable energy systems in Longmont with:
  - Electric net metering rates
  - Interconnection standards for grid-tied systems
  - Technical support



# Getting Started With Solar

- Start with an energy audit or rating: get to know your home, analyze your usage
  - RESNET, BPI are leading national rater/auditor certification organizations
  - The Center for ReSource Conservation offers a professional subsidized audit
  - Other audit/rating companies offer various levels/types of services
  - Most “energy mortgage” financing options require a certified HERS Rating

# Conservation is FREE

- The simple things (*a.k.a.* “*waste not, want not*”!)
  - Educate yourself about energy-saving habits
  - Turn it off
  - Set it & forget it
  - Eliminate “phantoms”
- Contact LPC for efficiency tips, resources and incentives

*Good habits can offset inefficient systems...*

*Conversely, bad habits can defeat the most efficient home*



# Efficiency First

- Implement audit recommendations
  - Good audits provide recommendations prioritized by least cost/greatest impact
  - Best path, when possible, is a comprehensive energy retrofit, with “house as a system” guiding principles
  - Choose Energy Star – rebates designed to help cover cost premium
  - Reduce electric loads, minimize the size of PV system required, save thousands on your system



# Does Solar Fit?

- What size system?
  - NREL PV Watts Program  
<http://www.nrel.gov/rredc/>
  - Rule of thumb: 1kW PV = ~ 125 kWh/mo
- Do you have the room?
  - Rule of thumb: 100sf per 1kW PV
- Is the location suitable?
  - Shading?
  - Orientation?
- Get professional advice



# Net Metering

- LPC has net metering rates
- Only measures the net flow of electricity from the grid into and out of a building
  - Does not measure your system output
  - Does not measure your total electric consumption within the building
  - Difficult to compare before and after usage



# Net Meter Billing

- Customer generators still use the utility distribution system
- LPC rates are cost based
  - Generation rate design prevents cross-subsidy
  - Distribution costs formerly collected in kWh rate are now captured in monthly charge
  - kWh charge reduced
- Excess generation credited monthly
- Payment for annual excess generation



# How the 2010 Rates Compare

- RE: Standard Residential Rate
  - Customer Charge: \$6.00/mo
  - Energy Charge:
    - 0-750 kWh consumed: \$0.0597/kWh
    - 751-1,500 kWh consumed: \$0.0656/kWh
    - >1,500 kWh consumed: \$0.0733/kWh
- RGEN: Residential Generation Rate
  - Customer/Distribution System Charge: \$12.80/mo
  - Energy Charge: \$0.0485/kWh (less than 690 kWh)  
\$0.597/kWh (more than 690 kWh)



# Can I afford solar PV?

- Costs and options vary – get estimates
- Are there incentives?
  - Check with GEO for state incentives
- Federal Tax Credit = 30% of system cost
- State sales tax exemption
- Financing options
  - Solar systems may be financed through the Boulder County Commercial Climate Smart Loan Program, or through private lending if you qualify. Consult your lender and/or financial advisor for guidance



# Other Economic Factors

- Impact on home value and or ease of sale
- Some financing options offer tax-deductible interest and achieve break-even or monthly savings from day 1
- Tax credit doesn't occur until taxes are filed, if eligible
- Electric rates will be increasing
  - State Climate Action Plan/RPS requirements
  - Fossil fuel supply costs trend upward over long term
  - Possible Federal carbon legislation

# Proceed with Installation

- Get bids from licensed & certified installers
  - List of installers at [www.coseia.org](http://www.coseia.org)
  - National solar certification [www.nabcep.org](http://www.nabcep.org)
- Investigate and apply for incentives and/or financing before proceeding
- Obtain building permit
- Request LPC interconnection agreement



# OK, my PV system is complete...

- Building Dept. inspects for electric code compliance up to panel
- LPC schedules “pre-parallel” inspection
  - Anti-islanding test
  - Requires short outage
- Placed on net-metering rate
- Monthly net metering report
- **YOU’VE GONE SOLAR!**



# Solar Domestic Hot Water

- Use the sun's radiant energy to heat water for domestic use (shower, laundry, etc)
- Typically 2-3 panels will supply family of 4
- Since supplying year-round hot water, panels can often be flush-mounted
- Panels vary in size and appearance, but are generally larger than PV panels
- Solar thermal storage tank space required
- Like other major appliances, some maintenance required for optimal long-term performance



# Solar Domestic Hot Water

- Costs and options vary widely – get estimates from licensed & certified contractors
  - [www.coseia.org](http://www.coseia.org), [www.nabcep.org](http://www.nabcep.org)
- Are there incentives?
  - Check with GEO for state incentives
- 30% Federal Tax Credit
- Payback often faster than PV, but depends on usage – not “net metered”



# Solar Domestic Hot Water

- Solar Hot Water can also be used for space heating; upfront costs can be significantly higher; systems may be larger and more complex; require more maintenance
- Check with GEO for state incentives
- Federal Tax Credit = 30% of system cost
- Commercial Climate Smart Loan Program allows for repairs of “orphaned” SHW systems to be financed



# Questions?

- Contact:

Longmont Power & Communications (LPC) at 303-651-8386 or [www.ci.longmont.co.us/lpc](http://www.ci.longmont.co.us/lpc)

Boulder County at 303-441-3131 or [www.bouldercounty.org/sustain](http://www.bouldercounty.org/sustain)

Center for ReSource Conservation (CRC) at 303-999-3820 or [www.conservationcenter.org](http://www.conservationcenter.org)

Governor's Energy Office (GEO) at 303-866-2100 or [www.colorado.gov/energy](http://www.colorado.gov/energy)

Colorado Solar Energy Industries Association (CoSEIA) at 303-333-7342 or [www.coseia.org](http://www.coseia.org)

National Renewable Energy Laboratory (NREL) at 303-275-3000 or [www.nrel.gov](http://www.nrel.gov)

