



# Solar Working Group Summary of Findings

## **Solar Working Group Members:**

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# Intro

- Thanks to Mayor, Council, and Staff
- Group: diverse, experienced = valuable resource
- Topics covered a lot of ground: tactical short term tactical issues, blue sky brainstorming, highest priorities and lowest hanging fruit

# Topics and Recommendations

- Recommendations for Increasing Local Solar
  - Dynamic Integrated Resource Planning
  - Maintain a detailed forecast of declining solar costs
- The Transition from Incentives to Reducing Barriers
  - Facilitate / Enable financing options, esp. for C&I customers
  - Embrace Solar Gardens and Remote Net Metering
  - Streamline permitting process
- Tariff Design
  - We recommend that solar incentives and general rates be designed simultaneously / holistically

# How much solar should Boulder target?

- We need to know how much **capacity** is available on rooftops, parking lots, etc. – study coming
- We need to know the **future load** - moving targets
  - Load reduction: EE, DR, TOU pricing.
  - Load increases: electrifying the City's transportation sector.
- Opportunity for enhanced **grid reliability**
  - In the past, variable generation had a reliability threshold
  - Complementary technologies, e.g. battery storage and microgrids
    - Changes variable power to firm power
    - Improved resiliency with locally generated power

# Calculating an Incentive

- The math is straightforward, but need to know what economics will motivate customers to go solar
- Want strong uptake, but not too strong (boom/bust)
- For example – a Five year payback
- Different types of Customers must be considered:
  - Resi, C&I, high demand, low income housing
- Lastly, we have to keep in mind the ITC will sunset in 2017

## What to expect after the ITC sunsets in 2017?

- ITC steps down from 30% to 10% at the end of 2016
- Possibility for extension by congress (e.g. Wind)
- Strong possibility for a de facto extension – projects that start construction before 2017 would be eligible
- Without the ITC, gap widens by 20%
- Grid-parity will be delayed in Colorado
- Analysis by industry pundits - referenced in the report

We recommend the City maintain a detailed analysis forecasting declining solar costs as 2017 approaches

# Financing is a barrier for Solar

Financing is scarce for solar, esp. for C&I

- High transaction costs in assessing credit worthiness
- Important dilemma to recognize since C&I is ~80% of Boulder's load

We recommend the City facilitate / enable financing options, esp. for C&I customers

# Options for Financing Programs

Rely on external programs

- 3<sup>rd</sup> Party PPA financing (BAU)
- State PACE program – launching this winter

Create City Financing Program

- On Bill Financing
- Enhanced by loan loss reserves

City could also play the role aggregator to help dilute transactions costs

# We recommend the City embrace Solar Gardens and Remote Net Metering

## Advantages of Solar Gardens

- For customers with shaded roofs or subpar orientations
- For renters and residents of condominium buildings
- Improved economies of scale
- Flexibility of a liquid investment

Remote Net Metering ensures that the roofs with the best potential are fully utilized.

- creates synergy between properties with high energy demand and those with surplus roof capacity for solar PV, e.g. warehouses

# Solar Friendly Communities

<http://solarcommunities.org/>

12 Best Practices: A Roadmap to a Solar Friendly Community

Platinum Level: 1400 points.

For Example: 275 points for a standard permit form for streamlined review.



# Tariff Design

We recommend that Incentives and rates be designed simultaneously

Rate Design can support solar PV

- e.g. inclining block, time of use, real-time pricing, no demand charges, minimum bills, etc.

Net Metering vs. Feed in Tariff vs. Value of Solar

- Price Degression
- Who enjoys the Solar Hedge
- Administrative simplicity
- Flexibility to modify the tariff
- Legal hurdles

# Next Steps

## Near Term:

- Applying for Solar Friendly Communities
- Consolidated solar website: [www.bouldercolorado.gov/solar](http://www.bouldercolorado.gov/solar)
- Designing local solar potential study

## Longer Term:

- Transition planning –working groups, goals, targets, modeling, economic considerations, financing, rate and tariff design
- RFP for local solar study
- Modify solar grant program

