Solar Working Group Summary of Findings

Solar Working Group Members:

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Tuesday, August 19th

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

We recommend dynamic Integrated Resource Planning

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

- 3rd 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
- 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

Q&A