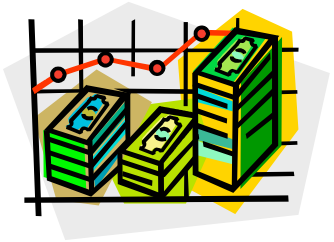
Yolo Leaders Forum

Evaluating the Economics of Energy Savings



Government Financial Strategies inc.

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September 26, 2012

Today's Agenda

- Independent Analysis
- Savings Analysis
- Analytical Tools

Value of Independent Analysis

- Solar energy projects can be high risk
  - Projected savings may not exceed:
    - » cost of project
    - » cost of financing the project

- Independent Analysis
  - Energy
    - » Understanding the solar system size, cost, energy generation, output degradation, etc.
  - Financial
    - » Understanding the projected savings, underlying assumptions, and potential risks

✔ *It's important to <u>not</u> solely rely on the firm selling the product.*

Savings Analysis

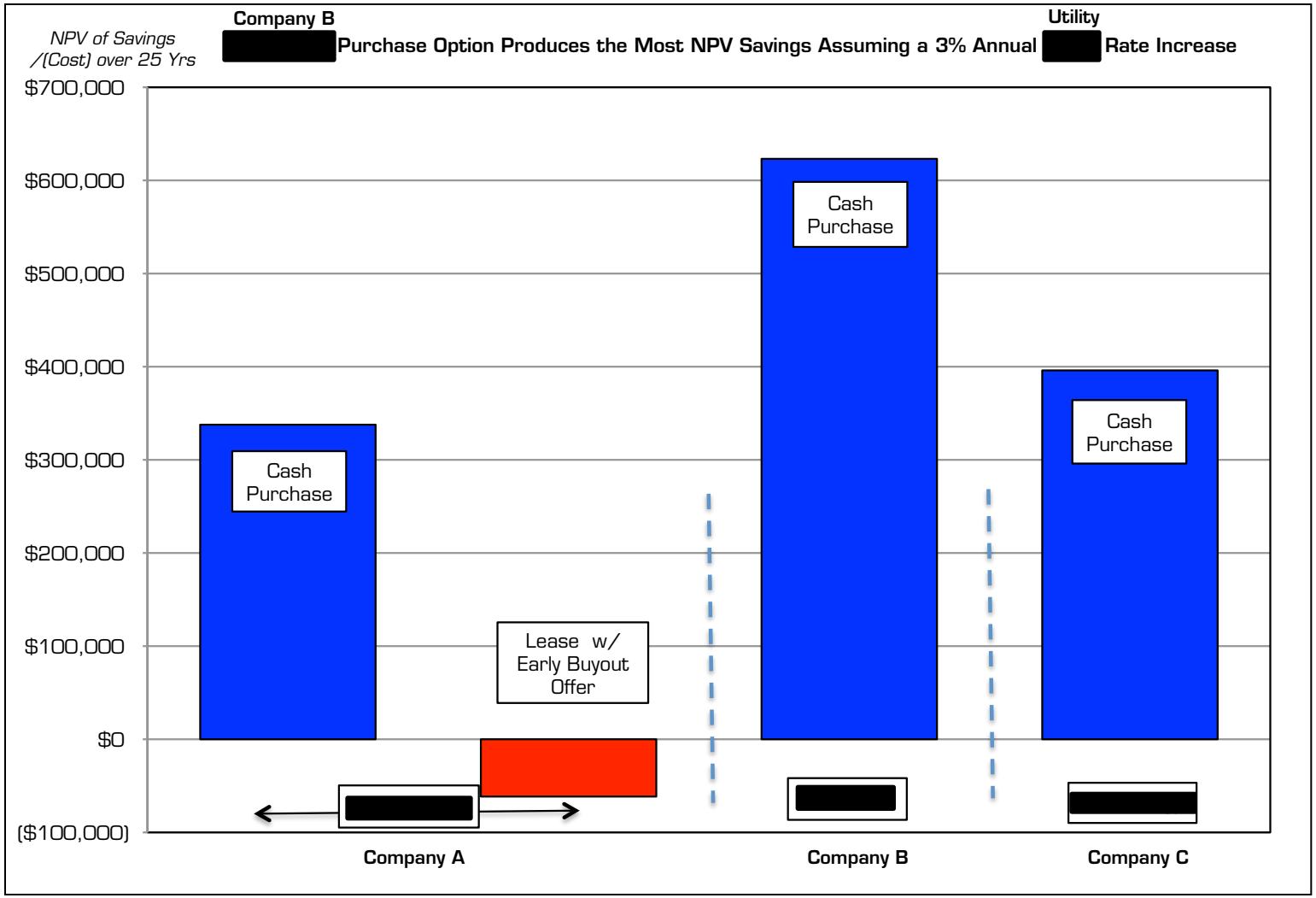
- Key underlying assumption
  - Assumed growth in energy cost from utility provider (from whom energy would otherwise be purchased)
- Other considerations
  - Financial incentives
    - » California Solar Initiative rebates for ownership
    - » Tax credits and depreciation bonuses for PPAs
    - » Federal subsidies for financings
  - Annual maintenance costs
  - Equipment replacement costs
    - » Inverter replacement

Analytical Tools

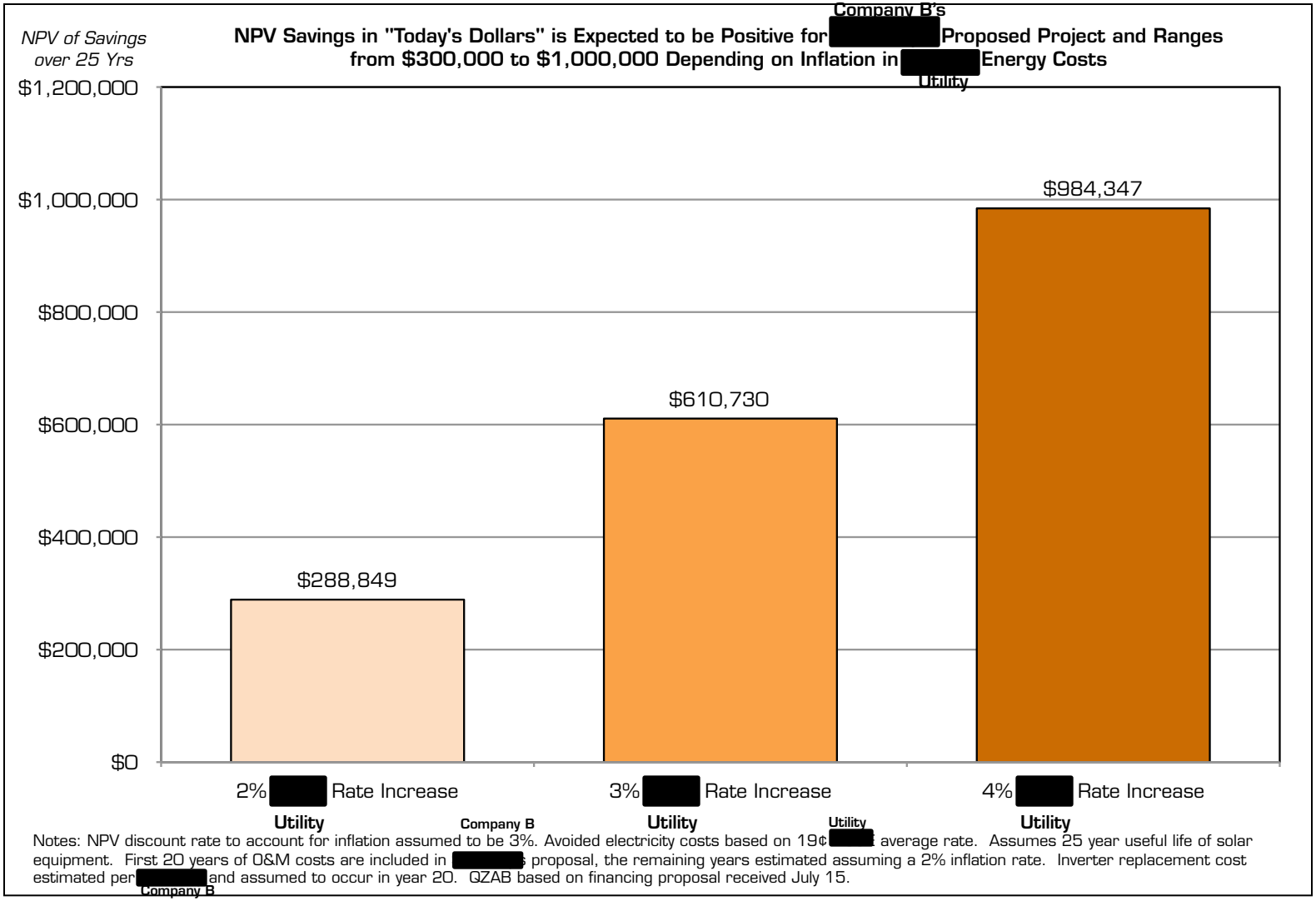
- **Net present value analysis**
  - **This tool should be used for ranking projects and selecting the optimal project**
  - **It looks at savings over time, calculated in today's dollars, less the cost of the project in today's dollars**
  - ✓***The discount rate/inflation rate used is critical***

- **Cash flow analysis**
  - **This tool should be used to determine the feasibility of the project from year to year**
  - **It looks at whether cash shortfalls are expected to occur in any given year and options to mitigate the shortfall**

NPV Savings Identifies Best Project

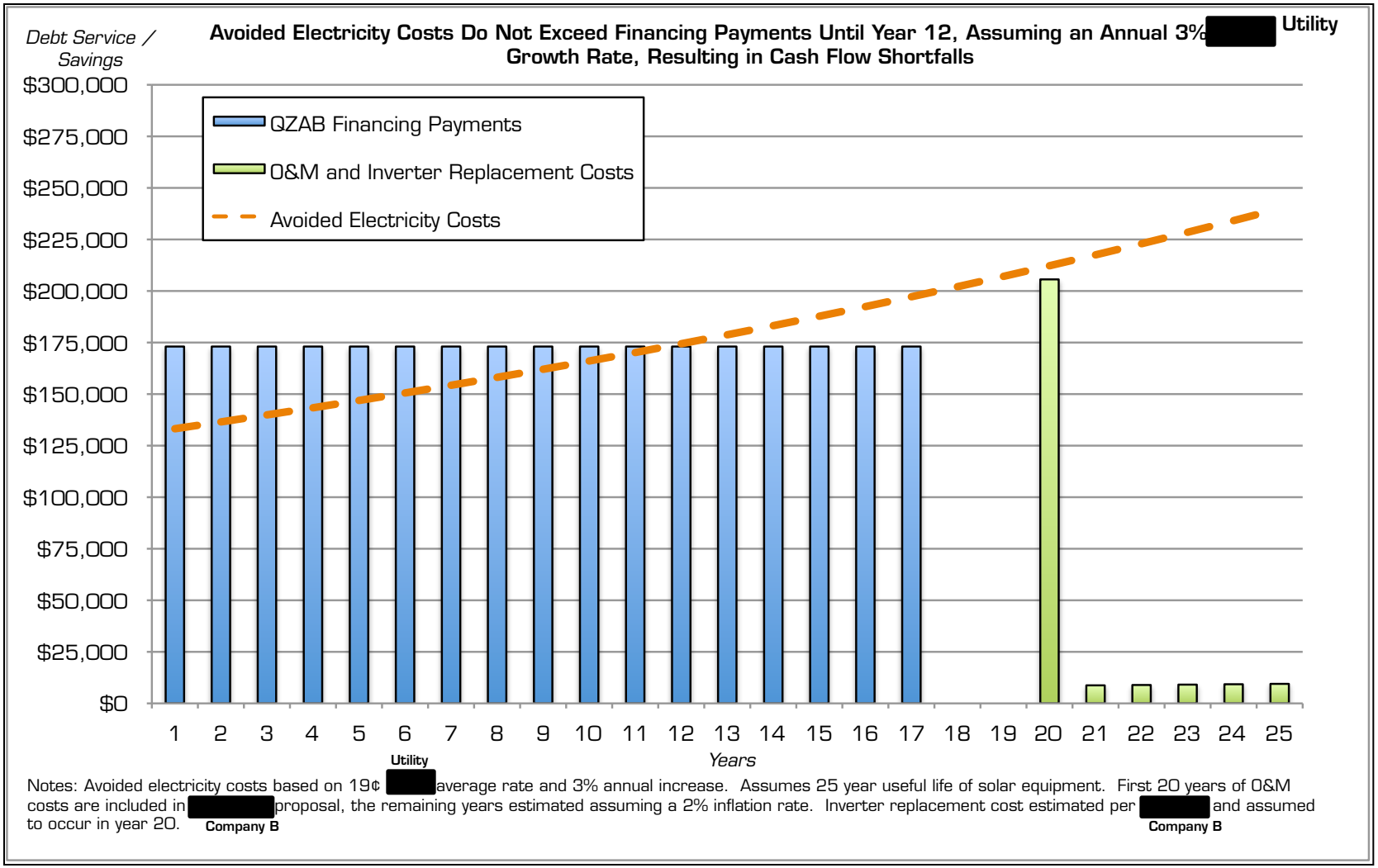


Consider Savings Risk - Vary Assumptions



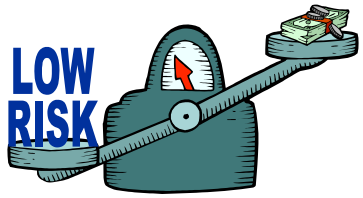
Notes: NPV discount rate to account for inflation assumed to be 3%. Avoided electricity costs based on 19¢ average rate. Assumes 25 year useful life of solar equipment. First 20 years of O&M costs are included in proposal, the remaining years estimated assuming a 2% inflation rate. Inverter replacement cost estimated per and assumed to occur in year 20. QZAB based on financing proposal received July 15.

Cash Flow Analysis Reveals Shortfalls



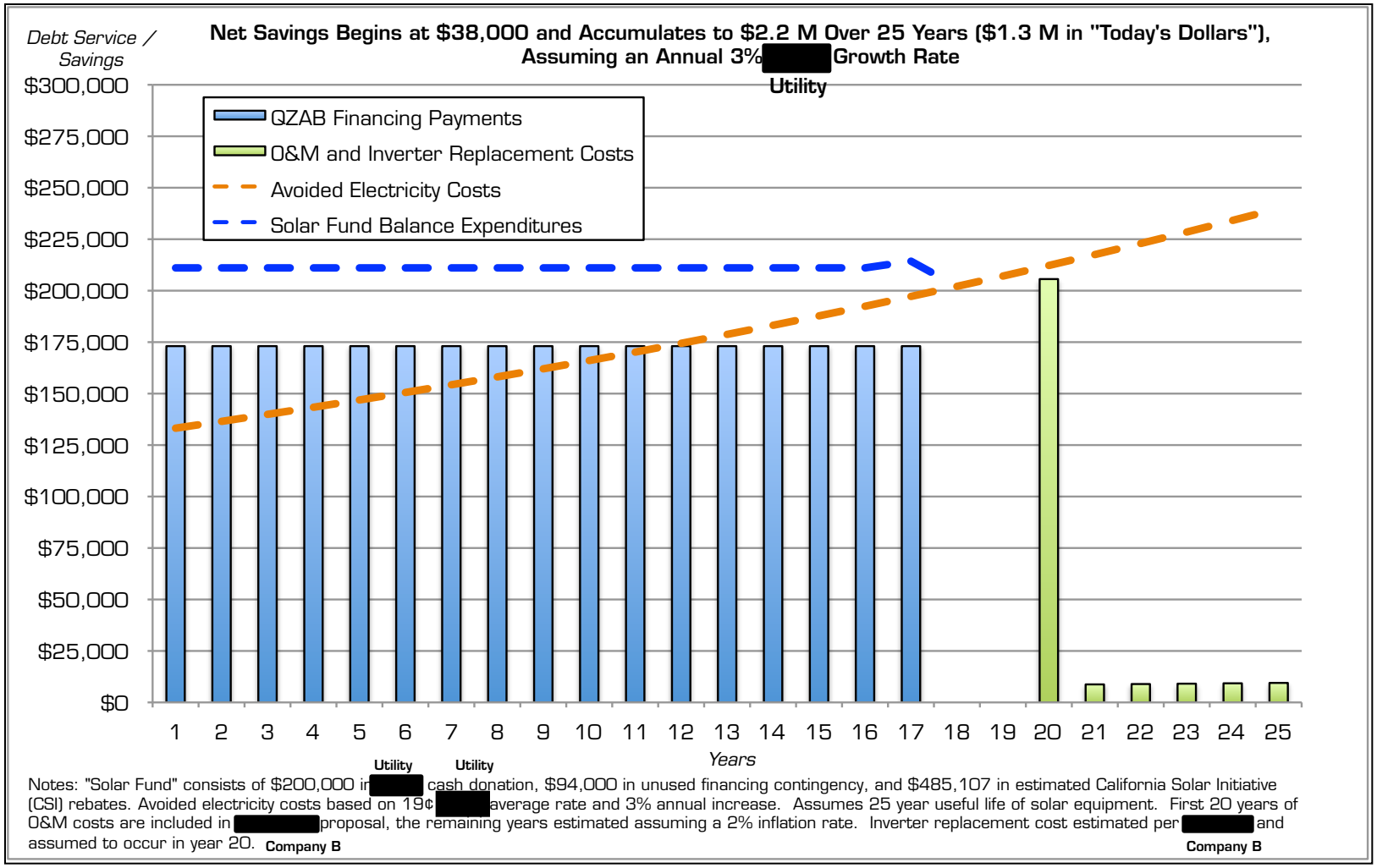
Cash Flow Risk Mitigation Strategies

- Establish a "Solar Fund" that can contribute to paying for the project in case projections do not materialize as planned.
  - » California Solar Initiative rebates
  - » Unused contingency financing or construction funds
  - » Donations or contributions



- Optimize the financing structure.
  - – Review financing options that receive Federal subsidies.
  - – Consider a term and payment schedule that better synchronizes with the expected savings.
  - – Make sure interest rate and upfront costs are minimized.
- Consider using facilities-restricted funds.
  - – Mello-Roos, General Obligation Bond, etc.

Cash Flow with Risk Mitigation

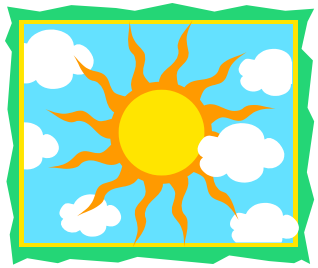


Tools Work for All Energy Projects

- **Project Types**
  - Energy Generation
  - Energy Conservation
- **Implementation Methods**
  - User owned
  - Power Purchase Agreement
  - Solar Lease
  - Other

Concluding Thoughts

- **Investing in energy improvement projects may run into financial obstacles because:**
  - **Not enough savings to pay for the project or financing**
  - **The annual cash flow results in shortfalls in certain years**
- **Analytical tools to evaluate whether to invest include:**
  - **NPV savings to rank projects**
  - **Cash flow analysis to identify shortfalls**
- **Utilizing risk mitigation strategies to improve savings and cash flow can boost confidence and maximize results.**



- ***Questions?***