

# 2012 Caltech Energy Efficiency Forum

## Green Revolving Fund Key Takeaways

### What is CECIP?

The Caltech Energy Conservation Investment Program (CECIP) is a capital revolving fund, financed by the Institute's endowment, used to finance energy conservation projects. The fund is then reimbursed from avoided utility costs that result from the implementation of the projects.

### CECIP Projects Must

- Exhibit verifiable savings
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- Contain a plan for periodic measurement & verification
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- Provide return on investment greater than 15%

If you can't see where the energy is going, finding savings will be difficult.

### Getting Started

#### Know Your Data

1. Energy density (BTU/SQFT)
2. Space type (lab to support space ratio)
3. Load Profile (heating, cooling & electricity)
4. Utility rate structure(s)
5. How does my facility compare to others ?
6. System types (CAV, VAV, Pneumatic, DDC)

#### Making the case for a green revolving fund

1. What is the max draw on the fund (access to capital)?
2. How much work will be executed over program term?
3. What is the program break-even point?
4. Can we "rim-fence" the utility budget?
5. Can we budget for avoided cost paybacks?
6. How will risk be managed?

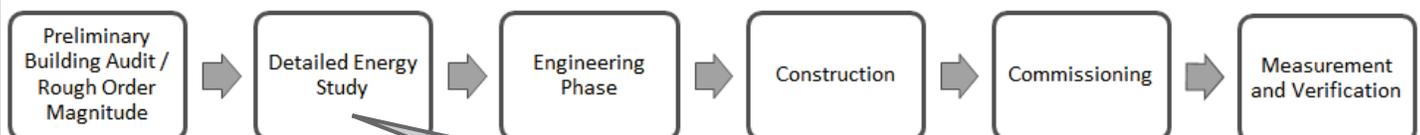
### Benefits to Caltech's Management Approach

- Partnership approach with agreed upon goals
- Transparent process
- No upfront cost during evaluation
- Accountability through commissioning and M&V

### Build the Team

- Engage your utility representative
- Engage campus stakeholders (O&M, end users, management, finance)
- Evaluate engineering, construction, and retrofit teams for compatibility and transparency

### Define the Process



Energy modeling is time intensive and expensive. It is required for deep high capital cost projects but don't discount simply counting and taking spot readings. Quick calculations are a great proxy to guide the retrofit team and bound the task of developing a scope of work.

### Ranking Projects

- Non mutually exclusive ECMs—use modified internal rate of return
- Mutually exclusive ECMs—use NPV
- Use simple payback as a proxy for risk

### The MANTRA

The cost to the utility budget during a CECIP project does **not** change. What does change is that a portion goes to utility bills, and a portion to debt service. **After the payback period**, there is a real \$\$ reduction in the utility budget.

### Key Financial Points

- Be sure everyone understands the concept of **avoided cost** and what it will mean.
- Plan with the Facilities crew beforehand (define maximum draw to the revolver)
- Make sure everyone is clear on roles (approval, payback calculation, directing loan draws/repay, recording )
- Plan to have the program's design and operation audited, early on