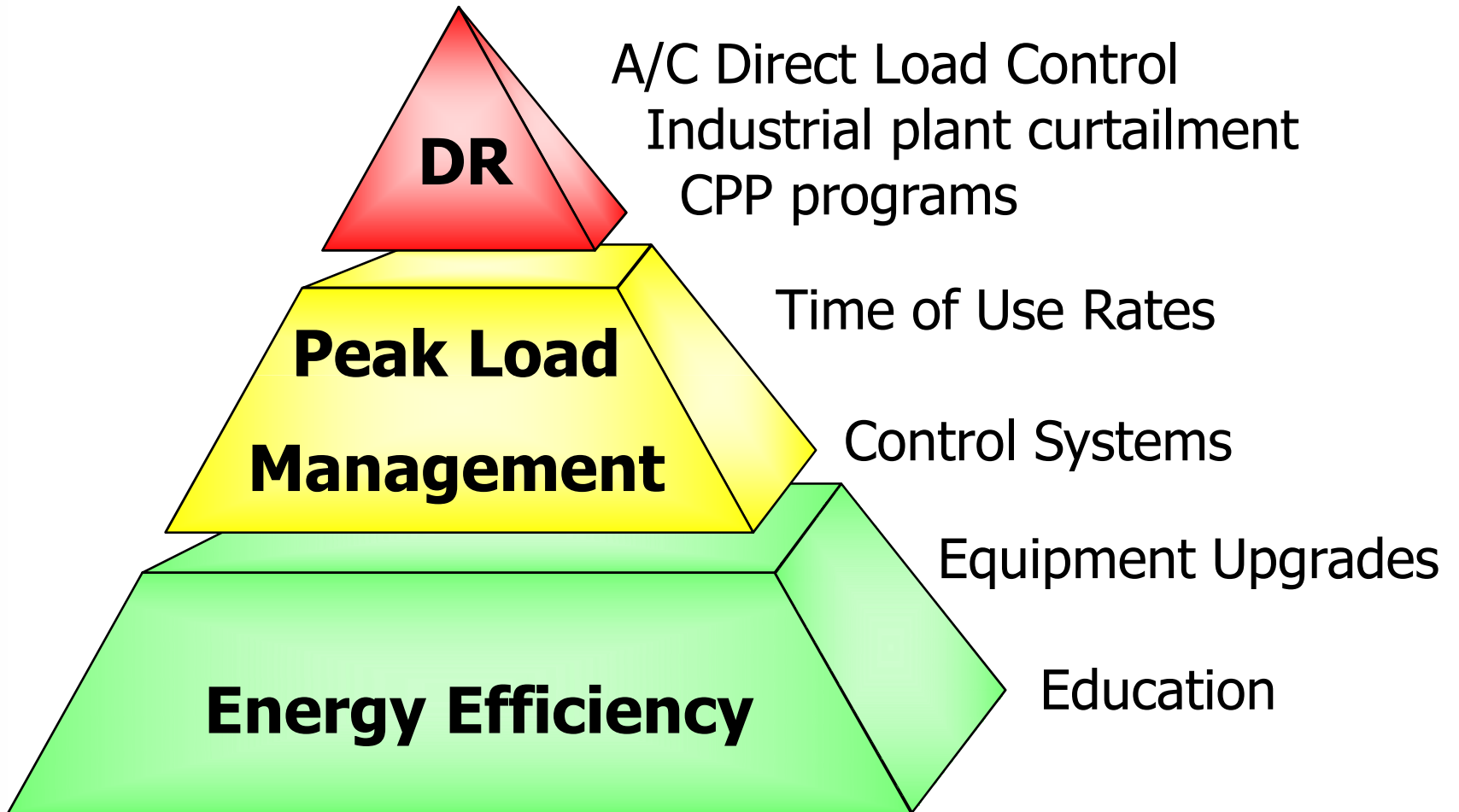




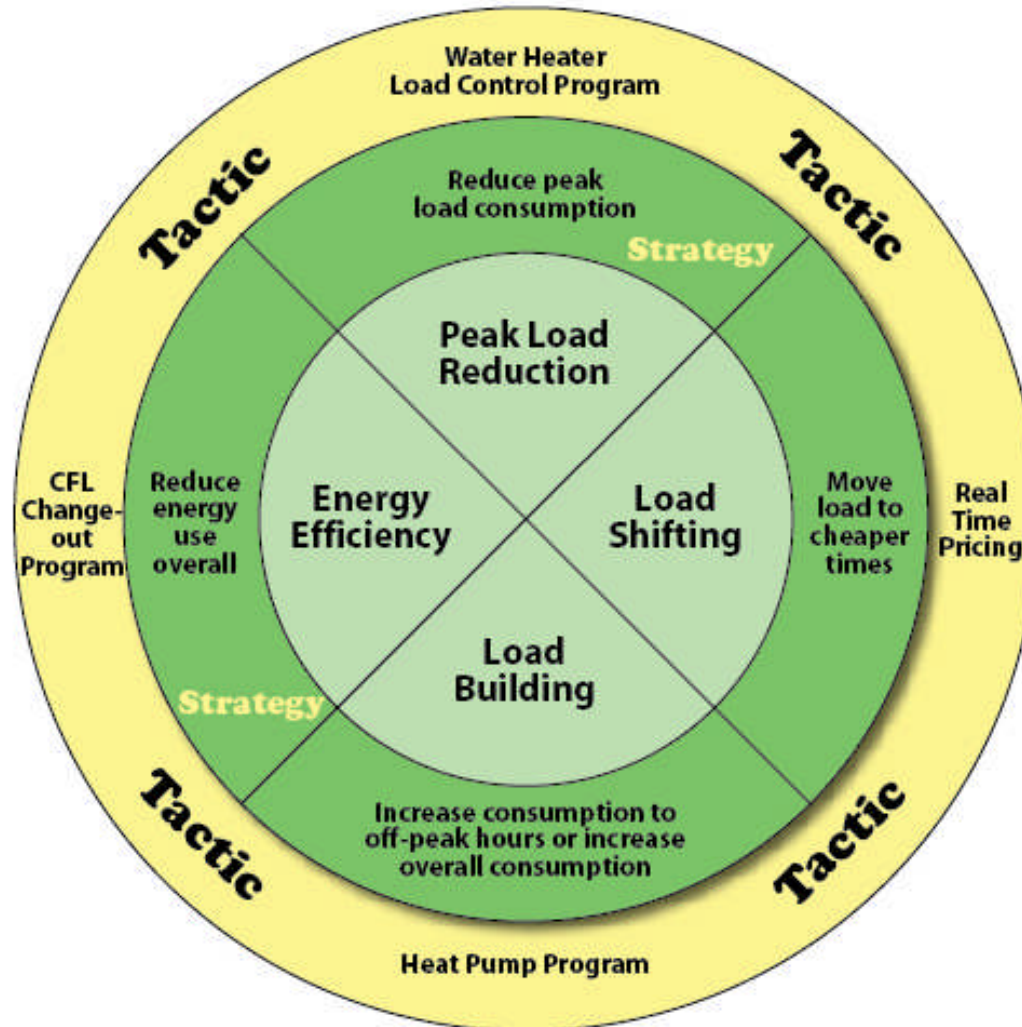
Issues to Consider in Developing a Commercial/ Industrial Lighting Program,

**Katherine Johnson and Ed Thomas,
Market Development Group**

Demand Elements of a Resource Plan



How Load Strategies Link to Program Tactics



End-Use Strategy

- **Load Strategy:**
Energy Efficiency
- **Challenge:**
Lower all customer bills with electric technologies
- **End-Use Tactic:**
Lighting

Program Planning Process

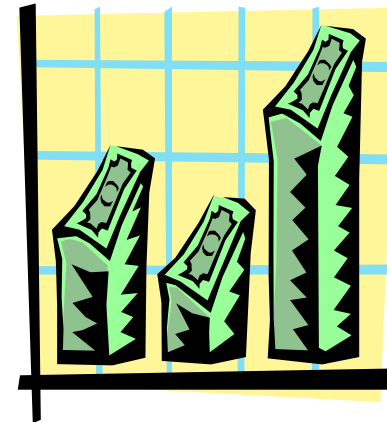
1. Identify load objectives
2. Identify sectors, end-uses and efficiency measures to target
3. Understand the market for targeted sectors and measures
4. Develop program designs
5. Conduct cost-effectiveness screening
6. Prepare an implementation plan
7. Implement programs
8. Evaluate programs

To identify opportunities to save money, we must determine...

- How does the supply side economics work?
- How does the demand side economics work?
- Which technologies (supply or demand) can be applied to “provide economic value” to our members?
- How much can you “afford” to support non-economic “causes”

Ways Utilities Calculate Program Value

- Cost Effectiveness Tests
 - Total Resource Cost Test
 - Utility Cost Test
 - Participant Cost Test
 - Ratepayer Impact Test
 - Determining rebate levels
- Assess Market Potential
- Program Impact Analysis
- Financial Analysis
- Determining Other Benefits like reductions in Carbon Emissions



Defining Costs and Benefits

- The utility benefits are the supply costs avoided (such as generation, transmission and distribution, energy and operations and maintenance) *due to demand and energy savings achieved.*
- Participant costs are the costs incurred by customers due to participation in the program (such as equipment installation costs).
- Utility costs include the program's rebates, administrative costs, marketing costs and measurement and verification costs. The discount rate is a pre-determined figure, usually relatively low such as 5.5%.
- *Costs and Benefits will vary by utility and technology selected.*

Summary of Economic Cost Tests

- **Total Resource Cost Test (TRC)=**
Avoided supply costs /
(Participant Costs + Utility Cost)
- **Utility Cost Test (UC) =**
(Avoided supply costs) /
(Utility Costs + Rebate)
- **Rate Payer Impact Measure (RIM) Test=**
(Avoided supply costs) /
(Utility costs + Rebate + Revenue loss)
- **The Participant Test=**
(NPV of Benefits to Participants)/
(NPV of the Participant Costs)

The ratio of benefits to costs ≥ 1

Determining Residential Market Potential

(Fill in the Blanks)

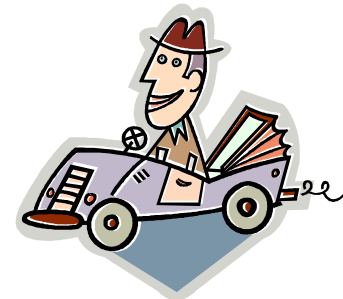
Assumptions	
Total Number of Commercial/Industrial Customers	
Percentage of Owner Occupied	
Percentage Planning to install new energy technology	
Percentage of Market Selecting Energy Efficient alternative	
Estimated Annual Market Potential for Retrofit	

Program Impact Analysis

- Program Impact Analysis often part of a larger evaluation study:
 - Provides an objective comparison of program results against benchmarks
 - Can be used to track progress over time
 - Determines **net savings** attributable to program activities
 - Identifies areas for program improvement
- Net Savings are calculated after accounting for
 - Free Ridership
 - Free Drivership

Determining Program Impacts

- Free ridership rate is how many participants **would have** purchased energy efficient equipment without the program
- Free drivership rate is how many participants will install the rebated energy efficient equipment, **outside the utility's service territory**
- These impacts are best measured through customer survey questions conducted as part of an overall program evaluation



Calculating Costs and Benefits

- Lots of calculators are available from manufacturers/ reps
 - GE ([www.gelighting.com/na/business **lighting/lighting**](http://www.gelighting.com/na/business_lighting/lighting))
 - TCP (http://www.tcpi.com/commercial/energy_savings_calculator.aspx)
- Other example- BPA

[BPA's Lifecycle Lighting Calculator](#)



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