Presentation on
Energy Cost Reduction for Profit Maximization

Presented by:
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About SEE-Tech Solutions

- An ESCO, Accredited By Bureau Of Energy Efficiency (BEE): as “Grade-2”
- Carried out more than 500 Assignments in the field of energy conservation since last 20 years
- Winner Of Association Of Energy Engineers (2013)
- Award for excellence in energy conservation and management
- Delivered Guaranteed Savings through Proven and Tested Ways

- We are on Mission to deliver 20% savings in Energy Cost
- No product/brand representation
- One stop solution
- Environment Friendly Solution
SEE-Tech’s Model for Energy Cost Reduction*

- Plenty
- Brand independent
- Select most suited

- Invest
- Facilitate

- Maintain Projects
- Maintain Savings
- Ready for new Projects

Putting M&V in place first
- Speed
- Its all for results

* Sustainable Energy, Environmental & Technological Model for Energy Cost Reduction
Our Approach:

1. Energy Assessment Study (EAS)
2. EAS Report + Proposal Submission
3. Financing & Contract Finalization
4. Monitoring & Verification In Place
5. Project Implementation
6. AMC Services for continued Savings
7. Handing Over of Site
8. Demonstration of Savings
Results Achieved at 5 Star Hotel

Delivered 16% Saving in Energy Cost
Results Achieved at 5 Star Hotel

Graph showing reduction in Boiler Diesel (HSD) consumption from 2014 to 2016.

- **By Operational Improvements**
- **By Technology**
- **By Services**

Graph indicates a downward trend in Boiler HSD consumption, with peaks and troughs correlating to specific dates.
Results Achieved at Commercial Building

**kWh Consumption Comparison**

- **Monthly Electricity Consumption, Lacs kWh**
  - 9.5
  - 9
  - 8.5
  - 8
  - 7.5
  - 7
  - 6.5
  - 6
  - 5.5
  - 5

- **Months**: Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec

- **Legend**:
  - Blue line: kWh Consumption before Energy Conservation projects
  - Orange line: kWh Consumption with Energy Conservation projects

**20% Saving**
Likely List of Energy Conservation Projects

1. Reactive Power Management
2. Performance optimization of Air-Conditioning
3. Building Heat Load Reduction
4. Performance improvement of Air Cooled Condensers
5. Energy Efficient Lighting
6. Installation of Voltage Stabilizers
7. Repair and Maintenance of Cooling Towers
8. Installation of Dynamic Chiller Controller
Likely List of Energy Conservation Projects

9. Installation of VFD on AHUs
10. Operational Optimization in Cooling Towers
11. Optimizing use of Diesel Consumption in Hot Water Generator by Installing Heat Pump
12. Optimizing use of Diesel Consumption in Steam Boiler by Installing Electrical Equipments
Photographs of Implemented Energy Conservation Projects

1. Reactive Power Management
Photographs of Implemented Energy Conservation Projects

3. Building Heat Load Reduction
Photographs of Implemented Energy Conservation Projects

4. Performance improvement of Air Cooled Condensers
Photographs of Implemented Energy Conservation Projects

5. Saving by Installing EE lighting
Photographs of Implemented Energy Conservation Projects

6. Installation of Voltage Stabilizers
Photographs of Implemented Energy Conservation Projects

7. Repair and Maintenance of Cooling Towers
Photographs of Implemented Energy Conservation Projects

8. Installation of Dynamic Chiller Controller
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9. Installation of VFD on AHUs
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11. Optimizing use of Diesel Consumption in Hot Water Generator by Installing Heat Pump
Photographs of Implemented Energy Conservation Projects

12. Optimizing use of Diesel Consumption in Steam Boiler by Installing Electrical Equipments
Why Holistic Approach?

- Focus is on Savings, not project or products
- One Stop Solution- Total Integration of Product, Project & Services for long term
- Transparent Measurement & Verification (M&V) Systems (Graded by BEE, MoP- Highest body in the country on EE)
- Services based ESCO do not represent any Brand
- Access to almost all Technologies
- EE Specialist, Expertise for delivering Energy Cost Savings
## Why Holistic Approach?

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<th>Particulars</th>
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<tr>
<td>Energy Cost Savings without Investment</td>
<td>✓</td>
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<tr>
<td>Reduced Risk</td>
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<td>Guaranteed Minimum Savings</td>
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<td>May be</td>
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<tr>
<td>Savings, M&amp;V</td>
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<td>May be</td>
<td>✗</td>
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<td>Solutions to Obstacles &amp; Unknown issues</td>
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<td>Holistic Approach</td>
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<td>May be</td>
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Issues need to be addressed in Performance Contracting

- Proper Base Line
  - Last one year before project Implementation

- Monitoring & Verification
  - Addition & Deletion of loads
  - Increase & Decrease in Occupancy
  - Increase & Decrease in usage hours of Banquettes, Halls & persons…
  - Effect of outdoor Temperature
Improved approach of Monitoring & Verification

- M&V will be based on IPMVP principles which are accepted worldwide
  http://www.nrel.gov/docs/fy02osti/31505.pdf

- Use of regression equation to accommodate variables as listed in previous slide
Next Steps…

- Collection of required data
- Conducting Energy Assessment Study (EAS)
- Analysis
- Discussion of EAS Report & Our proposal
- Contract Finalization
- Project Implementation
- Demonstration of savings
Thank you....

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