ALIEN GROUP OF COMPANIES

PRESENTED BY
AKASH JAIN
DIRECTOR
ALIEN GROUP OF COMPANIES
PRANAT ENGINEERS PVT LTD
ALIEN ENERGY PVT. LTD
 Built-up area of 6000 sq. ft.
 North East Facing (Vastu compliance).
 Designed as per SAVGRIHA/BEE 5 star rating.
 Using maximum natural light and minimum artificial light.
 Doubled Glaze glass reduce the heat Loss inside the office.
 Eco friendly products used inside the building.
 Energy efficient lighting system and BEE 5 star Air-conditioning units used in the centre.
 Insulation used in wall and ceiling to transfer the heat.
Well proven and fully documented LED Light portfolio (more than 5,000,000 units successfully installed)

- Close proximity, cooperation and QC process with suppliers
- Continuous product development and improvements based on latest commercially available LED components
- End-to-end project delivery: Site survey, break-even calculations, on-site light delivery measurements, DIALux simulations
- Fully financed options - CAPEX AUDITED and ILLUMINATED BY US

YOU WILL GET THE BEST FROM THE BEST
The INDIAN government is actively pushing for further transformation of India to an even more Sustainable, Green and Balanced Country.

We save energy, you get a cleaner environment - more export revenue and jobs. Grants for green projects work. We have put a half billion crowns for the development of green technology, for example in the form of green loans and grants for green projects”.

Prime Minister NARENDRA MODI
BUSINESS AREAS

- ENERGY AUDIT
- ESCO
- Alien Energy
- LED LIGHTING
- RENEWABLE ENERGY

- Money Isn't All You're Saving
CREDENTIALS, APPROVAL and AWARDS
Mr. Akash Jain  
Pranat Engineers Private Limited  
A-16/A, Om Sai Complex Link Road, Site-IV,  
Sahibabad Industrial Area,  
Ghaziabad - 201 010, Uttar Pradesh  

Sub: Empanelment of Energy Service Company (ESCO)  

Sir,  

This has reference to your application for re-empament/empament as an Energy Service Company with BEE in response to our advertisement for re-empament and fresh empament of ESCOs in the month of January, 2017.  

Consequent to scrutiny and evaluation of your documents by SEBI accredited agencies CRISIL/CARE/ICRA in terms of the approved parameters for evaluation, we are pleased to inform that your company ‘Pranat Engineers Private Limited’ has qualified for empanment with BEE as a Grade 1 Energy Service Company (ESCO). This empanment would be valid till 31st March, 2018.  

Further, the list of all the empanned ESCOs along with grading score assigned by CRISIL/CARE/ICRA is unposed on its website (www.beeindia.gov.in) for use by State/Central government/Public Sector agencies as well as by any other agency interested in implementing energy efficiency projects on performance contracting mode. Please acknowledge your acceptance to this letter.  

Yours faithfully,  

(Saurabh Diddi)  
Director
T2 ILLUMINATED BY ULTRA ADVANCE ALIEN LED LIGHTS
AWARDED BY THE INDEPENDENT POWER PRODUCER ASSOCIATION OF INDIA’S FOR ‘INNOVATION IN ENERGY EFFICIENCY-MANUFACTURE OF ENERGY EFFICIENT PRODUCTS’
AWARDED BY BEE (MOP) FOR
THE BEST ESCO (2015)
AWARDED BY IPPAI FOR THE BEST ESCO (2013)

This is to certify that
Pranat Engineers Private Ltd
is adjudged Runner up of the award for
Best Energy Services Company (ESCO)
at
The 14th Regulators & Policymakers Retreat 2013
1-4 August, 2013
ENERGY AUDIT
SCOPE OF IGEA

Scope in IGEA which may include the following:

- Study of Electrical System
- Study of Electricity Bills
- Study of Fuel consumption
- Study of Lighting
- Study of DG Sets
- Study of Boiler
- Study of compressor like FAD test, Leakage test etc.
- Study of other systems having any electrical or thermal consumption
BENEFITS OF IGEA

- IGEA helps to achieve SEC’s targets of big industries given by BEE.
- Minimize energy costs / waste without affecting production & quality.
- Minimize environmental effects.
- Detail study of complete Electrical system / thermal system / HVAC & Process.
- Enhance Energy efficiency in Electrical system, thermal system, HVAC & Process.
- Reduce specific energy consumption.
- Study of Waste Heat Recovery system in thermal system.
- Reduce overall energy bill.
- To avail benefits of Carbon Credits.
- It is a complete bankable DPR for getting finance from Financial Institution.
INSTRUMENTS USED
BEE STAR RATING

ENERGY IS LIFE

CONSERVE IT

MORE STARS
MORE SAVINGS

POWER SAVINGS GUIDE
BEE’s Star Rating for Commercial Buildings

BEE STAR rated qualified products and practices help you to save money and reduce greenhouse gas emissions by meeting strict energy efficiency guidelines set by the U.S. EPA and U.S. DOE. The ENERGY STAR label also designates superior energy performance in buildings.

While any of Pranat’s energy audit and implementation can help you to achieve greater degrees of comfort and energy savings, the ENERGY STAR label is a permanent, recognized certification of energy efficiency in Office, Hotels, Hospital buildings. Pranat can help you to make your facility energy star and in upgrade of star rating.

EPI = kwh/sqm/year

<table>
<thead>
<tr>
<th>Climate Zone</th>
<th>1 Star</th>
<th>2 Star</th>
<th>3 Star</th>
<th>4 Star</th>
<th>5 Star</th>
</tr>
</thead>
<tbody>
<tr>
<td>More than 50% air conditioned built up area</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Composite</td>
<td>190-165</td>
<td>165-140</td>
<td>140-115</td>
<td>115-90</td>
<td>Below 90</td>
</tr>
<tr>
<td>Warm and Humid</td>
<td>200-175</td>
<td>175-150</td>
<td>150-125</td>
<td>125-100</td>
<td>Below 100</td>
</tr>
<tr>
<td>Hot and Dry</td>
<td>180-155</td>
<td>155-130</td>
<td>130-105</td>
<td>105-80</td>
<td>Below 80</td>
</tr>
<tr>
<td>Less than 50% air conditioned built up area</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Composite</td>
<td>80-70</td>
<td>70-60</td>
<td>60-50</td>
<td>50-40</td>
<td>Below 40</td>
</tr>
<tr>
<td>Warm and Humid</td>
<td>85-75</td>
<td>75-65</td>
<td>65-55</td>
<td>55-45</td>
<td>Below 45</td>
</tr>
<tr>
<td>Hot and Dry</td>
<td>75-65</td>
<td>65-55</td>
<td>55-45</td>
<td>45-35</td>
<td>Below 35</td>
</tr>
</tbody>
</table>
CURRENT PROJECTS
Working with EESL for Energy Audit of Pumping Stations all over India

Appointed by Delhi Electricity Regulatory Commission (DERC) as consultant for Energy Audit of Network of DISCOM in BYPL, Delhi
Some of the iconic buildings of India audited/star upgraded by us

- President House
- Parliament House
- Yojana Bhawan
- Niti Ayog
- Paryavaran Bhawan
- Punjab Bhawan
Nav Bharat Ventures, Orissa
Arvind mill, Ahmedabad
Caparo Maruti Ltd., Gurgaon
Mafatlal Industries, Ahmedabad
SRF Gwalior
Satyam Auto components Ltd., Haryana
DEFENCE ESTABLISHMENTS

Ordnance factory, Bhandara
GREY iron Foundry, Jabalpur
BHEL, Haridwar
Old Delhi Railway Station
HAL, Bangalore
Ordnance factory, Katni
MEASUREMENT AND VERIFICATION
‘OPTION A’ of IPMVP should be considered to calculate energy savings

Key parameter will be ‘W’ (Watt)/Connected Load which should be measured once yearly to calculate KW saved/reduced

Monetary saving in Rupees will be on DEEMED basis which will be calculated considering working hours, no. of days and existing power tariff for the existing and energy efficient equipments
BENEFITS OF M&V

- Confirms Energy Savings
- Document Financial Transactions
- Arrange finance for efficiency projects
- Improve engineering design and facility operations & maintenance
- Manage Energy Budgets
- Enhance the value of emission-reduction credits
- Support evaluation of regional efficiency program
- Increase public understanding of energy management as a public policy tool
- Improve score in sustainability rating systems such as “LEED”
What is ESCO?

“An Energy Service Company (ESCO), or Energy Services Provider (ESP) is a business that develops, installs, and finances projects designed to improve energy efficiency and maintenance costs for facilities. ESCO acts as project developer for a wide range of tasks and assumes technical and performance risk associated with the project.”
EXPERIENCE IN ESCO

- We have 20 years experience in esco projects in India
- We are executing projects since 1994
- We have executed ESCO projects in municipal corporation, industries and buildings
- We have executed more than 100 projects in last two decades
- We have many success full case studies
Implementation of LED / EEM’s

OUTRIGHT PURCHASE
Through Tender Negotiation quotation & DGS&D

ESCO ROUTE
Without Investment & With Maintenance
ESCO Activities

Energy services include a wide range of activities, such as:

- Energy analysis and audits
- Energy Management
- Project design and implementation
- Maintenance and operation
- Monitoring and evaluation of savings
- Energy and/or equipment supply
**Energy Indices—As per sample survey in India**

<table>
<thead>
<tr>
<th></th>
<th>GOI Offices</th>
<th>Private Offices</th>
<th>ITES Complex</th>
<th>Hotel-5star</th>
<th>Academic Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Min</strong></td>
<td>109</td>
<td>49</td>
<td>370</td>
<td>290</td>
<td>30</td>
</tr>
<tr>
<td><strong>Max</strong></td>
<td>249</td>
<td>150</td>
<td>584</td>
<td>360</td>
<td>58</td>
</tr>
</tbody>
</table>

*Improvement opportunity range from 30 to over 60%*
There is an aggregate investment potential of $9.8 billion for energy savings in buildings (WRI estimates).

There is a potential for 30% demand reduction through energy efficiency in buildings, appliances and lighting. (Mckinsey’s Analysis)

The real question is how we can achieve energy saving of these estimates....??
Why ESCO is challenging?

TAILOR MADE/RETROFIT PROJECTS to suit existing condition of the building

- Requires highly experienced staff
- Requires more time for execution
- Requires more funds for installation
- ESCO is a partial activity of the big system, slow in changes, not flexible
- Staff problem – Ground staff is not cooperative for the changes in the system
ESCO Baseline Issues...

- Unknown Working Hours/Days of devices
- Average Metering
- Addition/Reduction of Load
- Non-metering
- TOD- Metering
- Availability Of Power
- Variation In Voltages
- Variation in temp. of weather
- Theft
ESCO CONTRACT

Guaranteed Saving Contract

Shared Saving Contract
Guaranteed Saving Contract

ESCO

Energy saving guarantee agreement

Client

Design and Performance risk

Fees for services

Financial Institution

Loan

Repayment of loan

Services:
1. Design
2. Detailed engineering
3. Specifications
4. Procurement assistance
5. Construction supervision or construction
6. Maintenance
7. Performance guarantee
Shared Saving Contract

ESCO

CREDIT RISK

1. Financing
2. Design
3. Construction
4. Operation
5. Maintenance
6. Saving Guarantee

EPC Services

Financial Institution

Loan

Energy Performance Contract

Installments

Client

Repayment of Loan
Payments to ESCO < Total cost savings in energy & maintenance. Total Cash flow during ESPC is (supposed to be) less than before ESPC. Owner would enjoy 100% energy saving after the contract period.
More than 60% Energy Savings Over Existing System
Pay from reduction in energy and maintenance

Best products.....pay for performance

Modernization at zero cost

No Cap-ex/Investment/Budget !!

No Op-ex/Zero Maintenance cost

Reduction in electricity bill

No Purchase No Corruption

Better services

Warranty On Product Extended Over The ESCO Period

No Hardware Cost Over The Period Of Proposal
The Case Study Recipe

Problem  Solution  Results
SUCCESSFUL CASE STUDY OF ESCO IN MUNICIPAL CORPORATION OF HARYANA

<table>
<thead>
<tr>
<th>Highlights of HUDA Panchkula Street Lighting ESCO project</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL NO OF STREET LIGHTS : 5273</td>
</tr>
<tr>
<td>PERCENTAGE OF ENERGY SAVINGS : 60%</td>
</tr>
<tr>
<td>SAVING SHARING % TO ESCO &amp; OWNER : 77% &amp; 23%</td>
</tr>
<tr>
<td>CONTRACT PERIOD : EIGHT YEARS</td>
</tr>
<tr>
<td>ANNUAL ENERGY SAVING (KWH) : 21,20,182 KWH</td>
</tr>
<tr>
<td>ANNUAL MONETARY SAVING (RS) : RS. 96,04,428</td>
</tr>
<tr>
<td>ANNUAL PAYMENT TO ESCO (RS) : RS. 73,35,409</td>
</tr>
<tr>
<td>ANNUAL PAYMENT TO HUDA (RS) : RS 22,09,018</td>
</tr>
<tr>
<td>EXPECTED CER's : 1100</td>
</tr>
<tr>
<td>TIME FOR COMPLETION : SIX MONTHS</td>
</tr>
<tr>
<td>DATE OF START : 1/4/2009</td>
</tr>
</tbody>
</table>
TECHNOLOGY.....

Replacement of Conventional Street Lights of Sodium, Mercury & Fluorescent with New generation Energy Efficient T-5 Fittings. Installation of GSM based dimming panels to timely Switch ON & OFF Street light and to monitor energy consumption & faulty street lights by centralized server.

BENEFITS TO OWNER

• Modernization.
• Zero cost of maintenance
• Reduction in Electricity Bill
• Earning out of energy saving & carbon credits.
Case Study: NDMC Palika Kendra

- It was the first ESCO project of India
- It was executed in association with DSCL
- Lighting was taken to achieve energy efficiency
- Contract period was 4 years (2000 – 2004)
- All the conventional lights were replaced by ALIEN efficient lights
- Energy saving achieved – more than 44%
Before Implementation:
- Energy audit conducted
- Identified saving potential up to 30%
- EPI was 130 kWh/sq. m/year
- It was a 3 star building
- Decision was taken to upgrade from 3 star to 5 star
- EESL was given to upgrade the building as a pilot project to do.

After Implementation & Result:
- All the lights were changed by Alien led lights
- All the fan were changed by five star rated fans
- Energy saver for A.C. were installed
- Saving was observed more than 50%
- EPI has gone down from 130 to 80 kWh/sq. m/year
- Building becomes five star NOW
IT WAS THE FIRST LED PROJECT EXECUTED IN DEC-2010

ALIEN WAS AWARDED THE WORK BY NDPL TO REPLACE INEFFICIENT LIGHT THROUGH ALIEN LED LIGHTS

ALIEN ENJOYED THIS PROJECT AS FIRST LED PROJECT
ESCO in Building At ITO Delhi.....

CLIENT : BUSINESS STANDARD

---

<table>
<thead>
<tr>
<th>EXISTING LIGHTING</th>
<th>Qty.</th>
<th>Hrs/Day</th>
<th>Days/Year</th>
<th>Watt</th>
<th>Proposed EE Lighting</th>
<th>Watt</th>
</tr>
</thead>
<tbody>
<tr>
<td>2*18W CFL Fixture</td>
<td>58</td>
<td>15</td>
<td>313</td>
<td>45</td>
<td>23W LED RETRO - FIXTURE</td>
<td>23</td>
</tr>
<tr>
<td>2*11W CFL fixture</td>
<td>88</td>
<td>15</td>
<td>313</td>
<td>35</td>
<td>12W LED RETRO-FIXTURE</td>
<td>15</td>
</tr>
<tr>
<td>1*18W CFL spot light</td>
<td>52</td>
<td>15</td>
<td>313</td>
<td>30</td>
<td>9W LED RETRO- FIXTURE</td>
<td>9</td>
</tr>
<tr>
<td>2*36W T-8</td>
<td>168</td>
<td>15</td>
<td>313</td>
<td>86</td>
<td>2*16W LED TL</td>
<td>36</td>
</tr>
<tr>
<td>1*36W T8</td>
<td>45</td>
<td>15</td>
<td>313</td>
<td>43</td>
<td>1*16W LED TL</td>
<td>18</td>
</tr>
<tr>
<td>3*11W CFL FIXTURE</td>
<td>65</td>
<td>15</td>
<td>313</td>
<td>55</td>
<td>20W LED RETRO-FIXTURE</td>
<td>20</td>
</tr>
</tbody>
</table>

Quantity : 476 Nos.
Load Reduction : 15.68 kW
Potential Electrical Saving : 73599 kWh
Annual Monetary Saving : Rs. 463968/year
Annually Payment to ESCO: Rs. 455998
Annually Saving to CLIENT: Rs. 7970
Contract Period : 4 years
THANK YOU