

Preliminary Energy Analysis

Conducted at

Odyssia footwear, Kozhikode

As part of the course EE6401 Energy Audit and Management,
Instructed by Dr.Ashok. S, NIT Calicut during monsoon semester
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ABSTRACT

- **Company Profile**
- **Plant details**
- **Process**
- **Observations**
- **TECHNO-ECONOMIC ANALYSIS**
- **Suggestions**

Company Profile

✓ Odysia Launched in dec 2006 at Kozhikode ,Kerala

✓ Established by a group of entrepreneurs having experience since 1980's in the footwear industry.Odysia aimed at making footwear products for different age group in different class.

✓ Odysia is guided by a group of directors under the leadership of the Chairman Mr.P.Sasidharan

✓ Odysia aimed at to make a change in the trends and designs prevailed in kerala footwear industry till that time, and we introduced footwears in every segment.

✓ In kerala F/W manufacturing industry, Odysia is first who introduced footwears with different colors of sole.

✓ Odysia footwear assures comfort ability, durability and style in each and every designs

✓ Odysia footwear always given importance in manufacturing different footwears ,which can use in different climate without compromising in its Quality, design and comfort ability.

✓ Odysia, tried to make the footwear which blend with the style and trend ,which we seen only in international brands till that time. And it helped us to gain a prominent position in the minds of youth as well as others quickly.

✓ Odysia have 8 individual units producing different kinds of footwears.

✓ Odysia Footwears are manufactured under Italian technology, which is the most advanced technology in the industry.

✓ Pu footwears are manufactured under direct casting method.

✓ We are using latest and state of the art technology and machineries for the production process. The qualities of the products are tested at every stage of production. The quality inspection departments are attached to each production units to test the raw materials, semi-finished and finished products.

✓ Odysia is the first brand in kerala which introduced sub brands for every segment of people.

PLANT DETAILS

- **TARIFF - LT 4 (A)**
- **Connected Load – 137.5 kW**
- **Plant is operating for 24 hrs*6 days**
- **Avg energy consumption-17630kWh**

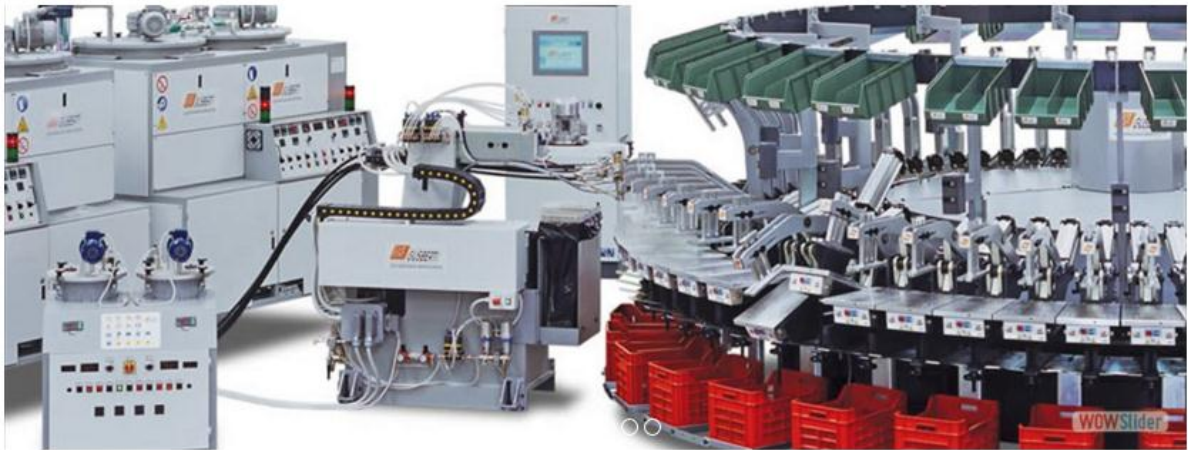
LT - IV (A) Industrial	
Fixed Charge	
(a) Connected load 8 kW or below (Rs./consumer per month)	60
(b) Connected load above 8kW (Rs./ kW or part thereof per month)	60
Energy Charge (Paise/kWh)	470

PROCESSES:

The different stages of production

- **cutting ('clicking') – trimming and shaping leather or fabric pieces for the 'upper' section**
- **stitching ('closing') – sewing together all the individual sections to complete the upper**
- **lasting – moulding the uppers into their final shape on a wooden or metal pattern called a 'last'**
- **making – attaching the soles with adhesive or stitching**
- **finishing – fitting and trimming heels to shape, and staining the soles, heels and edges before waxing and buffing**

- shoe room – working on the final stage of production, polishing the shoe for the desired colour and effect.



OBSERVATIONS

Major Electrical Loads

Motor/ S. No.	No. of motors	Motor rating(KW)	Rated Speed(Rpm)	Pf	Current (I) Y/Δ	No. of Hours
1.	1	7.5	1460	0.83	25.5/14.7	22
2.	2	0.18	1350	—	1.18/0.68	24
3.	2	0.37	2730	—	1.68/0.97	22

4.	1	1.5	2880	0.87	6.1/3.5	22
5.	2	1.1	925	—	5.25/3.20	01
6.	2	0.76	1380	—	3.35/1.93	24
7.	2	0.75	2900	0.76	3.7/2.2	24
8.	2	1.5	7830	—	6.1/3.5	22

Excluding this motors 3 A/c's (3*1.5TR) ,10 computers (10*200W) , fans(5*200W) and lights(5*60W+10*20W) are connected to the energy meter.

Option for saving

- Change the connected load to 30kW.

As the demand in industry is Very less compared to the connected load. Connected load is 137.5kW and the max demand estimated is 27 kW. Taking 10% variation in the max demand the new connected load is 30 kW.

TECHNO-ECONOMIC ANALYSIS:

Fixed cost(initial) = $137.5 * 60 = 8250$ Rs

After changing the connected load to 30kW.

Fixed cost (final) = $30 * 60 = 1800$ Rs

Savings = $8250 - 1800 = 6450$ Rs /month

Annual saving = 77,400 Rs

Suggestions

- Change the connected load to 30kW(instantly)
- Changing the Energy meter :

As the max demand is expected (in last calculation) it is better if it measures the max demand so that we can save more