

# GREEN AUDIT REPORT

of

## SHREE L. R. TIWARI COLLEGE OF Law,

Shree L. R. Tiwari Educational Campus, Mira Road (East) Thane 401 107



Year: 2018-19

Prepared by:

### Enrich Consultants


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## REGISTRATION CERTIFICATES

Regn. No. EA-8192		No. 2942
<b>National Productivity Council</b> (National Certifying Agency)		
<b>PROVISIONAL CERTIFICATE</b>		
This is to certify that Mr. / Ms. <u>Achyut Yashavant Mehendale</u> son / daughter of Mr. <u>Yashavant</u> has passed the National Certification Examination for Energy Auditors in April - 2007, conducted on behalf of the Bureau of Energy Efficiency, Ministry of Power, Government of India.		
He / She is qualified as Certified Energy Manager as well as Certified Energy Auditor.		
He / She shall be entitled to practice as Energy Auditor under the Energy Conservation Act 2001, subject to the fulfillment of qualifications for the Accredited Energy Auditor and issue of certificate of Accreditation by the Bureau of Energy Efficiency under the said Act.		
This certificate is valid till the issuance of an official certificate by the Bureau of Energy Efficiency.		
Place : Chennai, India		 Controller of Examination
Date : 10 <sup>th</sup> August 2007		

## BEE ENERGY AUDITOR CERTIFICATE

<b>MAHARASHTRA ENERGY DEVELOPMENT AGENCY</b>	
 <b>Maharashtra Energy Development Agency</b> (A Government of Maharashtra undertaking) 2 <sup>nd</sup> Floor, MHADA Commercial Complex, Opp. Tridal Nagar, Yerwada, Pune 411 006, Ph No: 020-26614393/266144403 Email: <a href="mailto:eee@mahaurja.com">eee@mahaurja.com</a> , Web: <a href="http://www.mahaurja.com">www.mahaurja.com</a>	
ECN/2018-19/CR-05/4174	19 <sup>th</sup> September , 2018
<b>CERTIFICATE OF REGISTRATION FOR CLASS 'A'</b>	
We hereby certify that, the firm having following particulars is registered with <b>MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA)</b> under given category as "Energy Planner & Energy Auditor" in Maharashtra for Energy Conservation Programme of MEDA.	
<b>Name and Address of the firm</b>	: <b>Enrich Consultants</b> Yashashree, Plot No. 26, Nirmal Bag Society, Near Muktagan English School, Parvati, Pune - 411009.
<b>Registration Category</b>	: Empanelled Consultant for Energy Conservation Programme
<b>Registration Number</b>	: <b>MEDA/ECN/CR-05/2018-19/EA-03</b>
<ul style="list-style-type: none"><li>Energy Conservation Programme intends to identify areas where wasteful use of energy occurs and to evaluate the scope for Energy Conservation and take concrete steps to achieve the evaluated energy savings.</li><li>MEDA reserves the right to visit the firm at any time without giving any prior information and canceling the registration, if the information is found incorrect.</li><li>This empanelment is valid till <b>31<sup>st</sup> March 2021</b> from the date of registration, to carry out energy audits under the Energy Conservation Programme</li><li>The Director General, MEDA reserves the right to cancel the registration at any time without assigning any reasons thereof.</li></ul>	
 (Smita Kudarikar) General Manager (EC)	

## MEDA EMPANELMENT CERTIFICATE

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## **ACKNOWLEDGEMENT**

We Enrich Consultants, Pune, express our sincere gratitude to the management Shree L. R. Tiwari College of Law, Shree L. R. Tiwari Educational Campus, Mira Road (East) Thane 401 107, for awarding us the assignment of Green Audit of their Campus for the Year: 2018-19.

We are thankful to all Staff members for helping us during the field study.

## EXECUTIVE SUMMARY

1. **Shree L. R. Tiwari College of Law, Mira Road**, consumes Energy in the form of **Electrical Energy**; used for various Electrical Equipment.

### 2. Present Energy Consumption & CO<sub>2</sub> Emission:

No	Parameter/ Value	Energy Consumed, kWh	CO <sub>2</sub> Emissions, MT
1	Total	40087	32.07
2	Maximum	3998	3.20
3	Minimum	2963	2.37
4	Average	3340.58	2.67

### 3. Usage of Renewable Energy:

- The College has yet to install Roof Top Solar PV Plant.

### 4. Waste Management:

#### 4.1 Segregation of Waste at Source:

The Dry and Wet waste is segregated at the source. Waste collection Bins are kept at various points.

### 5. Rain Water Management:

The Rain water falling on terrace is collected through Pipes and is used to increase the underground water table.

### 6. Green Practices:

- Good internal roads for easy movement of commuters
- Maintenance of Lawn in the campus

### 7. Assumptions:

1. Energy Consumption is computed based on Load Utilization Factor
2. **1 kWh** of Electrical Energy releases **0.8 Kg** of **CO<sub>2</sub>** into atmosphere

## **ABBREVIATIONS**

Kg	:	Kilo Gram
MT	:	Metric Ton
kWh	:	kilo-Watt Hour
LPD	:	Liters per Day
LED	:	Light Emitting Diode

## **CHAPTER-I INTRODUCTION**

### **1.1 Objectives:**

1. To study present Energy Consumption
2. To compute CO<sub>2</sub> emissions
3. To Study Usage of Renewable Energy
4. To Study Waste Management Practices
5. To Study Rain Water Harvesting
6. To Study Green Initiatives

### **1.2 Table No 1: General Details of College:**

<b>No</b>	<b>Head</b>	<b>Particulars</b>
1	Name of College	Shree L. R. Tiwari College of Law
2	Address	Shree L. R. Tiwari Educational Campus, Mira Road (East) Thane 401 107
3	Affiliation	University of Mumbai

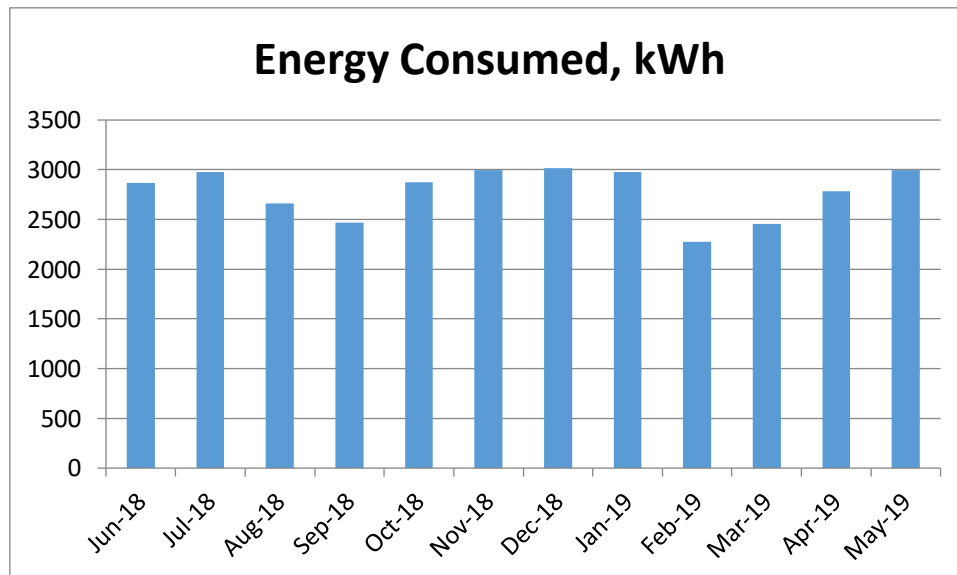
## CHAPTER-II STUDY OF PRESENT ENERGY CONSUMPTION

In this chapter, we present the analysis of last year Electrical Energy.

**Table No 2: Electrical Energy Consumption Analysis: 2018-19:**

No	Month	Energy Consumed, kWh
1	Jun-18	2870
2	Jul-18	2978
3	Aug-18	2665
4	Sep-18	2469
5	Oct-18	2874
6	Nov-18	2998
7	Dec-18	3015
8	Jan-19	2978
9	Feb-19	2278
10	Mar-19	2456
11	Apr-19	2784
12	May-19	2998
13	Total	33363
14	Maximum	3015
15	Minimum	2278
16	Average	2780.25

**Chart No 1: To study the variation of Monthly Energy Consumption, kWh:**





## CHAPTER III STUDY OF CARBON FOOT PRINTING

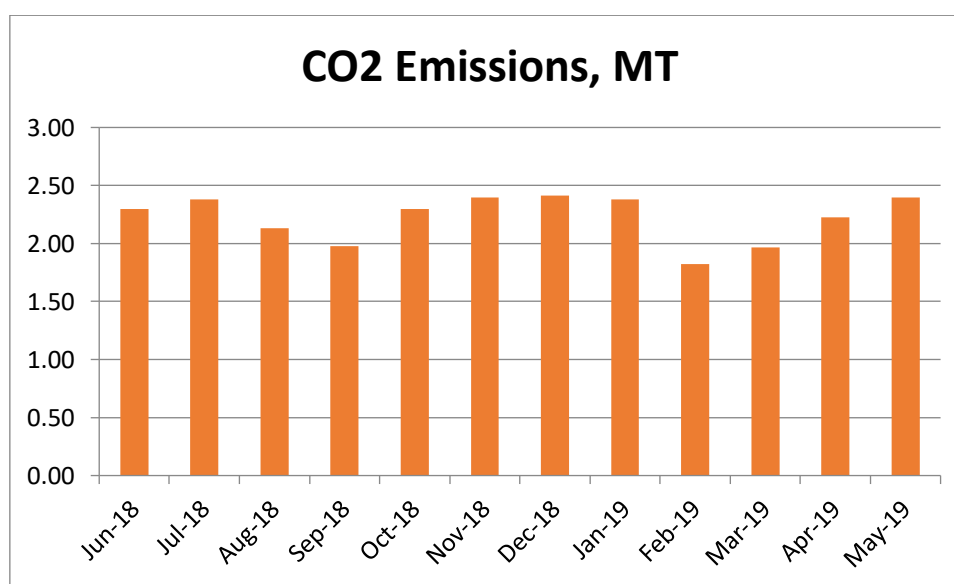
A Carbon Foot print is defined as the Total Greenhouse Gas emissions, emitted due to various activities. **Basis for computation of CO<sub>2</sub> Emissions:**

- 1 kWh of Electrical Energy releases 0.8 Kg of CO<sub>2</sub> into atmosphere

**Table No 3: Month wise CO<sub>2</sub> Emissions:**

No	Month	Energy Consumed, kWh	CO <sub>2</sub> Emissions, MT
1	Jun-18	2870	2.30
2	Jul-18	2978	2.38
3	Aug-18	2665	2.13
4	Sep-18	2469	1.98
5	Oct-18	2874	2.30
6	Nov-18	2998	2.40
7	Dec-18	3015	2.41
8	Jan-19	2978	2.38
9	Feb-19	2278	1.82
10	Mar-19	2456	1.96
11	Apr-19	2784	2.23
12	May-19	2998	2.40
13	Total	33363	26.69
14	Maximum	3015	2.41
15	Minimum	2278	1.82
16	Average	2780.25	2.22

**Chart No 2: Representation of Month wise CO<sub>2</sub> Emissions:**



## **CHAPTER IV**

### **STUDY OF USAGE OF RENEWABLE ENERGY**

The College has yet to install Roof Top Solar PV Plant.

## **CHAPTER V STUDY OF WASTE MANAGEMENT**

### **5.1 Segregation of Waste at Source:**

The Dry and Wet waste is segregated at the source. Waste collection Bins are kept at various points.

#### **Photograph of Waste Collection Bin:**



## **CHAPTER-VI**

### **STUDY OF RAIN WATER MANAGEMENT**

The Rain Water falling on the terrace is used to increase the underground Water Table.

**Photograph of Rain Water Collecting Pipe:**



## **CHAPTER-VII**

### **STUDY OF GREEN & SUSTAINABLE PRACTICES**

#### **7.1 Pedestrian Friendly Road:**

The College has well maintained internal road to facilitate the easy movement of the students within the campus.

**Photograph of Internal Road inside the College Campus:**



#### **7.2 Green Landscaping with Trees and Plants:**

The College has maintained Lawn in the campus.

**Photograph of Lawn in the College campus:**

