



Dr D Y Patil Educational Enterprises Charitable Trust's

Dr D Y PATIL SCHOOL OF MANAGEMENT

(Approved by AICTE, New Delhi Recognized by Govt. of Maharashtra, Affiliated to Savitribai Phule Pune University)

AISHE Code: C-48357

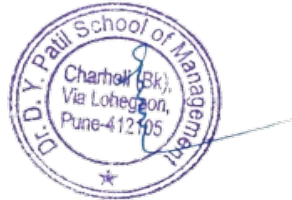
DTE Code: MB6189

SPPU PUN Code: IMMP015810

(Accredited by NAAC)

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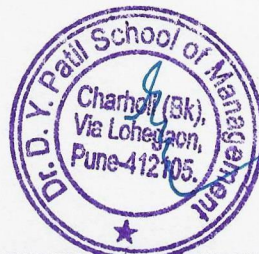
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ENVIRONMENT POLICY (2023-24)



ENVIRONMENT POLICY

1



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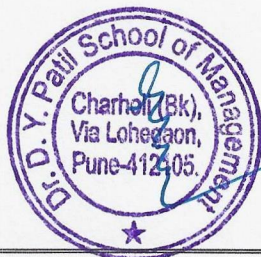
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1. INSTITUTE VISION, MISSION, QUALITY POLICY, GOALS & CORE VALUES

1.1 VISION

Dr D Y Patil School of Management aspire to be a frontrunner in managerial education at national level by making students methodically superior and ethically strong having enterprise spirit with an inclusive mindset.

1.2 MISSION

We are committed to provide wholesome education in management to enable aspiring students to utilize their fullest potential and become professionally competent by providing:

- Well qualified, experienced, and professionally trained faculty
- State-of-the-art infrastructural facilities and learning environment.
- Encouraging environment for research and development.
- Delight to all stakeholders.

1.3 QUALITY POLICY

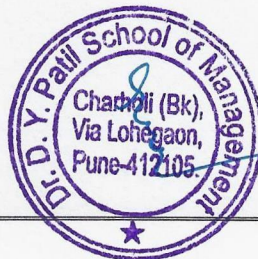
DYPSOM aspire to establish a system of Quality Assurance, which would on a continuous basis evaluate and monitor the quality of education and training imparted at institute, to improve the teaching learning process and develop the institute as a Centre of Excellence.

1.4 GOALS

- 1) To develop a quality system for conscious, consistence and catalytic programmed action to improve the academic ana administrative performance.
- 2) To promote measures for institutional functioning towards quality enhancement through internationalization of best practices.

1.5 CORE VALUES

- 1) Encouraging and building student ability, character, and creativity
- 2) Freedom of thought and expression





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1) Policy Statement

Dr D Y Patil School of Management takes great pride in being a part of sustainable environment. Optimal use of available water resources, efficient management of solid and liquid waste, sustaining of variety of trees to maintain the biodiversity. Use of conventional and nonconventional energy resources and initiating towards paperless offices makes the campus unique. The provisions adhere to the National Environment Policy 2006.

2) Purpose

This policy will play an integral role as the Institution continues to develop an environmentally sustainable and economically viable campus that reflects the Institutional core values of engagement and accountability. The institution is committed to preparing its students to become engaged environmental citizens on campus, in their own communities and throughout their lives. The institution will educate the community and implement the best practices to improve the environmental footprint of the campus and its operations. We will strive for meeting the United Nations sustainable development goals.

3) Scope

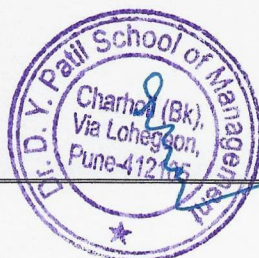
This policy applies to all the Stakeholders of the Institutions, including students, faculty and staff.

4) Objectives

- To implement green and sustainable initiatives on campus
- Monitoring and reducing waste of all campus operations and activities.
- Foster a culture of sustainability awareness, action in the campus and community.
- The stake holders to adopt environment friendly practices to save electricity, water, using paper bags, banning single use plastic, etc.

5) Practices

- A. Green Clean Environment through managing solid, liquid & e-waste.
- B. Water conservation



ENVIRONMENT POLICY

4



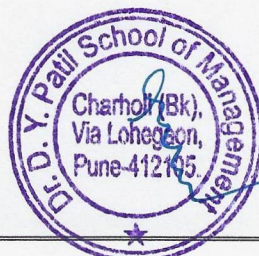
- C. Energy use and conservation
- D. Paperless operations
- E. Landscaping with Trees and Plants
- F. Ban on Single-Use Plastic
- G. General cleanliness
- H. Environment awareness and training

6) Green Clean Environment through managing solid, liquid & e-waste

- Collection and handing over of solid waste generated in the campus and canteens to agencies that carry out its disposal in eco-friendly manner.
- Setting up of Biogas Plant near canteen for biogas generation from biodegradable solid and liquid waste from canteen.
- Fixing water saving equipment to save water.
- Restricting entry of automobiles in the Campus in vehicle free zone.
- Installing electrical charging station for two and four wheeled vehicles.
- Provision for carrying out e-waste and plastic waste disposal as per the green practices.
- Banning single use plastics in the Campus.

7) Water Conservation

- Installation of Roof top water harvesting system over the terraces of the buildings in the campus.
- Efficient working of the Sewage Treatment Plant (STP) in the campus.
- Use of treated water of Sewage Treatment Plant (STP) for gardening and vegetation purposes to conserve available water resources in the campus.
- Rain-water conservation through rainwater harvesting. The rainwater from the roof top outlets is carried through the well-connected pipelines to the wells or is collected in the large water harvesting tanks and is discharged through the soak-pits for ground water recharge.
- Recharging available reservoir. The campus is provided with a natural slope, the storm water accumulated is effectively discharged through the natural slope in the available reservoir recharging it.





8) Energy use and Conservation

- Installation of Grid connected Roof top solar panels for reducing the carbon footprints.
- Energy efficient product like LED fittings, etc.
- Wheeling of Grid.
- Lights and fans shall be switched off when they are not in use.
- Electrical equipment's shall be switched off soon after the usage.
- Artificial lighting and ventilation should be used under unavoidable conditions.
- Existing electrical equipment's shall be replaced with energy efficient equipment's in the phased manner.
- Existing incandescent bulbs shall be replaced with LED bulbs and tube lights in the phased manner.
- Energy auditing on yearly basis.
- Adopt Suitable measures shall be adopted in order to continuously improve energy conservation.

9) Paperless Operations

- Promote the concept of Paperless office and advocate its benefits in reducing the paper waste.
- Use of both sides of paper for writing in case its use becomes inevitable.
- Inclusion of digital library with the help of EBSCO software and application.

10) Landscaping with Trees and Plants

- Promote environmental activities.
- Gardeners and full time adequate support staff have been appointed for the maintenance of gardens and keeping the campus litter-free.
- The tree-plantation drives are undertaken by the institute on regular basis.

11) Ban on Single-Use Plastic

- A complete ban on single-use plastics in classrooms, laboratories, canteen, hostel, and in the other premises.
- Facilitates environment friendly substitutes like stainless steel, washable and reusable tumblers at all water units and mandates the canteen to serve only in stainless steel or paper plates/glasses/cups to systematically ban the use of plastics on the campus.





12) Air quality monitoring and General cleanliness

- To educate workers collecting fallen dry tree leaves in the campus to avoid its disposal by temptation of burning.
- To utilise dry tree leaves collected for composting in the ditches, dug in the free area of the campus for generating manure in house.
- To make campus tobacco free and No smoking area.
- To carry out maximum tree plantation for carbon sequestration.

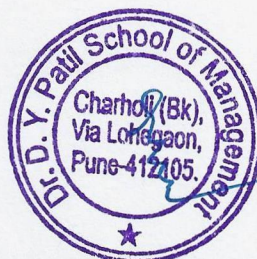
13) Environment awareness and training

- To celebrate Environment day by taking out student rallies, Poster competition, preparation and presentation of skit on environment awareness and climate change etc.
- To organise symposiums and workshop for faculty and students to get into interactive sessions for understanding the environment and Green building best practices.
- To ask Canteen staff to serve only half glass of water initially to prevent wastage of water in the canteen.
- To promote the environment the guests are felicitated with saplings.
- Every month tree plantation is carried out as birthday celebration of the stakeholders of that month.
- Training sessions to educate staff and students about the concept of Environment impact and develop habits to minimise the impact at individual's level.
- To take continuous feedback from the staff and students on implementation of Green practices in the campus.
- To run short term courses on environmental studies for all students.

Prepared By
Faculty Member

Verified By
IQAC Coordinator

Approved By
Director



ENGRESS SERVICES

Yashashree, 26, Nirmal Bag Society, Near Mukhtangan English School, Parvati, Pune 411 009
Tel: 09890444795 Email: engress123@gmail.com
MEDA Registration No: ECN/2022-23/CR-43/1709
ISO: 9001-2015 Certified (Cert No: 23EQKC13),
ISO: 14001-2015 Certified (Cert No: 23EEKW20)

ENERGY AUDIT CERTIFICATE

Certificate No: ES/DYPMBA/22-23/01

Date: 13/7/2023

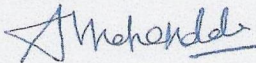
This is to certify that we have conducted Energy Audit at Dr. D. Y. Patil Educational Enterprises Charitable Trust's, Dr. D. Y. Patil School of Management, Charholi Budruk, Pune 412 105, in the Academic year 2022-23.

The Institute has adopted following Energy Efficient Practices:

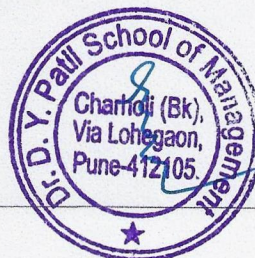
- Usage of Energy Efficient LED Fittings
- Maximum usage of Day Lighting
- Installation of 10 kWp Roof Top Solar PV Plant

We appreciate the support of Management, involvement of faculty members and students in the process of Energy Conservation & making the campus Energy Efficient.

For Engress Services,



A Y Mehendale,
B E-Mechanical, M Tech- Energy
BEE Certified Energy Auditor, EA-8192



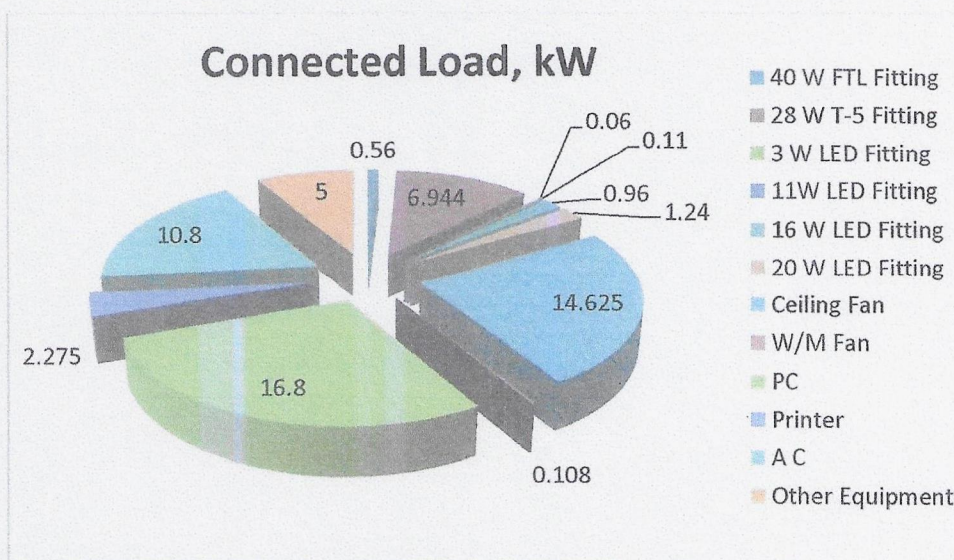
CHAPTER-II STUDY OF CONNECTED LOAD

In this chapter, we present the details of various Electrical loads as under

Table No 2: Details of Overall Connected Load:

| No | Equipment | Qty | Load/unit | Load, kW |
|----|------------------|-----|-----------|--------------|
| 1 | 40 W FTL Fitting | 14 | 40 | 0.56 |
| 2 | 28 W T-5 Fitting | 248 | 28 | 6.944 |
| 3 | 3 W LED Fitting | 20 | 3 | 0.06 |
| 4 | 11W LED Fitting | 10 | 11 | 0.11 |
| 5 | 16 W LED Fitting | 60 | 16 | 0.96 |
| 6 | 20 W LED Fitting | 62 | 20 | 1.24 |
| 7 | Ceiling Fan | 225 | 65 | 14.625 |
| 8 | W/M Fan | 2 | 54 | 0.108 |
| 9 | PC | 112 | 150 | 16.8 |
| 10 | Printer | 13 | 175 | 2.275 |
| 11 | A C | 6 | 1800 | 10.8 |
| 12 | Other Equipment | 20 | 250 | 5 |
| 13 | Total | | | 59.48 |

Chart No 1: Total Connected Load:

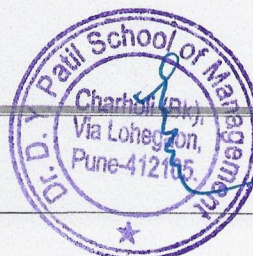
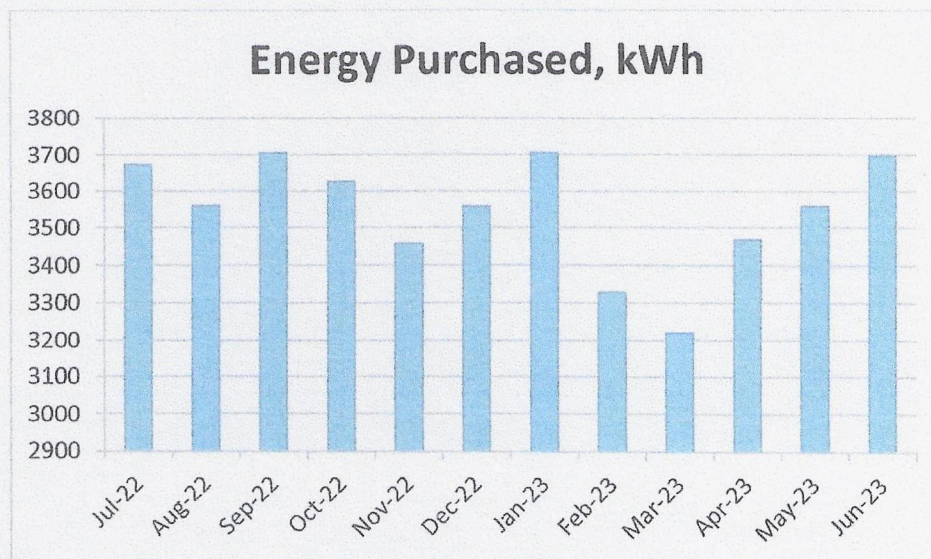


CHAPTER-III STUDY OF ELECTRICAL ENERGY CONSUMPTION

In this chapter, we present the analysis of last year Electricity Bills
Table No 3: Electrical Bill Analysis- 2022-23:

| No | Month | Energy Purchased, kWh | CO ₂ Emissions, MT |
|----|---------|-----------------------|-------------------------------|
| 1 | Jul-22 | 3675 | 3.31 |
| 2 | Aug-22 | 3559 | 3.20 |
| 3 | Sep-22 | 3705 | 3.33 |
| 4 | Oct-22 | 3625 | 3.26 |
| 5 | Nov-22 | 3458 | 3.11 |
| 6 | Dec-22 | 3557 | 3.20 |
| 7 | Jan-23 | 3706 | 3.34 |
| 8 | Feb-23 | 3328 | 3.00 |
| 9 | Mar-23 | 3221 | 2.90 |
| 10 | Apr-23 | 3469 | 3.12 |
| 11 | May-23 | 3559 | 3.20 |
| 12 | Jun-23 | 3698 | 3.33 |
| 13 | Total | 42560 | 38.30 |
| 14 | Maximum | 3706 | 3.34 |
| 15 | Minimum | 3221 | 2.90 |
| 16 | Average | 3546.67 | 3.19 |

Chart No 2: To study the variation of Month wise Energy Purchased, kWh:



CHAPTER-IV STUDY OF ENERGY PERFORMANCE INDEX

Energy Performance Index: Energy Performance Index of a Building is its Annual Energy Consumption in Kilo Watt Hours per square meter of the Building

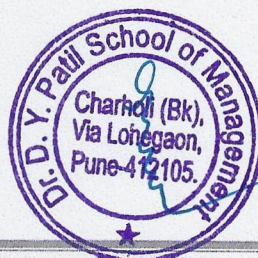
It is determined by:

$$\text{EPI} = \frac{\text{(Annual Energy Consumption in kWh)}}{\text{(Total Built-up area in m}^2\text{)}}$$

Now we compute the EPI for the Institute as under:

Table No 3: Computation of Energy Performance Index:

| No | Particulars | Value | Unit |
|----|-------------------------------------|--------|--------------------|
| 1 | Total Annual Energy Purchased | 42560 | kWh |
| 2 | Energy Generated by Solar PV Plant | 12000 | kWh |
| 3 | Total Energy Purchased = 1+2 | 54560 | kWh |
| 4 | Total Built up area of Institute | 769.54 | m ² |
| 5 | Energy Performance Index =(3) / (4) | 70.90 | kWh/m ² |



ENGRESS SERVICES

Yashashree, 26, Nirmal Bag Society,
Near Mukhtangan English School, Parvati, Pune 411 009
Tel: 020-24220747 Email: engress123@gmail.com

Ref: ES/DYPMBA/21-22/01

Date: 11/7/2022

CERTIFICATE

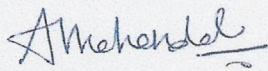
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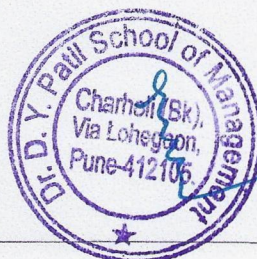
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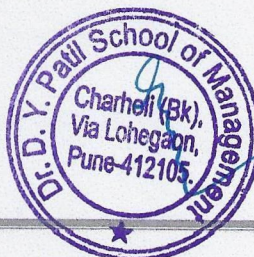
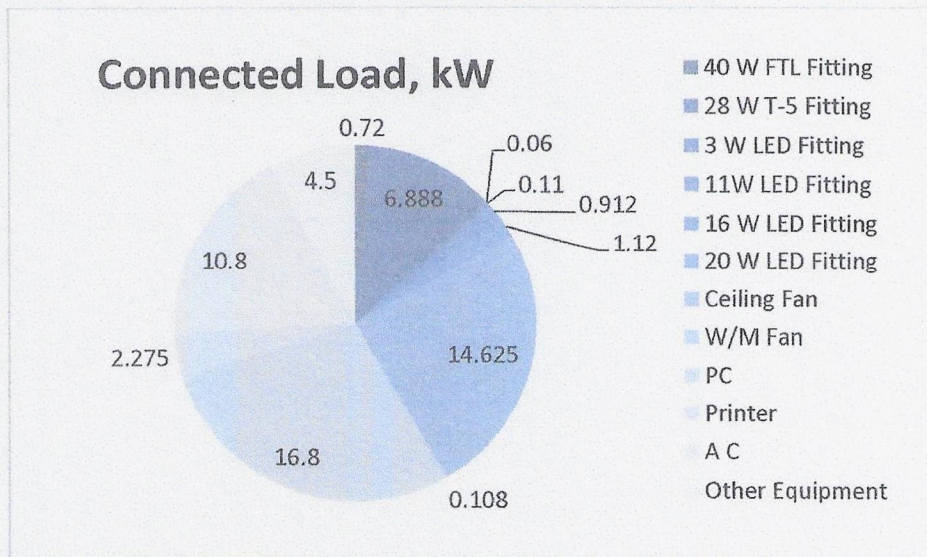
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| 5 | 16 W LED Fitting | 57 | 16 | 0.912 |
| 6 | 20 W LED Fitting | 56 | 20 | 1.12 |
| 7 | Ceiling Fan | 225 | 65 | 14.625 |
| 8 | W/M Fan | 2 | 54 | 0.108 |
| 9 | PC | 112 | 150 | 16.8 |
| 10 | Printer | 13 | 175 | 2.275 |
| 11 | A C | 6 | 1800 | 10.8 |
| 12 | Other Equipment | 18 | 250 | 4.5 |
| 13 | Total | | | 58.92 |

Chart No 1: Total Connected Load:



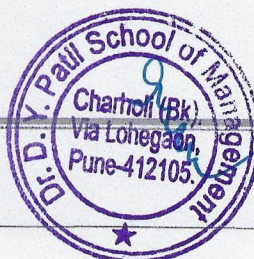
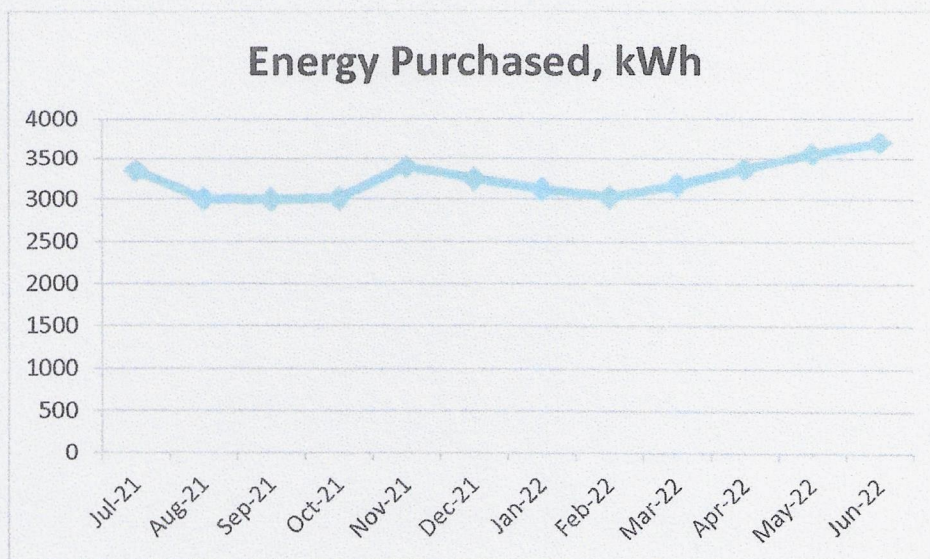
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In this chapter, we present the analysis of last year Electricity Bills

Table No 3: Electrical Bill Analysis- 2021-22:

| No | Month | Energy Purchased, kWh |
|----|---------|-----------------------|
| 1 | Jul-21 | 3345 |
| 2 | Aug-21 | 3003 |
| 3 | Sep-21 | 2996 |
| 4 | Oct-21 | 3012 |
| 5 | Nov-21 | 3396 |
| 6 | Dec-21 | 3248 |
| 7 | Jan-22 | 3118 |
| 8 | Feb-22 | 3028 |
| 9 | Mar-22 | 3168 |
| 10 | Apr-22 | 3368 |
| 11 | May-22 | 3558 |
| 12 | Jun-22 | 3706 |
| 13 | Total | 38946 |
| 14 | Maximum | 3706 |
| 15 | Minimum | 2996 |
| 16 | Average | 3245.50 |

Chart No 2: To study the variation of Month wise Energy Consumption, kWh:



CHAPTER-IV CARBON FOOTPRINTING

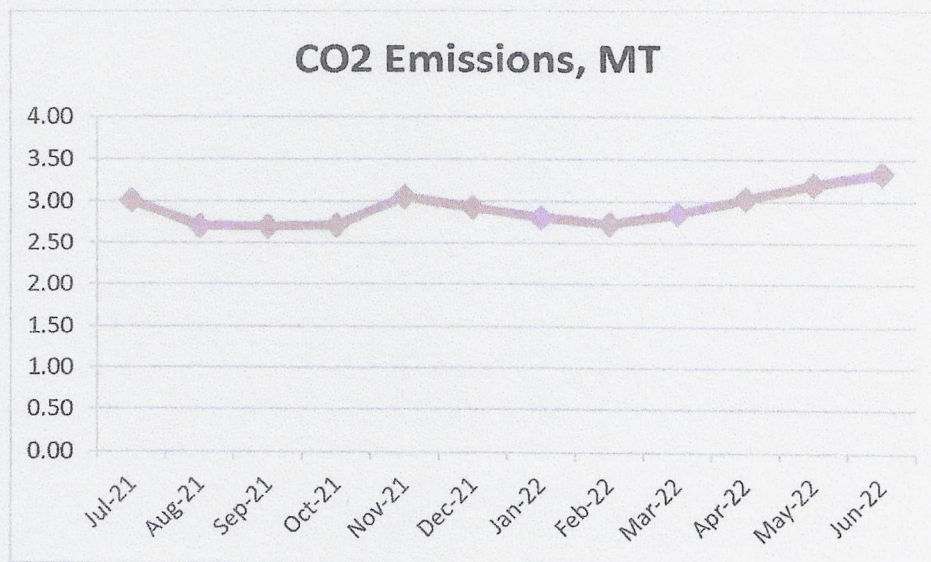
A Carbon Foot print is defined as the Total Greenhouse Gas emissions, emitted due to various activities. **Basis for computation of CO₂ Emissions:**

- 1 kWh of Electrical Energy releases 0.9 Kg of CO₂ into atmosphere

Table No 4: Month wise CO₂ Emissions:

| No | Month | Energy Purchased, kWh | CO2 Emissions, MT |
|----|---------|-----------------------|-------------------|
| 1 | Jul-21 | 3345 | 3.01 |
| 2 | Aug-21 | 3003 | 2.70 |
| 3 | Sep-21 | 2996 | 2.70 |
| 4 | Oct-21 | 3012 | 2.71 |
| 5 | Nov-21 | 3396 | 3.06 |
| 6 | Dec-21 | 3248 | 2.92 |
| 7 | Jan-22 | 3118 | 2.81 |
| 8 | Feb-22 | 3028 | 2.73 |
| 9 | Mar-22 | 3168 | 2.85 |
| 10 | Apr-22 | 3368 | 3.03 |
| 11 | May-22 | 3558 | 3.20 |
| 12 | Jun-22 | 3706 | 3.34 |
| 13 | Total | 38946 | 35.05 |
| 14 | Maximum | 3706 | 3.34 |
| 15 | Minimum | 2996 | 2.70 |
| 16 | Average | 3245.50 | 2.92 |

Chart No 3: Representation of Month wise CO₂ emissions:



CHAPTER-V STUDY OF USAGE OF ALTERNATE ENERGY

The Institute is in a process of installation of 10 kWp Roof Top Solar PV Plant.
Now we compute the % of Usage of Alternate Energy to Annual Energy Demand of the Institute.

Table No 4: Computation of % Usage of Alternate Energy:

| No | Particulars | Value | Unit |
|----|--|-------|---------|
| 1 | Energy Purchased from MSEDCL | 38946 | kWh |
| 2 | Installed Roof Top Solar PV Plant Capacity | 10 | kWp |
| 3 | Average Daily Energy Generated | 4 | kWh/kWp |
| 4 | Annual Generation Days | 300 | Nos |
| 5 | Annual Solar Energy Generated | 12000 | kWh |
| 6 | Total Energy Demand = (1) + (5) | 50946 | kWh |
| 7 | Usage of Alternate Energy to Annual Energy Demand = $5 \times 100 / 6$ | 23.55 | % |

Photograph of Roof Top Solar PV Plant:



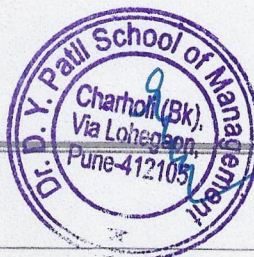
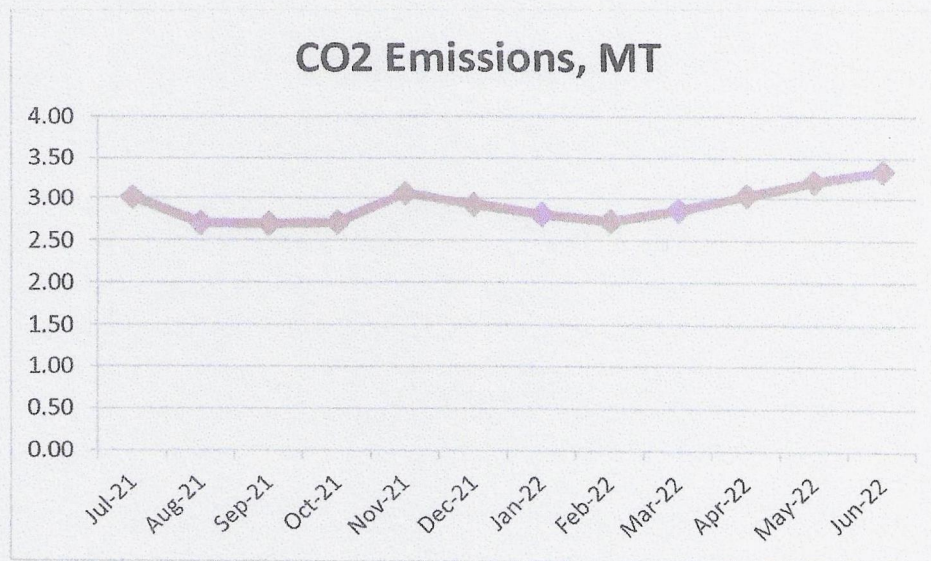
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CHAPTER-III STUDY OF CARBON FOOTPRINTING

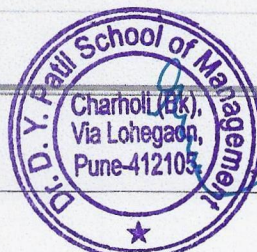
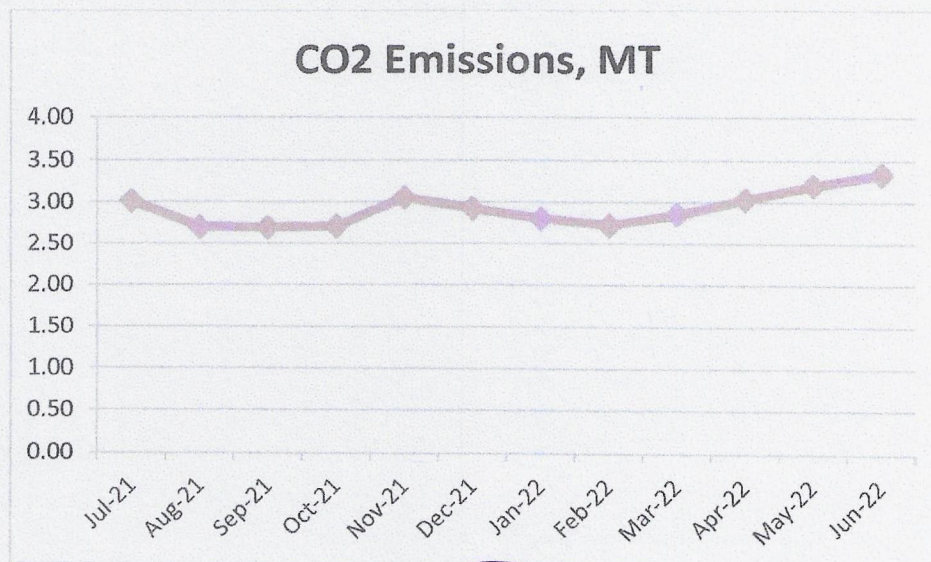
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Chart No 2: Representation of Month wise CO₂ emissions:



CHAPTER-IV STUDY OF USAGE OF RENEWABLE ENERGY

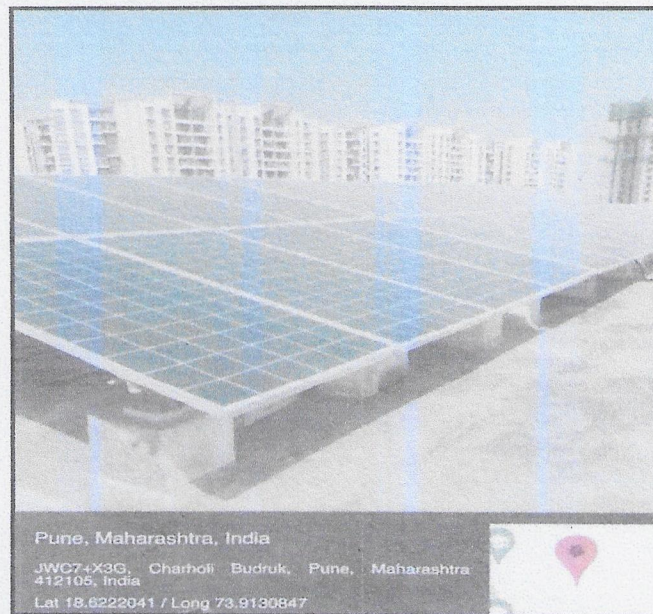
The Institute has installed Roof Top Solar PV Plant of Capacity **10 kWp**.

In the following Table, we compute the Annual Reduction in CO₂ Emissions due to installation of Roof Top Solar PV Plant.

Table No 4: Computation of Annual Reduction in CO₂ Emissions:

| No | Particulars | Value | Unit |
|----|--|-------|-----------------------|
| 1 | Installed Capacity of Roof Top Solar PV Plant Capacity | 10 | kWp |
| 2 | Energy Generated in per kWp | 4 | 4 kWh/kWp |
| 3 | Annual Solar Energy generation Days | 300 | Nos |
| 4 | Energy Generated in the Year: 21-22 | 12000 | kWh |
| 5 | 1 kWh of Electrical Energy saves | 0.9 | Kg/kWh |
| 6 | Qty of CO ₂ Saved by Solar PV Plant = (4)*(5) /1000 | 10.8 | MT of CO ₂ |

Photograph of Roof Top Solar PV Plant:



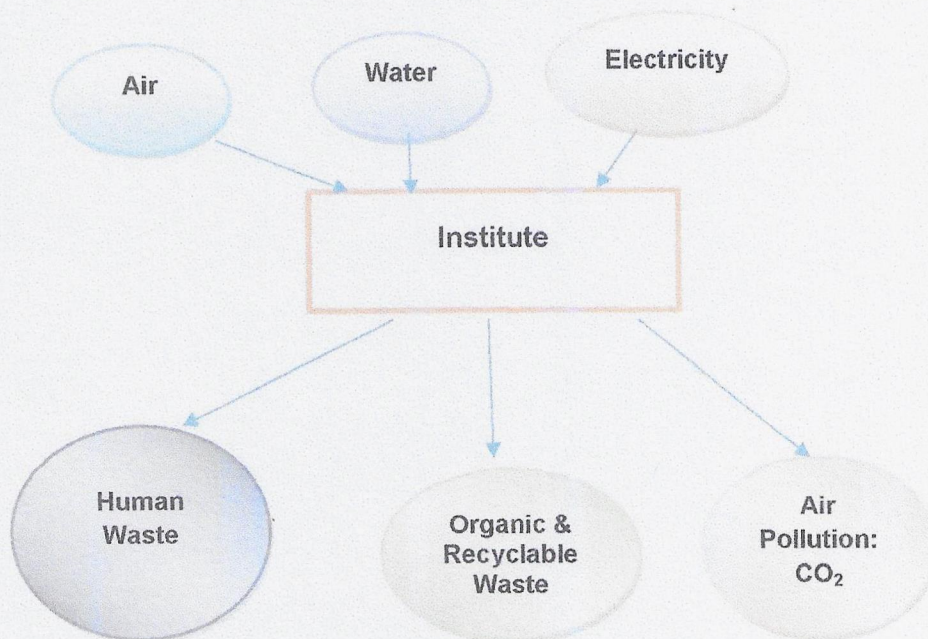
CHAPTER-II STUDY OF CONSUMPTION OF RESOURCES & CO₂ EMISSION

2.1 The Institute consumes following Natural/derived Resources:

1. Air
2. Water
3. Electrical Energy

We try to draw a schematic diagram for the Institute System & Environment as under.

2.2 Chart No 1: Representation of Institute as a System:



2.3 Computation of CO₂ Emissions :A Carbon Foot print is defined as the Total Greenhouse Gas Emissions, emitted due to various activities. The Institute uses Electrical Energy for various Electrical gadgets& day to day activities.

Basis for computation of CO₂ Emissions:

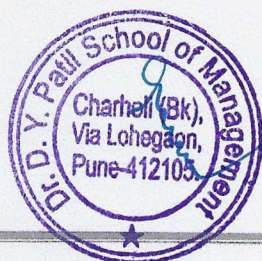
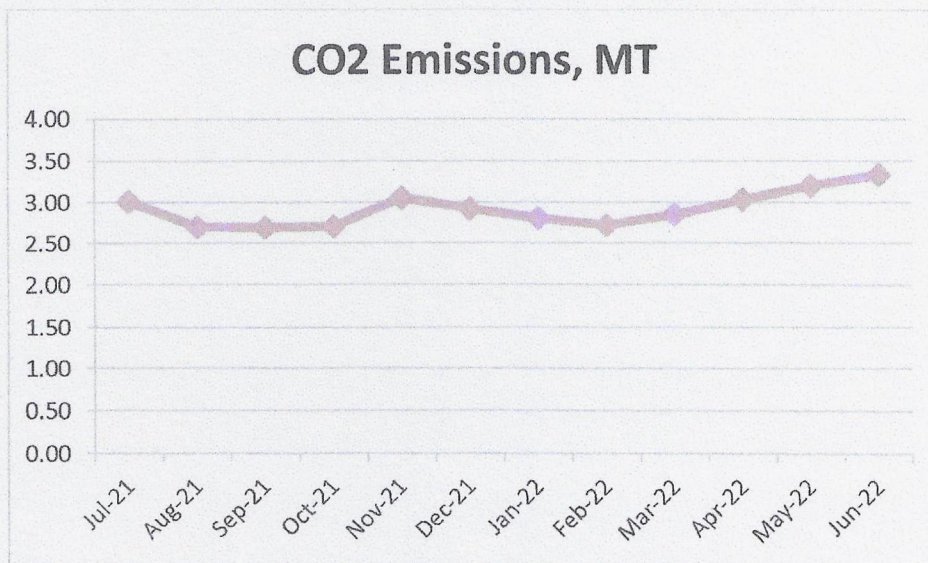
- 1 kWh of Electrical Energy releases 0.9 Kg of CO₂ into atmosphere

Table No 5: Month wise CO₂ Emissions:

| No | Month | Energy Purchased, kWh | CO ₂ Emissions, MT |
|----|--------|-----------------------|-------------------------------|
| 1 | Jul-21 | 3345 | 3.01 |
| 2 | Aug-21 | 3003 | 2.70 |
| 3 | Sep-21 | 2996 | 2.70 |

| | | | |
|----|---------|---------|-------|
| 4 | Oct-21 | 3012 | 2.71 |
| 5 | Nov-21 | 3396 | 3.06 |
| 6 | Dec-21 | 3248 | 2.92 |
| 7 | Jan-22 | 3118 | 2.81 |
| 8 | Feb-22 | 3028 | 2.73 |
| 9 | Mar-22 | 3168 | 2.85 |
| 10 | Apr-22 | 3368 | 3.03 |
| 11 | May-22 | 3558 | 3.20 |
| 12 | Jun-22 | 3706 | 3.34 |
| 13 | Total | 38946 | 35.05 |
| 14 | Maximum | 3706 | 3.34 |
| 15 | Minimum | 2996 | 2.70 |
| 16 | Average | 3245.50 | 2.92 |

Chart No 2: Representation of Month wise CO₂ emissions:



CHAPTER-III STUDY OF USAGE OF RENEWABLE ENERGY

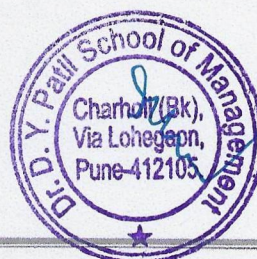
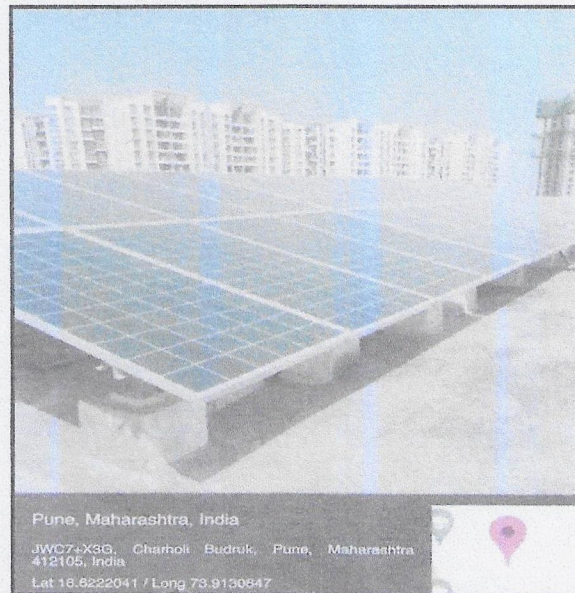
The Institute has installed Roof Top Solar PV Plant of Capacity 10 kWp.

In the following Table, we compute the Annual Reduction in CO₂ Emissions due to installation of Roof Top Solar PV Plant.

Table No 6: Computation of Annual Reduction in CO₂ Emissions:

| No | Particulars | Value | Unit |
|----|---|-------|-----------------------|
| 1 | Installed Capacity of Roof Top Solar PV Plant Capacity | 10 | kWp |
| 2 | Energy Generated in per kWp | 4 | 4 kWh/kWp |
| 3 | Annual Solar Energy generation Days | 300 | Nos |
| 4 | Energy Generated in the Year: 21-22 | 12000 | kWh |
| 5 | 1 kWh of Electrical Energy saves | 0.9 | Kg/kWh |
| 6 | Qty of CO ₂ Saved by Solar PV Plant $= (4) * (5) / 1000$ | 10.8 | MT of CO ₂ |

Photograph of Roof Top Solar PV Plant:



ENRICH CONSULTANTS

Yashashree, 26, Nirmal Bag Society,
Near Mukhtangan English School, Parvati, Pune 411 009
Tel: 09890444795 Email: enrichcons@gmail.com

Ref: EC/DYPMBA/20-21/01

Date: 2/8/2021

CERTIFICATE

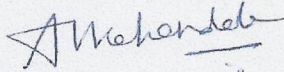
This is to certify that we have conducted Energy Audit at Dr. D. Y. Patil Educational Enterprises Charitable Trust's, Dr. D. Y. Patil School of Management, Charholi Budruk, Pune 412 105, in the Academic year 2020-21.

The Institute has adopted following Energy Efficient Practices:

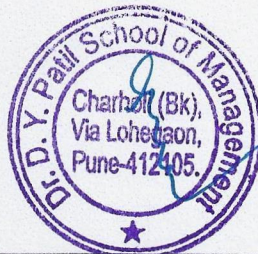
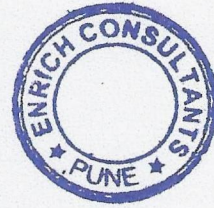
- Usage of Energy Efficient LED Fittings
- Maximum usage of Day Lighting
- Installation of 10 kWp Roof Top Solar PV Plant

We appreciate the support of Management, involvement of faculty members and students in the process of Energy Conservation & making the campus Energy Efficient.

For Enrich Consultants,



A Y Mehendale,
Certified Energy Auditor
EA-8192



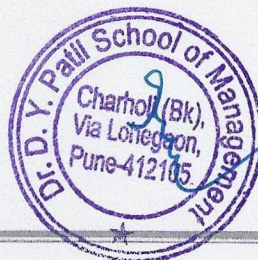
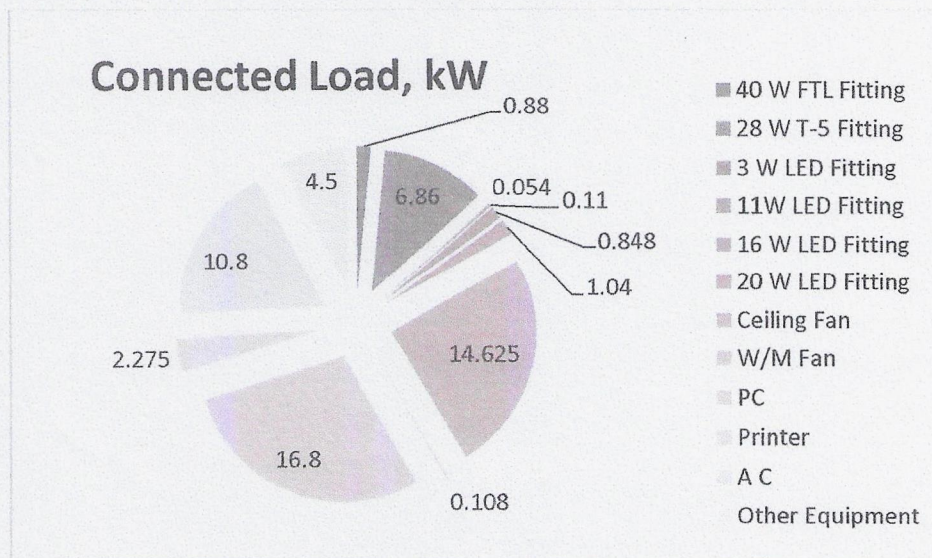
CHAPTER-II STUDY OF CONNECTED LOAD

In this chapter, we present the details of various Electrical loads as under

Table No 2: Details of Overall Connected Load:

| No | Equipment | Qty | Load/unit | Load, kW |
|----|------------------|-----|-----------|--------------|
| 1 | 40 W FTL Fitting | 22 | 40 | 0.88 |
| 2 | 28 W T-5 Fitting | 245 | 28 | 6.86 |
| 3 | 3 W LED Fitting | 18 | 3 | 0.054 |
| 4 | 11W LED Fitting | 10 | 11 | 0.11 |
| 5 | 16 W LED Fitting | 53 | 16 | 0.848 |
| 6 | 20 W LED Fitting | 52 | 20 | 1.04 |
| 7 | Ceiling Fan | 225 | 65 | 14.625 |
| 8 | W/M Fan | 2 | 54 | 0.108 |
| 9 | PC | 112 | 150 | 16.8 |
| 10 | Printer | 13 | 175 | 2.275 |
| 11 | A C | 6 | 1800 | 10.8 |
| 12 | Other Equipment | 18 | 250 | 4.5 |
| 13 | Total | | | 58.90 |

Chart No 1: Total Connected Load:



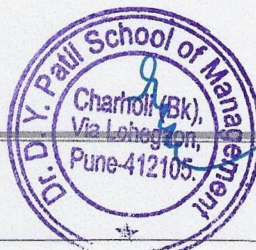
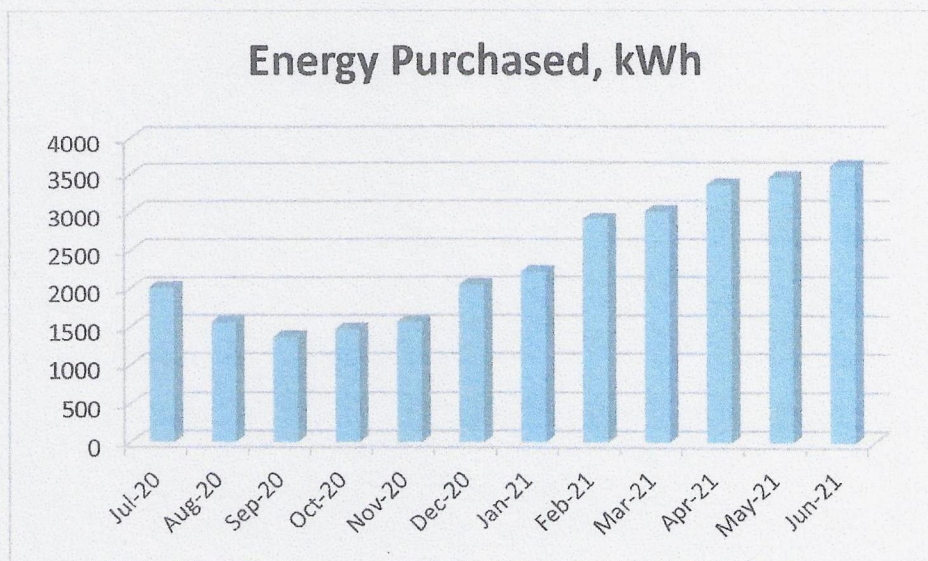
CHAPTER-III STUDY OF ELECTRICAL ENERGY CONSUMPTION

In this chapter, we present the analysis of last year Electricity Bills

Table No 3: Electrical Bill Analysis- 2020-21:

| No | Month | Energy Purchased, kWh |
|----|---------|-----------------------|
| 1 | Jul-20 | 2005 |
| 2 | Aug-20 | 1558 |
| 3 | Sep-20 | 1368 |
| 4 | Oct-20 | 1469 |
| 5 | Nov-20 | 1559 |
| 6 | Dec-20 | 2036 |
| 7 | Jan-21 | 2215 |
| 8 | Feb-21 | 2904 |
| 9 | Mar-21 | 3005 |
| 10 | Apr-21 | 3360 |
| 11 | May-21 | 3450 |
| 12 | Jun-21 | 3598 |
| 13 | Total | 28527 |
| 14 | Maximum | 3598 |
| 15 | Minimum | 1368 |
| 16 | Average | 2377.25 |

Chart No 2: To study the variation of Month wise Energy Consumption, kWh:



CHAPTER-IV CARBON FOOTPRINTING

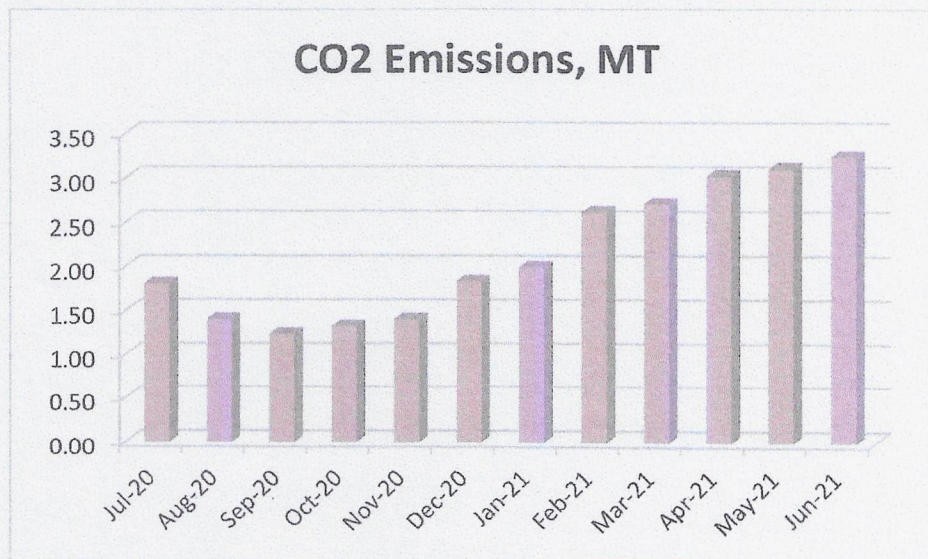
A Carbon Foot print is defined as the Total Greenhouse Gas emissions, emitted due to various activities. **Basis for computation of CO₂ Emissions:**

- 1 kWh of Electrical Energy releases 0.9 Kg of CO₂ into atmosphere

Table No 4: Month wise CO₂ Emissions:

| No | Month | Energy Purchased, kWh | CO ₂ Emissions, MT |
|----|---------|-----------------------|-------------------------------|
| 1 | Jul-20 | 2005 | 1.80 |
| 2 | Aug-20 | 1558 | 1.40 |
| 3 | Sep-20 | 1368 | 1.23 |
| 4 | Oct-20 | 1469 | 1.32 |
| 5 | Nov-20 | 1559 | 1.40 |
| 6 | Dec-20 | 2036 | 1.83 |
| 7 | Jan-21 | 2215 | 1.99 |
| 8 | Feb-21 | 2904 | 2.61 |
| 9 | Mar-21 | 3005 | 2.70 |
| 10 | Apr-21 | 3360 | 3.02 |
| 11 | May-21 | 3450 | 3.11 |
| 12 | Jun-21 | 3598 | 3.24 |
| 13 | Total | 28527 | 25.67 |
| 14 | Maximum | 3598 | 3.24 |
| 15 | Minimum | 1368 | 1.23 |
| 16 | Average | 2377.25 | 2.14 |

Chart No 3: Representation of Month wise CO₂ emissions:



CHAPTER-V STUDY OF USAGE OF ALTERNATE ENERGY

The Institute is in a process of installation of 10 kWp Roof Top Solar PV Plant.

Now we compute the % of Usage of Alternate Energy to Annual Energy Demand of the Institute.

Table No 4: Computation of % Usage of Alternate Energy:

| No | Particulars | Value | Unit |
|----|--|-------|---------|
| 1 | Energy Purchased from MSEDCL | 28527 | kWh |
| 2 | Installed Roof Top Solar PV Plant Capacity | 10 | kWp |
| 3 | Average Daily Energy Generated | 4 | kWh/kWp |
| 4 | Annual Generation Days | 180 | Nos |
| 5 | Annual Solar Energy Generated | 7200 | kWh |
| 6 | Total Energy Demand = (1) + (5) | 35727 | kWh |
| 7 | Usage of Alternate Energy to Total Energy Demand= (5)*100/ (6) | 20.15 | % |

Photograph of Roof Top Solar PV Plant:

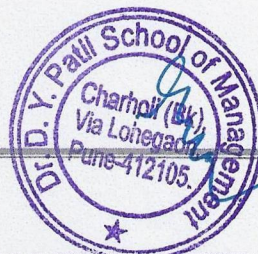
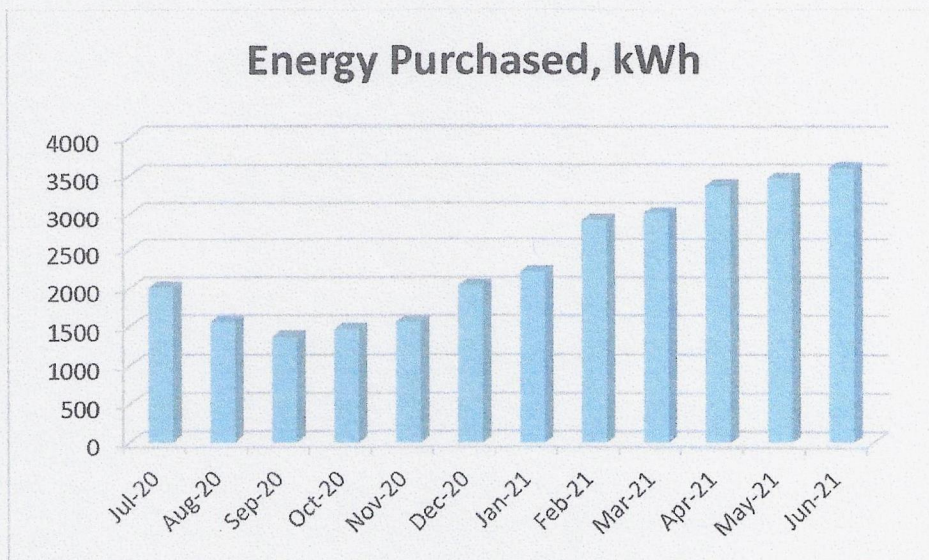


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| 13 | Total | 28527 |
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Chart No 1: To study the variation of Month wise Energy Consumption, kWh:



CHAPTER-III CARBON FOOTPRINTING

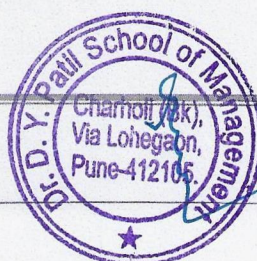
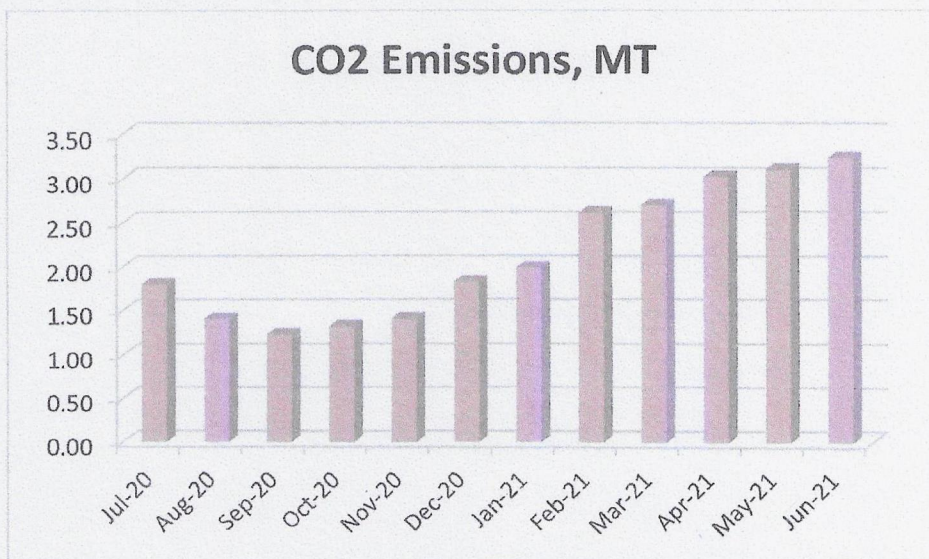
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Table No 3: Month wise CO₂ Emissions:

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Chart No 2: Representation of Month wise CO₂ emissions:



CHAPTER-IV STUDY OF USAGE OF RENEWABLE ENERGY

The Institute has installed Roof Top Solar PV Plant of Capacity 10 kWp.

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Table No 4: Computation of Annual Reduction in CO₂ Emissions:

| No | Particulars | Value | Unit |
|----|---|-------|-----------------------|
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| 2 | Energy Generated in per kWp | 4 | 4 kWh/kWp |
| 3 | Annual Solar Energy generation Days | 180 | Nos |
| 4 | Energy Generated in the Year: 21-22 | 7200 | kWh |
| 5 | 1 kWh of Electrical Energy saves | 0.9 | Kg/kWh |
| 6 | Qty of CO ₂ Saved by Solar PV Plant $= (4) * (5) / 1000$ | 6.48 | MT of CO ₂ |

Photograph of Roof Top Solar PV Plant:



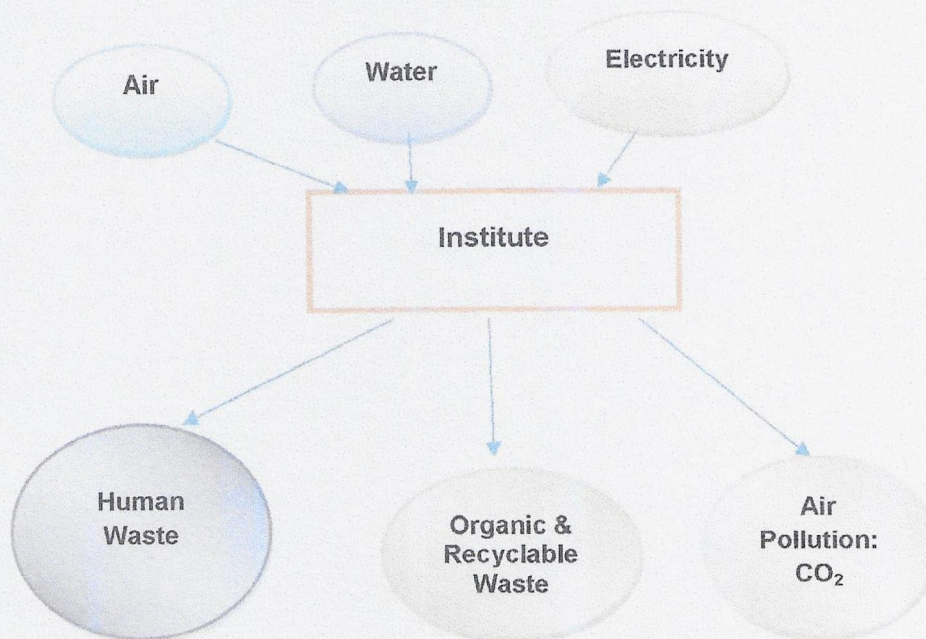
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2.1 The Institute consumes following Natural/derived Resources:

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We try to draw a schematic diagram for the Institute System & Environment as under.

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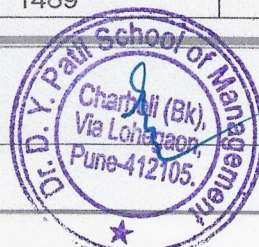
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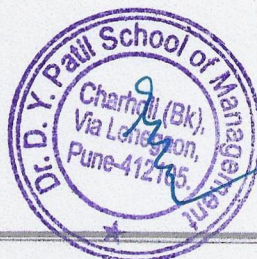
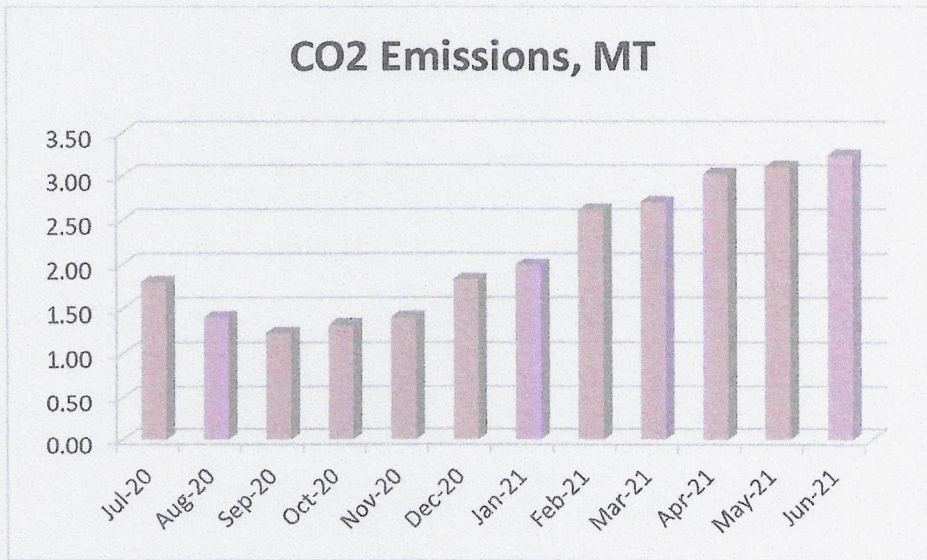
Table No 5: Month wise CO₂ Emissions:

| No | Month | Energy Purchased, kWh | CO ₂ Emissions, MT |
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| 3 | Sep-20 | 1368 | 1.23 |
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| | | | |
|----|---------|---------|-------|
| 5 | Nov-20 | 1559 | 1.40 |
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| 7 | Jan-21 | 2215 | 1.99 |
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CHAPTER-III STUDY OF USAGE OF RENEWABLE ENERGY

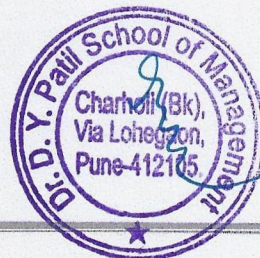
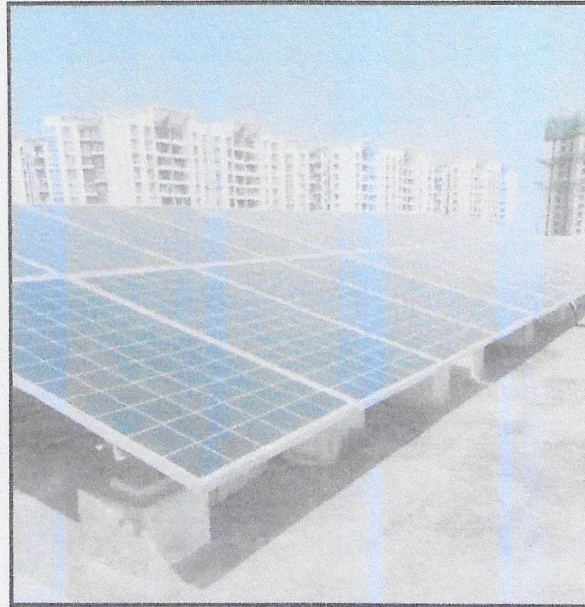
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Enrich Consultants

Yashashree, 26, Nirmal Bag Society,
Near Mukhtangan English School, Parvati, Pune 411 009
Tel: 09890444795 Email: enrichcons@gmail.com

Ref: EC/DYPMBA/19-20/01

Date: 25/8/2020

CERTIFICATE

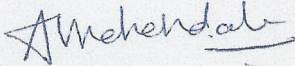
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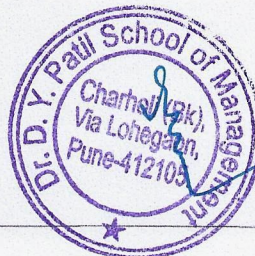
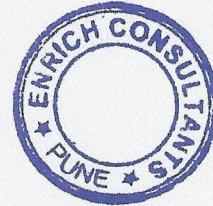
- Usage of Energy Efficient LED Fittings
- Maximum usage of Day Lighting

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For Enrich Consultants,



A Y Mehendale,
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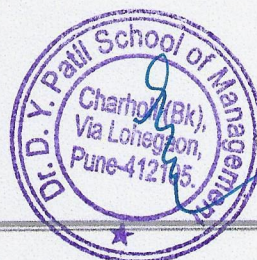
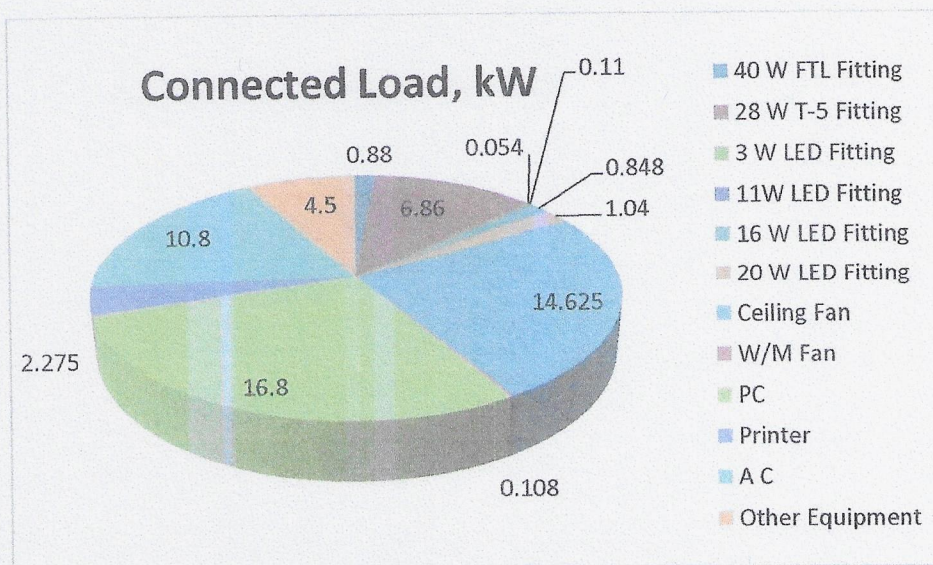
CHAPTER-II STUDY OF CONNECTED LOAD

In this chapter, we present the details of various Electrical loads as under

Table No 2: Details of Overall Connected Load:

| No | Equipment | Qty | Load/unit | Load, kW |
|----|------------------|-----|-----------|--------------|
| 1 | 40 W FTL Fitting | 22 | 40 | 0.88 |
| 2 | 28 W T-5 Fitting | 245 | 28 | 6.86 |
| 3 | 3 W LED Fitting | 18 | 3 | 0.054 |
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| 7 | Ceiling Fan | 225 | 65 | 14.625 |
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| 9 | PC | 112 | 150 | 16.8 |
| 10 | Printer | 13 | 175 | 2.275 |
| 11 | A C | 6 | 1800 | 10.8 |
| 12 | Other Equipment | 18 | 250 | 4.5 |
| 13 | Total | | | 58.90 |

Chart No 1: Total Connected Load:



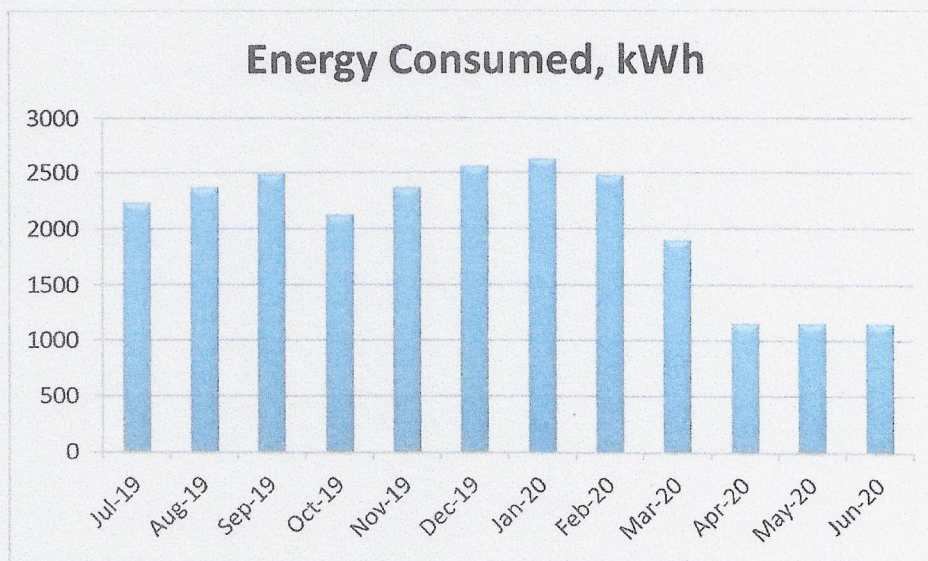
CHAPTER-III STUDY OF ELECTRICAL ENERGY CONSUMPTION

In this chapter, we present the analysis of last year Electricity Bills

Table No 3: Electrical Bill Analysis- 2019-20:

| No | Month | Energy Consumed, kWh |
|----|---------|----------------------|
| 1 | Jul-19 | 2236 |
| 2 | Aug-19 | 2369 |
| 3 | Sep-19 | 2485 |
| 4 | Oct-19 | 2125 |
| 5 | Nov-19 | 2367 |
| 6 | Dec-19 | 2558 |
| 7 | Jan-20 | 2630 |
| 8 | Feb-20 | 2478 |
| 9 | Mar-20 | 1901 |
| 10 | Apr-20 | 1150 |
| 11 | May-20 | 1150 |
| 12 | Jun-20 | 1150 |
| 13 | Total | 24599 |
| 14 | Maximum | 2630 |
| 15 | Minimum | 1150 |
| 16 | Average | 2049.92 |

Chart No 2: To study the variation of Month wise Energy Consumption, kWh:



CHAPTER-IV CARBON FOOTPRINTING

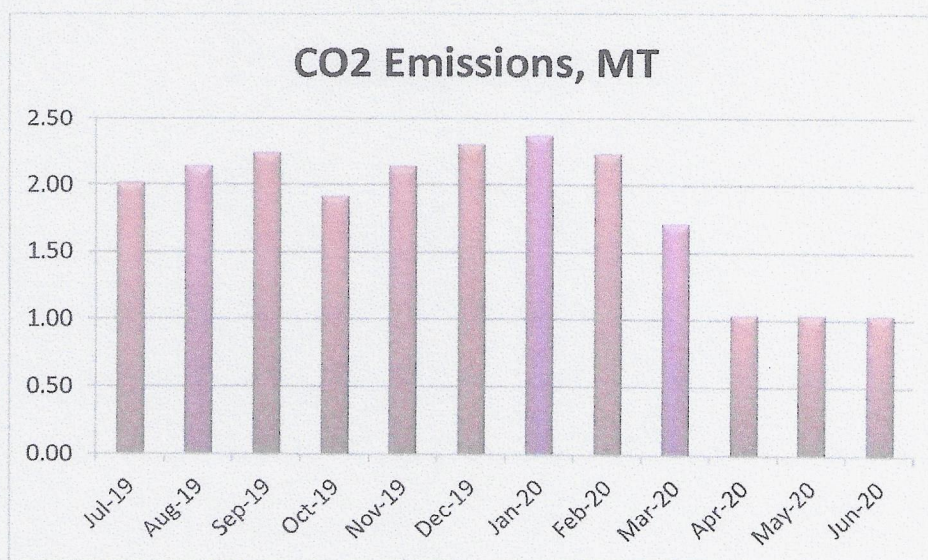
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Table No 4: Month wise CO₂ Emissions:

| No | Month | Energy Consumed, kWh | CO ₂ Emissions, MT |
|----|---------|----------------------|-------------------------------|
| 1 | Jul-19 | 2236 | 2.01 |
| 2 | Aug-19 | 2369 | 2.13 |
| 3 | Sep-19 | 2485 | 2.24 |
| 4 | Oct-19 | 2125 | 1.91 |
| 5 | Nov-19 | 2367 | 2.13 |
| 6 | Dec-19 | 2558 | 2.30 |
| 7 | Jan-20 | 2630 | 2.37 |
| 8 | Feb-20 | 2478 | 2.23 |
| 9 | Mar-20 | 1901 | 1.71 |
| 10 | Apr-20 | 1150 | 1.04 |
| 11 | May-20 | 1150 | 1.04 |
| 12 | Jun-20 | 1150 | 1.04 |
| 13 | Total | 24599 | 22.14 |
| 14 | Maximum | 2630 | 2.37 |
| 15 | Minimum | 1150 | 1.04 |
| 16 | Average | 2049.92 | 1.84 |

Chart No 3: Representation of Month wise CO₂ emissions:

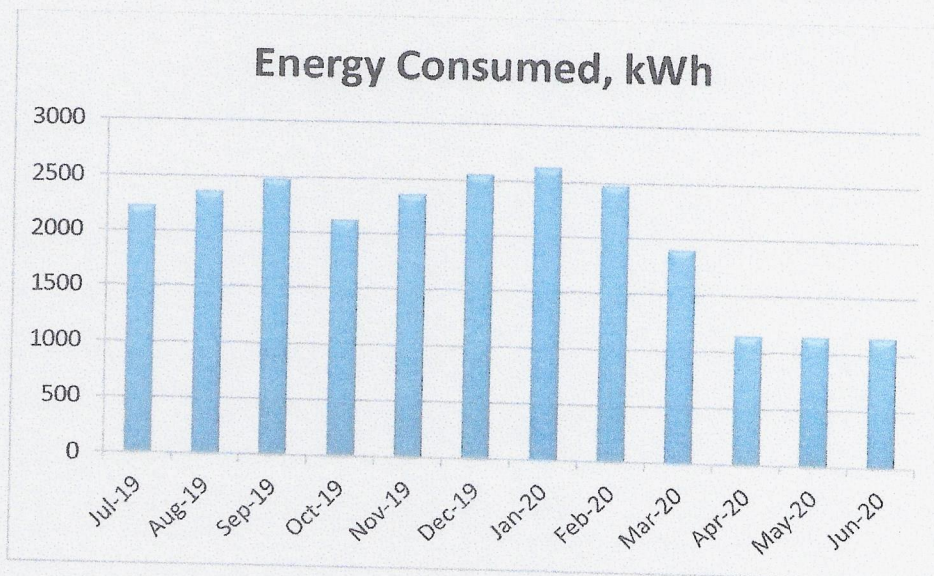


CHAPTER-II STUDY OF ELECTRICAL ENERGY CONSUMPTION

In this chapter, we present the analysis of last year Electricity Bills
Table No2: Electrical Bill Analysis- 2019-20:

| No | Month | Energy Consumed, kWh |
|----|---------|----------------------|
| 1 | Jul-19 | 2236 |
| 2 | Aug-19 | 2369 |
| 3 | Sep-19 | 2485 |
| 4 | Oct-19 | 2125 |
| 5 | Nov-19 | 2367 |
| 6 | Dec-19 | 2558 |
| 7 | Jan-20 | 2630 |
| 8 | Feb-20 | 2478 |
| 9 | Mar-20 | 1901 |
| 10 | Apr-20 | 1150 |
| 11 | May-20 | 1150 |
| 12 | Jun-20 | 1150 |
| 13 | Total | 24599 |
| 14 | Maximum | 2630 |
| 15 | Minimum | 1150 |
| 16 | Average | 2049.92 |

Chart No 1: To study the variation of Month wise Energy Consumption, kWh:



CHAPTER-III CARBON FOOTPRINTING

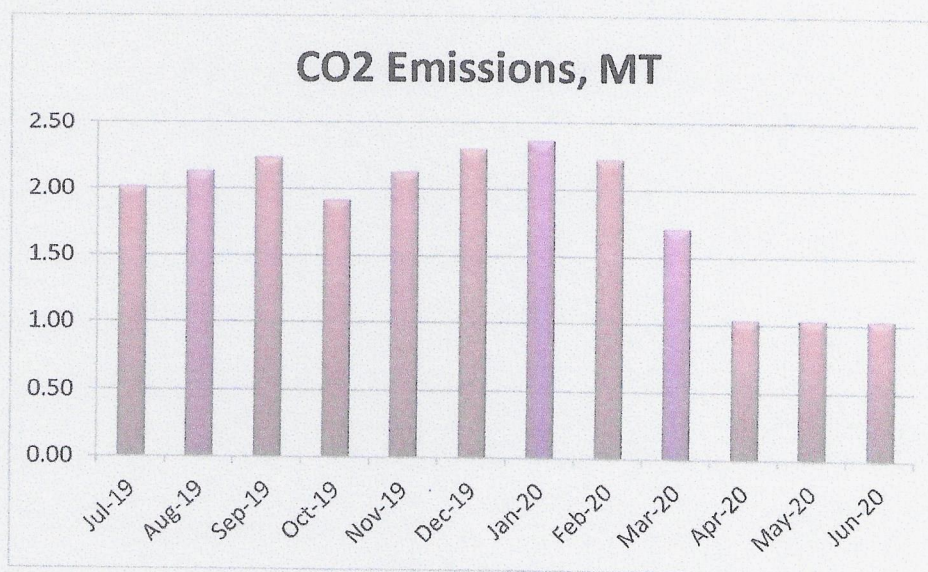
A Carbon Foot print is defined as the Total Greenhouse Gas emissions, emitted due to various activities. **Basis for computation of CO₂ Emissions:**

- 1 kWh of Electrical Energy releases 0.9 Kg of CO₂ into atmosphere

Table No 3: Month wise CO₂ Emissions:

| No | Month | Energy Consumed, kWh | CO ₂ Emissions, MT |
|----|---------|----------------------|-------------------------------|
| 1 | Jul-19 | 2236 | 2.01 |
| 2 | Aug-19 | 2369 | 2.13 |
| 3 | Sep-19 | 2485 | 2.24 |
| 4 | Oct-19 | 2125 | 1.91 |
| 5 | Nov-19 | 2367 | 2.13 |
| 6 | Dec-19 | 2558 | 2.30 |
| 7 | Jan-20 | 2630 | 2.37 |
| 8 | Feb-20 | 2478 | 2.23 |
| 9 | Mar-20 | 1901 | 1.71 |
| 10 | Apr-20 | 1150 | 1.04 |
| 11 | May-20 | 1150 | 1.04 |
| 12 | Jun-20 | 1150 | 1.04 |
| 13 | Total | 24599 | 22.14 |
| 14 | Maximum | 2630 | 2.37 |
| 15 | Minimum | 1150 | 1.04 |
| 16 | Average | 2049.92 | 1.84 |

Chart No 2: Representation of Month wise CO₂ emissions:



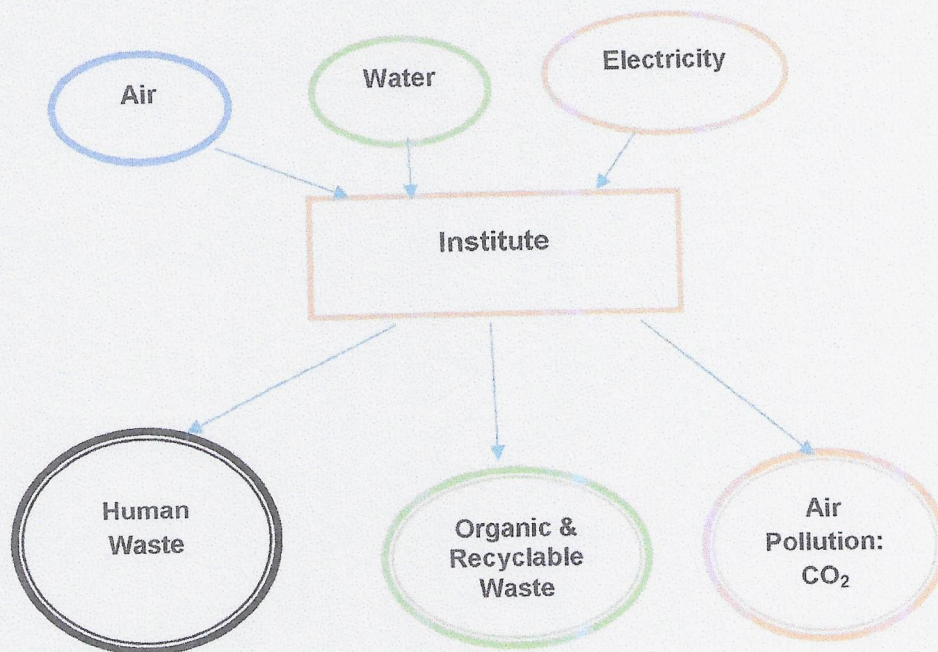
CHAPTER-II STUDY OF CONSUMPTION OF RESOURCES & CO₂ EMISSION

2.1 The Institute consumes following Natural/derived Resources:

1. Air
2. Water
3. Electrical Energy

We try to draw a schematic diagram for the Institute System & Environment as under.

2.2 Chart No 1: Representation of Institute as a System:



2.3 Computation of CO₂ Emissions :A Carbon Foot print is defined as the Total Greenhouse Gas Emissions, emitted due to various activities. The Institute uses Electrical Energy for various Electrical gadgets& day to day activities.

Basis for computation of CO₂ Emissions:

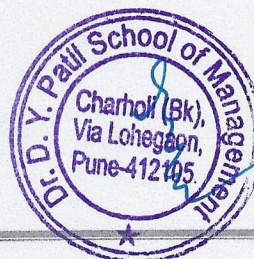
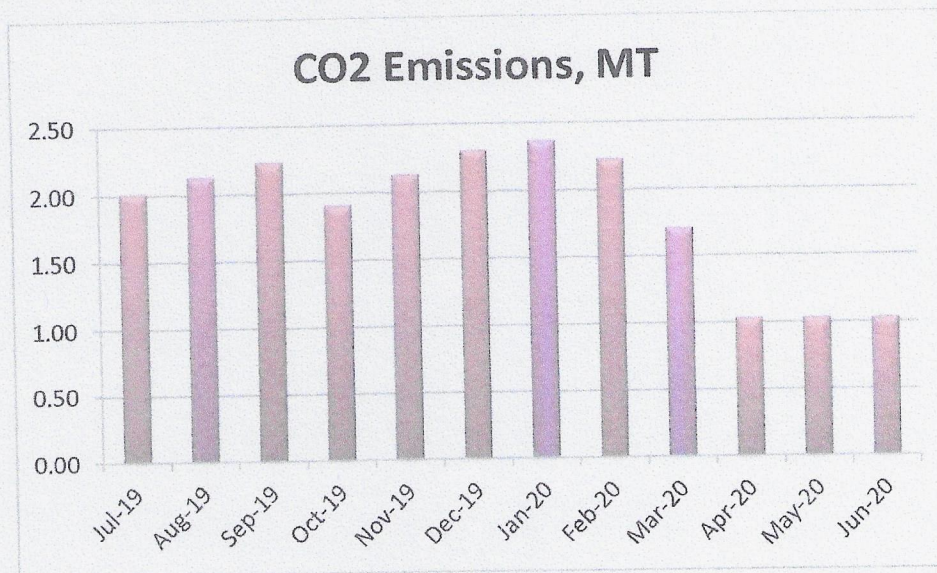
- 1 kWh of Electrical Energy releases 0.9 Kg of CO₂ into atmosphere

Table No 4: Month wise CO₂ Emissions:

| No | Month | Energy Consumed, kWh | CO ₂ Emissions, MT |
|----|--------|----------------------|-------------------------------|
| 1 | Jul-19 | 2236 | 2.01 |
| 2 | Aug-19 | 2369 | 2.13 |
| 3 | Sep-19 | 2485 | 2.24 |
| 4 | Oct-19 | 2125 | 1.91 |

| | | | |
|----|---------|---------|-------|
| 5 | Nov-19 | 2367 | 2.13 |
| 6 | Dec-19 | 2558 | 2.30 |
| 7 | Jan-20 | 2630 | 2.37 |
| 8 | Feb-20 | 2478 | 2.23 |
| 9 | Mar-20 | 1901 | 1.71 |
| 10 | Apr-20 | 1150 | 1.04 |
| 11 | May-20 | 1150 | 1.04 |
| 12 | Jun-20 | 1150 | 1.04 |
| 13 | Total | 24599 | 22.14 |
| 14 | Maximum | 2630 | 2.37 |
| 15 | Minimum | 1150 | 1.04 |
| 16 | Average | 2049.92 | 1.84 |

Chart No 2: Representation of Month wise CO₂ emissions:



Enrich Consultants

Yashashree, 26, Nirmal Bag Society,
Near Mukhtangan English School, Parvati, Pune 411 009
Tel: 09890444795 Email: enrichcons@gmail.com

Ref: EC/DYPMBA/18-19/01

Date: 20/7/2019

CERTIFICATE

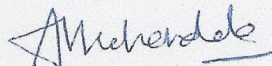
This is to certify that we have conducted Energy Audit at Dr. D. Y. Patil Educational Enterprises Charitable Trust's, Dr. D. Y. Patil School of Management, Charholi Budruk, Pune 412 105, in the Academic year 2018-19.

The Institute has adopted following Energy Efficient Practices:

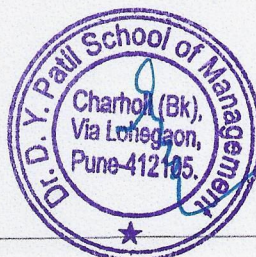
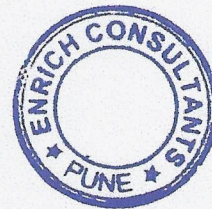
- Usage of Energy Efficient LED Fittings
- Maximum usage of Day Lighting

We appreciate the support of Management, involvement of faculty members and students in the process of Energy Conservation & making the campus Energy Efficient.

For Enrich Consultants,



A Y Mehendale,
Certified Energy Auditor
EA-8192



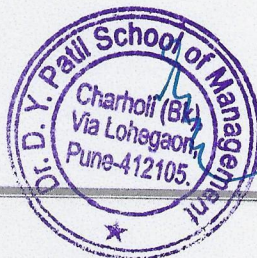
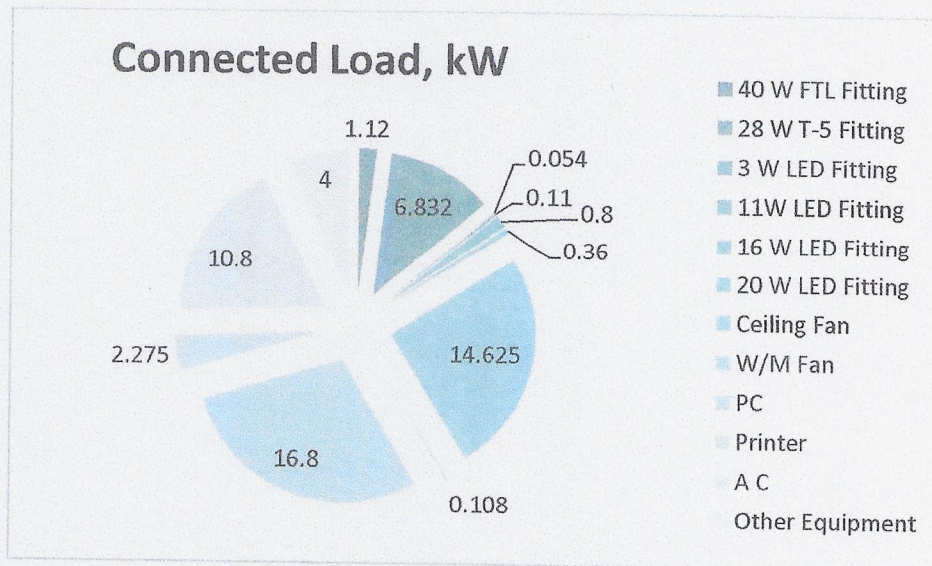
CHAPTER-II STUDY OF CONNECTED LOAD

In this chapter, we present the details of various Electrical loads as under

Table No 2: Details of Overall Connected Load:

| No | Equipment | Qty | Load/unit | Load, kW |
|----|------------------|-----|-----------|--------------|
| 1 | 40 W FTL Fitting | 28 | 40 | 1.12 |
| 2 | 28 W T-5 Fitting | 244 | 28 | 6.832 |
| 3 | 3 W LED Fitting | 18 | 3 | 0.054 |
| 4 | 11W LED Fitting | 10 | 11 | 0.11 |
| 5 | 16 W LED Fitting | 50 | 16 | 0.8 |
| 6 | 20 W LED Fitting | 18 | 20 | 0.36 |
| 7 | Ceiling Fan | 225 | 65 | 14.625 |
| 8 | W/M Fan | 2 | 54 | 0.108 |
| 9 | PC | 112 | 150 | 16.8 |
| 10 | Printer | 13 | 175 | 2.275 |
| 11 | A C | 6 | 1800 | 10.8 |
| 12 | Other Equipment | 16 | 250 | 4 |
| 13 | Total | | | 57.88 |

Chart No 1: Total Connected Load:



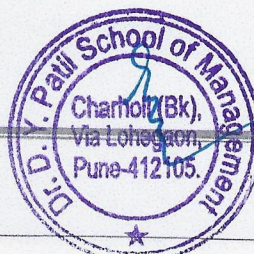
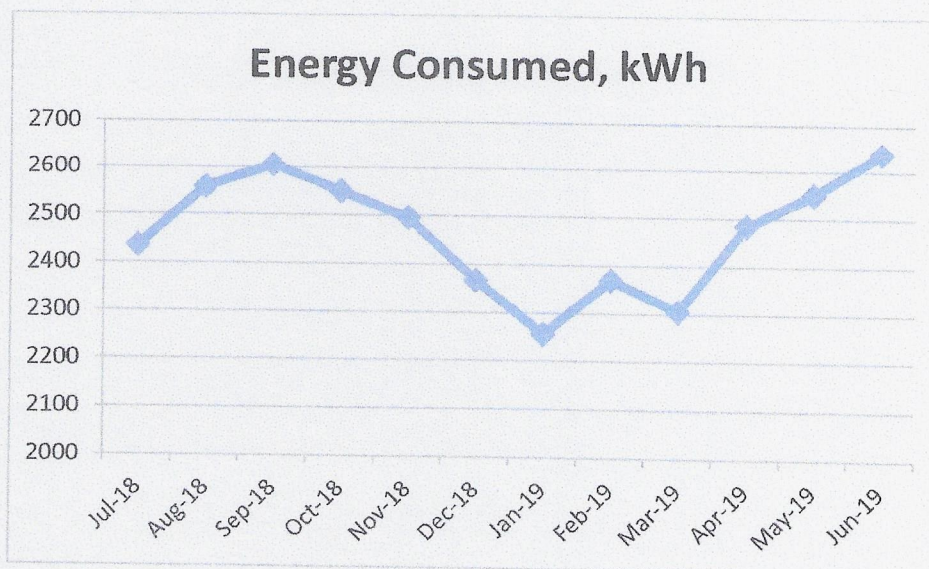
CHAPTER-III STUDY OF ELECTRICAL ENERGY CONSUMPTION

In this chapter, we present the analysis of last year Electricity Bills

Table No 3: Electrical Bill Analysis- 2018-19:

| No | Month | Energy Consumed, kWh |
|----|---------|----------------------|
| 1 | Jul-18 | 2436 |
| 2 | Aug-18 | 2558 |
| 3 | Sep-18 | 2605 |
| 4 | Oct-18 | 2550 |
| 5 | Nov-18 | 2496 |
| 6 | Dec-18 | 2367 |
| 7 | Jan-19 | 2256 |
| 8 | Feb-19 | 2369 |
| 9 | Mar-19 | 2305 |
| 10 | Apr-19 | 2485 |
| 11 | May-19 | 2550 |
| 12 | Jun-19 | 2638 |
| 13 | Total | 29615 |
| 14 | Maximum | 2638 |
| 15 | Minimum | 2256 |
| 16 | Average | 2467.92 |

Chart No 2: To study the variation of Month wise Energy Consumption, kWh:



CHAPTER-IV CARBON FOOTPRINTING

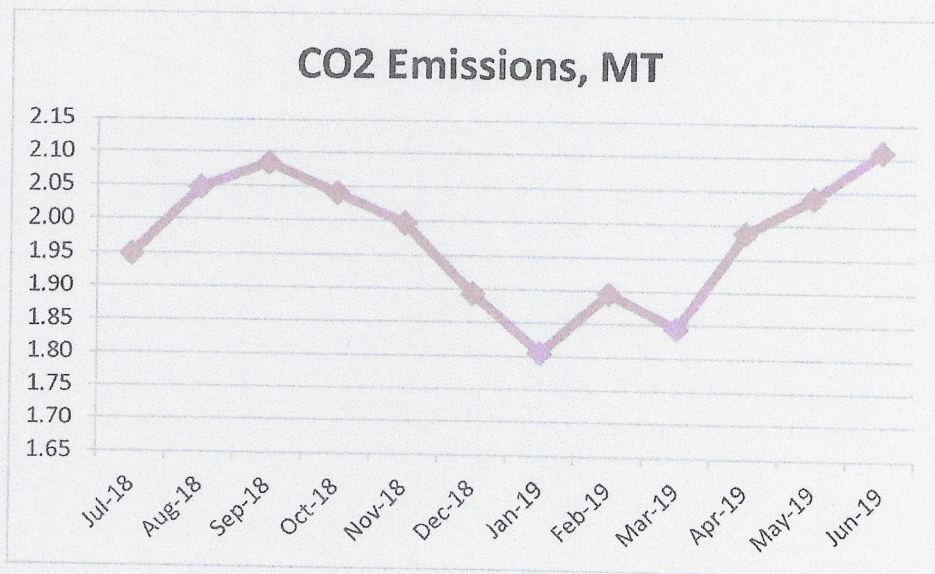
A Carbon Foot print is defined as the Total Greenhouse Gas emissions, emitted due to various activities. **Basis for computation of CO₂ Emissions:**

- 1 kWh of Electrical Energy releases 0.8 Kg of CO₂ into atmosphere

Table No 4: Month wise CO₂ Emissions:

| No | Month | Energy Consumed, kWh | CO ₂ Emissions, MT |
|----|---------|----------------------|-------------------------------|
| 1 | Jul-18 | 2436 | 1.95 |
| 2 | Aug-18 | 2558 | 2.05 |
| 3 | Sep-18 | 2605 | 2.08 |
| 4 | Oct-18 | 2550 | 2.04 |
| 5 | Nov-18 | 2496 | 2.00 |
| 6 | Dec-18 | 2367 | 1.89 |
| 7 | Jan-19 | 2256 | 1.80 |
| 8 | Feb-19 | 2369 | 1.90 |
| 9 | Mar-19 | 2305 | 1.84 |
| 10 | Apr-19 | 2485 | 1.99 |
| 11 | May-19 | 2550 | 2.04 |
| 12 | Jun-19 | 2638 | 2.11 |
| 13 | Total | 29615 | 23.69 |
| 14 | Maximum | 2638 | 2.11 |
| 15 | Minimum | 2256 | 1.80 |
| 16 | Average | 2467.92 | 1.97 |

Chart No 3: Representation of Month wise CO₂ emissions:

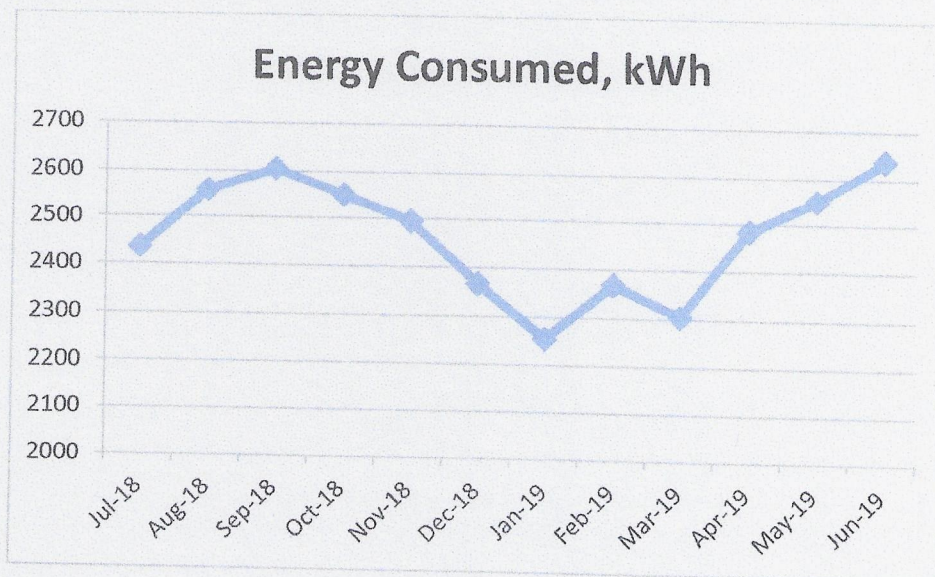


CHAPTER-II STUDY OF ELECTRICAL ENERGY CONSUMPTION

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| 9 | Mar-19 | 2305 |
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CHAPTER-III CARBON FOOTPRINTING

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| 5 | Nov-18 | 2496 | 2.00 |
| 6 | Dec-18 | 2367 | 1.89 |
| 7 | Jan-19 | 2256 | 1.80 |
| 8 | Feb-19 | 2369 | 1.90 |
| 9 | Mar-19 | 2305 | 1.84 |
| 10 | Apr-19 | 2485 | 1.99 |
| 11 | May-19 | 2550 | 2.04 |
| 12 | Jun-19 | 2638 | 2.11 |
| 13 | Total | 29615 | 23.69 |
| 14 | Maximum | 2638 | 2.11 |
| 15 | Minimum | 2256 | 1.80 |
| 16 | Average | 2467.92 | 1.97 |

Chart No 2: Representation of Month wise CO₂ emissions:

