



Tata Motors Limited Dharwad

Team Members

Mr. Sudhir A. Kadam (DGM)

Mr. Vinayak Patil (DGM)

Mr. Ravi Sharma (Sr.Manager)

1. Brief introduction on Company/Unit

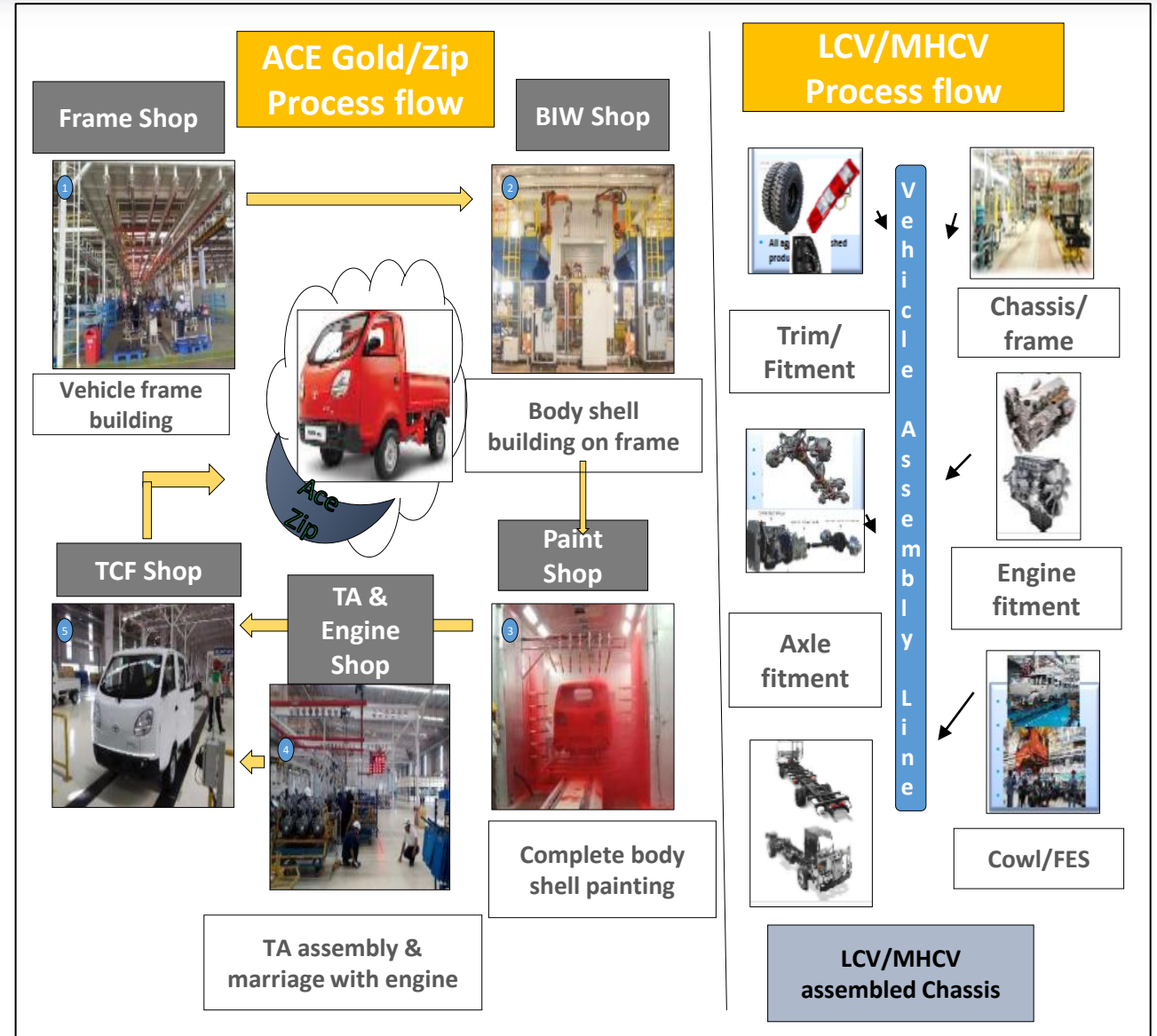
Tata Motors Dharwad plant is Commercial Vehicle manufacturing unit with state of art facility established in 2012 with average manpower of 500 nos. only. Plant is certified for ISO 14001, ISO 45001, ISO 50001 and TS 16949. We have various awards and honours from esteemed institutions like CII, BEE, Insaan and so on. Our's is the first Automobile Manufacturing Facility in India to be certified with Platinum rating of Indian Green Building Council (IGBC) Platinum.

Small Commercial Vehicle : Ace Zip, Ace Gold	Light commercial Vehicle : 407/31,709 and 909 4SPCR, 7.5T ,8.5 T BS4 & 10.2 T AMT	Medium and Heavy Commercial vehicle : Signa 2823, 2825, 1923 and LPT 1918	Electric Buses : Electrical Bus 9/12 , 9/9
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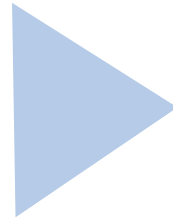


Various shops/processes in manufacturing are mentioned hereunder-

- 1) Frameline
- 2) Body Building
- 3) Painting
- 4) Engine dressing & Transaxle
- 5) Vehicle assembly & testing
- 6) Utility



Entire World is badly impacted by COVID -19. Industrial Sectors struggled to operate citing lockdown, adaption to new normal / adherence to MHA guidelines. Organizations not only faced heavy losses but also needed to take care of physical and emotional well being of the stake holders.

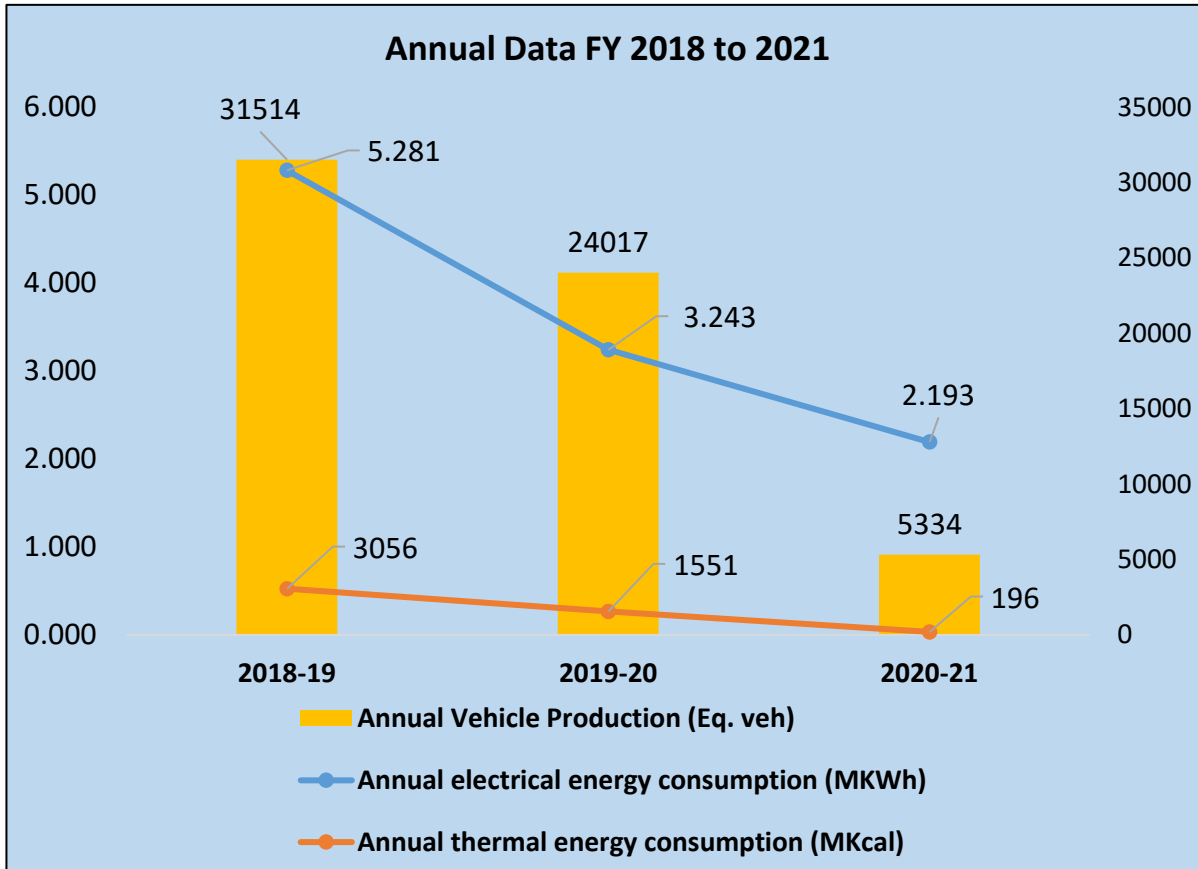


Impact on TML Dharwad Plant:

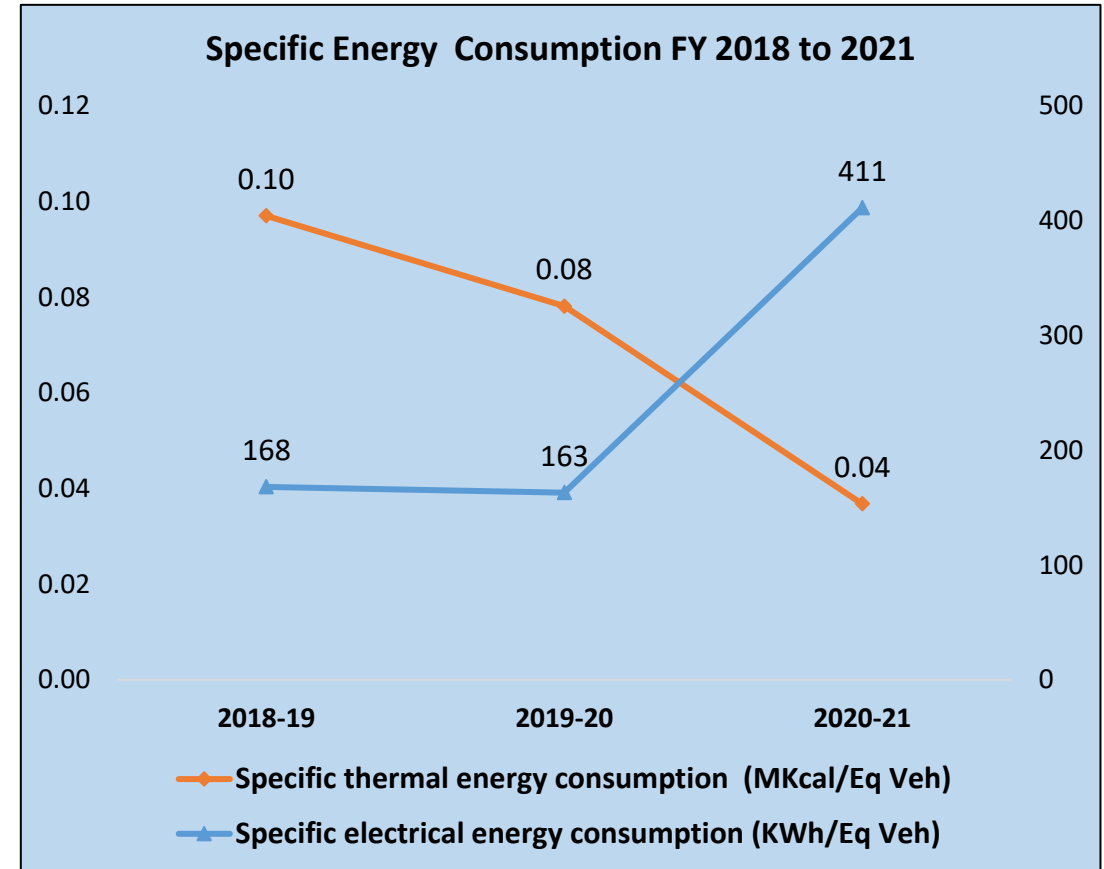
- Zero production during lock down period but fixed cost was existing.
- Educating all employees on new norms.
- Re-design the manufacturing cycle time considering social distancing.
- Disruption in Supply chain system.
- Commercial vehicle demand reduced to all time low amounting to as high as 270%.
- Moreover, our Variable cost increased with respect to commodities like power, fuel, freight and materials.
- Low demands even after lock down.

- **At Tata Group level, every individual are proud and motivated as it was first corporate to donate Rs.1500 crores to the Nation.**
- **At TML, well structured BCP (Business Continuity Plan) was developed wherein Production planning were rescheduled to improve the productivity with very lean set-up ensuring MHA guidelines.**
- **We supported the District Administration by various donations of PPE, Medical equipment, ration kits and inhouse developed automatic sanitizer dispensing machines**
- **Our employees volunteered for distributing food kit to stranded truck drivers in industrial areas and high ways. Our medical team provided necessary aid to these people.**

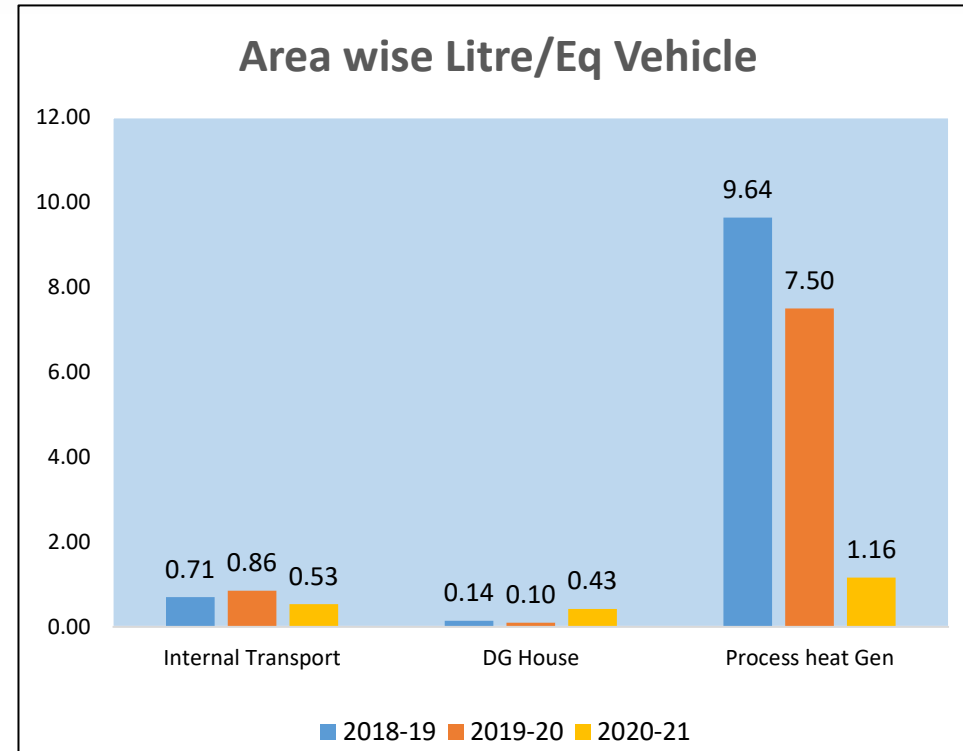
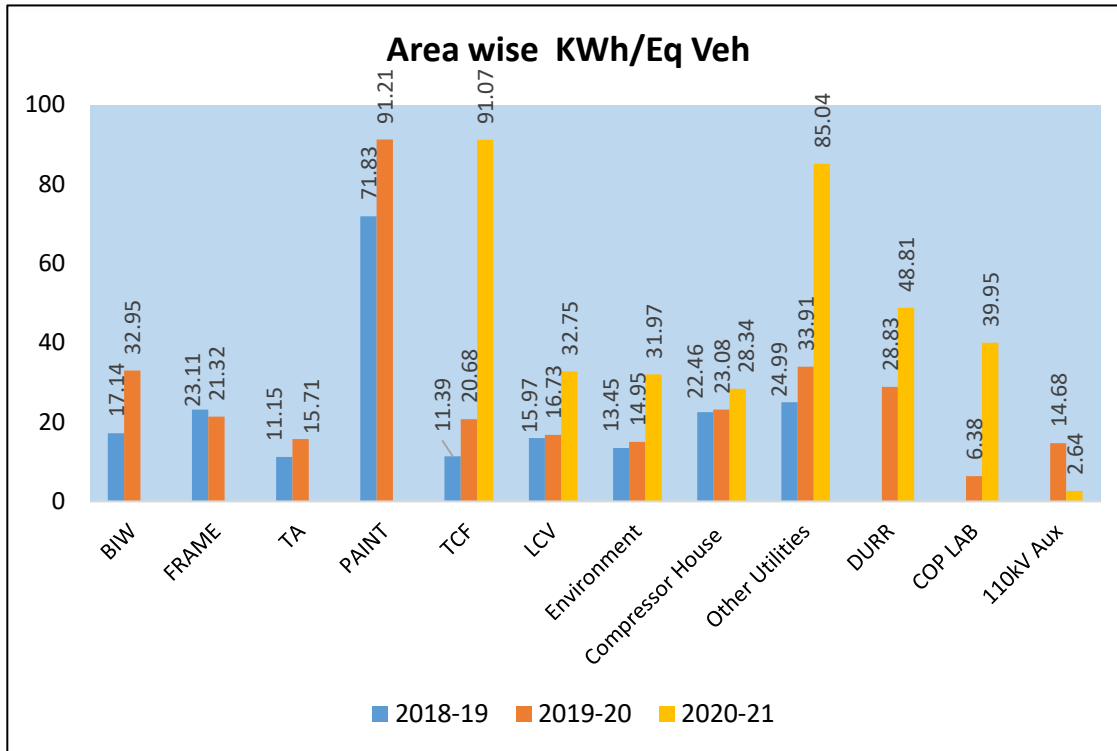
Electrical and Thermal Energy consumption



Electrical and Thermal Energy Specific consumption

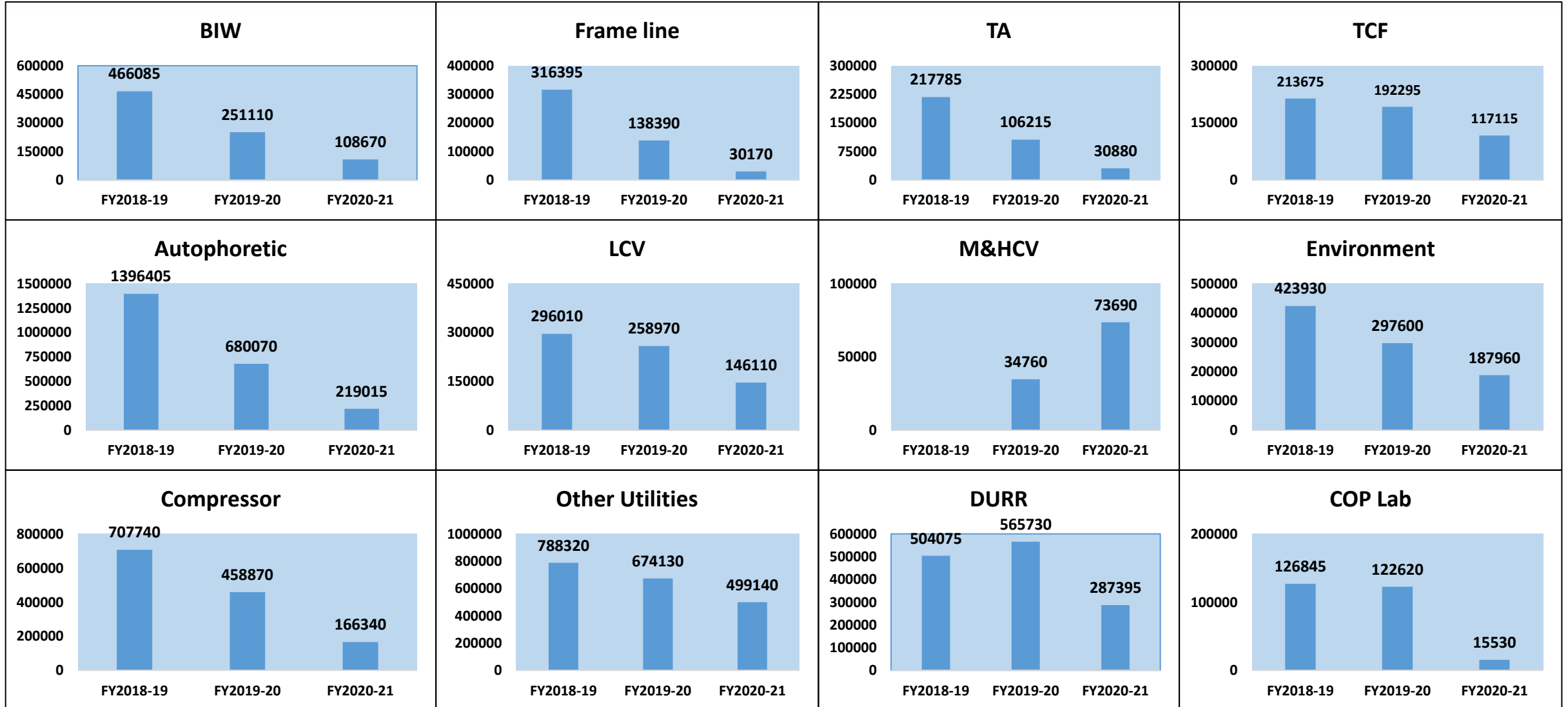


3. Sp. Energy Consumption in last 3 years (FY 2018-21)



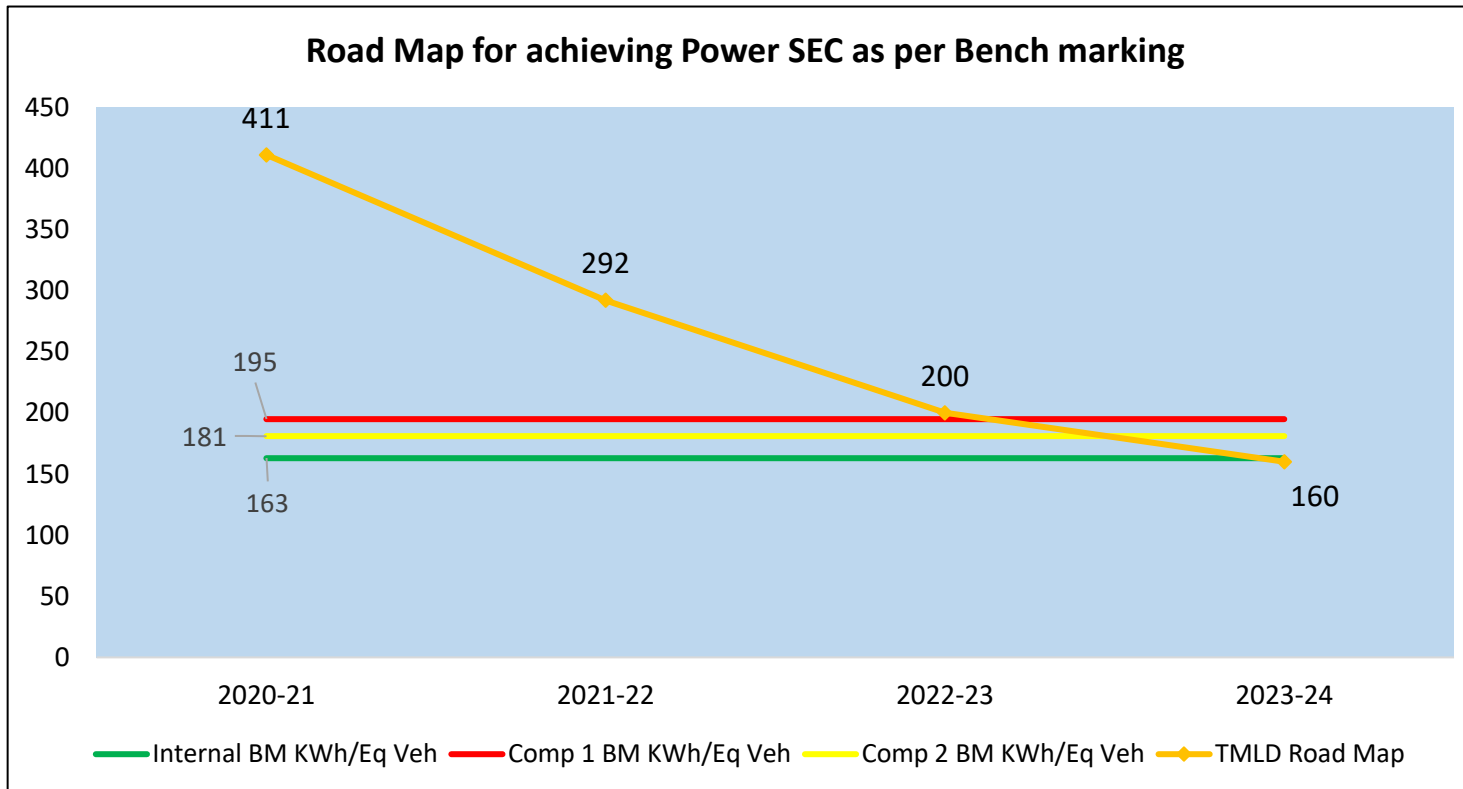
- For FY:2020-21, low volumes were observed mainly due to COVID-19 pandemic and BS IV to BS VI regulations
- Steep reduction in volume upto 270% was observed, however TML Dharwad with its various energy saving initiatives managed to control the power and fuel consumption
- Whereas Power SEC was high by 150 % , there was major reduction in Fuel SEC by 50 %
- We were able to reduce our fixed load (base) consumption from 7200 units to 4800 units

3. Sp. Energy Consumption in last 3 years (FY 2018-21)

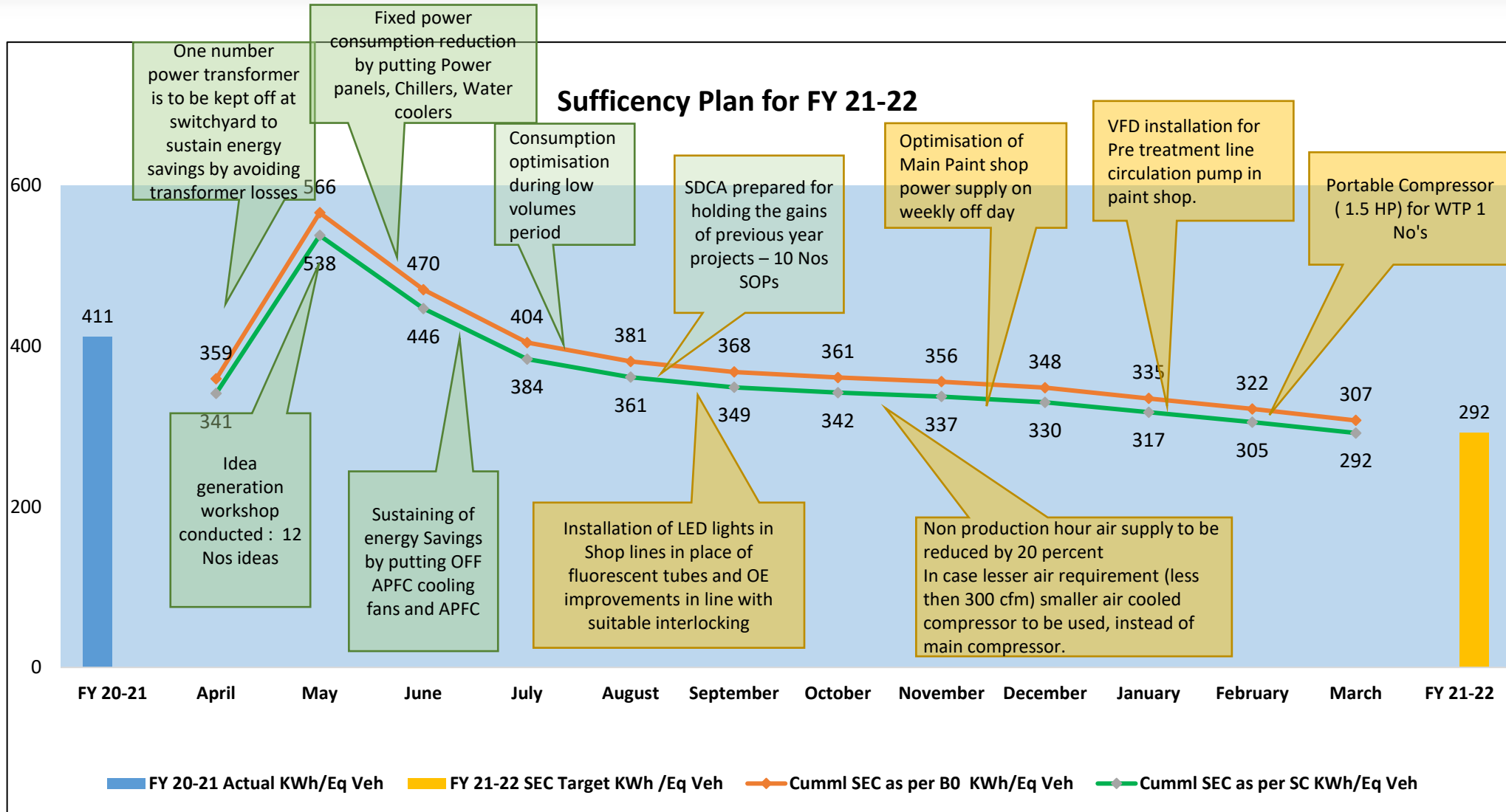


Competitor	kWh/Eq Vehicle	MKcal/Eq vehicle
Mahindra & Mahindra, Kandhiwali	204	0.104
Tata Motors Limited , Pantnagar	195	0.139

Internal Bench mark	kWh/Eq vehicle	MKcal/Eq Vehicle
Tata Motors Limited, Dharwad	163	0.08

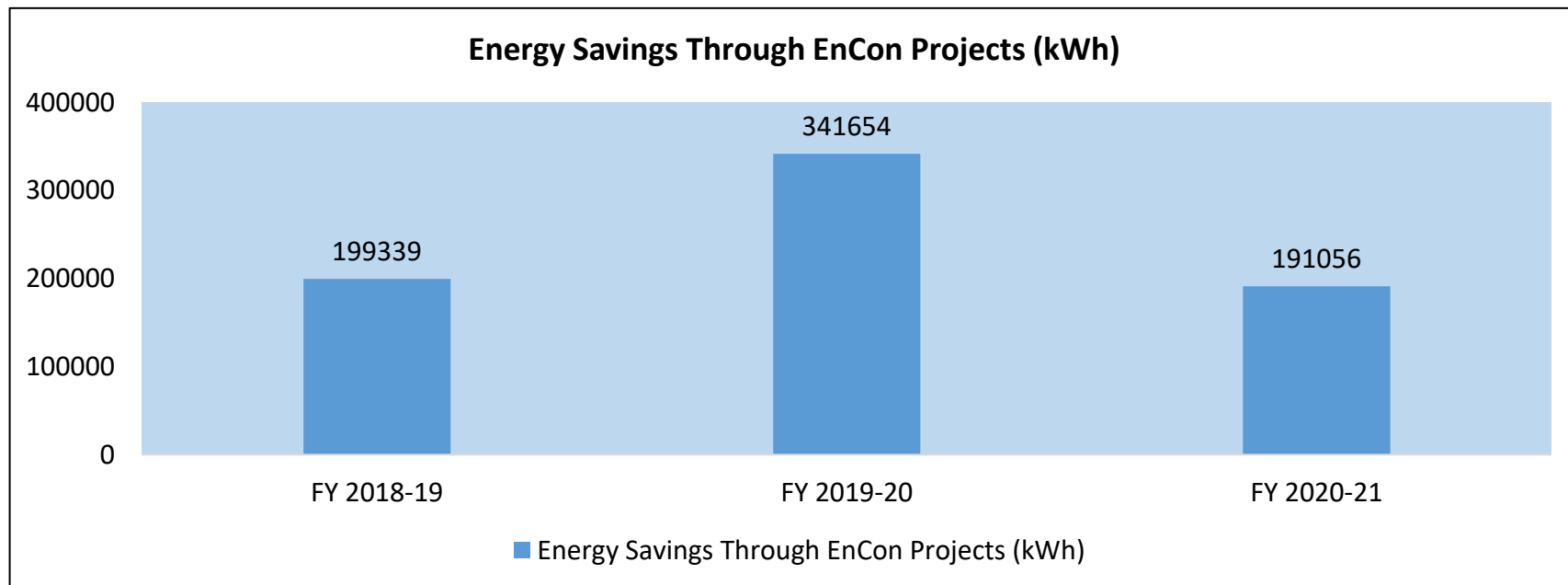


- In past we have achieved best SEC of 163 KWH/Eq veh and TML Dharwad is working on road map for achieving the same with various energy saving initiatives like-
- Adapting shift schedule inline with production demands and process optimisation
 - Replacing HSD by LPG for paint process
 - Working on further reduction of Fixed load consumption from 4800 units to 4600 units
 - Reduction of fixed contract demand
 - Installation of VFD's for process pumps



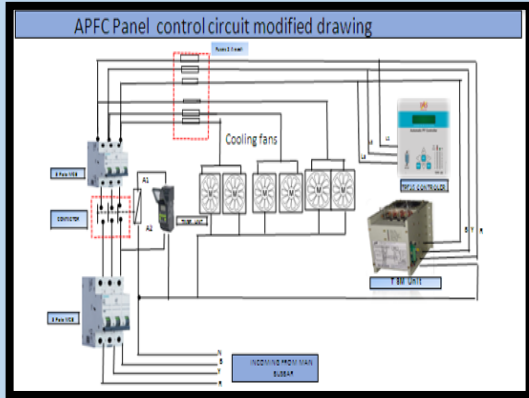
LIST OF MAJOR ENCON PROJECTS PLANNED (2021-2022)				
Title of Project	Annual Electrical Saving (Million kWh)	Annual Thermal Saving (KL)	Investment (Rs in Million)	Area
Installation of LED tube light instead of florescent lamp for LCV Main Assembly line Station Number 1 to 8 for to optimization of Electrical energy	0.0035568	NA	0.209	LCV Shop
B- Grid Sub Assembly Station 5 Man cooling Fans are interlocking with LCV Main Line conveyor for to optimization of Electrical energy during Lunch and Tea Time	0.00022698	NA	0.019104	LCV Shop
Installation of LED tube light instead of fluorescent lamp at TCF mechanical conveyor line Station Number 1 to 13 for to optimization of Electrical energy.	0.003648	NA	0.052668	TCF Shop
Installation of LED tube light instead of fluorescent lamp at TCF underbody line-1, Station Number 6 to 10 for to optimization of Electrical energy.	0.00096	NA	0.01386	TCF Shop
Installation of LED tube light instead of fluorescent lamp at TCF underbody line-2, Station Number 11 to 13 for to optimization of Electrical energy.	0.00096	NA	0.01386	TCF Shop
Installation of LED lights in place of fluorescent lamps in TCF shop office area for optimization of Electrical energy.	0.00876	NA	0.08	TCF Shop
VFD installation for Pre treatment line circulation pump in paint shop.	0.00965	NA	0.12	TCF Shop
Replacement of conventional flood lights to energy efficient LED flood lights. 1. LCV Paint touch-up booth (04 Nos, 400W), 2. Main Gate Security office (02 Nos, 150W) 3. Admin Building (01 No, 250W), 4. Dispatch Gate Office (03 Nos, 400W)	0.0086	NA	0.085	Plant
Switchyard lighting operation control by timer and as per shift requirements	0.001095	NA	NA	Switchyard
Energy saving by switching-off 16 MVA transformer	0.146	NA	NA	Switchyard
Optimisation of high mast operation by timer operation as per seasons, in line with shift timings and dispatch requirements	0.001825	NA	NA	Plant
Energy saving by implementing at Main Paint shop through initiatives like shutting of non required equipment's,	0.02225	NA	NA	Paint Shop
Conversion of HSD fuel to LPG fuel for Autopherotic Paint shop ovens & hot water generator	NA	53.65	5.6	Paint Shop

Year	No of Energy Saving Projects	Investment s (INR Million)	Electrical Savings (Million kWh)	Thermal Savings (KL)	Savings (INR Million)	Impact on SEC (Electrical, thermal)
FY 2018-19	12	0.16	0.199	25.16	1.838	6.33 kWh/Eq. Veh.
FY 2019-20	15	0.346	0.342	5.00	2.455	14.23 kWh/Eq. Veh.
FY 2020-21	10	0.006	0.191	14.00	1.338	35.82 kWh/Eq. Veh.



Major Energy Saving Projects

Optimization of APFC/RTPFC panel cooling fans operation



- Fan operation control through Timer
- Timer ON/OFF time aligned as per production time
- Annual Energy Saving 30000 kWh

- Energy saving through mini portable compressor for ACC line process circulation pump running.



- Fan operation control through Timer
- Timer ON/OFF time aligned as per production time
- Annual Energy Saving 20000 kWh

Common VFD For Pump & Compressor



- Used the same VFD of Water rinse to run the local compressor which runs during non production hours
- Optimum utilisation of existing VFD. Energy saving of 150Kwh/day (Considering 1 shift working and 2 shifts non working every day)
- Annual savings 15000 Kwh

VFD For Deluge Circulation Pump



- Speed control of Pump
- Soft starting.
- Unity power factor
- Annual Energy Saving 20000 kWh

Wind Ventilators



- Use of natural wind ventilator instead of motorized ventilators.

Fuel Saving



- Installed Flux maxiox magnetic fuel saver, (a proved technology) to reduce fuel consumption by 5%.

LED High Bay Lights:



VFD

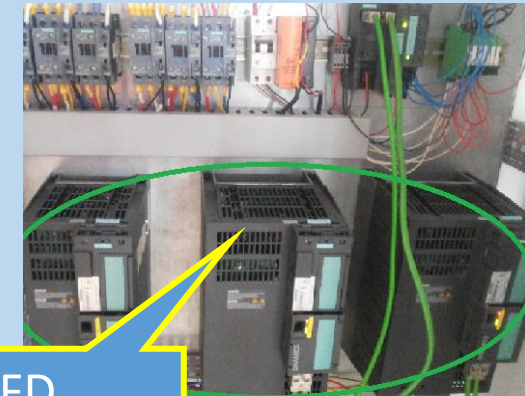
- Illumination inside Shops is with 160 watt LED High Bay light fitting which is equivalent to 400W conventional lights.
- Street Light with 43 watt LED which is equivalent to 150W Conventional light

Natural Day Light:



- Use of Transparent Sheet leading to sufficient natural light during daytime.

VFD For blowers:



VFD

- Speed control of Blower Motors
- Soft starting.
- Unity power factor
- Annual Energy Saving 20000 kWh

Trigger for Implementing the Project:

We have 2x16 MVA transformers at 110KV/33KV profile.

We observed that each transformer was consuming no-load losses of 400 units per day. We decided to shut one transformer in concurrence with OEM, M/s Schneider. OEM advised us to operate both transformers alternatively with a span of one month. But they also indicated that we should check the 33KV LV terminal box for any moisture ingress every time before charging.

Challenge:

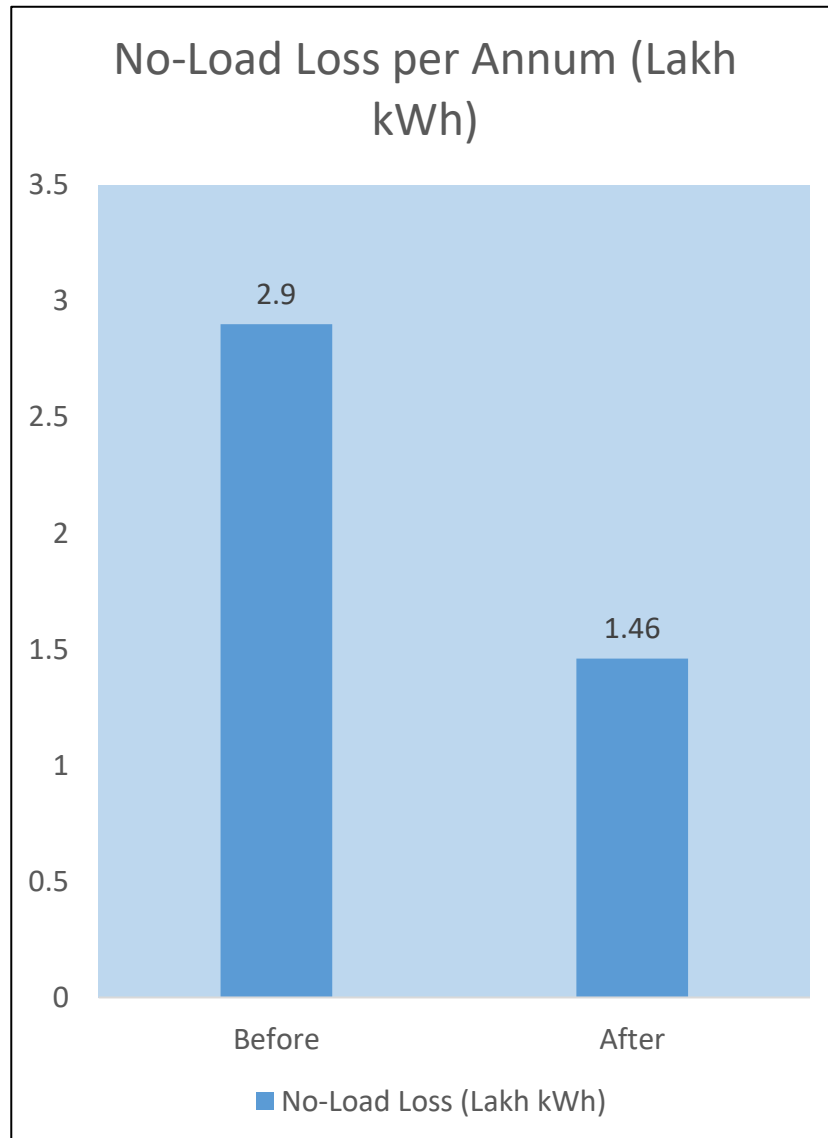
This process of ensuring is very time-consuming and cumbersome as it involves work at height with lifting tackle, to remove terminal cover plate by unscrewing 60 nos bolts. But we were determined to avail benefit of 1.46 lakh units per annum with corresponding value of Rs.10.22 lakhs.

KAIZEN:

- Why-Why analysis done by the team.
- Brain storming sessions conducted to mitigate the cumbersome job.
- The terminal box size is (1.6x1.5x1.5)mtr.
- We considered this as a panel and suggestion came to install 2x200W space heater with thermostat.
- To improve upon this, we added a breather to the box to detect moisture if any with visual inspection itself.
- The entire design and implementation done by the plant team itself.



6. Innovative Projects Implemented



Benefits:

- No moisture ingress observed after the kaizen.
- Mitigation of moisture ingress preventing any major flashover.

Annual Savings (Rs. in Lakh) : 10.22

Investment (Rs. in Lakh) : 0.10

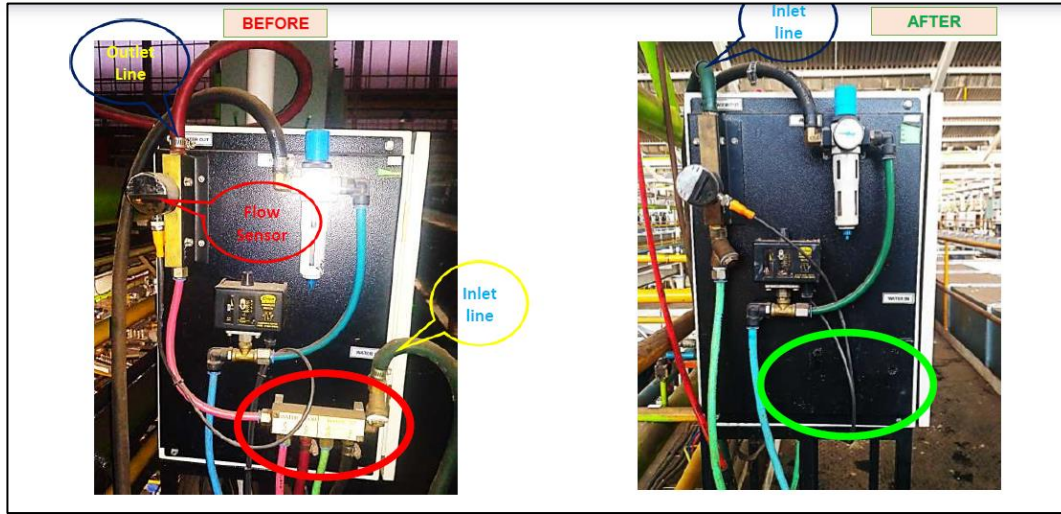
Replication Potential:

This project can be implemented across locations, wherever there is low utilization than the installed capacity of the transformers.

Confirmation by OEM:

OEM, M/s Schneider appreciated our out of box resolution.

6. Innovative Projects Implemented



Electrical Energy Savings achieved by switching-Off one cold water pump.

Before, Power Cons.

280 kWh/day

After, Power Cons.

160 kWh/day

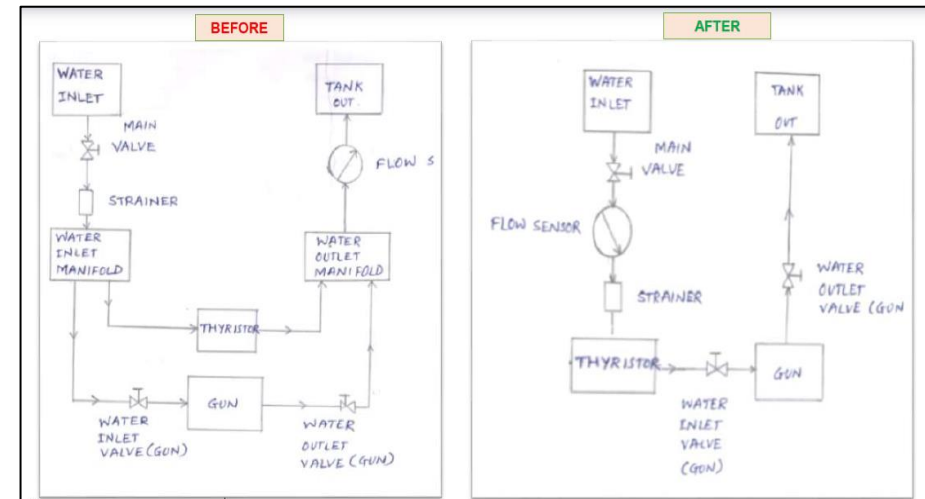
36,000 kWh/year, ₹3.6 lakhs/year

Thyristor and gun connected in series. Switched-Off one cold water pump. Water flow improved through 114 guns resulting in improved cooling thereby reducing the failure of gun arms, shanks and tip consumption

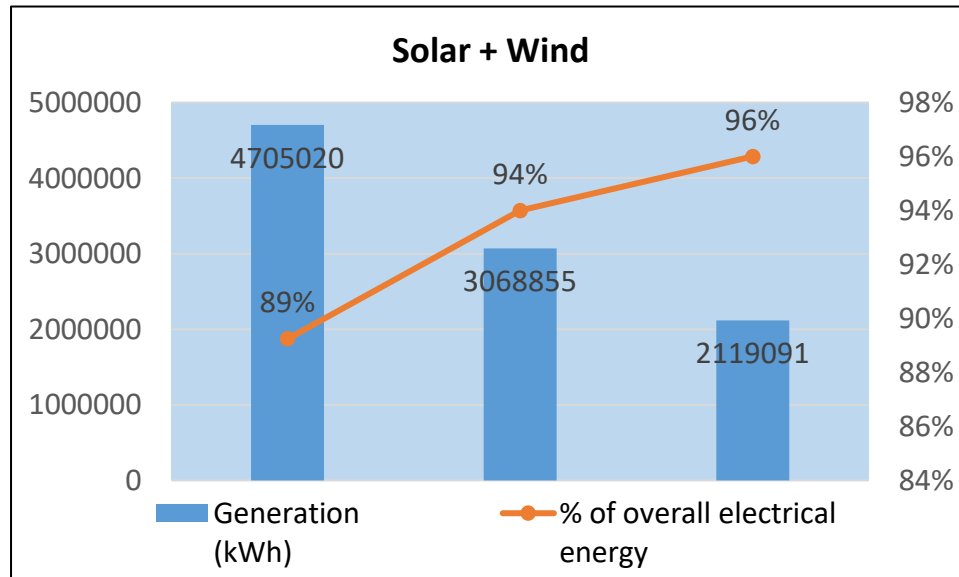
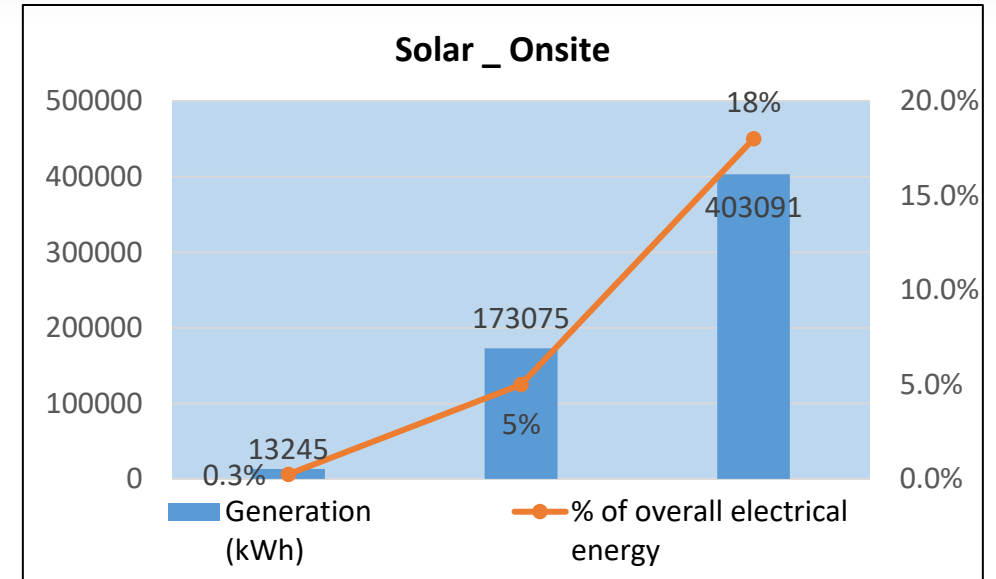
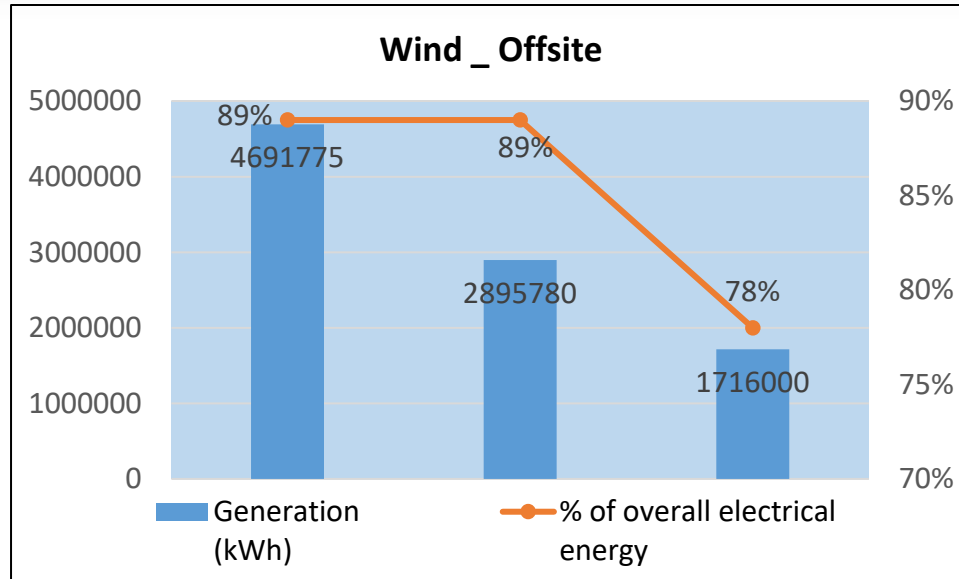
**Before
1084 lpm**

**After
501 lpm**

**Water flow requirement reduced by 54%
and cooling improved by 8%**



7. Utilization of Renewable Energy sources



Year	Technology (electrical)	Type of Energy	Onsite / Offsite	Installed Capacity (MW)	Generation (kWh)	% of overall electrical energy
FY 2018-19	Electrical	Wind	Offsite		4691775	89%
	Electrical	Solar	Onsite	12KWp	13245	0.3%
FY 2019-20	Electrical	Wind	Offsite		2895780	89%
	Electrical	Solar	Onsite	1 MWp	173075	5%
FY 2020-21	Electrical	Wind	Offsite		1716000	78%
	Electrical	Solar	Onsite	1 MWp	403091	18%

TATA MOTORS DHARWAD PLANT
ACHIEVES RE 100 (100% RENEWABLE ENERGY)
STORY COVERED BY AUTOCAR PROFESSIONAL MAGAZINE IN
THEIR AUGUST 2019 ISSUE

AUTOCAR professional
Essential reading for the Automotive industry

Rs 80

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SOUTH INDIA SPECIAL
Nexteer on a high as its make-in-India program pays off
Global steering and driveline components supplier sees Bangalore-based Indian subsidiary flush with business from both Indian and overseas OEMs, likely to set up a greenfield plant by 2021 **Page 10**

EXCLUSIVE INTERVIEWS
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MANUFACTURING
Tata Motors walks the green talk at Dharwad
Youngest Tata Motors plant ranks high on sustainability with its robust levels of energy efficiency, reuse of water and ample green cover **Page 46**

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MAHINDRA RESEARCH VALLEY HOW THE R&D HUB IS ENGINEERING M&M'S GROWTH PAGE 23

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How investing in motorsports is helping the two-wheeler OEM accelerate sales **Page 21**

ASHOK LEYLAND
Multi-pronged strategy to enter Global Top 10 **Page 53**

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Bangalore and Coimbatore turn e-mobility hubs **Page 80**

VISTEON INDIA
Banks on Indian engineering for global projects **Page 17**

Tata Motors' Dharwad plant walks the sustainability talk

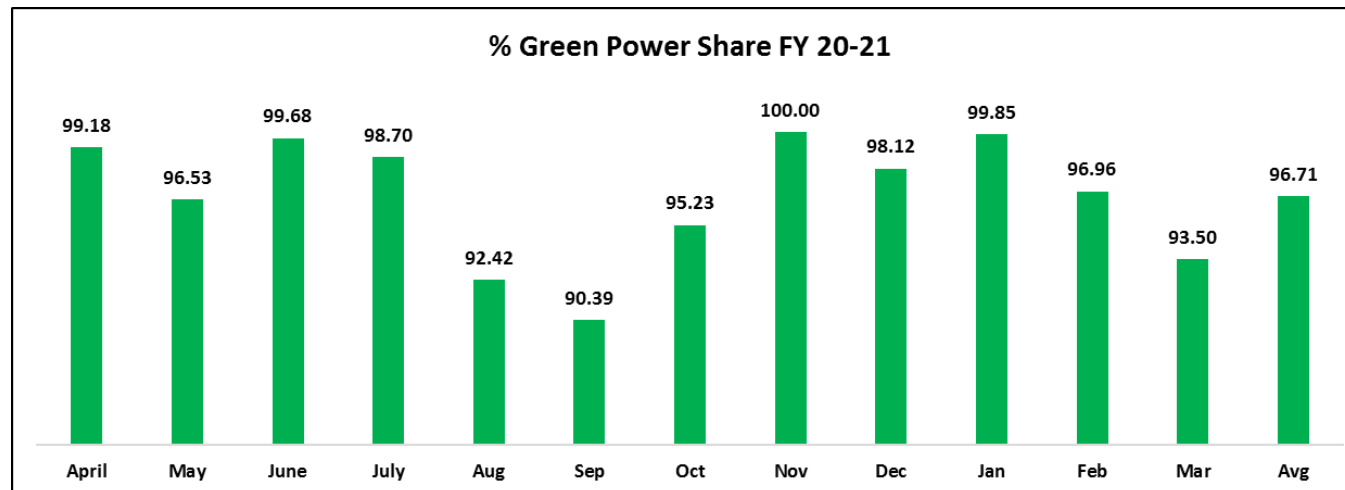
The automotive industry the world over is operating on an ultra-competitive scale even as technology disruptions keep it on edge. Most companies are also embracing sustainable practices with an aim to do their bit and more for the environment and also to achieve cost efficiencies. Tata Motors' Dharwad plant in Karnataka is an IGBC certified operation. Kiran Bajaj visits the facility which makes manufacturing a green activity.

The Dharwad plant, which has an installed capacity of 200,000 commercial vehicles per annum, produces the Ace Digi 504i, electric buses and LCVs. The facility is surrounded with a green belt of drought-resistant trees and utilizes solar panels on the factory roofs to generate plenty of power.

In Autocar Professional | August 2019 www.autocarpro.in



- TML Dharwad team has explored, planned and implemented successfully the road map for RE 100 in line with our organisation requirements
- Commendable RE share of 96 % is achieved at zero investment and recurring cost.
- We have finalised Green Power supplier considering our consumption trends, short term annual agreement, Base load and RE 100 target road map
- RE addition of 990 KWp Solar roof top was installed at Plant in the year 2019
- However at present there is no RPO Obligation on TML but our Organisation has been committed for RE 100 by 2030

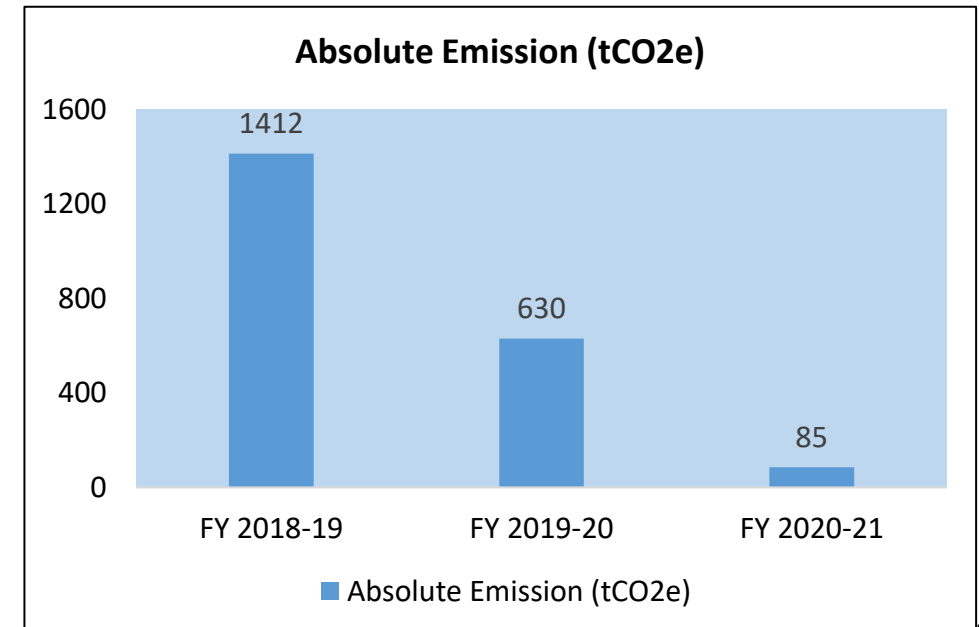
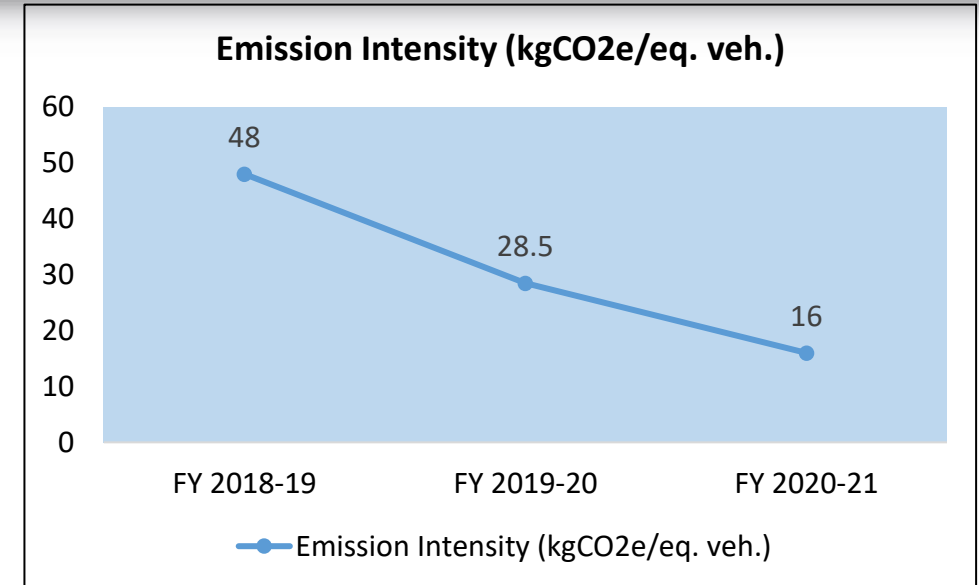


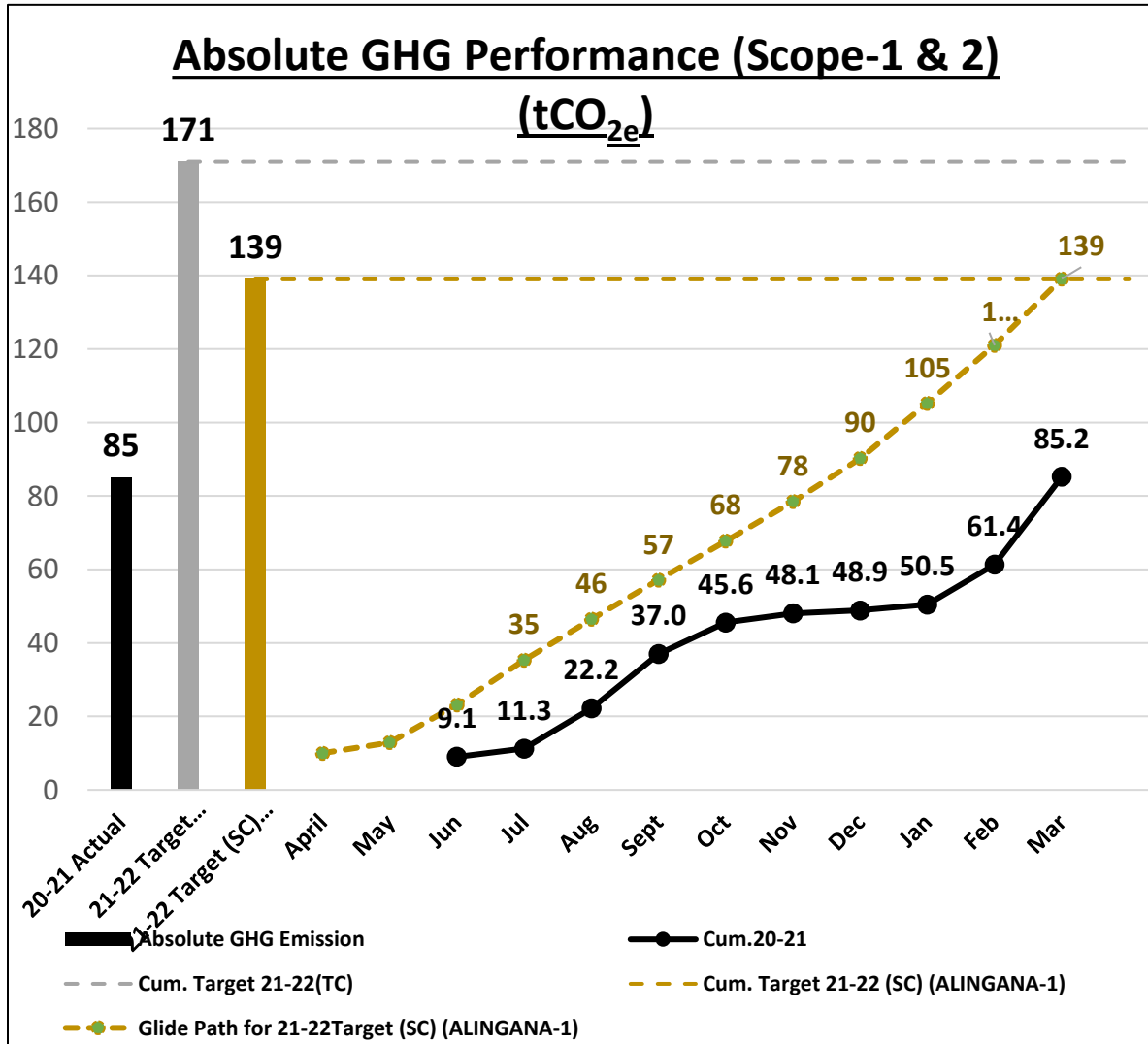
- Waste Utilization in last three years(FY2018-20).
- Description of waste utilization system/Waste management system.

SN	Year (2018-20)	Type of waste	Quantity	GCV	Waste as percentage of Total fuel
	Not Applicable as TML will not utilize any waste inside the premises(Under GCV recovery).				

SN	Year (2018-20)	Type of waste generated	Quantity of waste generated (MT/Year)	Disposal method
1	2018-19	<ul style="list-style-type: none"> • Used oil. • Discarded containers. • Waste or residues containing oil • ETP Sludge. • Process waste, residues and powder coating waste. • Waste or residues (Not made with vegetable or animal materials). 	237.62	<ul style="list-style-type: none"> • Coprocessing • Incineration, • Recycling
2	2019-20		145.5	
3	2020-21		42.21	<ul style="list-style-type: none"> • Coprocessing • Recycling

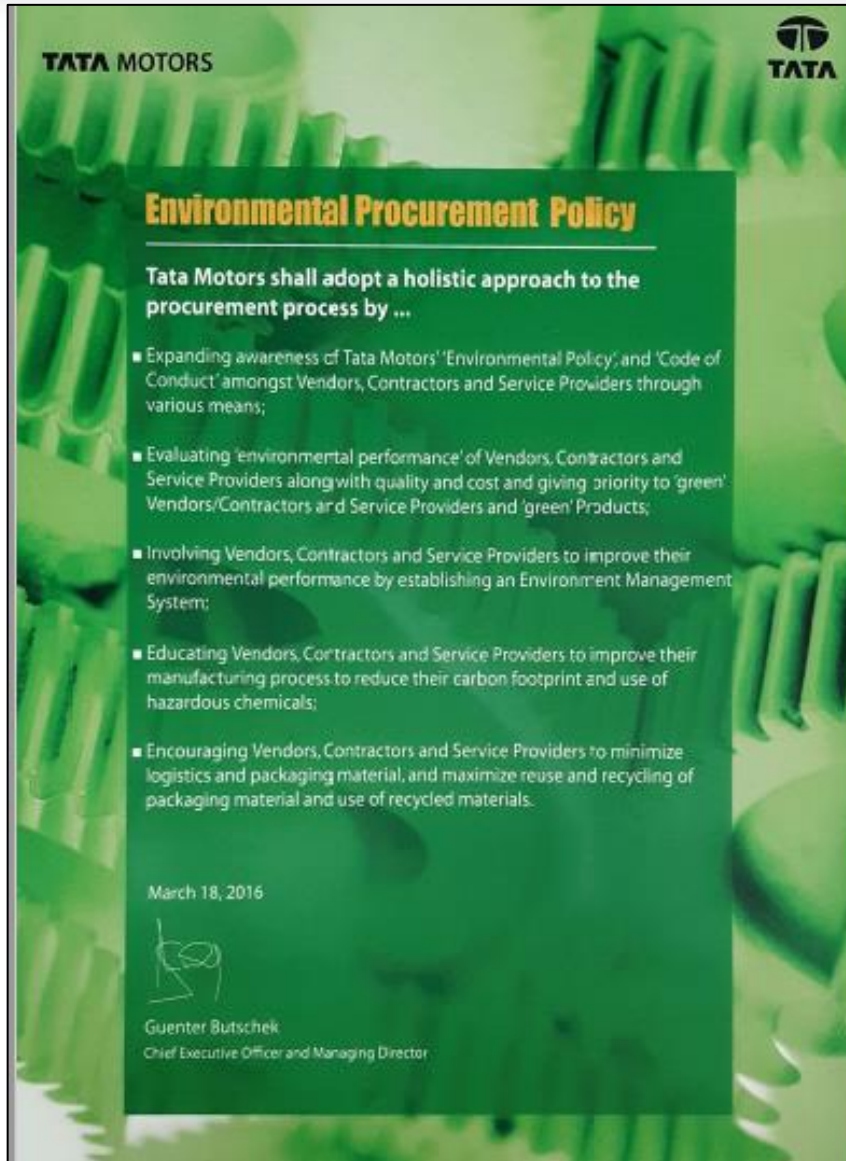
- ❑ GHG Inventorisation and Public Disclosure done through annual report at company level and corporate accounting method is followed
- ❑ Scope-1 and Scope-2 emissions have been identified for GHG inventorisation.
- ❑ Following has been considered as short-term target for CO2 emission reduction:
 - ❑ Conversion of HSD to LPG burners in Autophoretic paint shop.
 - ❑ Green power procurement from 3rd party through PPA.
 - ❑ Enhance on-site rooftop solar generation.
 - ❑ Carbon credit purchase.
- ❑ As a 'Future Ready' responsible corporate and a signatory of RE100 initiative, Tata Motors aims to source 100% renewable electricity by 2030.
- ❑ TML is committed to significantly reduce its GHG emissions to ultimately achieve net zero emissions.





Target (short term/ long term) for CO₂ emission reduction and action plan :

Tata Motors has always been conscious of the need to conserve energy in its Manufacturing Plants which leads to optimized consumption of non-renewable fossil fuels, energy productivity, climate change mitigation and reduction in operational costs. Tata Motors is also signatory to RE100 - a collaborative, global initiative of influential businesses committed to 100% renewable electricity, and is working to increase the amount of renewable energy generated in-house and procured from off-site sources. Tata Motors has set targets for reduction in Scope 1 + 2 intensity (kg CO₂e/Eq. Veh.) as per SBTi SDA tool. Tata Motors has as on date, 66.3 MW installed RE capacity through roof-top solar PV, Power Purchase agreements with off-site wind and solar power generators and Captive Wind Power. ENCON projects for power and fuel savings is a planned and budgeted exercise. We disclose air pollution data to KSPCB. We disclose GHG data @TML level in our Annual Integrated Report and voluntarily disclose to CDP – Carbon Disclosure Project.



Walk-through Energy Audits at TML Vendors		
Vendor Location	Planned	Completed
Belur Industrial Area Dharwad.	1	1
O&M contractor	3	3
Total	4	4

Some of the findings at Vendor audit
Energy policy sharing to all members not observed
Energy targets to be further stretched
Air leakage audit to be planned regularly
KWh meter found in the shop main incomer panel
Consolidated energy meter reading is taken from HESCOM meter & recorded
Energy efficient equipment's to be considered while planning new equipment's
Meter testing is been done periodically

10. Green Supply Chain Management

LCV FRAME Off-loading to M/s SUMIT AUTO Dharwad

Before (12 Frames/Trailer)

After (72 sets Long Members)

Part No.	Description
264231000112	709 Frame
282131000177	909 Frame
264231000101	712 Frame

Innovative stacking for Engines Transportation from Pune to DHW

Before (Y1-12 & Othr Engines -18)

After (Y1-24 & Othr Engines-36)

SI No.	Engine Models
1	Ultra 3L
2	LP 407/410
3	LP 709/909

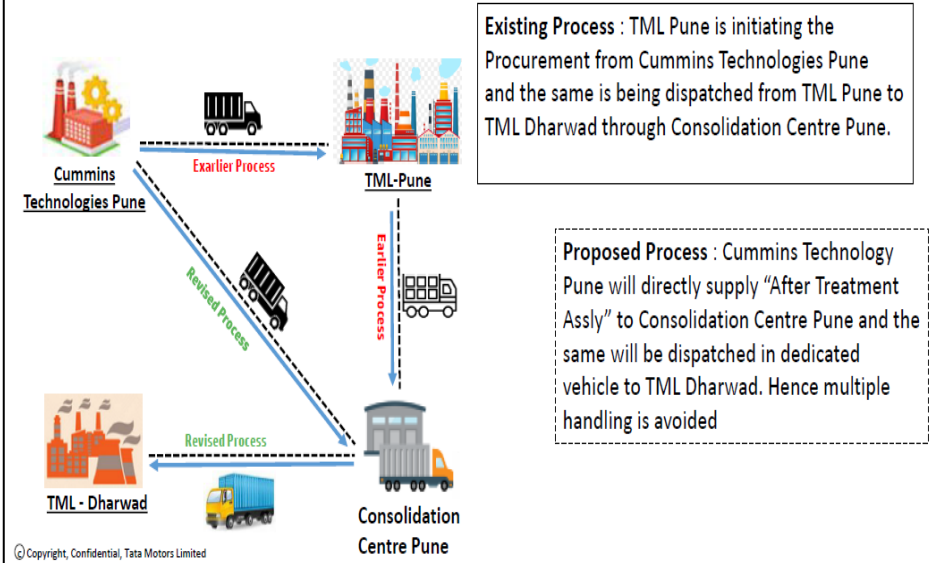
Freight cost reductions

- Localisation of Vendors situated in Jamshedpur, Pune and Pantnagar
- Direct ordering from base location (Dwd) to nearby local Vendors instead of other TML locations
- Innovative stacking method on the long chassis helping to transport more quantity
- Example shared here for implemented project of LCV frame transportation , Engine stacking and further proposed for Assembly shifting

Old practice	Problem	Improved Practice	Results																									
LCV Frames (Model: 709/909 & 712) were dispatched in 40 feet trailers from TML Pune to TML Dharwad for LCV production	LCV Frames being a voluminous part consuming more space in trailers and hence Logistics Cost was high	LCV LONG MEMBERS are being dispatched from TML Pune to M/s SUMIT AUTO Dharwad. Frame Assly. Off-loaded to supplier for localised supplies to TML Dharwad.	Optimised utilization of Bigger Trailers by dispatching LONG MEBMER resulted in Logistics Cost Saving and Utilising localised supplier capacity to avoid the blockage of Space and Funds																									
Before		After																										
<p style="font-size: small;">12 Frames are dispatched in 1- 40 ft trailer</p>		<p style="font-size: small;">72 Sets of Long Members dispatch in 1- 40 ft trailer</p>																										
			<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>SI NO.</th> <th>Part No.</th> <th>Description</th> <th>Saving/ Frame</th> <th>Total Saving (Rs Lakhs)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>264231000112</td> <td>709 Frame</td> <td>2573</td> <td>47</td> </tr> <tr> <td>2</td> <td>282131000177</td> <td>909 Frame</td> <td>2573</td> <td>60</td> </tr> <tr> <td>3</td> <td>264231000101</td> <td>712 Frame</td> <td>2573</td> <td>37</td> </tr> <tr> <td colspan="3"></td> <td></td> <td style="text-align: center;">144</td> </tr> </tbody> </table>	SI NO.	Part No.	Description	Saving/ Frame	Total Saving (Rs Lakhs)	1	264231000112	709 Frame	2573	47	2	282131000177	909 Frame	2573	60	3	264231000101	712 Frame	2573	37					144
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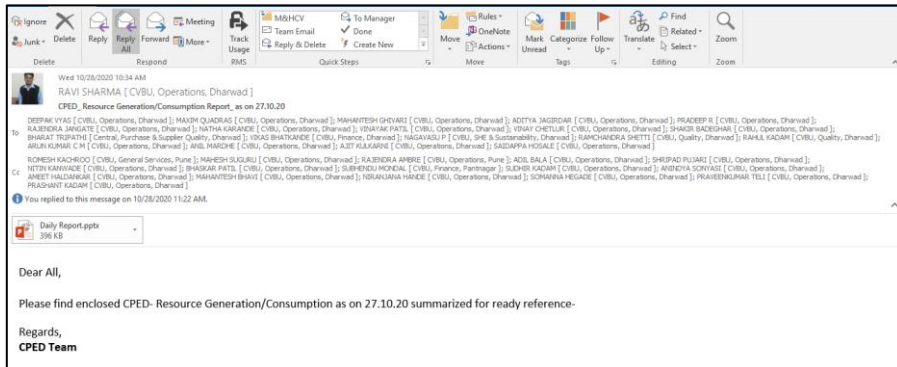
Idea : Direct procurement of 497 model "AFTER TREATMENT SYSTEM ASSY" from M/s Cummins Pune.

4-Logistics Cost saving



TML Dharwad is adhering to below best practices for Energy awareness and savings

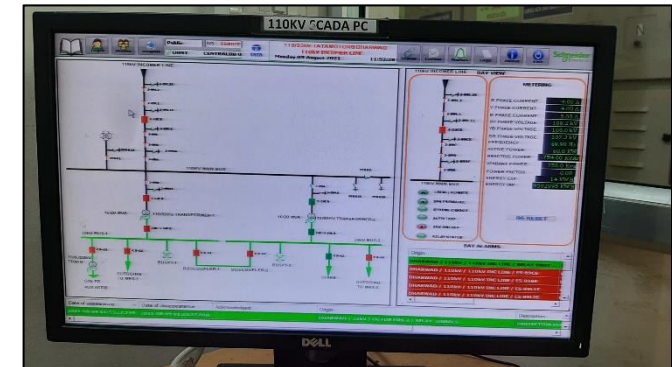
- Sharing of Power/Fuel/compressed air consumption report on daily basis to all end customers
- Power monitoring through online SCADA system and maintaining unity Power factor
- Plant Energy review meeting is chaired by Plant Head
- Energy efficiency and awareness training is conducted for all employees through online session and LMS
- Various projects have been implemented through Kaizens like APFC cooling system optimization, Separation of pipe line for MHCV spot guns, Common VFD For Pump & Compressor, Auto switch OFF chiller blower in lunch and tea break.
- Energy saving ideas are generated through brain storming sessions , GEM projects, Kaizens, unique suggestion schemes and CLT. Last Year more than 30 ideas were shortlisted with proposed savings of Rs 1.4 Crs
- GEAR method opted for energy saving ideas tracking



CPED_ Resource Generation/Consumption Report_ as on 06.08.21

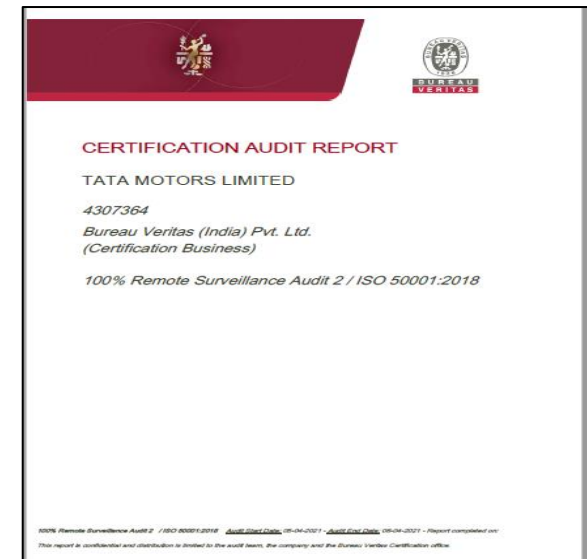
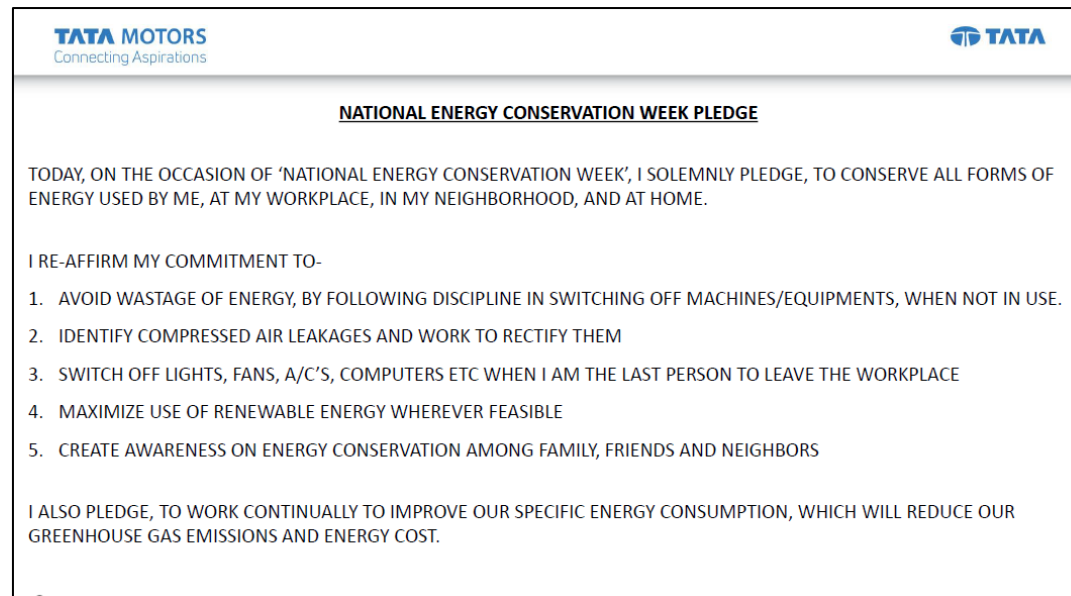
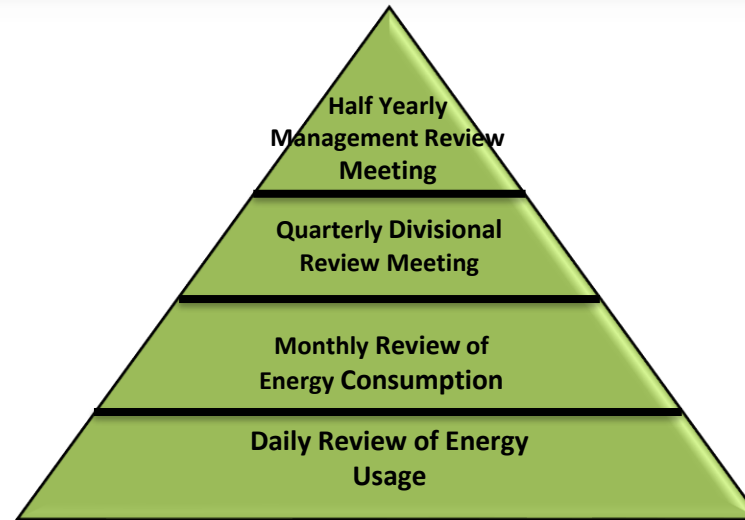
Area	Daily	Cumulative	MVA, KVA	Power Factor
Energy Generation	1077	11,000	3.38	0.908
Energy Consumption	2242	24,548		
ISSO Share, 85 MVA (Estm)	1583.2	1683.2		
	120.0	87.6		

Area/Area	Daily	Cumulative	Daily	Cumulative	Consumption per sq. ft.
Frame line	85	320			0.0001
YA	80	500			0.0001
Autoharctic	330	2295	0	0	0.0001
LCV	380	1245	0	0	0.0001
MHCV and EV	140	1115	0	0	0.0001
Environment	140	1115	0	0	0.0001
Compressor Houses & ISSO Yard	325	3200	0	0	0.0001
Other facilities	1200	2300	0	0	0.0001
CPED Lab	200	2000	0	0	0.0001
110KV Power Substation	500	3000	0	0	0.0001
Ongoing Projects	30	30	0	0	0.0001
TOTAL	2242	24,548	0	0	0.0001

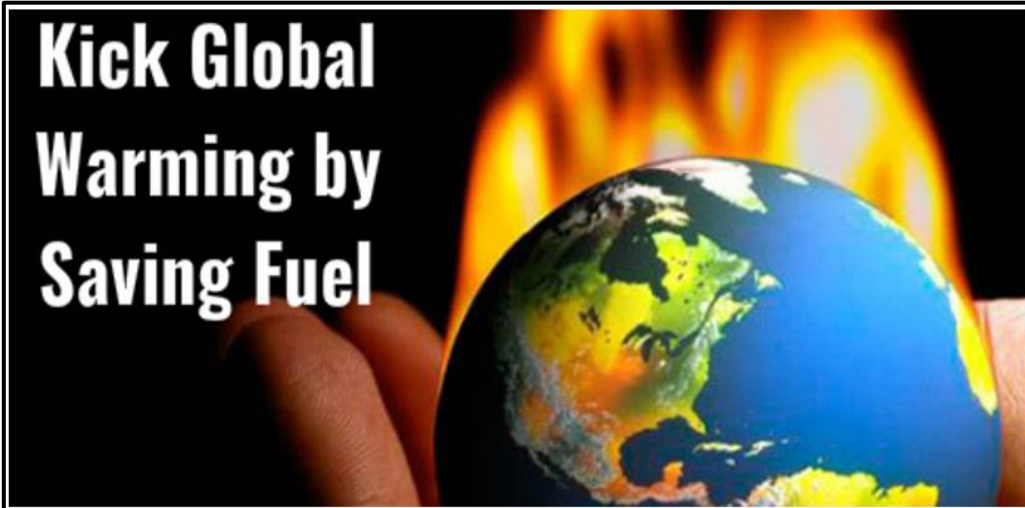


ISO 50001

- TML Dharwad is certified for ISO 50001:2018 by Bureau Veritas
- Half Yearly Internal audits are being conducted
- Yearly Surveillance audit is being conducted by BV team as per ISO 50001 standards
- Plant has 9 internal auditors certified by Bureau Veritas
- 20 people trained on energy management system by Bureau Veritas
- Energy conservation week is celebrated every year from 14th Dec onwards



Energy Tweets are shared to all plant members through mails and displayed at various locations in the plant



TML Dharwad learning form CII energy Award

- Participation in CII event is always inspiring and preeminent learning event
- Collective platform for exposure to new technologies being introduced in the industry
- Unique platform for bench marking ourselves with our competitors on basis of specific consumptions
- Encouraging to excel in Electrical & Thermal energy saving
- Enhancing energy team performance through learning, sharing and capability development
- Supportive to excel in Renewable energy utilization, reducing tCO2e contributions, waste management and utilization

Policy

TATA MOTORS
Connecting Aspirations

ENERGY POLICY

Tata Motors - Commercial Vehicle Business Unit reaffirms its commitment to minimize the use of energy through continual improvement of its energy performance.

Towards this end it shall strive to:

- Create and establish framework for achieving energy objectives and targets
- Select, purchase and use appropriate energy, efficient equipments, services and eco-friendly technologies
- Evaluate and compare with appropriate benchmark
- Comply with applicable legal and other requirements
- Build awareness on efficient energy use amongst our work force, customers, dealers, vendors and society

This policy has been communicated to all our work force and shall be made available to the public/ stakeholders on request.

Date: September 27, 2018
Place: Mumbai

Souvik Bhattacharya
Chief Executive Officer and Managing Director

Plant Level CLT

Variable Indirect Costs	Utilities	Admin & EW	Maintenance & Services	Other Fixed Costs	IT	MOP	Warranty
<ul style="list-style-type: none"> • Tools • Consumables • Freight • PTP 	<ul style="list-style-type: none"> • Power • Fuels • Water 	<ul style="list-style-type: none"> • Travel • Canteen • Security • Rent • Bus Service 	<ul style="list-style-type: none"> • Machinery Spares • AMCs • Service Cost • Machinery Repair 	<ul style="list-style-type: none"> • Legal • Civil Repair • General & Misc Costs • Conservancy • Municipal Charges 	<ul style="list-style-type: none"> • Operations • Digital Product Development 	<ul style="list-style-type: none"> • In-House Contracts • Cost per Vehicle • Hour Per Vehicle • Employee Mix 	<ul style="list-style-type: none"> • IPTV • EPV • PDI Expenses • Supplier Recovery

CLTs (Cross Locations Teams) would drive cost reduction for their respective categories.

SCOPE of CLTs

- Sharing of best practices across locations
- Horizontal Implementation of proven levers
- Identification & application of new levers
- Approval of High Value purchases
- Cost reduction target of 10%

Measurement & Analysis (M&A)	Operational Efficiency (OE)	New technology introduction (New tech)	Renewable energy (RE)	Benchmarking (BM)	Energy cost (cost)	Knowledge & Capability building (K&CB)

Thank You
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