1. Brief introduction on Company/Unit

TATA MOTORS
Connecting Aspirations

Tata Motors Limited Dharwad

Team Members
Mr. Sudhir A. Kadam (DGM)
Mr. Ravi Sharma (Sr. Mgr)
Mr. Anindya Sonyasi (Sr.Mgr)

1. Brief introduction on Company/Unit

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Connecting Aspirations

Tata Motors Ltd., Dharwad, located in Karnataka state, is the youngest plant amongst TATA MOTORS group and commercial vehicle business unit. Start of operations with regards to Small Commercial Vehicle from March-2012, Light Commercial Vehicle from March-2014, Medium Commercial Vehicle from May-2019 and Electric Vehicle from March-2019.

Manufacturing capacity of SCV is 150 no's per shift, LCV is 40 no's per shift, MHCV is 15 no's per shift and Electric Vehicle is 9 no's per shift.

Vehicle manufactured models at Dharwad are in SCV Ace gold, LCV model is 407, 709, 909 7.5T , 8.5 T , MHCV truck and bus chassis and EV bus model are 9/12 , 9/9.

Tata Motors, Dharwad Plant is certified for ISO 14001, ISO 50001, ISO 45001 and TS 16949. It is the first Automobile Manufacturing Facility in India to be certified with Indian Green Building Council (IGBC) Platinum Rating.

Digitalization is implemented with online WIS , Digital History Card , Loss Mapping , Torque Confirmation system.

We are working on I4.0 projects to connect all our shop floor lines, sub stations, utilities and other areas for real time data monitoring.

1. Brief introduction on Company/Unit

TATA MOTORS
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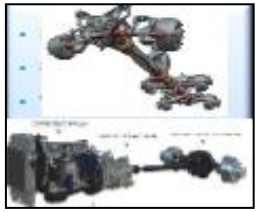
SCV Manufacturing line

Frame Shop → BIW Shop → TA & Engine Shop → Paint Shop → TCF Shop

LCV/MHCV/EV Manufacturing line

Chasis / Frame → Trim Fitment → Engine Fitment → Axle Fitment → Cowl / FES



MOREWHEN ONE
BE BOLD | OWN IT | SOLVE TOGETHER | BE EMPATHETIC

2. Power and Fuel Sp. Energy Consumption in last 3 years (FY 2019-22)

TATA MOTORS
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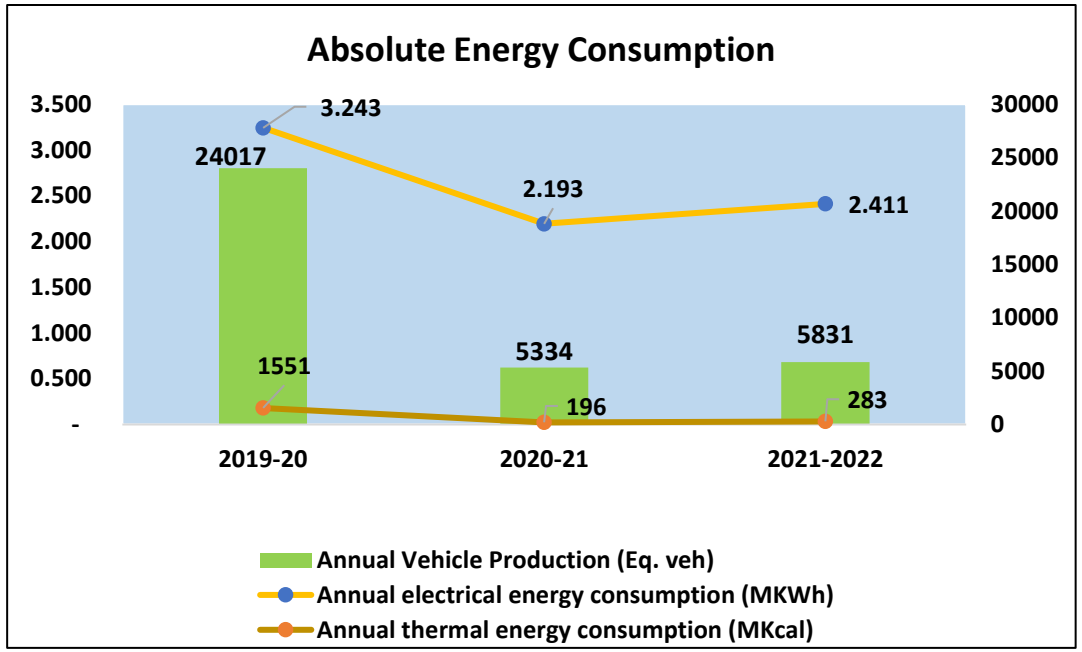
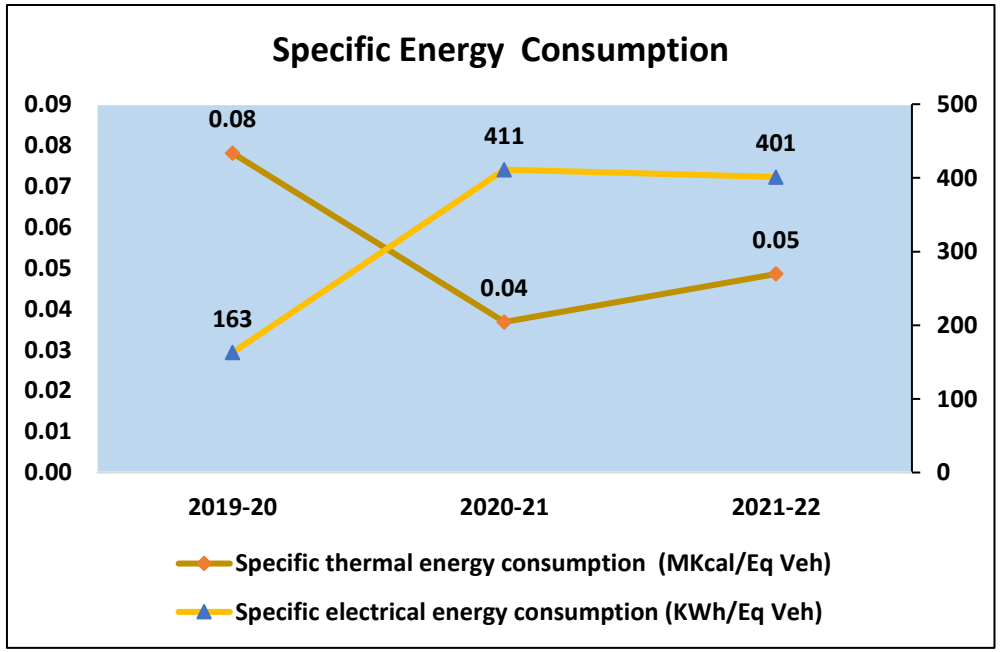
Electrical and Thermal Energy consumption



Electrical and Thermal Energy Specific consumption



- Summary out of this slide is specific electrical energy consumption has gone down.
- Specific thermal energy consumption has slightly increased because of trials during fuel change over from HSD to LPG.

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2. Power and Fuel Sp. Energy Consumption in last 3 years (FY 2019-22)

TATA MOTORS
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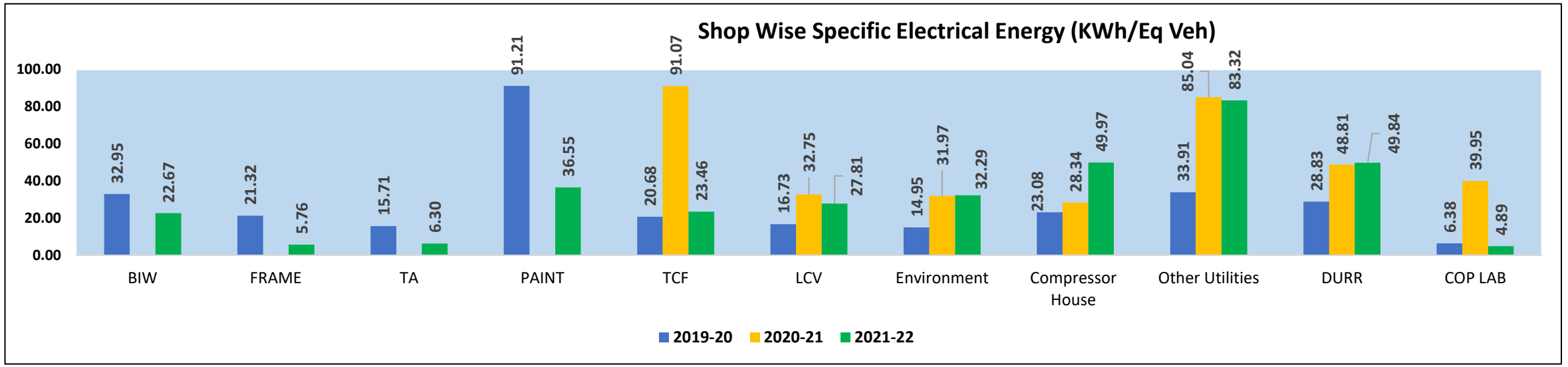

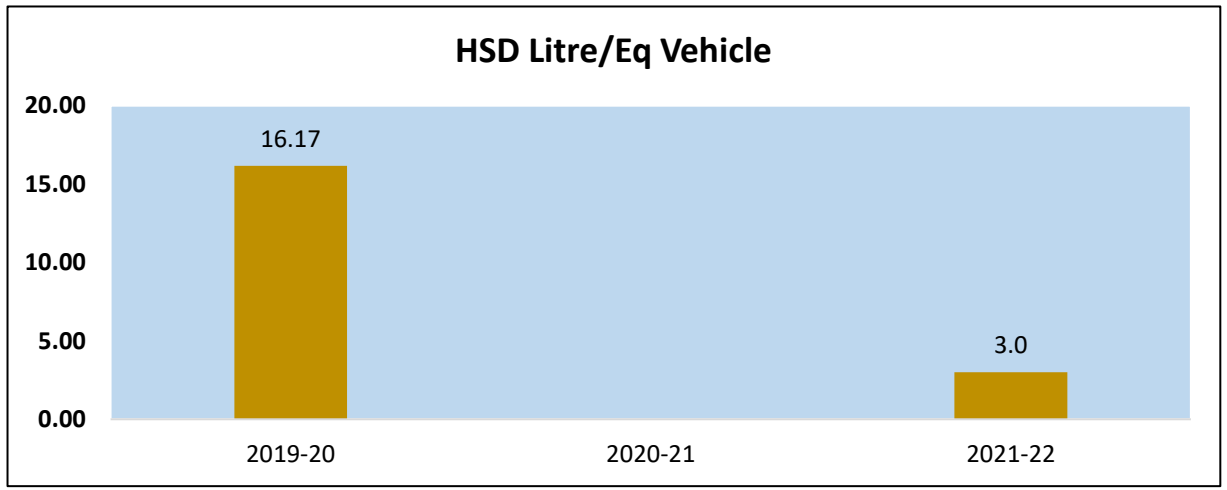

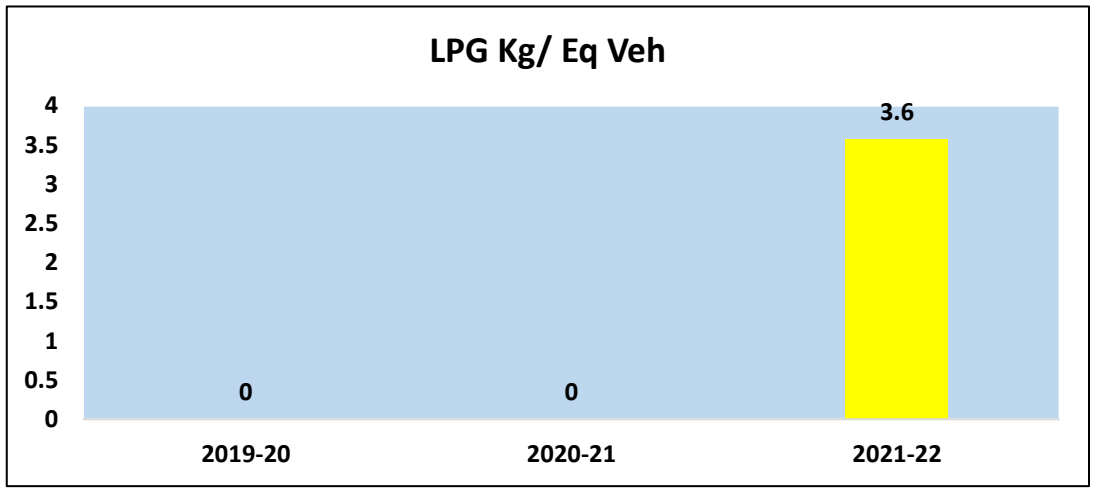

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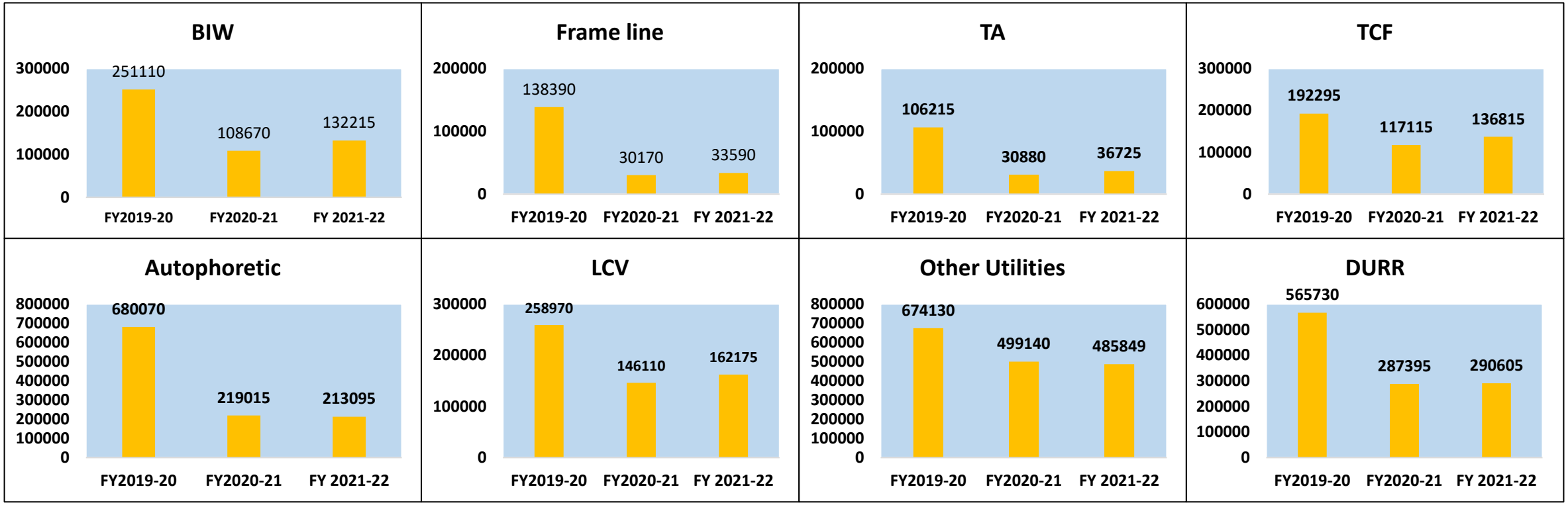
2. Power and Fuel Energy Consumption in last 3 years (FY 2019-22)

TATA MOTORS
Connecting Aspirations



- For FY 2021-22 low volumes were observed in comparison to 2019-20, however 8.5 % increase in vehicle production volumes were observed as compared to last FY 2020-21.
- TML Dharwad team with its various energy saving initiatives and sustenance practices reduced the power consumption.
- We were able to reduce the plant base power consumption from 4800 units to 4500 units.
- Electricity SEC was 2.5 % lower than last Financial Year.

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3. Information on Competitors, National & Global benchmark

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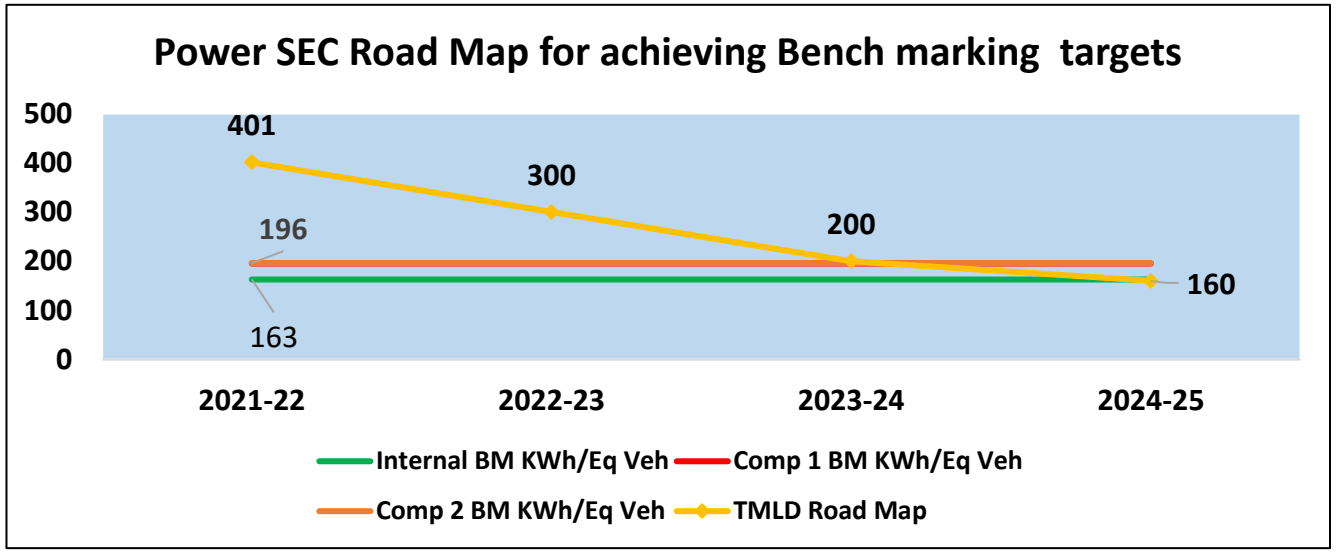
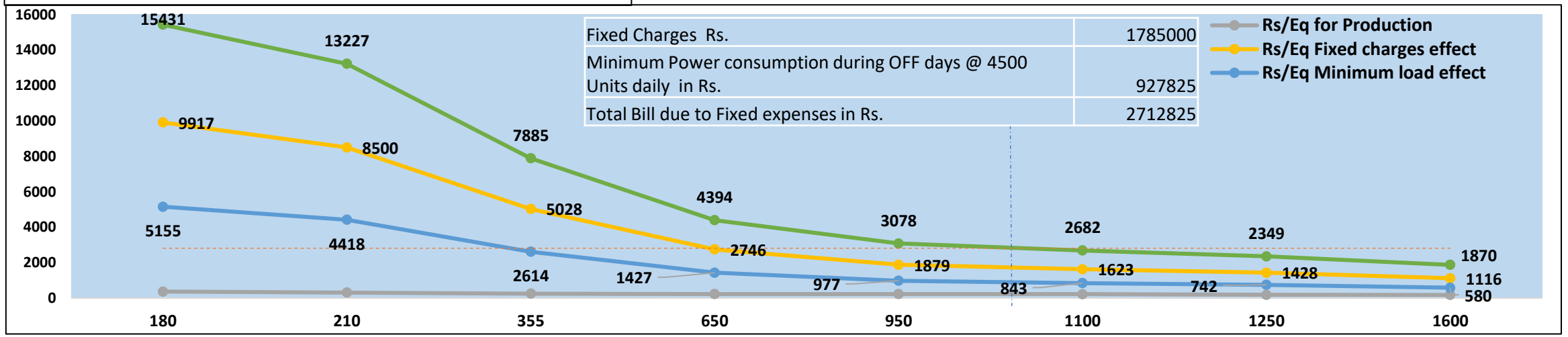
Competitor	kWh/Eq Vehicle	MKcal/Eq vehicle
Mahindra & Mahindra, Kandhiwali	204	0.104
Tata Motors Limited , Pantnagar	195	0.139
Internal Bench mark	**kWh/Eq vehicle**	**MKcal/Eq Vehicle**
Tata Motors Limited, Dharwad	163	0.08

Bench mark Data Source: CII website





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3. Information on Competitors, National & Global benchmark

TATA MOTORS
Connecting Aspirations

At Plant level below initiatives are been practiced for SEC reduction:

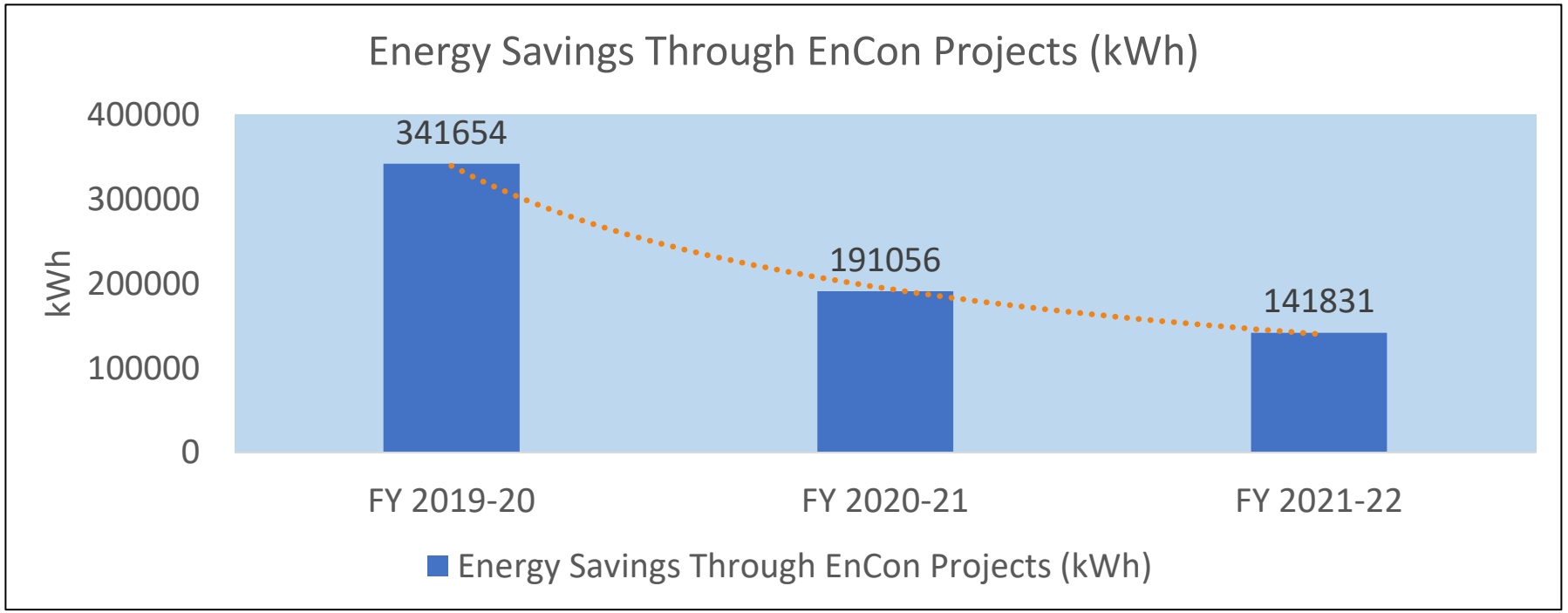
1. SDCA cycle implemented for sustenance of ongoing 10 number energy saving projects.
2. Sufficiency plan developed for FY 21-22 and same is implemented at plant level.
3. Suggestion scheme for energy saving ideas at plant level.
4. Kaizen for power and air consumption reduction.

MAJOR ECON PROJECTS FY 2022-23			
Sl No	**Title of Project**	**Annual Electrical Saving (Million kWh)**	**Investment (Rs in Million)**
1	VFD for Water Pump	0.0249	0.0365
2	VFD for Water Pump	0.0249	0.0365
3	VFD for KOD circulation pump	0.0432	0.0365
4	VFD for Degrese circulation pump	0.0432	0.0365
5	VFD for ACC oven-1 hot air circulation blower-1	0.018	0.0365
6	VFD for ACC oven-1 hot air circulation blower-2	0.018	0.0365
7	VFD for ACC oven-2 hot air circulation blower-1	0.018	0.0365
8	VFD for ACC oven-2 hot air circulation blower-2	0.018	0.0365
9	VFD for ACC oven-2 hot air circulation blower-3	0.018	0.0365
10	VFD for ACC oven-2 hot air circulation blower-4	0.018	0.0365
11	VFD for PCC oven hot air circulation blower-1	0.033	0.0365
12	VFD for PCC oven hot air circulation blower-2	0.033	0.0365
13	VFD for PCC oven hot air circulation blower-3	0.033	0.0365
14	VFD for PCC oven hot air circulation blower-4	0.033	0.0365
15	VFD for ETP & STP Blower No.2	0.0432	0.0365

4. Energy Saving Projects Implemented in last 3 years (FY 2019-22)

TATA MOTORS
Connecting Aspirations

Year	No of Energy Saving Projects	Investments (INR Million)	Electrical Savings (Million kWh)	Thermal savings (Million Kcal/ MTOE)	Savings (INR Million)	Impact on SEC (Electrical, thermal)
FY 2019-20	15	0.346	0.342	294.07	2.455	14.23 kWh/Eq. Veh.
FY 2020-21	10	0.006	0.191	164.23	1.338	35.82 kWh/Eq. Veh.
FY 2021-22	12	0.127	0.142	121.95	0.993	24.30 kWh/Eq. Veh.



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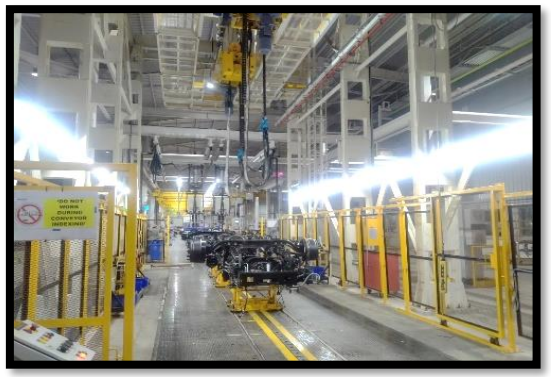
4. Energy Saving Projects Implemented in last 3 years (FY 2019-22)



- Installation of LED tube lamps for LCV main assembly line station is leading to savings of 360 units.
- 1,180 units saved by installation of LED lamps for LCV wheel alignment pit.
- Motion detector installation for EOL man cooling fan led to savings of 460 units.
- Installation of 5W LED Lamp for all LCV shop safety pits saved 490 units.
- Switched off the top side LED lights in EOL area underpit-01 helped to save 2410 units.
- Day light provision at MHCV shop by providing translucent polycarbonate sheets at ceiling and walls in MHCV shop extension area building.

4. Energy Saving Projects Implemented in last 3 years (FY 2019-22)

TATA MOTORS
Connecting Aspirations

- Man cooling Fans are interlocking with LCV Main Line conveyor led to savings of 270 units.
- 2710 Units saved by installation of LED lamps at smoke pit.
- Conversion of HSD to LPG fuel for Autophoretic paint shop ovens & hot water generator helped to fuel cost savings of 18%.
- Improving cycle time by removing unused skids in the line led to savings of 33,600 units.
- By turning off the K factor filter during B and C shift of off days/nonproduction days we have saved 18,000 units.
- Optimization of APFC panel cooling fan operation control.

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5. Innovative Projects Implemented

TATA MOTORS
Connecting Aspirations

Savings/ Reduction in Domestic Water Consumption by Modification of Push Taps	
Before	After
 	 
Std. gap between spindle cap and body of tap as per OEM. The tap self closing time is 9 secs after release of tap. Water dispensed is 250ml after release.	The Gap in-between is filled using rubber washer. The tap self closing time is reduced to 3 secs after release of tap. Water dispensed is 80ml after release. Savings 230 KL / year considering 60 nos. taps and average 75 times use per day for each tap.

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5. Innovative Projects Implemented

TATA MOTORS
Connecting Aspirations

Time reduction for skid transfer from one station to another Energy saving of 28000 units annually	
Before	After
	
Skid / Body keeps waiting for next station to be completely empty leading to increase in cycle time. Annual Energy consumption: 102500 units.	Studied the safe condition to enable skid transfer to next station. Modified logic for parallel operation of skid transfer. Annual Energy Consumption: 74,500 units.

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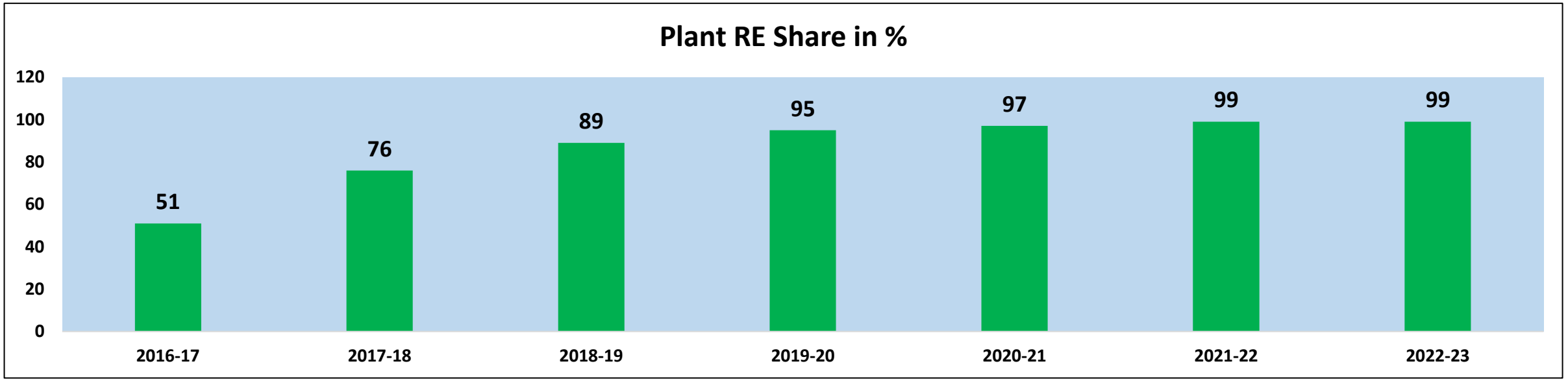
5. Innovative Projects Implemented

TATA MOTORS
Connecting Aspirations

ACC & PCC oven nozzles modified to optimum required temperature	
Before	After
	
ACC & PCC line nozzles were of 36 GPH leading to higher fuel consumption. Fuel consumption was 540 KL.	ACC & PCC line nozzles changed from 36 to 28 GPH leading to reduction in fuel consumption. Fuel consumption is 523 KL. Savings of 17 KL per annum.

6a. Utilization of Renewable Energy Sources

TATA MOTORS
Connecting Aspirations



Our plant has achieved commendable RE share enhancement in last 5 years and since last financial year we are at more than 99% RE.

We are able to achieve and sustain this RE share through power mix mentioned hereunder--

1) RE (Wind Power) from third party through PPA,
2) RE from 990 KWp solar roof top.

However at present there is no RPO obligation on TML but our organisation has been committed for RE 100 by 2030.


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 Bajad visits the facility which makes manufacturing a green activity.

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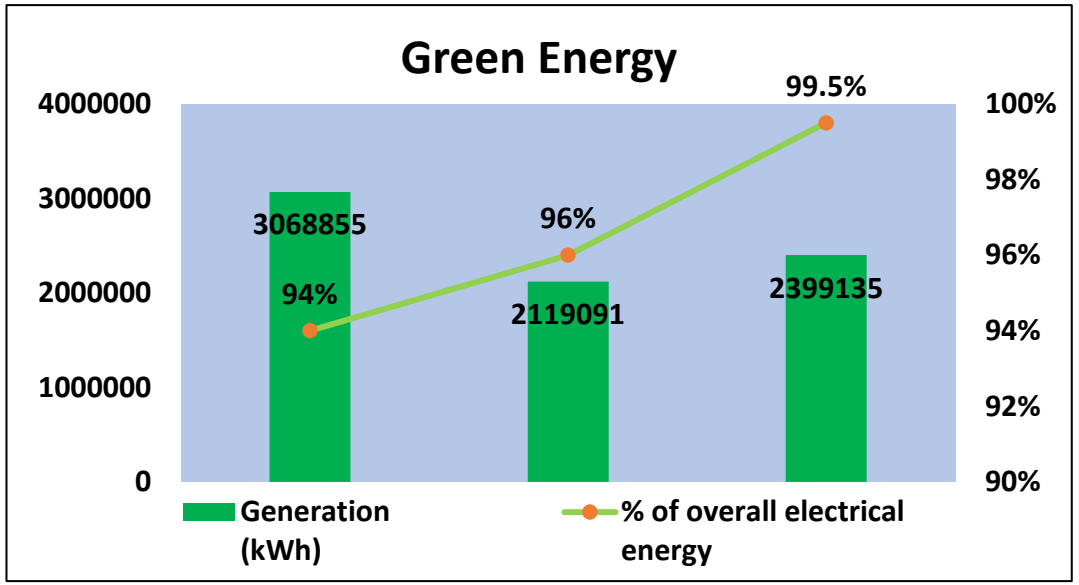
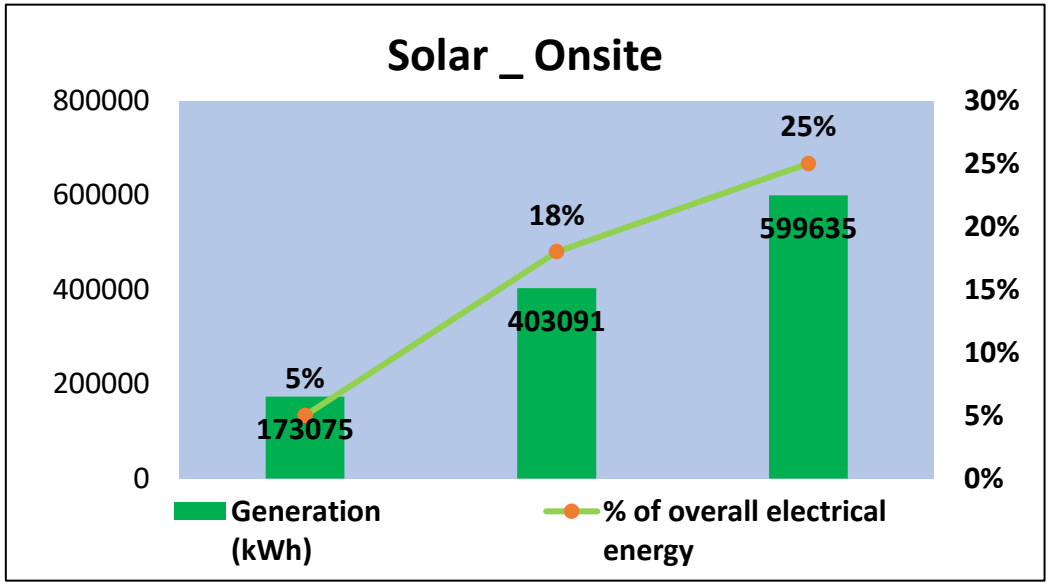
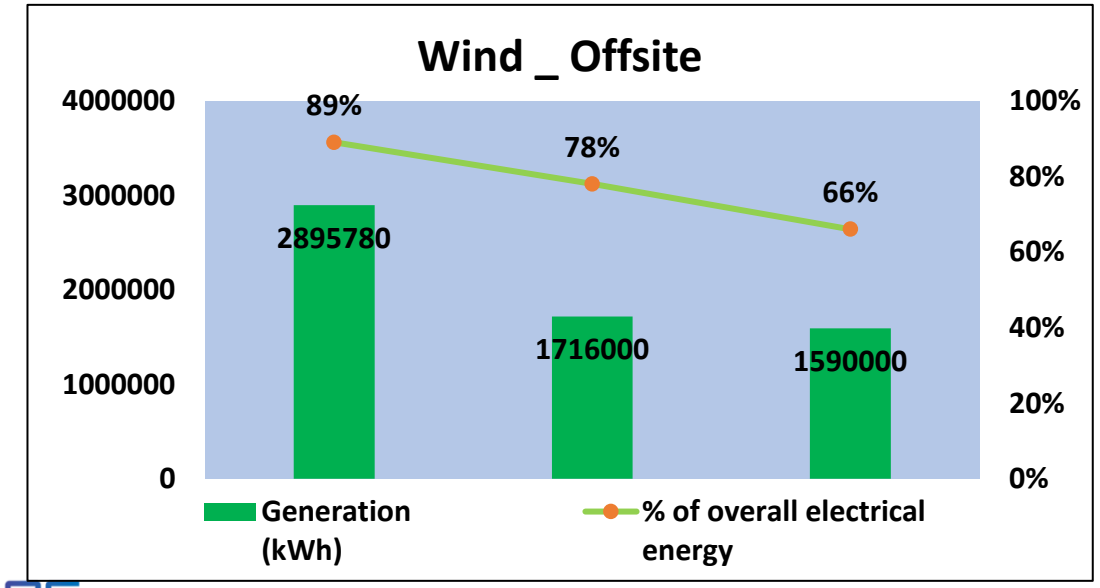
6a. Utilization of Renewable Energy Sources







Year	Technology (electrical)	Type of Energy	Onsite / Offsite	Installed Capacity (MW)	Generation (kWh)	% of overall electrical energy
FY 2019-20	Electrical	Wind	Offsite		2895780	89%
	Electrical	Solar	Onsite	990 KWp	173075	5%
FY 2020-21	Electrical	Wind	Offsite		1716000	78%
	Electrical	Solar	Onsite	990 KWp	403091	18%
FY 2021-22	Electrical	Wind	Offsite		1590000	66%
	Electrical	Solar	Onsite	990 KWp	599635	25%
	Electrical	Green Tariff	Offsite		209500	8.7%

7. Waste Utilization and Management

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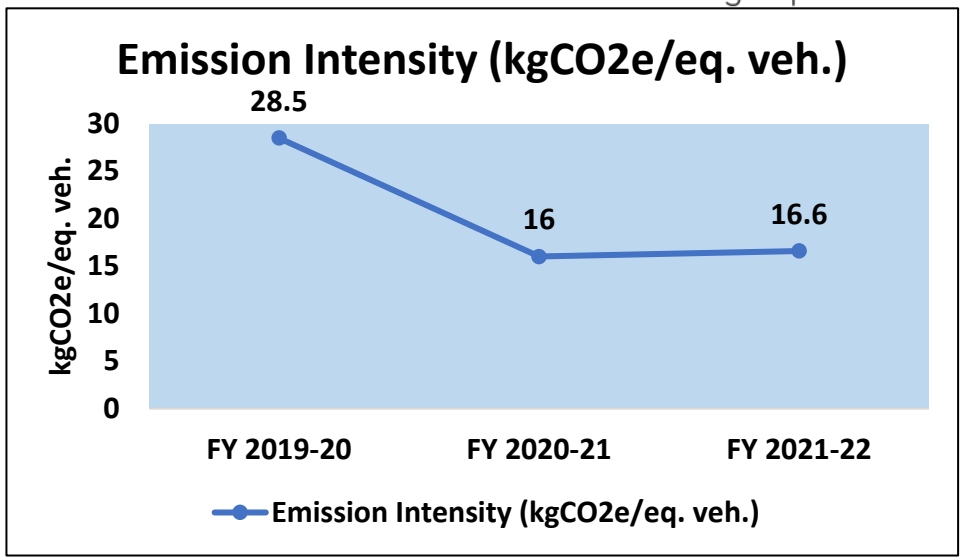
SN	Year (2019-21)	Type of waste	Qty	GCV	Waste as percentage of Total fuel
	Not Applicable, as TML is not utilizing any waste inside the plant premises (Under GCV recovery).				

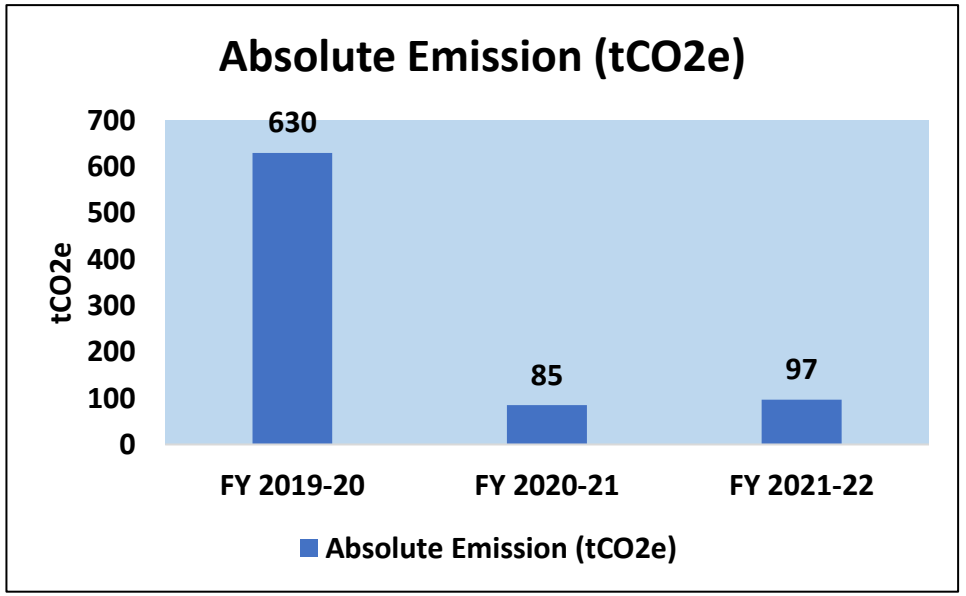
SN	Year	Type of waste generated	Qty of waste generated (MT/Year)	Disposal method
1	2019-20	• Used oil. • Discarded containers. • Waste or residues containing oil. • ETP Sludge. • Process waste, residues and powder coating waste. • Waste or residues (Not made with vegetable or animal materials).	145.5	• Coprocessing. • Incineration. Recycling.
2	2020-21		42.21	• Coprocessing. • Recycling.
3	2021-22		30.86	• Recycling. • Coprocessing in Cement Kilns to authorized units only.

8. GHG Inventorisation

TATA MOTORS
Connecting Aspirations

- GHG Inventorisation and Public Disclosure done through annual report at company level.
- Scope-1 and Scope-2 emissions have been identified for GHG inventorisation.
- Following has been considered as short-term target for CO2 emission reduction at plant level:
  - Conversion of Diesel operated fork lifts to Electric forklift.
  - Conversion of Propane to CNG burners in main paint shop.
  - Sustenance of Green power procurement from 3rd party through PPA.
  - Enhance on-site rooftop solar generation.
  - Electric vehicles for employee travel.
- 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.





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8. GHG Inventorisation

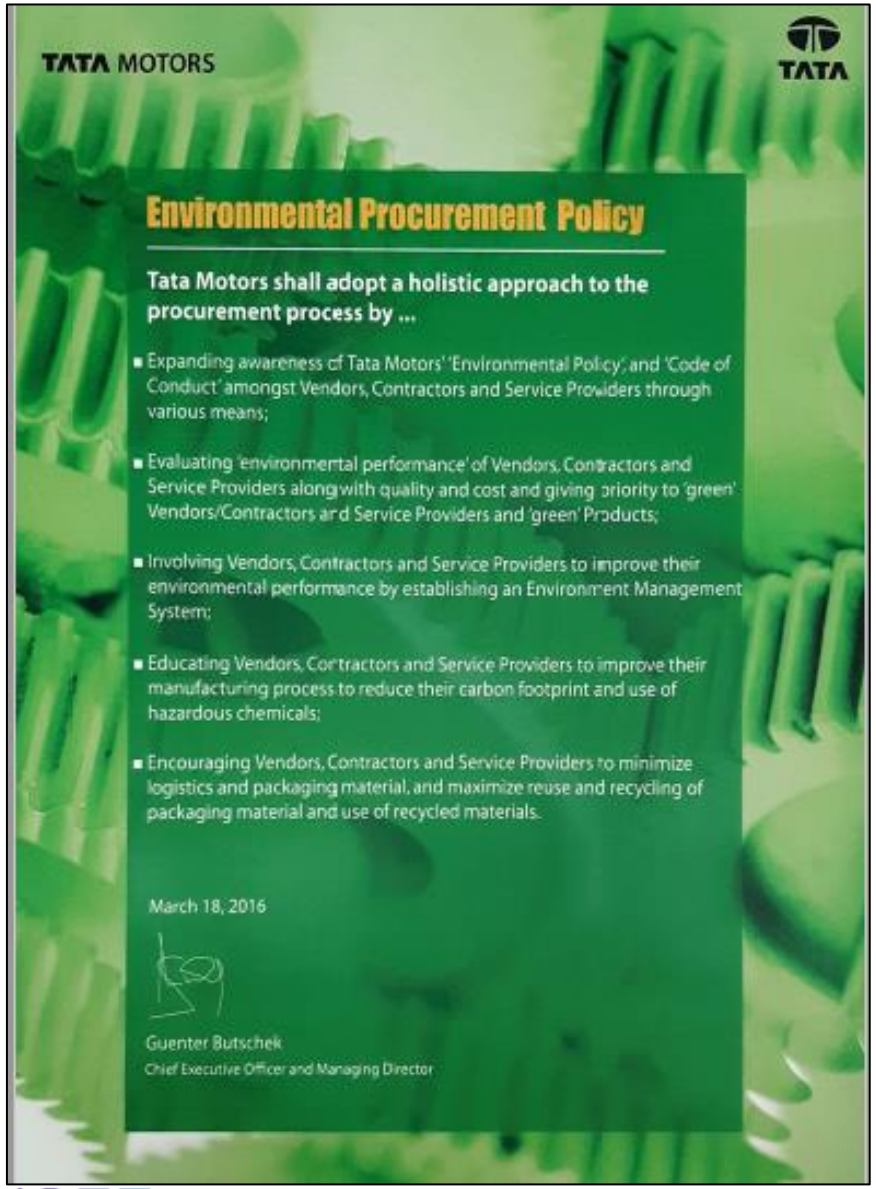
TATA MOTORS
Connecting Aspirations

- Tata motor at group level is working through below initiatives for sustainability:

1. Alingana : Tata group sustainability road map.
2. SBTi: Science base target Initiative.
3. RE 100

- Alingana:
  - We are working on 17 sustainable development goals to transform our world. Some goals to mention are Responsible consumption & production, affordable & clean energy, clean water and sanitation etc.
- SBTi:
  - The Science Based Targets initiative (SBTi) is a global body enabling businesses to set ambitious emissions reductions targets in line with the latest climate science.
  - Alingana speaks of NetZero (and Scope3) only in 2045, setting a science based target would imply a continued action towards de-carbonisation.
  - Tata Motors Limited commits to reduce Scope 1&2 GHG emissions by 80.00% per vehicle by 2037 from a 2022 base year.
  - Tata Motors Limited commits to reduce Scope 3 GHG emissions from Use of sold products by 53.00% per vehicle km by 2037 from a 2022 base year.
- RE 100:
  - Understand consumption requirements of each unit.
  - Develop a clear set of priorities for power procurement.
  - Develop location specific renewable procurement strategy.
  - Carry out risk assessment for identified procurement strategy and recommend risk mitigation solutions.

9. Green Supply Management

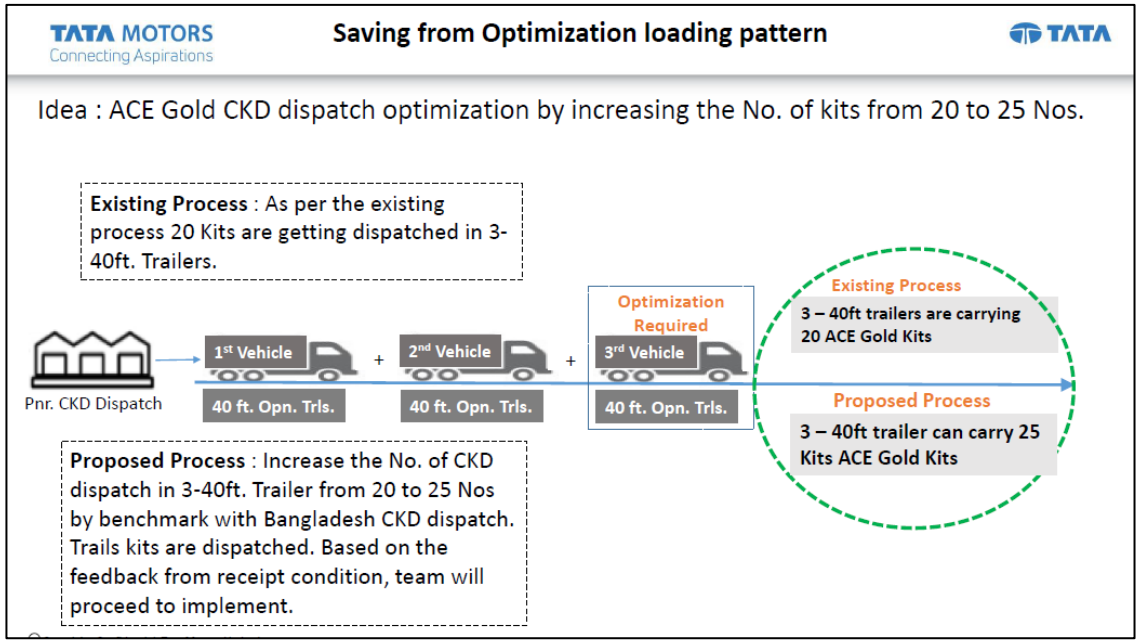


- We are in the process of upgrading the Sustainable Supply Chain Initiative.
- We have put in place Supplier and Dealer Code of Conduct to ensure ethical and sustainable practices across the value chain.
- Tata Motors continue to work with its suppliers through the Sustainable Supply Chain Initiative to ensure sustainable sourcing.
- Through this initiative the Company aimed to firstly create awareness on the subject and then partner with them for driving improvement.
- We have established 'Sustainability Guidelines for Suppliers' covering key topics like governance, legal compliance, TCoC, management system certification, transparency & reporting, occupational health and safety, labour and human rights.

9. Green Supply Management

TATA MOTORS
Connecting Aspirations

- In FY 2021-22, the Company continued to engage with suppliers, to estimate their Greenhouse Gas (GHG) emissions for baselining.
- Basis our engagement with 108 suppliers, emissions from Scope 3 Category 1: Purchased Goods & Services is 65364 tCO2e.
- Scope 3 Category 4: Upstream Transportation and Distribution is 21441 tCO2e.



10. Team work, Employee Involvement and Monitoring

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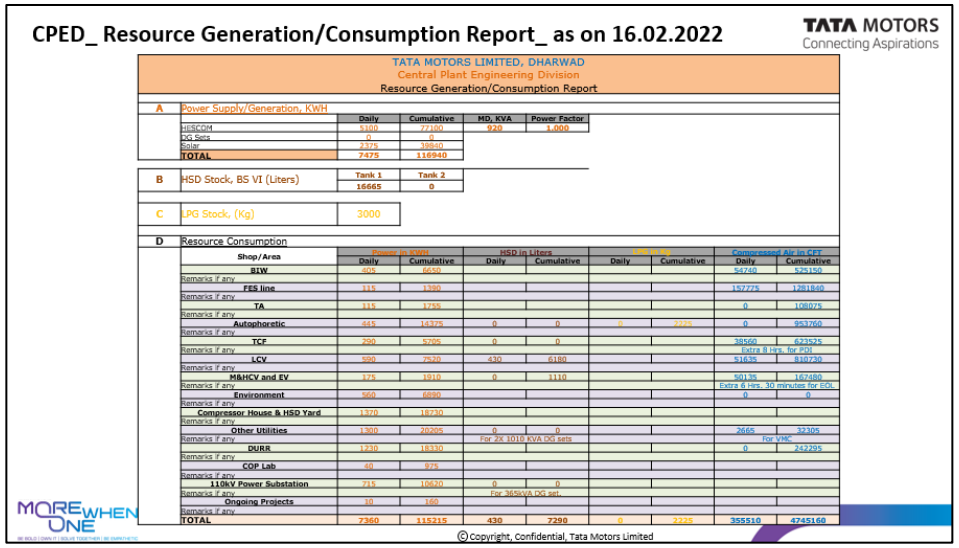


CPED_ Resource Generation/Consumption Report_ as on 16.02.2022

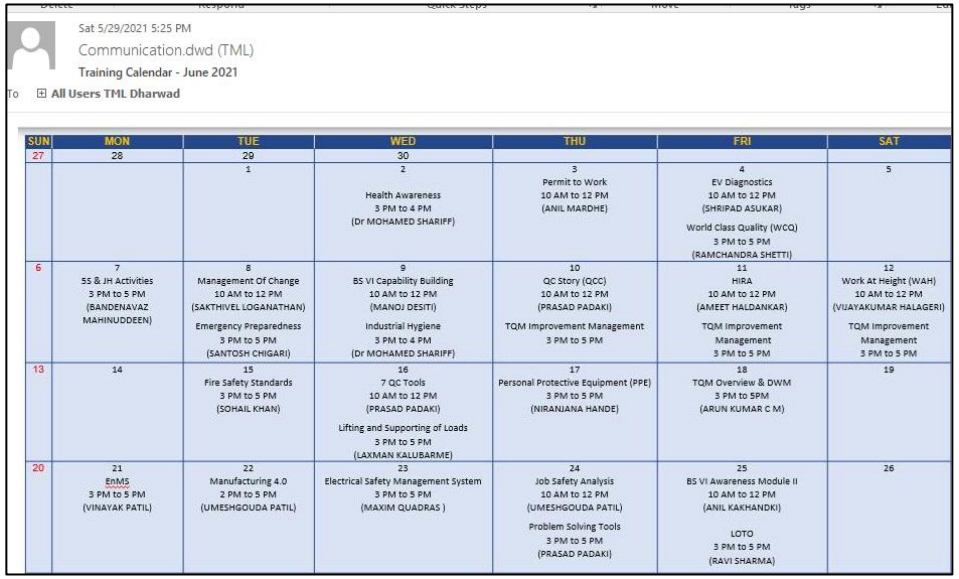
TATA MOTORS LIMITED, DHARWAD
Central Plant Engineering Division
Resource Generation/Consumption Report

		Daily	Cumulative	MD, KVA	Power Factor
A	Power Supply/Generation, KWH				
	HESCOM	5100	77100	920	1.000
	DG Sets	0	0		
	Solar	2375	39840		
	TOTAL	7475	116940		

		Tank 1	Tank 2
B	HSD Stock, BS VI (Liters)	16665	0
C	LPG Stock, (Kg)	3000	

D Resource Consumption

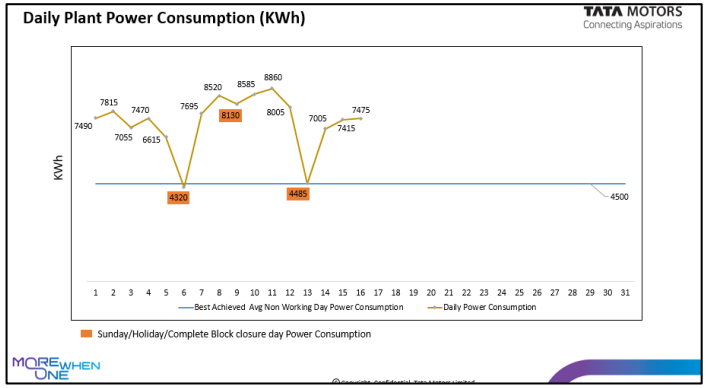
Shop/Area	Power in KWH Daily	Power in KWH Cumulative	HSD in Liters Daily	HSD in Liters Cumulative	LPG in Kg Daily	LPG in Kg Cumulative	Compressed Air in CFT Daily	Compressed Air in CFT Cumulative
BIW	405	6650					56740	525150
Remarks if any								
FES line	115	1380					157775	1281840
Remarks if any								
TA	115	1755					0	108075
Remarks if any								
Autophoretic	445	14375	0	0	0	2225	0	953760
Remarks if any								
TCF	290	5705	0	0			38560	623525
Remarks if any							Extra 8 Hrs. for PDI	
LCV	580	7520	430	6180			51635	810730
Remarks if any								
M&HCV and EV	175	1910	0	1110			50135	167480
Remarks if any							Extra 6 Hrs. 30 minutes for EOL	
Environment	560	6890					0	0
Remarks if any								
Compressor House & HSD Yard	1370	18730						
Remarks if any								
Other Utilities	1300	20205	0	0			2665	32305
Remarks if any			For 2X 1010 KVA DG sets				For VMC	
DURR	1230	18330					0	242295
Remarks if any								
COP Lab	40	975						
Remarks if any								
110kV Power Substation	715	10620	0	0				
Remarks if any			For 365kVA DG set.					
Ongoing Projects	10	160						
Remarks if any								
TOTAL	7360	115215	430	7290	0	2225	355510	4745160

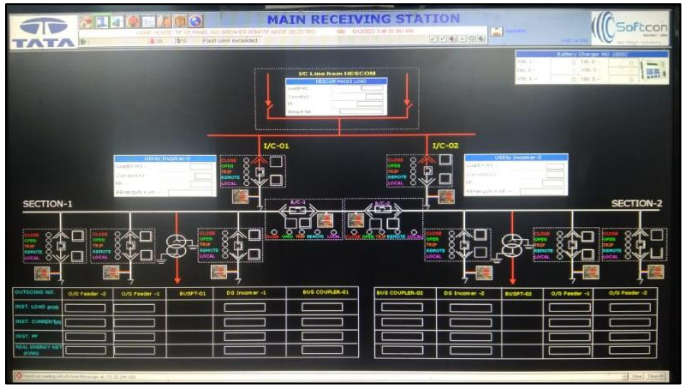


Sat 5/29/2021 5:25 PM
Communication.dwd (TML)
Training Calendar - June 2021
To All Users TML Dharwad

SUN	MON	TUE	WED	THU	FRI	SAT
27	28	29	30			
		1	2 Health Awareness 3 PM to 4 PM (Dr MOHAMED SHARIFF)	3 Permit to Work 10 AM to 12 PM (ANIL MARDHE)	4 EV Diagnostics 10 AM to 12 PM (SHRIPAD ASUKAR) World Class Quality (WCQ) 3 PM to 5 PM (RAMCHANDRA SHETTI)	5
6	7 5S & JH Activities 3 PM to 5 PM (BANDENAVAZ MAHINUDDEEN)	8 Management Of Change 10 AM to 12 PM (SAKTHIVEL LOGANATHAN) Emergency Preparedness 3 PM to 5 PM (SANTOSH CHIGARI)	9 BS VI Capability Building 10 AM to 12 PM (MANOJ DESITI) Industrial Hygiene 3 PM to 4 PM (Dr MOHAMED SHARIFF)	10 QC Story (QCC) 10 AM to 12 PM (PRASAD PADAKI) TQM Improvement Management 3 PM to 5 PM	11 HIRA 10 AM to 12 PM (AMEET HALDANKAR) TQM Improvement Management 3 PM to 5 PM	12 Work At Height (WAH) 10 AM to 12 PM (VIJAYAKUMAR HALAGERI) TQM Improvement Management 3 PM to 5 PM
13	14	15 Fire Safety Standards 3 PM to 5 PM (SOHAIL KHAN)	16 7 QC Tools 10 AM to 12 PM (PRASAD PADAKI) Lifting and Supporting of Loads 3 PM to 5 PM (LAXMAN KALUBARME)	17 Personal Protective Equipment (PPE) 3 PM to 5 PM (NIRANJANA HANDE)	18 TQM Overview & DWM 3 PM to 5PM (ARUN KUMAR C M)	19
20	21 EnMS 3 PM to 5 PM (VINAYAK PATIL)	22 Manufacturing 4.0 2 PM to 5 PM (UMESHGOUDA PATIL)	23 Electrical Safety Management System 3 PM to 5 PM (MAXIM QUADRAS)	24 Job Safety Analysis 10 AM to 12 PM (UMESHGOUDA PATIL) Problem Solving Tools 3 PM to 5 PM (PRASAD PADAKI)	25 BS VI Awareness Module II 10 AM to 12 PM (ANIL KAKHANDKI) LOTO 3 PM to 5 PM (RAVI SHARMA)	26

- At TML Dharwad Power , fuel, water, compressed air consumption is monitored on daily basis at plant level as well as shop and area wise.
- We are sharing utility resource report comprising of Power, fuel and air consumption details on daily basis to all end users for creating consciousness at individual level in all areas.
- Power is monitored through online SCADA at sub station and switchyard level.
- Energy awareness, training and refresher programs are conducted at all levels through class room and online medium.





MOREWHEN ONE
BE BOLD | OWN IT | SOLVE TOGETHER | BE EMPATHETIC

10. Team work, Employee Involvement and Monitoring

TATA MOTORS
Connecting Aspirations

- Plant has seven FIC's and each FIC Head reviews the energy status at functional level and Energy conservation review meeting is chaired by Plant Head at plant level.
- Separate budget is released for ENCON. This year Rs 40 lakhs is released.
- Various projects are implemented through Kaizen and last year Kaizen no 11 helped to reduce Power and Air consumption at plant level.

Kaizen 11- Kaizen News paper KNP

TATA MOTORS Connecting Aspirations

KAIZEN NEWSPAPER

Kaizen Event Number: 11	Kaizen Event Topic: Improvement in Line efficiency and elimination of NVAs in LCV Shop	Overall Status R Y G		Kaizen Event Dates-
Event Leader: Mr. Ravi Sharma			Reviewer: Mr. Jagadish Kulkarni, Mr. Sudhir Kadam, Mr. Vinayak Patil	From: 13 August 2021
				To: 20 August 2021

S.No	Problem Description	Counter Measure / Action to be taken	By Whom	By When (≤ 90 Days)	Status (R/Y/G)	Results Achieved/ Expected	Actual Completion Date	Remarks
1	High Power consumption on Non prodcution day at BIW shop	To turn off Power panels (Excluding Lighting panel during non-working Sundays)	Mr. Pavan kulkarni	19/08/2021		Swicthed OFF Power panels on Non working day leading to savings of 11 units per day	19/08/2021	
2	Air consumption when line not working in BIW shop	To turn of the main valve of UB and MF line when not in use	Mr. Pavan Kulkarni	19/08/2021		Air compressor main line valve closed of UB and MB line, resulting in savings of 2 CFM per day	19/08/2021	
3	LCV shop B- Grid Sub Assy Station Fan power consumption during Lunch and tea time	B- Grid Sub Assy Station 5 Man cooling Fans are interloking with LCV Main Line conveyor for to optimization of Electrical energy during Lunch and Tea Time	Mr. Deepak/Mr. Sunil	19/08/2021		Fans swicthed OFF resulting into 1 unit saving per day	19/08/2021	
4	High Power consumption of TMLD High Mast	TMLD High mast no 1,2 ,3 operation to be optimised and to be put OFF	Mr. Prashant Kadam	19/08/2021		High Mats no 1,2, 3 lights Put OFF, acheving savings of 49 units per day (Avg 152 to 103 units)	21/08/2021	

Kaizen 11- Expected results

TATA MOTORS Connecting Aspirations

KAIZEN Results – Target / Progress Sheet

KAIZEN Event : 01 | Area : Plant (13th to 20th August 2021)

Improvement				After KAIZEN								
Sr	Parameter	Before KAIZEN	Target	01	02	03	04	05	06	07	08	% Improved
1	Avg Power Consumption in KWH	7114	6830								6195	12.9%
2	Reduction in Air Consumption leakage in CFM	5.9	5.6								2.4	59%

11. Implementation of ISO 50001/Green Co/IGBC rating

TATA MOTORS
Connecting Aspirations

ISO 50001/IGBC rating

- TML Dharwad is certified for ISO 50001 by Bureau Veritas since 2012.
- Below activities are part of ISO 50001.
  - Half Yearly Internal audits as per schedule.
  - Yearly Surveillance audit by BV team as per ISO 50001 standards.
  - Training and refresher trainer are conducted for all TML and contractor employees.
  - Energy conservation week is celebrated every year from 14th Dec onwards.
  - Energy tweet sharing through mail.
  - Idea generation workshop for energy savings.

AUDIT STANDARDS

Audit Standard(s)	ISO 50001:2018

SCOPE OF CERTIFICATION

Language	Standard	Site Name	Head Office	Scope of Certification
English	ISO 50001:2018	Ho	✓	MANUFACTURE OF SMALL / LIGHT COMMERCIAL VEHICLES AND THEIR VARIANTS FOR VARIOUS APPLICATIONS

Type	Remote Recertification audit				
Audit Start Date	05-01-2022	Audit End Date	15-01-2022	Duration	5

Internal Audit Schedule

Date	Area	Timings in Hrs. From	Timings in Hrs. To	Auditee	Auditor
23-11-2021	Opening Meeting	09:30:00	10:00:00	EnMS Team	
	Auto Phoretic	10:00:00	12:00:00	Vinayak Patil/ Ajit Kulkarni	Maxim Quadrus
	TA/TCF	13:00:00	15:00:00	Vinayak Patil/ Umeshgouda Patil	Anindya Sonyaasi
	CPED	10:00:00	12:00:00	Sudhir K/ Ravi Sharma	Maxim Quadrus
	APL	13:00:00	15:00:00	Nikhil K / Janealam Belgaum	Pavankumar Hugar
	Frame/BIW	13:00:00	15:00:00	Maxim Quadrus/ Pavan Kulkarni	Janealam Belgaum
	Training /Admin & HR	15:00:00	17:00:00	Anand Patil/Rajshekar /Gireesh Devarmani	AMEET HALDANKAR
24-11-2021	Purchase - Machinery spares	09:30:00	10:30:00	Venkatesh A/ Anoop Bhat	Sudhir K
	Purchase - Capex & Indirect spend	11:00:00	12:00:00	Bhart T/ Anand Seth	Sudhir K
	LCV	11:00:00	12:00:00	R Pardeep/ Sunil Vernekar	Pavan Kulkarni
	MHCV	13:00:00	15:00:00	R Pardeep/ Pavan Hugar	Anindya Sonyaasi
	Environment	13:00:00	15:00:00	Nagavasu P	Raghvendra Hugar
	MR & Top management	09:30:00	11:30:00	Vinayak Patil / Raghavendra H	R Pardeep
	Review Meeting	15:00:00	16:00:00	EnMS Team	

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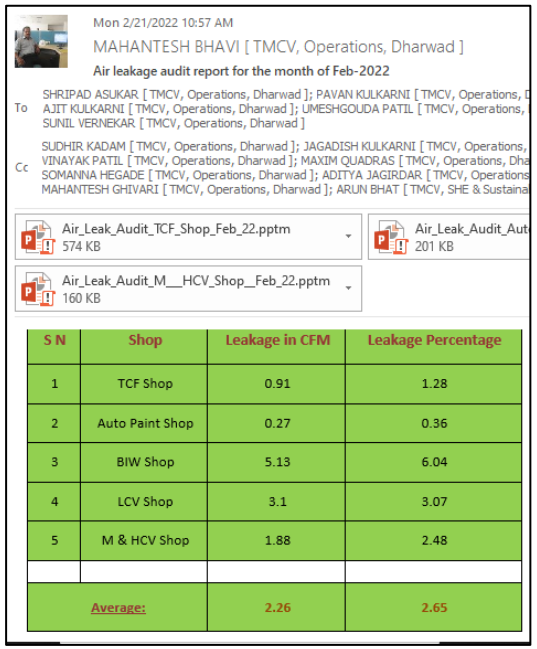
11. Implementation of ISO 50001/Green Co/IGBC rating

TATA MOTORS
Connecting Aspirations

ISO 50001/IGBC rating

- Air leakage audit is conducted on monthly basis for all shops.
- Average air leakage for the plant is 2.65%.
- TML Dharwad is IGBC platinum rated plant since 2012.
- In line with IGBC requirements we are having translucent poly carbonate sheets at shop floor walls and ceiling for day light panel provisions, day light pipe system at admin canteen, 3 number lakes for rain water harvesting (1.8 lakh cubic meter), low water flow taps, APFC for PF improvement, light density 11 watts/sqmt.



Mon 2/21/2022 10:57 AM

MAHANTESH BHAVI [TMCV, Operations, Dharwad]

Air leakage audit report for the month of Feb-2022

To SHRIPAD ASUKAR [TMCV, Operations, Dharwad]; PAVAN KULKARNI [TMCV, Operations, D
AJIT KULKARNI [TMCV, Operations, Dharwad]; UMESHGOUDA PATIL [TMCV, Operations,
SUNIL VERNEKAR [TMCV, Operations, Dharwad]

Cc SUDHIR KADAM [TMCV, Operations, Dharwad]; JAGADISH KULKARNI [TMCV, Operations,
VINAYAK PATIL [TMCV, Operations, Dharwad]; MAXIM QUADRAS [TMCV, Operations, Dha
SOMANNA HEGADE [TMCV, Operations, Dharwad]; ADITYA JAGIRDAR [TMCV, Operations
MAHANTESH GHIVARI [TMCV, Operations, Dharwad]; ARUN BHAT [TMCV, SHE & Sustaina

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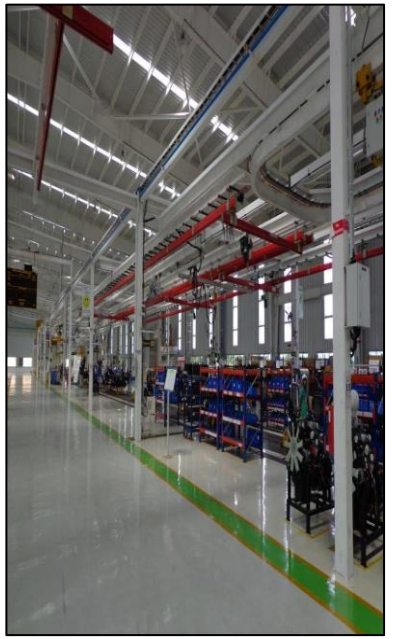
S N	Shop	Leakage in CFM	Leakage Percentage
1	TCF Shop	0.91	1.28
2	Auto Paint Shop	0.27	0.36
3	BIW Shop	5.13	6.04
4	LCV Shop	3.1	3.07
5	M & HCV Shop	1.88	2.48
Average:		2.26	2.65



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11. Implementation of ISO 50001/Green Co/IGBC rating

TATA MOTORS
Connecting Aspirations

- Pumping of treated effluent by **hydro-pneumatic system** to save water and electricity.
- **Low flow water fixtures** for the domestic use.
- **Treated water** is used **for gardening purpose** through separate irrigation system.
- **Drip and pop-up sprinkler** for Horticulture Purposes.
- **Separate water lines** for process, domestic, drinking and flushing water requirements.

12. Learning from CII Award or any other award program

TATA MOTORS
Connecting Aspirations

Participation in CII Awards has always led to outstanding experience for learning, capability enhancement and knowledge sharing.

Dharwad plant is always courteous to CII team for floating various events and by participation in this various awards we are able learn, explore, innovate and implement new methods/technologies not only in field of energy savings but also in electrical safety, power reliability, low cost automation, EHS excellence and best application & use of Renewable Energy.

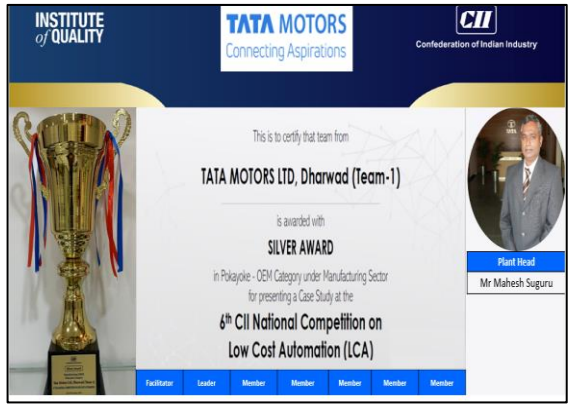
The Jury members have always inspired us, motivated and shown us the path to achieve our goals and sustain them.

All participating teams are from high performing organizations and show casing there eminent practices which have also inspired us to learn and compete further.

Few outcomes to share from CII learning area in past we are able to reduce our Specific energy consumption, enhance our RE share near to 100%, enhancement of safety system, improvement in line operation through kaizens and small innovations.

12. Learning from CII Award or any other award program

TATA MOTORS
Connecting Aspirations



CII initiatives have motivated us to participate in various events and were successful in wining below awards last year:
CII 23rd National Award for excellence in Energy Management; Gold award in CII-SR EHS excellence; Silver in LCA competition; and 2nd runner up in CII Power safety and reliability circle competition.

Team Dharwad has evolved with time and has work upfront for team involvement for energy saving initiatives through formation of Cross functional team (CFT's), Cross location team (CLT's) , identification of various Levers like measurement & Analysis (M&A) / Benchmarking / operational efficiency / new technology.

With reduction in the volume its highly challenging to reduce the base load however we have reduced base load from 4800 units per day to 4500 units last year.

We are further working inline with innovative solution and technologies and nearest competitors best practices shared on CII platform, our other plant ENCON projects and idea generation from our plant team.

Any other relevant Information

TATA MOTORS
Connecting Aspirations

March 2012
TML Dharwad began operations

June 2012
IGBC-Platinum Rating

August 2012
ISO 14001:2004 Certified

February 2013
ISO 50001: 2011 certified

January 2014
Started LCV chassis Production

May 2014
TS 16949 : 2009 Certified

May 2014
World Class Quality Level 1

July 2014
Golden Peacock Environment Management Award

February 2015
1st Prize for Improvement in Productivity by IIE

February 2015
1Lakh Ace Zip Roll Out

May 2015
OHSAS Certified

February 2015
Good Green Governance Award

December 2015
First prize for National Energy Conservation Award

January 2016
World Class Quality Level II

June 2016 Gold
Rating Green Co

August 2016
Energy Efficient Unit Award by CII

November 2016
1 Lakh ACE Zip Key Handover

December 2016
National Energy Conservation Award

February 2017
World Class Quality Level -III

SEEM National Energy Award

Sept 2018
MD Cup – TA Shop Best Productivity

Feb'19
Ace Gold CKD

Mar'19
Electric Vehicle Roll Out 9X9

April 2019
MD Cup - TA Shop Best Productivity

May 2019
Best Safety Performance Award

May'19
M&HCV New line operation began

Jun'19
Electric Vehicle Chassis Roll Out 9X12

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Important Milestone

Thank you