

## Energy Conservation Measure implemented in 2007-2008



(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>		Sector :02 (Automobile)		
Year to be filled by BEE	To reduce idle running of feed motor in tool room.		Technology: Interlocking		
<u>Description of the energy conservation measure:</u>					
<p>HMT 823 milling m/c is used for the milling operation of in-house produced spare parts of tooling, jigs &amp; fixtures etc.            Earlier the feed motor of the m/c used to run continuously even if the m/c is in idle mode.            To eliminate this energy loss, a timer has been installed in the electric circuit &amp; operation of feed motor is interlocked with the m/c operation. Now the feed motor gets off if the machine remains idle more than set time.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable			Not applicable		
Agency that executed the project (with complete address and email): In-house Modification					
Total investment, Rs.: 5000=00			Year of implementation: 2007 - 2008		
Annual energy cost savings, Rs.: 3000=00					
On annual basis	kWh (Lacs)	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.11	-----	-----	-----	-----
Energy consumption after	0.058	-----	-----	-----	-----
Energy tariff, Rs/ kWh	Rs. 5.66	-----	-----	-----	-----
<b>Company complete address:</b> <a href="#">Mahindra &amp; Mahindra Ltd</a> <a href="#">Automotive Sector, Akurli road,</a> <a href="#">Kandivli (East), Mumbai-400101</a>				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> <a href="mailto:priolkar.sandip@mahindra.com">Mr. S.D Priolkar (priolkar.sandip@mahindra.com)</a> <a href="mailto:marathe.anand@mahindra.com">Mr. A.P. Marathe (marathe.anand@mahindra.com)</a>				Signature  Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>	Sector : 02 (Automobile)			
Year to be filled by BEE	Replacing conventional lamps with CFL in Tool room.	Technology: CFL			
<u>Description of the energy conservation measure:</u>					
<p>Total population of m/c's in tool room is 21 no's. Previously All m/c's were provided with dedicated conventional machine lamp of 60 w to carry out operation as well as inspection during &amp; after machining.</p> <p>Our plant took an initiative to replace all conventional 60w machine lamps with Compact florescent lamp (CFL) with same illumination level.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
					
Agency that executed the project (with complete address and email): In-house Modification					
Total investment, Rs.: 2000=00			Year of implementation: 2007- 2008		
Annual energy cost savings, Rs.: 27236=00					
On annual basis	kWh ( Lacs )	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.060	-----	-----	-----	-----
Energy consumption after	0.012	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector, Akurli road, Kandivli (East), Mumbai-400101				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P. Marathe (marathe.anand@mahindra.com)				Signature  Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>	Sector : 02 (Automobile)			
Year to be filled by BEE	Installation of natural draft ventilators at Axle PU & CMD	Technology: Use Non conventional energy source			
<u>Description of the energy conservation measure:</u>					
Electrical exhaust fans were provided at all locations on shop floor for keeping healthy working environment and maintaining required air changes.					
Plant took an initiative wherein Natural draft turbine air ventilators are installed on top of the roof. It works on natural Wind and stack effect. No electricity is required. The wind turbine ventilator also provides a sunlight and safe, cool, healthier and more controlled work environment. It also maintains the required air changes.					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
					
Agency that executed the project (Supplier): Ganesh Engineering Baroda					
Total investment, Rs.:4 Lacs			Year of implementation:2007- 2008		
Annual energy cost savings, Rs.: 1.49 Lacs					
On annual basis	kWh ( Lacs )	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	1.79	-----	-----	-----	-----
Energy consumption after	1.52	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> <a href="#">Mahindra &amp; Mahindra Ltd</a> <a href="#">Automotive Sector,Akurli road,</a> <a href="#">Kandivli (East),Mumbai-400101</a>				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> <a href="mailto:priolkar.sandip@mahindra.com">Mr. S.D Priolkar (priolkar.sandip@mahindra.com)</a> <a href="mailto:marathe.anand@mahindra.com">Mr. A.P.Marathe (marathe.anand@mahindra.com)</a>				Signature	
				Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008


(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b> Installation of localized air boosters at Engine PU & IDAM	Sector : : 02 (Automobile)			
Year to be filled by BEE		Technology: Positive displacement amplification			
<p><u>Description of the energy conservation measure:</u></p> <p>We have centralized compressed air system wherein compressed air is generated &amp; supplied to all end users with two different pressures( High pressure -90 psi &amp; Low pressure – 75 psi)High pressure air is generated &amp; supplied to all sections in 1<sup>st</sup> &amp; 2<sup>nd</sup> shift but only foundry PU requires high pressure air in third shift.</p> <p>For quality &amp; productivity enhancement two washing machines (7133 &amp; 7134) are installed at Engine PU &amp; Zomac machine from IDAM. All these three m/c's operates at high pressure only i.e. 90 psi .To cater this through high pressure network, one additional air compressor was required to run in 3<sup>rd</sup> shift resulting in high energy losses.</p> <p>After brainstorming ,we installed localized air boosters to boost up the low air pressure from 75 psi to 90 psi near m/c itself .As low pressure air is normally available at Engine PU &amp; IDAM in third shift ,need of running additional air compressor from high pressure network is eliminated.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable					
Agency that executed the project (Supplier): SMC pneumatic India Pvt Ltd Sector 11,CBD,Belapur, New Mumbai-400614					
Total investment, Rs.: 0.25 Lacs			Year of implementation:2007 - 2008		
Annual energy cost savings, Rs.: 5660=00					
On annual basis	kWh ( Lacs )	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.384	-----	-----	-----	-----
Energy consumption after	0.374	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> <a href="#">Mahindra &amp; Mahindra Ltd</a> <a href="#">Automotive Sector,Akurli road,</a> <a href="#">Kandivli (East),Mumbai-400101</a>				We authorize Bureau to use this information for dissemination	
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Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>	Sector : 02 (Automobile)			
Year to be filled by BEE	Avoid idle running of Ventilation Fans in Body PU.	Technology: Interlocking.			
<u>Description of the energy conservation measure:</u>					
<p>Like all units, ventilation fans are provided at all locations in shop floor for keeping healthy working environment and required air changes. Earlier these electrical driven ventilator fans used to run continuously during all three shifts in Body PU causing high energy consumption. Plant came out with an idea &amp; installed timer for the operation of ventilator fan to avoid idle running of the fans during breaks / non productive time.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable					
Agency that executed the project (with complete address and email): In house Modification.					
Total investment, Rs.- 0.09 Lacs			Year of implementation: 2007- 2008		
Annual energy cost savings, Rs.: 0.22 Lacs					
On annual basis	kWh ( Lacs )	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.53	-----	-----	-----	-----
Energy consumption after	0.49	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> <a href="#">Mahindra &amp; Mahindra Ltd</a> <a href="#">Automotive Sector, Akurli road,</a> <a href="#">Kandivli (East), Mumbai-400101</a>				We authorize Bureau to use this information for dissemination	
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(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>	Sector : 02 (Automobile)			
Year to be filled by BEE	Eliminated use of AC's by Centralization of time office	Technology: Centralization			
<p><u>Description of the energy conservation measure:</u></p> <p>Earlier, we had de centralized time offices for all Product Units who keep all the leave &amp; attendance records of the employees of respective product units. In this specific energy conservation measure we have clubbed two of the time offices of Axle &amp; Transmission Product Units. We have eliminated &amp; recovered two windows AC's &amp; tube light fittings from old time office.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)		<b>Picture/ sketch/ drawing after modification</b>			
Not applicable		Not applicable			
Agency that executed the project (with complete address and email): In house modification					
Total investment, Rs.: Nil.			Year of implementation: 2007-2008		
Annual energy cost savings, Rs.: 0.22 Lacs					
On annual basis	kWh ( Lacs )	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.09	-----	-----	-----	-----
Energy consumption after	0.05	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<p><b>Company complete address:</b>  <a href="#">Mahindra &amp; Mahindra Ltd</a>  Automotive Sector, Akurli road,  Kandivli (East), Mumbai-400101</p> <p><b>Contact person who could be contacted for more information:</b>  <a href="mailto:priolkar.sandip@mahindra.com">Mr. S.D Priolkar (priolkar.sandip@mahindra.com)</a>  <a href="mailto:marathe.anand@mahindra.com">Mr. A.P. Marathe (marathe.anand@mahindra.com)</a></p>				<p>We authorize Bureau to use this information for dissemination</p> <p>Signature</p> <p>Date-01/10/08</p>	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b> Temp. monitoring & controlling system at utility compressor house	Sector : 02 (Automobile)			
Year to be filled by BEE		Technology: Interlocking			
<u>Description of the energy conservation measure:</u>  We have centralized compressed air system including three no's cooling towers to maintain the cooling water temp. at 30-32 Deg .c. During project implementation we have installed sub zero make temp. Controller at the cooling pond & operation of one of the cooling tower fan is interlocked with controller. Hence due to intermittent running of the cooling tower fan, total energy consumed is reduced.					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable					
Agency that executed the project (with complete address and email): In house modification					
Total investment, Rs: .900			Year of implementation: 2007-2008		
Annual energy cost savings, Rs.: 0.34 Lacs					
On annual basis	kWh ( Lacs )	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.40	-----	-----	-----	-----
Energy consumption after	0.34	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector, Akurli road, Kandivli (East), Mumbai-400101				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P. Marathe (marathe.anand@mahindra.com)				Signature	
				Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b> Interconnection of major municipal water tanks	Sector : 02 (Automobile)			
Year to be filled by BEE		Technology: Interconnection			
<u>Description of the energy conservation measure:</u>					
Kandivli plant has two major water storage tanks (i.e. nursery & steelyard tank) to collect & store the main incoming municipal water from corporation. Steelyard tank water is mainly used for processes whereas water from nursery tank is used for drinking as well as processes. In past there was no provision of dedicated water line to interconnect both the tanks. Hence water is to be transferred in between these tanks by 2" old & underground pipe line with very complex routing. This results into very high pressure losses & pump energy consumption. During project implementation we have Interconnected both water tanks by dedicated 3" water line leading to optimum pressure losses & saved energy consumption of water pump.					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable			Not applicable		
Agency that executed the project (with complete address and email): In house modification					
Total investment, Rs.: Nil.			Year of implementation: 2007- 2008		
Annual energy cost savings, Rs.: 0.13 Lacs					
On annual basis	kWh ( Lacs )	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.067	-----	-----	-----	-----
Energy consumption after	0.043	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Auto sector, Akurli road, Kandivli (East), Mumbai-400101				We authorize Bureau to use this information for dissemination	
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				Date-01/10/08	

Annexure 'B'

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(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>		Sector : 02 (Automobile)		
Year to be filled by BEE	Optimization of compressed air pressure at Pretreatment area.		Technology: Optimization of air pressure		
<u>Description of the energy conservation measure:</u>					
<p>We have centralized compressed air system wherein compressed air is generated &amp; supplied to all end users with two different pressures (i.e. High pressure -90 psi &amp; Low pressure – 75 psi).</p> <p>High pressure compressed air (90 psi) is used for cleaning application on rework component at pretreatment area even during the 3<sup>rd</sup> shift &amp; plant holidays.To cater this ,one additional air compressor was needed to be run in third shift.</p> <p>After brainstorming it was noticed that cleaning operation at pretreatment area can be done with low air pressure &amp; with use of nozzle. By implementing this we have eliminated need of running high pressure compressor in third shift.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable			Not applicable		
Agency that executed the project (with complete address and email):In-house modification.					
Total investment, Rs.: Nil.			Year of implementation:2007-2008.		
Annual energy cost savings, Rs.: 6566=00					
On annual basis	kWh ( Lacs )	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.0960	-----	-----	-----	-----
Energy consumption after	0.0844	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> <a href="#">Mahindra &amp; Mahindra Ltd</a> <a href="#">Automotive Sector,Akurli road,</a> <a href="#">Kandivli (East),Mumbai-400101</a>				We authorize Bureau to use this information for dissemination	
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Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b> Replacement of higher HP motor with lower HP motor for cooling tower at Central AC.	Sector : 02 (Automobile)			
Year to be filled by BEE		Technology: Optimization of motor size.			
<u>Description of the energy conservation measure:</u>					
<p>Kandivli plant has central air conditioning system for Administration building. This system consists of three no's of counter flow type cooling towers. They are used for cooling warm water coming through condenser of the AC.</p> <p>When compared with the theoretical efficiency curve of the cooling tower motor, it was observed that motor was not operating at best efficiency point &amp; its efficiency was also deteriorated due to repeated rewinding.</p> <p>We have replaced the same motor with 5 h.p motor which has better efficiency than previous motor. A downward trend in the energy consumption of cooling tower is recorded &amp; maintained.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable			Not applicable		
Agency that executed the project (with complete address and email): In house Modification					
Total investment, Rs.: 0.10 Lacs			Year of implementation: 2007-2008		
Annual energy cost savings, Rs.: 0.25 Lacs					
On annual basis	kWh ( Lacs )	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.138	-----	-----	-----	-----
Energy consumption after	0.093	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector, Akurli road, Kandivli (East), Mumbai-400101				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P. Marathe (marathe.anand@mahindra.com)				Signature  Date-01/10/08	

Annexure 'B

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(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>	Sector : 02 (Automobile)			
Year to be filled by BEE	Optimization of ventilation system at Engine Testing.	Technology: Decentralization			
<u>Description of the energy conservation measure:</u>					
<p>Kandivli plant has the facility of in house engine testing. Total 18 no's of test beds are installed to carry out engine testing activity. Previously we had four no's of common intake blowers (Total 60 h.p) for all test beds. Due to centralized system higher HP intake blowers remained ON even if single test bed in operation.</p> <p>During project implementation we have replaced higher hp intake blower with dedicated individual lower hp (2 HP) blowers for all test beds.</p> <p>Now the blowers are switched ON as per the requirement of the test bed.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable					
Agency that executed the project (with complete address and email): In house modification.					
Total investment, Rs.:1.20 Lacs			Year of implementation: 2007-2008.		
Annual energy cost savings, Rs.: 0.67 Lacs					
On annual basis	kWh ( Lacs )	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	1.074	-----	-----	-----	-----
Energy consumption after	0.956	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector,Akurli road, Kandivli (East),Mumbai-400101				We authorize Bureau to use this information for dissemination	
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				Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b> Lighting optimization in Body, Transmission & Axle Product Unit.	Sector : 02 (Automobile)			
Year to be filled by BEE		Technology: Lighting optimization			
<u>Description of the energy conservation measure:</u>					
For effective illumination, company had installed 400 watts Mercury vapor lamps on the shop floor including aisles. A mercury-vapor lamp is a gas discharge lamp which uses mercury in an excited state to produce light. It is also used for intensive lighting. ECON cell members conducted in house lighting audit at Body ,Transmission & Axle Product Units & disconnected (removed) 32 no's of Mercury vapor lamps. The balanced lamps were relocated to retain the required illumination.					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable			Not applicable		
Agency that executed the project (with complete address and email):- In house modification					
Total investment, Rs.:0			Year of implementation: 2007- 2008.		
Annual energy cost savings, Rs.: 3.04 Lacs					
On annual basis	kWh ( Lacs )	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.54	-----	-----	-----	-----
Energy consumption after	0	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector,Akurli road, Kandivli (East),Mumbai-400101				We authorize Bureau to use this information for dissemination	
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ID to be filled by BEE	<b>Title of the measure</b>		Sector : 02 (Automobile)		
Year to be filled by BEE	Optimization in operation of central air conditioning plant		Technology: Monitoring & control.		
<u>Description of the energy conservation measure:</u>					
<p>Kandivli plant has central air conditioning system (capacity 360 Tons)for Administration building.          It is highest energy consuming Air conditioning plant in the premises.( Energy consumption nearly 2000 units /day).          Earlier the AC plant used to run continuously within day timings(8 am to 6 pm)          To optimize the energy efficiency, everyday we have started to switch off the entire central AC plant for ½ hr during lunch break.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable			Not applicable		
Agency that executed the project (with complete address and email): In house modification.					
Total investment, Rs.: Nil.			Year of implementation:2007-2008.		
Annual energy cost savings, Rs.: 0.81 Lacs.					
On annual basis	kWh ( Lacs )	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	6.000	-----	-----	-----	-----
Energy consumption after	5.856	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector,Akurli road, Kandivli (East),Mumbai-400101				We authorize Bureau to use this information for dissemination	
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ID to be filled by BEE	<b>Title of the measure</b>		Sector : 02 (Automobile)		
Year to be filled by BEE	Provided electro pneumatic shut off valve for compressed air line at Body PU.		Technology: Manual to Auto system		
<p><u>Description of the energy conservation measure:</u>                  We have centralized compressed air system wherein compressed air is generated &amp; supplied to all end users including Body Product Unit. Body Product Unit consists of four sections i.e Paint shop, Press shop, Body MM &amp; Body CL.To cater the compressed air demand,4" dedicated line is provided for all above mentioned sections.                  As the air line were laid from height &amp; the main shut off valve were also located at height, it was difficult to shut off the air valve during non – production hrs.                  Now the ECON CFT has installed electro pneumatic shut off valve on compressed air line and provided its control at accessible location.                  At present switching off the main shut off valves during non-working hrs is a common practice.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable					
Agency that executed the project (with complete address and email): In house modification					
Total investment, Rs.: 0.25 Lacs.			Year of implementation:2007-2008		
Annual energy cost savings, Rs.: 0.81 Lacs.					
On annual basis	kWh ( Lacs )	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	4.800	-----	-----	-----	-----
Energy consumption after	4.656	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector,Akurli road, Kandivli (East),Mumbai-400101				We authorize Bureau to use this information for dissemination	
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				Date-01/10/08	

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(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>		Sector : 02 (Automobile)		
Year to be filled by BEE	Energy efficient screw chiller for central air conditioning		Technology: Screw compressor		
<p><u>Description of the energy conservation measure:</u>                  Kandivli plant has central air conditioning system for Administration building with total capacity of 360 Tons. All the chiller units were very old &amp; had inbuilt reciprocating type of refrigeration compressor. The efficiency of the units was very low (1.2 kw/ton)                  With proper planning &amp; budgeting company has replaced, inefficient old reciprocating compressor type of chiller with new energy efficient screw compressor type chiller (0.8 kw/ton).                  Screw compressor is more efficient compared with reciprocating one.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
					
Agency that executed the project (Supplier): M/S Carrier Aircon India Ltd. Vinay Bhavya complex,159,Kalina,Santacruz, Mumbai-400098					
Total investment, Rs.:30 Lacs			Year of implementation:2007- 2008.		
Annual energy cost savings, Rs.: 10.19 Lacs.					
On annual basis	kWh ( Lacs )	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	3.357	-----	-----	-----	-----
Energy consumption after	1.557	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<p><b>Company complete address:</b>  <a href="#">Mahindra &amp; Mahindra Ltd</a>  <a href="#">Automotive Sector,Akurli road,</a>  <a href="#">Kandivli (East),Mumbai-400101</a></p> <p><b>Contact person who could be contacted for more information:</b>  <a href="mailto:priolkar.sandip@mahindra.com">Mr. S.D Priolkar (priolkar.sandip@mahindra.com)</a>  <a href="mailto:marathe.anand@mahindra.com">Mr. A.P.Marathe (marathe.anand@mahindra.com)</a></p>				We authorize Bureau to use this information for dissemination  Signature  Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008


(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b> Lighting optimization in Vehicle & Engine PU	Sector : 02 (Automobile)			
Year to be filled by BEE		Technology: Lighting optimization			
<u>Description of the energy conservation measure:</u>					
<p>For effective illumination, company had installed 400 watts Mercury vapor lamps on the shop floor including aisles. A mercury-vapor lamp is a gas discharge lamp which uses mercury in an excited state to produce light. It is also used for intensive lighting. ECON cell members conducted in house lighting audit at Engine , vehicle Product Units &amp; disconnected (removed) 13 no's of Mercury vapor lamps. The balanced lamps were relocated to retain the required illumination.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable			Not applicable		
Agency that executed the project (with complete address and email): In house modification					
Total investment, Rs.: Nil.			Year of implementation:2007-2008.		
Annual energy cost savings, Rs.: 1.24 Lacs.					
On annual basis	kWh ( Lacs )	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.218	-----	-----	-----	-----
Energy consumption after	0.000	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector,Akurli road, Kandivli (East),Mumbai-400101				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P.Marathe (marathe.anand@mahindra.com)				Signature  Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008


(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>		Sector : 02 (Automobile)		
Year to be filled by BEE	Optimize use of ventilation system at Axle & Transmission Product Unit.		Technology: Timer interlocking		
<u>Description of the energy conservation measure:</u>					
<p>Like all units, ventilation fans are provided at all locations in shop floor for keeping healthy working environment and required air changes.</p> <p>Earlier these electrical driven ventilator fans used to run continuously during all three shifts in Body PU causing high energy consumption.</p> <p>Plant came out with an idea &amp; installed timer for the operation of ventilator fan to limit its operating in between 9 to 19.30 hrs only.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable					
Agency that executed the project (with complete address and email): In house modification.					
Total investment, Rs.: 9000			Year of implementation: 2007-2008.		
Annual energy cost savings, Rs.: 1.58 Lacs.					
On annual basis	kWh ( Lacs )	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.792	-----	-----	-----	-----
Energy consumption after	0.512	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> <a href="#">Mahindra &amp; Mahindra Ltd</a> <a href="#">Automotive Sector, Akurli road,</a> <a href="#">Kandivli (East), Mumbai-400101</a>				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> <a href="mailto:priolkar.sandip@mahindra.com">Mr. S.D Priolkar (priolkar.sandip@mahindra.com)</a> <a href="mailto:marathe.anand@mahindra.com">Mr. A.P. Marathe (marathe.anand@mahindra.com)</a>				Signature  Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008


(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>	Sector : 02 (Automobile)			
Year to be filled by BEE	Variable Frequency Drive for Paint Booth Blowers at Axle Product Unit.	Technology: Variable frequency drive ( VFD )			
<u>Description of the energy conservation measure:</u>					
<p>Open End Yoke (OEY) paint booth is situated in Axle Product Unit to carry out painting of the produced Axles.</p> <p>It consists of main exhaust blower for which plant had already installed Variable Frequency Drive (VFD) to reduce the motor RPM. This year(F-08) RPM of the motor is optimized by further reducing the frequency from 45 to 40 Hzs</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable					
Agency that executed the project (with complete address and email): In-house modification					
Total investment, Rs.: Nil.			Year of implementation: 2007-2008.		
Annual energy cost savings, Rs.: 0.304 Lacs.					
On annual basis	kWh ( Lacs )	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.859	-----	-----	-----	-----
Energy consumption after	0.805	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector, Akurli road, Kandivli (East), Mumbai-400101				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P. Marathe (marathe.anand@mahindra.com)				Signature  Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>		Sector : 02 (Automobile)		
Year to be filled by BEE	Reduction in compressed air losses in press shop by providing auto shut off valve		Technology: Manual to auto control		
<u>Description of the energy conservation measure:</u>					
<p>We have centralized compressed air system wherein compressed air is generated &amp; supplied to all end users including Body Product Unit. In body product unit there are mainly four sections i.e Paint shop, Press shop, Body MM &amp; Body CL. To cater the compressed air demand, 4" dedicated line is provided for each section. The main shut of valve for press shop was located at far main body pu header (located at far distance from press shop), it was difficult to shut off the air valve of press shop during non – production hrs. Now the ECON CFT has installed electro pneumatic shut off valve on compressed air line at press shop itself and provided its control at accessible location.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable					
Agency that executed the project (with complete address and email): In house modification					
Total investment, Rs.:0.25 Lacs.			Year of implementation:2007- 2008.		
Annual energy cost savings, Rs.: 0.75 Lacs.					
On annual basis	kWh ( Lacs )	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	4.320	-----	-----	-----	-----
Energy consumption after	4.187	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> <a href="#">Mahindra &amp; Mahindra Ltd</a> <a href="#">Automotive Sector,Akurli road,</a> <a href="#">Kandivli (East),Mumbai-400101</a>				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> <a href="mailto:priolkar.sandip@mahindra.com">Mr. S.D Priolkar (priolkar.sandip@mahindra.com)</a> <a href="mailto:marathe.anand@mahindra.com">Mr. A.P.Marathe (marathe.anand@mahindra.com)</a>				Signature	
				Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008



(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b> Lighting optimization in Transmission Product Unit.	Sector : 02 (Automobile)			
Year to be filled by BEE		Technology: Lighting optimization			
<u>Description of the energy conservation measure:</u>					
For effective illumination, company had installed 400 watts Mercury vapor lamp on the shop floor including aisle A mercury-vapor lamp is a gas discharge lamp which uses mercury in an excited state to produce light. It is also used for intensive lighting.					
Econ cell members conducted in house lighting audit at Transmission Product Unit. We could able to eliminated(removed) 12 no's of Mercury vapor lamps by relocating or reorientation of the existing MV lamps					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable			Not applicable		
Agency that executed the project (with complete address and email): In house modification.					
Total investment, Rs.:0			Year of implementation:2007-2008.		
Annual energy cost savings, Rs.: 1.14 Lacs.					
On annual basis	kWh ( Lacs )'	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.201	-----	-----	-----	-----
Energy consumption after	0.000	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector,Akurli road, Kandivli (East),Mumbai-400101				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P.Marathe (marathe.anand@mahindra.com)				Signature	
				Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b> Installation of new energy efficient screw air compressor	Sector : 02 (Automobile)			
Year to be filled by BEE		Technology: Screw compressor			
<u>Description of the energy conservation measure:</u>					
<p>We have centralized compressed air system wherein compressed air is generated &amp; supplied to all end users with two different pressures(i.e High pressure -90 psi &amp; Low pressure – 75 psi)</p> <p>Total population of air compressor was 6 no's at centralized location including two reciprocating air compressors.These Chicago pneumatic make air compressor are very old &amp; there efficiency has also deteriorated to 0.21 kw/cfm.</p> <p>With investment of nearly Rs 25 Lacs company has procured &amp; installed new energy efficient screw compressor with spiral valve technology(Mechanical VFD) .Rated efficiency of the new compressor is 0.151 kw/cfm. Now the new screw compressor is being run and old reciprocating compressor is kept as stand by.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
					
Agency that executed the project (Supplier): M/S Godrej & Boyce Ltd. E & E Division Vikhroli,Mumbai					
Total investment, Rs.:25 Lacs.			Year of implementation:2007- 2008.		
Annual energy cost savings, Rs.: 4.16 Lacs.					
On annual basis	kWh ( Lacs )	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	5.76	-----	-----	-----	-----
Energy consumption after	5.02	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> <a href="#">Mahindra &amp; Mahindra Ltd</a> <a href="#">Automotive Sector,Akurli road,</a> <a href="#">Kandivli (East),Mumbai-400101</a>				We authorize Bureau to use this information for dissemination	
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Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008


(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>		Sector : 02 (Automobile)		
Year to be filled by BEE	Lighting optimization in Vehicle Product Unit.		Technology: Lighting optimization		
<u>Description of the energy conservation measure:</u>					
<p>For effective illumination, company had installed 40 watts conventional tube light fittings on the shop floor.</p> <p>ECON cell members conducted in house lighting audit at Vehicle Product Unit. We could able to eliminate (removed) 45 no's of such fittings by relocating or reorientation of the remaining tube fittings.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable			Not applicable		
Agency that executed the project (with complete address and email): In house modification					
Total investment, Rs.: Nil.			Year of implementation:2007-2008.		
Annual energy cost savings, Rs.: 0.49 Lacs.					
On annual basis	kWh ( Lacs )	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.162	-----	-----	-----	-----
Energy consumption after	0.756	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> <a href="#">Mahindra &amp; Mahindra Ltd</a> <a href="#">Automotive Sector,Akurli road,</a> <a href="#">Kandivli (East),Mumbai-400101</a>				We authorize Bureau to use this information for dissemination	
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Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008



(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b> Optimum utilization of natural sun light in Engine PU & TMPU	Sector : 02 (Automobile)			
Year to be filled by BEE		Technology: Explore to natural sun light			
<u>Description of the energy conservation measure:</u>					
<p>For effective illumination, 400 watts Mercury vapor lamp were installed at Engine &amp; TMPU dispatch area. A mercury-vapor lamp is a gas discharge lamp which uses mercury in an excited state to produce light</p> <p>After conducting in-house lighting audit, it was concluded that the absence of the roof glass is responsible for use of MV lamps. In line with the idea we have provided the roof glasses &amp; thereby eliminated use of MV lamp at Engine &amp; TMPU dispatch area.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable					
Agency that executed the project (with complete address and email): In house modification					
Total investment, Rs.: 6.00 Lacs.			Year of implementation: 2007-2008.		
Annual energy cost savings, Rs.: 0.22 Lacs.					
On annual basis	kWh ( Lacs )	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.067	-----	-----	-----	-----
Energy consumption after	0.028	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector, Akurli road, Kandivli (East), Mumbai-400101				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P. Marathe (marathe.anand@mahindra.com)				Signature  Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>	Sector : 02 (Automobile)			
Year to be filled by BEE	Optimization in window AC temp. setting in Axle PU	Technology: Digital control			
<p><u>Description of the energy conservation measure:</u></p> <p>Total 212 no's of window air conditioner are used in the plant for offices, UPS rooms, conference rooms etc. Mechanical Thermostat was the only controlling device in these AC'S to control the operation of the compressor. With thermostat precise temp. setting is not possible. As a result compressor of AC used to run continuously causing high energy consumption.(Avg 1.27 kwh/hr.)</p> <p>After brainstorming the AC team came up with the idea &amp; installed digital temp. Controller on window AC'S for precise controlling of compressor operation (like in all latest AC models). Temp. set for window AC'S is 26 Deg .C. This has given the required cooling effect and user need not have to adjust the temp. setting every time. ( 12 nos installed for Axle Product Unit )</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)		<b>Picture/ sketch/ drawing after modification</b>			
					
Agency that executed the project (with complete address and email): In house modification					
Total investment, Rs.:11000			Year of implementation:2007-2008.		
Annual energy cost savings, Rs.: 0.44 Lacs.					
On annual basis	kWh ( Lacs )	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.414	-----	-----	-----	-----
Energy consumption after	0.336	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<p><b>Company complete address:</b>  <a href="#">Mahindra &amp; Mahindra Ltd</a>  <a href="#">Automotive Sector,Akurli road,</a>  <a href="#">Kandivli (East),Mumbai-400101</a></p> <p><b>Contact person who could be contacted for more information:</b>  <a href="mailto:priolkar.sandip@mahindra.com">Mr. S.D Priolkar (priolkar.sandip@mahindra.com)</a>  <a href="mailto:marathe.anand@mahindra.com">Mr. A.P.Marathe (marathe.anand@mahindra.com)</a></p>				<p>We authorize Bureau to use this information for dissemination</p> <p>Signature</p> <p>Date-01/10/08</p>	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008



(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>		Sector : 02 (Automobile)		
Year to be filled by BEE	Optimization in compressed air leakages		Technology: Audit & control		
<p><u>Description of the energy conservation measure:</u></p> <p>Air compressors consumes almost 15% of the total energy consumed by the plant. Air leakages through pneumatic pipe fittings like hose, couplings, valves etc. are the major contributor for high energy consumption of air compressor. About 15- 20% of total compressor energy was wastage through leakages.</p> <p>Central maintenance department conducted frequent air leakage audits in the plant &amp; arrested maximum no. of identified leakages at the same time. Action plan has been prepared and implemented to arrest the leakages.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable			Not applicable		
Agency that executed the project (with complete address and email): In house modification					
Total investment, Rs.: Nil.			Year of implementation: 2007-2008.		
Annual energy cost savings, Rs.: 5.43 Lacs.					
On annual basis	kWh ( Lacs )	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	33.40	-----	-----	-----	-----
Energy consumption after	32.44	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<p><b>Company complete address:</b>  <a href="#">Mahindra &amp; Mahindra Ltd</a>  <a href="#">Automotive Sector, Akurli road,</a>  <a href="#">Kandivli (East), Mumbai-400101</a></p> <p><b>Contact person who could be contacted for more information:</b>  <a href="mailto:priolkar.sandip@mahindra.com">Mr. S.D Priolkar (priolkar.sandip@mahindra.com)</a>  <a href="mailto:marathe.anand@mahindra.com">Mr. A.P. Marathe (marathe.anand@mahindra.com)</a></p>				<p>We authorize Bureau to use this information for dissemination</p> <p>Signature</p> <p>Date-01/10/08</p>	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008


(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>		Sector : 02 (Automobile)		
Year to be filled by BEE	Optimization in window AC temp. Setting in Transmission Product Unit.		Technology: Digital control		
<u>Description of the energy conservation measure:</u>					
<p>Total 212 no's of window air conditioner are used in the plant for offices, UPS rooms, conference rooms etc. Mechanical Thermostat was the only controlling device in these AC'S to control the operation of the compressor. With thermostat precise temp. Setting is not possible. .As a result compressor of AC used to run continuously causing high energy consumption.(Avg 1.27 kwh/hr.)</p> <p>After brainstorming the AC team came up with the idea &amp; installed digital temp. Controller on window AC'S for precise controlling of compressor operation (like in all latest AC models). Temp. set for window AC'S is 26 Deg .C. This has given the required cooling effect and user need not have to adjust the temp. Setting every time. ( 50 nos installed for Transmission Product Unit )</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
					
Agency that executed the project (with complete address and email):In-house modification					
Total investment, Rs.: 0.45 Lacs.			Year of implementation:2007-2008.		
Annual energy cost savings, Rs.: 1.84 Lacs.					
On annual basis	kWh ( Lacs )	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	1.725	-----	-----	-----	-----
Energy consumption after	1.400	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> <a href="#">Mahindra &amp; Mahindra Ltd</a> <a href="#">Automotive Sector,Akurli road,</a> <a href="#">Kandivli (East),Mumbai-400101</a>				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> <a href="mailto:priolkar.sandip@mahindra.com">Mr. S.D Priolkar (priolkar.sandip@mahindra.com)</a> <a href="mailto:marathe.anand@mahindra.com">Mr. A.P.Marathe (marathe.anand@mahindra.com)</a>				Signature  Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>		Sector : 02 (Automobile)		
Year to be filled by BEE	Timer for exhaust fans at high bay press shop area.		Technology: Timer interlocking		
<u>Description of the energy conservation measure:</u>					
<p>Earlier, energy wastage was observed in press shop due to continuous running of exhaust fans.</p> <p>Now timer is inserted in the electrical circuit &amp; operation of the exhaust fan is interlocked with it.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable					
Agency that executed the project (with complete address and email): In house modification					
Total investment, Rs.: 1800=00			Year of implementation: 2007-2008.		
Annual energy cost savings, Rs.: 0.71 Lacs.					
On annual basis	kWh ( Lacs )	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.214	-----	-----	-----	-----
Energy consumption after	0.089	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> <a href="#">Mahindra &amp; Mahindra Ltd</a> <a href="#">Automotive Sector, Akurli road,</a> <a href="#">Kandivli (East), Mumbai-400101</a>				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> <a href="mailto:priolkar.sandip@mahindra.com">Mr. S.D Priolkar (priolkar.sandip@mahindra.com)</a> <a href="mailto:marathe.anand@mahindra.com">Mr. A.P. Marathe (marathe.anand@mahindra.com)</a>				Signature  Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008


(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b> Replacing group tube light fittings by Mercury Vapor Lamps at Press shop.	Sector : 02 (Automobile)			
Year to be filled by BEE		Technology: Lighting optimization			
<u>Description of the energy conservation measure:</u>					
<p>During in house lighting audit, scope of energy efficiency improvement was found as previously 16 no.s of 40 w tube light fittings were grouped at single location at press shop.</p> <p>Now All the 16 no's of tube fittings are replaced by single mercury vapor lamp maintaining the required illumination level. A mercury-vapor lamp is a gas discharge lamp which uses mercury in an excited state to produce light.It is used for intensive lighting.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable					
Agency that executed the project (with complete address and email): In house modification					
Total investment, Rs.:4000			Year of implementation:2007-2008.		
Annual energy cost savings, Rs.: 6520=00					
On annual basis	kWh ( Lacs )	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.067	-----	-----	-----	-----
Energy consumption after	0.055	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector,Akurli road, Kandivli (East),Mumbai-400101				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P.Marathe (marathe.anand@mahindra.com)				Signature	
				Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008


(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>	Sector : 02 (Automobile)			
Year to be filled by BEE	Timer for lighting in Administration building.	Technology: Timer interlocking			
<u>Description of the energy conservation measure:</u>					
<p>As a regular practice Individual switches are provided for decorative metal halide fittings at Administration building. ( AD building ) But at times the lights were remained ON overnight causing energy loss.</p> <p>With an ingenious idea we have provided timer for AD building 2<sup>nd</sup> floor lighting to switch off all the lights at 8.30 pm automatically. The supply to lighting resumes in morning at 8.30 am.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable					
Agency that executed the project (with complete address and email): In house modification					
Total investment, Rs.:5000			Year of implementation:2007-2008.		
Annual energy cost savings, Rs.: 0.51 Lacs.					
On annual basis	kWh ( Lacs )	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.189	-----	-----	-----	-----
Energy consumption after	0.099	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> <a href="#">Mahindra &amp; Mahindra Ltd</a> <a href="#">Automotive Sector ,Akurli road,</a> <a href="#">Kandivli (East),Mumbai-400101</a>				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> <a href="mailto:priolkar.sandip@mahindra.com">Mr. S.D Priolkar (priolkar.sandip@mahindra.com)</a> <a href="mailto:marathe.anand@mahindra.com">Mr. A.P.Marathe (marathe.anand@mahindra.com)</a>				Signature  Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008



(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	Title of the measure	Sector : 02 (Automobile)			
Year to be filled by BEE	Providing cord switches for tube lights at Administration Building.	Technology: Easy access			
<p><u>Description of the energy conservation measure:</u></p> <p>As a regular practice Individual switches are provided for tube light fittings at Administration building. As individual switches provided are at remote location, at times, tube light used to be remained ON even when they are not required. To avoid such losses, individual electrical cord switches are provided for lighting on 2nd floor of Administration Building.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable					
Agency that executed the project (with complete address and email): In house Modification.					
Total investment, Rs.: 1000=00			Year of implementation: 2007-2008.		
Annual energy cost savings, Rs.: 5094=00					
On annual basis	kWh ( Lacs )	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.126	-----	-----	-----	-----
Energy consumption after	0.117	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<p><b>Company complete address:</b>  <a href="#">Mahindra &amp; Mahindra Ltd</a>  <a href="#">Automotive Sector, Akurli road,</a>  <a href="#">Kandivli (East), Mumbai-400101</a></p> <p><b>Contact person who could be contacted for more information:</b>  <a href="mailto:priolkar.sandip@mahindra.com">Mr. S.D Priolkar (priolkar.sandip@mahindra.com)</a>  <a href="mailto:marathe.anand@mahindra.com">Mr. A.P. Marathe (marathe.anand@mahindra.com)</a></p>				<p>We authorize Bureau to use this information for dissemination</p> <p>Signature</p> <p>Date-01/10/08</p>	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008


(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>		Sector : 02 (Automobile)		
Year to be filled by BEE	Superheat recovery from Air conditioning unit at Transmission Assembly.		Technology: Waste heat recovery from Air Conditioning.		
<p><u>Description of the energy conservation measure:</u>                  Various washing m/c `s are situated in the plant for cleaning of machined components. All the washing m/c`s are designed with electrical heaters to maintain the required temperature of cleaning solution(At 50-55 Deg. C) as quality requirement. High energy consumption of all washing machines was noted due to use of conventional electrical heaters.                  With a innovative way, a heat exchanger called desuperheater is introduced in the refrigeration unit of 5 speed transmission assembly (40 T capacity) to recover the waste heat from the refrigeration cycle and use it to heat cleaning solution of washing m/c. The project is implemented on m/c 1751 in transmission product unit.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
					
Agency that executed the project (with complete address and email): Mahindra Intertrade Ltd. Mahindra Tower,Road no 13,Worli, Mumbai-400018					
Total investment, Rs.:4.50 Lacs.			Year of implementation:2007-2008.		
Annual energy cost savings, Rs.: 5.09 Lacs.					
On annual basis	kWh ( Lacs )	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.936	-----	-----	-----	-----
Energy consumption after	0.036	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector,Akurli road, Kandivli (East),Mumbai-400101				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P.Marathe (marathe.anand@mahindra.com)				Signature	
				Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>	Sector : 02 (Automobile)			
Year to be filled by BEE	Optimization in window AC temp. setting in Body PU	Technology: Digital control			
<u>Description of the energy conservation measure:</u>					
<p>Total 212 no's of window air conditioner are used in the plant for offices, UPS rooms, conference rooms etc. Mechanical Thermostat was the only controlling device in these AC'S to control the operation of the compressor. With thermostat precise temp. Setting is not possible. .As a result compressor of AC used to run continuously causing high energy consumption.(Avg 1.27 kwh/hr.)</p> <p>After brainstorming the AC team came up with the idea &amp; installed digital temp. Controller on window AC'S for precise controlling of compressor operation (like in all latest AC models). Temp. set for window AC'S is 26 Deg .C. This has given the required cooling effect and user need not have to adjust the temp. Setting every time. ( 49 nos installed for Body Product Unit )</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable					
Agency that executed the project (with complete address and email):In house modification					
Total investment, Rs.: 0.44 Lacs.			Year of implementation:2007-2008.		
Annual energy cost savings, Rs.: 2.50 Lacs.					
On annual basis	kWh ( Lacs )	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	1.690	-----	-----	-----	-----
Energy consumption after	1.249	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> <a href="#">Mahindra &amp; Mahindra Ltd</a> <a href="#">Automotive Sector,Akurli road,</a> <a href="#">Kandivli (East),Mumbai-400101</a>				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> <a href="mailto:priolkar.sandip@mahindra.com">Mr. S.D Priolkar (priolkar.sandip@mahindra.com)</a> <a href="mailto:marathe.anand@mahindra.com">Mr. A.P.Marathe (marathe.anand@mahindra.com)</a>				Signature  Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b> Lighting optimization at AD building 4 <sup>th</sup> floor.	Sector : 02 (Automobile)			
Year to be filled by BEE		Technology: Lighting optimization			
<u>Description of the energy conservation measure:</u>					
As a regular practice we are conducting specific lighting audit at all locations .As a outcome of the audit findings, we have removed 15X 18W CFL tubes from 4th floor in Admin building by rearrangement of tube lights.					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable			Not applicable		
Agency that executed the project (with complete address and email): In house modification					
Total investment, Rs.: Nil.			Year of implementation:2007-2008.		
Annual energy cost savings, Rs.: 4126=00					
On annual basis	kWh ( Lacs )	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.0072	-----	-----	-----	-----
Energy consumption after	0.0000	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector,Akurli road, Kandivli (East),Mumbai-400101				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P.Marathe (marathe.anand@mahindra.com)				Signature	
				Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b> Lighting optimization at AD building 4 <sup>th</sup> floor.	Sector : 02 (Automobile)			
Year to be filled by BEE		Technology: Lighting optimization			
<u>Description of the energy conservation measure:</u>					
As a regular practice we are conducting specific lighting audit at all locations .As a outcome of the audit findings, we have removed 2X 150W decorative metal halide fittings from 4th floor in Admin building by rearrangement of tube light fittings.					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable			Not applicable		
Agency that executed the project (with complete address and email): In house modification					
Total investment, Rs.: Nil.			Year of implementation:2007-2008.		
Annual energy cost savings, Rs.:4600=00					
On annual basis	kWh Lacs	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.0081	-----	-----	-----	-----
Energy consumption after	0.0000	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector,Akurli road, Kandivli (East),Mumbai-400101				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P.Marathe (marathe.anand@mahindra.com)				Signature	
				Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008


(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>		Sector : 02 (Automobile)		
Year to be filled by BEE	Replacing 400 W MV lamp with 200 W Metal halide lamps		Technology: Pulse Start Metal halide for Lighting.		
<p>Description of the energy conservation measure:                  A mercury-vapor lamp is a gas discharge lamp which uses mercury in an excited state to produce light. Earlier we used 400 w mercury vapor lamp for most of the location in the plant for intensive lighting. 400 w MV lamp are giving an output of 23000 Lumens. Now company has replaced 65 Nos of mercury vapor lamps with Venture make 200W Metal Halide Lamps with pulse start technology at Engine PU. Venture make 200 w metal halide lamps are same effective as 400 w MV lamp (in terms of illumination level)</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
					
Agency that executed the project (Supplier): Elechmech Enterprises Andheri, Mumbai-400093					
Total investment, Rs.: 1.30 Lacs.			Year of implementation: 2007-2008.		
Annual energy cost savings, Rs.: 2.65 Lacs.					
On annual basis	kWh ( Lacs )	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.780	-----	-----	-----	-----
Energy consumption after	0.312	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> <a href="#">Mahindra &amp; Mahindra Ltd</a> <a href="#">Automotive Sector, Akurli road,</a> <a href="#">Kandivli (East), Mumbai-400101</a>				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> <a href="mailto:priolkar.sandip@mahindra.com">Mr. S.D Priolkar (priolkar.sandip@mahindra.com)</a> <a href="mailto:marathe.anand@mahindra.com">Mr. A.P. Marathe (marathe.anand@mahindra.com)</a>				Signature  Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008


(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>	Sector : 02 (Automobile)			
Year to be filled by BEE	Optimizing cooling tower consumption at BA-10 AC plant	Technology: Auto operation			
<p><u>Description of the energy conservation measure:</u>                      5 speed gear boxes are assembled at BA-10 assembly Line in Transmission Product Unit It is completely enclosed and associated with dedicated air conditioning system of capacity 40 T x 2 Nos.                      Air conditioning system consists of two no's of counter flow cooling towers for condenser water cooling. High energy consumption due to running of both cooling towers (to maintain lower water temp.) during humid &amp; hot atmosphere. To optimize the energy consumption of cooling tower a digital temp. Controller Is installed &amp; interlocked with the one of the cooling tower operation. Thereby operation of one cooling tower is made intermittent.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)		<b>Picture/ sketch/ drawing after modification</b>			
Not applicable					
Agency that executed the project (with complete address and email): In house modification					
Total investment, Rs: 900=00			Year of implementation:2007-2008.		
Annual energy cost savings, Rs.: 13584=00					
On annual basis	kWh Lacs	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.268	-----	-----	-----	-----
Energy consumption after	0.244	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> <a href="#">Mahindra &amp; Mahindra Ltd</a> <a href="#">Automotive Sector,Akurli road,</a> <a href="#">Kandivli (East),Mumbai-400101</a>				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> <a href="mailto:priolkar.sandip@mahindra.com">Mr. S.D Priolkar (priolkar.sandip@mahindra.com)</a> <a href="mailto:marathe.anand@mahindra.com">Mr. A.P.Marathe (marathe.anand@mahindra.com)</a>				Signature	
				Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b> VFD for washing machine pumps in Engine PU.	Sector : 02 (Automobile)			
Year to be filled by BEE		Technology: Variable Frequency Drive ( VFD )			
<u>Description of the energy conservation measure:</u>					
<p>Kandivli plant has a washing machine 7133 at Engine PU. This washing m/c is used for cleaning of machined component (Engine head)to achieve required Millipore value. It was observed that the designed capacity of the spray washing pumps (50 h.p) was higher than the actual requirement and the flow is throttled with the help of valve mechanism. It has been studied that same Millipore value can be achieved with reduced flow.</p> <p>With investment of nearly Rs 3 Lacs we have installed Variable frequency drive for spray washing pump to optimize the speed of pump motor. Variable frequency drives accomplish part load control by varying electric motor speed, significantly reducing energy waste. With frequency setting at 40 Hz we could able to achieve a drastic reduction in the total energy consumption of the m/c.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable					
Agency that executed the project (with complete address and email): Amtech Electronics Ltd. E-6,GIDC electronics zone, Gandhinagar-382028,Gujrat					
Total investment, Rs.: 3.00 Lacs.			Year of implementation:2007-2008.		
Annual energy cost savings, Rs.: 10.19 Lacs.					
On annual basis	kWh ( Lacs )	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	2.685	-----	-----	-----	-----
Energy consumption after	0.885	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector,Akurli road, Kandivli (East),Mumbai-400101				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P.Marathe (marathe.anand@mahindra.com)				Signature	
				Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008


(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>		Sector : 02 (Automobile)		
Year to be filled by BEE	Optimum running of Exhaust Fan at Axle PU Toilet.		Technology: Timer interlocking		
<u>Description of the energy conservation measure:</u>					
To maintain good ventilation , damp air must be quickly and efficiently removed from the room. For which each toilet across the plant is equipped with exhaust system. Energy loss is observed as these fans remained ON continuously even in third shift. Energy conservation team has installed timer for operation of the exhaust fan thereby eliminated energy losses.					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable			Not applicable		
Agency that executed the project (with complete address and email):In house modification					
Total investment, Rs.:2000			Year of implementation:2007-2008.		
Annual energy cost savings, Rs.: 0.55 Lacs.					
On annual basis	kWh Lacs	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.125	-----	-----	-----	-----
Energy consumption after	0.027	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector,Akurli road, Kandivli (East),Mumbai-400101				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P.Marathe (marathe.anand@mahindra.com)				Signature	
				Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>		Sector : 02 (Automobile)		
Year to be filled by BEE	Replacing 400 W MV lamp with 200 W Metal halide lamps		Technology: Pulse Start Metal halide for Lighting.		
<p><u>Description of the energy conservation measure:</u>                  A mercury-vapor lamp is a gas discharge lamp which uses mercury in an excited state to produce light. Earlier we used 400 w mercury vapor lamp for most of the location in the plant for intensive lighting.400 w MV lamp are giving an output of 23000 Lumens. Now company has replaced 60 Nos of mercury vapor lamps with Venture make 200W Metal Halide Lamps with pulse start technology at Body PU. Venture make 200 w metal halide lamps are same effective as 400 w MV lamp (in terms of illumination level)</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable					
Agency that executed the project (Supplier): Elechmech Enterprises Andheri,Mumbai-400093					
Total investment, Rs.:1.20 Lacs.			Year of implementation:2007-2008.		
Annual energy cost savings, Rs.: 2.85 Lacs.					
On annual basis	kWh ( Lacs )	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.720	-----	-----	-----	-----
Energy consumption after	0.216	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector,Akurli road, Kandivli (East),Mumbai-400101				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P.Marathe (marathe.anand@mahindra.com)				Signature	
				Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008


(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b> Lighting optimization at administration building.	Sector : 02 (Automobile)			
Year to be filled by BEE		Technology: Lighting optimization			
<u>Description of the energy conservation measure:</u>					
Conventional 11 watts PL lamps at Administration building ground floor conference room After conducting in house audit for lighting optimization, 6 no's of PL lamps are removed by relocating & redirection of existing PL lamps.					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable			Not applicable		
Agency that executed the project (with complete address and email): In house modification					
Total investment, Rs.: Nil.			Year of implementation:2007-2008.		
Annual energy cost savings, Rs.: 448=00					
On annual basis	kWh	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	79	-----	-----	-----	-----
Energy consumption after	00	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector,Akurli road, Kandivli (East),Mumbai-400101				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b>				Signature	
Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P.Marathe (marathe.anand@mahindra.com)				Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b> Provide occupancy sensor for lighting in Power Planning office.	Sector : 02 (Automobile)			
Year to be filled by BEE		Technology: Occupancy Sensor interlocking			
<p><u>Description of the energy conservation measure:</u>                  Individual tube lights are provided with dedicated switch for operation. But regardless of the presence of any person tube light remained ON in the offices &amp; cabins.                  To avoid energy loss Person Occupancy Sensor is provided in Power Planning Office cabin &amp; interlocked with tube light operation. Occupancy sensors detect the presence or absence of people and turn lights ON and OFF accordingly.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable					
Agency that executed the project (Supplier): Close Contact, Goregaon, Mumbai.					
Total investment, Rs.:5000			Year of implementation:2007-2008.		
Annual energy cost savings, Rs.: 734=00					
On annual basis	kWh	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	480	-----	-----	-----	-----
Energy consumption after	350	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<p><b>Company complete address:</b>  <a href="#">Mahindra &amp; Mahindra Ltd</a>  <a href="#">Automotive Sector,Akurli road,</a>  <a href="#">Kandivli (East),Mumbai-400101</a></p> <p><b>Contact person who could be contacted for more information:</b>   <a href="mailto:priolkar.sandip@mahindra.com">Mr. S.D Priolkar (priolkar.sandip@mahindra.com)</a>  <a href="mailto:marathe.anand@mahindra.com">Mr. A.P.Marathe (marathe.anand@mahindra.com)</a></p>				We authorize Bureau to use this information for dissemination  Signature  Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008


(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>		Sector : 02 (Automobile)		
Year to be filled by BEE	Optimum compressed air setting on Sundays & Holidays.		Technology: Optimization		
<u>Description of the energy conservation measure:</u>					
<p>Maintenance and cleaning activities usually regularly done on Sundays &amp; plant holidays. To cater these demand air compressors need to be in operation even on Sundays &amp; holidays,</p> <p>But none of the above activities are very critical &amp; can be executed at slightly reduced air pressure.</p> <p>Hence during Sundays &amp; holidays air compressors are used to set at 75 Psi instead of 78 psi</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable			Not applicable		
Agency that executed the project (with complete address and email): In house modification					
Total investment, Rs.: Nil.			Year of implementation: 2007-2008.		
Annual energy cost savings, Rs.: 0.88 Lacs.					
On annual basis	kWh ( Lacs )	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	4.160	-----	-----	-----	-----
Energy consumption after	4.004	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> <a href="#">Mahindra &amp; Mahindra Ltd</a> <a href="#">Automotive Sector, Akurli road,</a> <a href="#">Kandivli (East), Mumbai-400101</a>				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> <a href="mailto:priolkar.sandip@mahindra.com">Mr. S.D Priolkar (priolkar.sandip@mahindra.com)</a> <a href="mailto:marathe.anand@mahindra.com">Mr. A.P. Marathe (marathe.anand@mahindra.com)</a>				Signature	
				Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008


(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>	Sector : 02 (Automobile)			
Year to be filled by BEE	Installation of capacitors for maintaining unity power factor.	Technology: Improving power factor			
<u>Description of the energy conservation measure:</u>					
Kandivli Plant is having various inductive loads like lighting, motors, induction furnaces etc. Due to the existing inductive load, the average power factor of the plant was lagging at the level of 0.97. The plant has taken the initiative to improve the average power factor to unity. Fixed power capacitors are installed in each product unit as a base capacitors. Automatic Power Factor Controllers are installed to improve the average power factor further to unity. For the 12 months of the last year the plant has maintained average power factor to unity. The plant has received an incentive of Rs. 172.30 Lacs from Tata Power Company in the electricity bill.					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable					
Agency that executed the project (with complete address and email): In house modification.					
Total investment, Rs.: Nil			Year of implementation: 2007-2008.		
Annual energy cost savings, Rs.: 172.30 Lacs.					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	-----	-----	-----	-----	-----
Energy consumption after	-----	-----	-----	-----	-----
Energy tariff, Rs/ kWh	-----	-----	-----	-----	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector, Akurli road, Kandivli (East), Mumbai-400101				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P. Marathe (marathe.anand@mahindra.com)				Signature	
				Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008


(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>		Sector : 02 (Automobile)		
Year to be filled by BEE	Water conservation by replacement old & underground main bore well water line		Technology: Retrofitting		
<u>Description of the energy conservation measure:</u>					
<p>Daily bore well water demand of kandivli plant is 600 KL on average. The bore well water is utilized for toilets, gardening, washing purpose as well as for processes. The Main bore well water line was more than 30 years old &amp; it was completely underground. Water leakages was observed at many places through old ,rusty &amp; damaged pipe lines.</p> <p>With investment of Rs 5 Lacs we have replaced the underground main borewell line with overhead. Thereby eliminated all known as well as unknown underground water leakages.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable					
Agency that executed the project (with complete address and email): In house modification					
Total investment, Rs.:5 Lacs.			Year of implementation:2007-2008.		
Annual energy cost savings, Rs.: 1.20 Lacs.					
On annual basis	kWh ( Lacs )	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	1.432	-----	-----	-----	-----
Energy consumption after	1.220	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> <a href="#">Mahindra &amp; Mahindra Ltd</a> <a href="#">Automotive sector, Akurli road,</a> <a href="#">Kandivli (East), Mumbai-400101</a>				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> <a href="mailto:priolkar.sandip@mahindra.com">Mr. S.D Priolkar (priolkar.sandip@mahindra.com)</a> <a href="mailto:marathe.anand@mahindra.com">Mr. A.P. Marathe (marathe.anand@mahindra.com)</a>				Signature	
				Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>		Sector : 02 (Automobile)		
Year to be filled by BEE	Replacing 400 W MV lamp with 200 W Metal halide lamps		Technology: High wattage to low wattage		
<p><u>Description of the energy conservation measure:</u>                  A mercury-vapor lamp is a gas discharge lamp which uses mercury in an excited state to produce light. Earlier we used 400 w mercury vapor lamp for most of the location in the plant for intensive lighting. 400 w MV lamp are giving an output of 23000 Lumens. Now company has replaced 132 Nos of mercury vapor lamps with Venture make 200W Metal Halide Lamps with pulse start technology at Vehicle PU. Venture make 200 w metal halide lamps are same effective as 400 w MV lamp (in terms of illumination level)</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable					
Agency that executed the project (Supplier): Elechmech Enterprises Andheri, Mumbai-400093					
Total investment, Rs.: 2.64 Lacs.			Year of implementation: 2007-2008.		
Annual energy cost savings, Rs.: 1.79 Lacs.					
On annual basis	kWh ( Lacs )	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.634	-----	-----	-----	-----
Energy consumption after	0.317	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> <a href="#">Mahindra &amp; Mahindra Ltd</a> <a href="#">Automotive Sector, Akurli road,</a> <a href="#">Kandivli (East), Mumbai-400101</a>				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> <a href="mailto:priolkar.sandip@mahindra.com">Mr. S.D Priolkar (priolkar.sandip@mahindra.com)</a> <a href="mailto:marathe.anand@mahindra.com">Mr. A.P. Marathe (marathe.anand@mahindra.com)</a>				Signature  Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>		Sector : 02 (Automobile)		
Year to be filled by BEE	Reducing Transformer losses by optimum operation.		Technology:- Optimization		
<u>Description of the energy conservation measure:</u>					
<p>Kandivli Plant has 2 nos of 10 MVA Power Transformers to cater the power requirement of the plant. Previously the entire load was fed from only one transformer by 90% loading the transformer . The transformers were designed to operate with highest efficiency at 50% loading. So we have started operating both the transformers in parallel with 45% load on each transformer, thereby saving copper losses. The plant is receiving power from M/S Tata Power Company at 22 KV supply voltage. The plant has 11 KV ring main system feeding to seven sub stations in the plant. We requested Tata to supply power at 11KV so that Iron and copper losses can be saved by eliminating the use of 2 nos. of 10 MVA Transformers. Since Tata did not have 11 KV supply provision in the region they continued to supply the power at 22 KV by giving compensation in Iron and copper losses to the tune of 16.96 Lacs of KWH per annum for the year 2007-2008.( @ Rs. 96.00 Lacs per annum )</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not Applicable.			Not Applicable.		
Agency that executed the project (with complete address and email):					
Total investment, Rs.: Nil.			Year of implementation:2007-2008.		
Annual energy cost savings, Rs.: 96 Lacs					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before		----	----	----	----
Energy consumption after		----	----	----	----
Energy tariff, Rs/ kWh		----	----	----	----
<b>Company complete address:</b> <a href="#">Mahindra &amp; Mahindra Ltd</a> <a href="#">Automotive Sector,Akurli road,</a> <a href="#">Kandivli (East),Mumbai-400101</a>				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> <a href="mailto:priolkar.sandip@mahindra.com">Mr. S.D Priolkar (priolkar.sandip@mahindra.com)</a> <a href="mailto:marathe.anand@mahindra.com">Mr. A.P.Marathe (marathe.anand@mahindra.com)</a>				Signature  Date-01/10/08	

## Energy Conservation Measure implemented in 2007-2008

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>		Sector : 02 (Automobile)		
Year to be filled by BEE	Optimization of 30 hp pump consumption at Body shop		Technology: Segregation on basis of operation		
<u>Description of the energy conservation measure:</u>					
<p>Previously we were running 30 hp main pumps from cooling pond for cooling of spot welding equipments like transformer, gun, cable at CL &amp; MM welding section in Body Shop. When volume requirement was low two pedestal spot welding machines were kept running to fulfill the production requirement. Main 30 hp water pump used to run for cooling the equipments of the two machines.</p> <p>Now dedicated 1" water pipe line is provided only for the two machines. An auxiliary water pump of 1 hp has been provided to cater the cooling requirement thereby eliminating energy losses through higher Hp pump operation.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable			Not applicable		
Agency that executed the project (with complete address and email): In house modification					
Total investment, Rs.: 1000			Year of implementation: 2007-2008.		
Annual energy cost savings, Rs.: 0.36 Lacs.					
On annual basis	kWh ( Lacs )	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.215	-----	-----	-----	-----
Energy consumption after	0.150	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector, Akurli road, Kandivli (East), Mumbai-400101				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P. Marathe (marathe.anand@mahindra.com)				Signature	
				Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008


(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>		Sector : 02 (Automobile)		
Year to be filled by BEE	Diesel conservation by eliminating forklift movement at press shop		Technology: Centralization		
<u>Description of the energy conservation measure:</u>					
<p>Earlier unloading of the raw sheet metals was done at steelyard building for official purpose. Then the material is transported to the press shop for processing by forklifts.</p> <p>Now unloading of the raw sheet metals is done directly at press shop (official work is also transferred) itself thereby eliminating forklift movements in between steelyard building &amp; press shop</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable			Not applicable		
Agency that executed the project (with complete address and email): In house modification					
Total investment, Rs.:0			Year of implementation:2007-2008		
Annual energy cost savings, Rs.:0.98 Lacs					
On annual basis	kWh ( Lacs )	Coal (Tons)	Gas Nm <sup>3</sup>	HSD (kL)	Other
Energy consumption before	-----	-----	-----	900	-----
Energy consumption after	-----	-----	-----	0	-----
Energy tariff, Rs/ kWh	-----	-----	-----	32.73	-----
<b>Company complete address:</b> <a href="#">Mahindra &amp; Mahindra Ltd</a> <a href="#">Automotive Sector,Akurli road,</a> <a href="#">Kandivli (East),Mumbai-400101</a>				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> <a href="mailto:priolkar.sandip@mahindra.com">Mr. S.D Priolkar (priolkar.sandip@mahindra.com)</a> <a href="mailto:marathe.anand@mahindra.com">Mr. A.P.Marathe (marathe.anand@mahindra.com)</a>				Signature  Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008


(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b> Single switch for lighting at press shop.	Sector : 02 (Automobile)			
Year to be filled by BEE		Technology: Ease of operation			
<u>Description of the energy conservation measure:</u>  Raw sheet metals are converted into required body shape using die presses at press shop. Operations timings of the presses are fixed at high bay area in press shop. For lighting operation individual switches were provided. Now, Econ CFT has provided single switch for lighting to shut off all the lights during non working hrs.					
<b>Picture/ sketch/ drawing before modification</b> (if available)		<b>Picture/ sketch/ drawing after modification</b>			
Not applicable					
Agency that executed the project (with complete address and email): In house modification					
Total investment, Rs.:2000=00			Year of implementation:2007-2008.		
Annual energy cost savings, Rs.: 2825=00					
On annual basis	kWh ( Lacs )	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.144	-----	-----	-----	-----
Energy consumption after	0.139	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector,Akurli road, Kandivli (East),Mumbai-400101				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P.Marathe (marathe.anand@mahindra.com)				Signature	
				Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008


(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b> Exploring to natural sun light	Sector : 02 (Automobile)			
Year to be filled by BEE		Technology: Natural light utilization			
<u>Description of the energy conservation measure:</u>					
<p>Previously it was observed that tube lights at the shop floor runs continuously even the day timings due to dusty roof glasses at Engine Product unit. Now periodic cleaning of roof glasses is done to explore maximum sun light at the shop floor thereby eliminating need of tube lights during day timing</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable					
Agency that executed the project (with complete address and email): In house modification					
Total investment, Rs.: Nil.			Year of implementation:2007-2008.		
Annual energy cost savings, Rs.: 1358=00					
On annual basis	kWh	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	480	-----	-----	-----	-----
Energy consumption after	240	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> <a href="#">Mahindra &amp; Mahindra Ltd</a> <a href="#">Automotive Sector,Akurli road,</a> <a href="#">Kandivli (East),Mumbai-400101</a>				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> <a href="mailto:priolkar.sandip@mahindra.com">Mr. S.D Priolkar (priolkar.sandip@mahindra.com)</a> <a href="mailto:marathe.anand@mahindra.com">Mr. A.P.Marathe (marathe.anand@mahindra.com)</a>				Signature  Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008


(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b> PNG instead of LPG at RX generator	Sector : 02 (Automobile)			
Year to be filled by BEE		Technology: Process control			
<u>Description of the energy conservation measure:</u>					
<p>Kandivli plant has in house Heat treatment section wherein case hardening of gear box &amp; axle parts is done. For case hardening of the components, indo gas (RX gas). Is supplied to furnaces. Previously Indo gas was generated at RX generator by using PNG for heating &amp; LPG utilized for enriching.</p> <p>Now separate PNG line also laid to enriching section at RX generator.PNG is more environment friendly &amp; cost effective compared to LPG. Thus LPG use at RX generator is eliminated.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable					
Agency that executed the project (with complete address and email):In house modification					
Total investment, Rs.:10000			Year of implementation:2007-2008		
Annual energy cost savings, Rs.:2.55 Lacs					
On annual basis	kWh 000'	Coal (Tons)	Gas	Oil (kL)	Other
Energy consumption before	-----	-----	15 ton	-----	-----
Energy consumption after	-----	-----	22.5 Kscm	-----	-----
Energy tariff, Rs / Kg	-----	-----	35 (LPG) 12 (PNG)	-----	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive sector,Akurli road, Kandivli (East),Mumbai-400101				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P.Marathe (marathe.anand@mahindra.com)				Signature	
				Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>		Sector : 02 (Automobile)		
Year to be filled by BEE	Elimination of water overfilling at vacuum furnace tank		Technology: Manual to auto		
<u>Description of the energy conservation measure:</u>  As conventional mechanical float valves doesn't work at high water pressure ,water storage tank of vacuum furnace often used to get overflow during pump operation. Now we have installed auto motorized butterfly valve to shut off/on the water supply based on water level in the storage tank. Auto motorized butterfly valve can withstand & operate at water pressure 10 kg/cm2.					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable					
Agency that executed the project (with complete address and email): Belimo Actuators India Pvt Ltd 204,jaisingh business centre Andheri (East),Mumbai-400099					
Total investment, Rs.:6000			Year of implementation:2007-2008		
Annual Water cost savings, Rs.:4800=00					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Water
Energy consumption before	-----	-----	-----	-----	120 KL
Energy consumption after	-----	-----	-----	-----	0 KL
Energy tariff, Rs/ KL	-----	-----	-----	-----	40
<b>Company complete address:</b> <a href="#">Mahindra &amp; Mahindra Ltd</a> <a href="#">Automotive sector,Akurli road,</a> <a href="#">Kandivli (East),Mumbai-400101</a>				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> <a href="mailto:priolkar.sandip@mahindra.com">Mr. S.D Priolkar (priolkar.sandip@mahindra.com)</a> <a href="mailto:marathe.anand@mahindra.com">Mr. A.P.Marathe (marathe.anand@mahindra.com)</a>				Signature	
				Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>		Sector : 02 (Automobile)		
Year to be filled by BEE	Replacing 400 W MV lamp with 200 W Metal halide lamps		Technology: High wattage to low wattage		
<u>Description of the energy conservation measure:</u>					
<p>A mercury-vapor lamp is a gas discharge lamp which uses mercury in an excited state to produce light. Earlier we used 400 w mercury vapor lamp for most of the location in the plant for intensive lighting. 400 w MV lamp are giving an output of 23000 Lumens. Now company has replaced 110 Nos of mercury vapor lamps with Venture make 200W Metal Halide Lamps with pulse start technology at Axle PU. Venture make 200 w metal halide lamps are same effective as 400 w MV lamp (in terms of illumination level)</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable					
Agency that executed the project (supplier): Elechmech Enterprises Andheri, Mumbai-400093					
Total investment, Rs.: 2.20 Lacs.			Year of implementation: 2007-2008.		
Annual energy cost savings, Rs.: 5.23 Lacs.					
On annual basis	kWh Lacs	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	1.58	-----	-----	-----	-----
Energy consumption after	0.66	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> <a href="#">Mahindra &amp; Mahindra Ltd</a> <a href="#">Automotive Sector, Akurli road,</a> <a href="#">Kandivli (East), Mumbai-400101</a>				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> <a href="mailto:priolkar.sandip@mahindra.com">Mr. S.D Priolkar (priolkar.sandip@mahindra.com)</a> <a href="mailto:marathe.anand@mahindra.com">Mr. A.P. Marathe (marathe.anand@mahindra.com)</a>				Signature	
				Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b> Lighting optimization at Engine assembly	Sector : 02 (Automobile)			
Year to be filled by BEE		Technology: Lighting optimization			
<u>Description of the energy conservation measure:</u>					
For effective illumination level, 40 watts conventional tube lights are provided at engine assembly area. After conducting specific lighting audit at Engine PU, 23 nos of tube fittings from engine assembly section are recovered by relocating & redirection of existing tube lights					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable			Not applicable		
Agency that executed the project (with complete address and email): In house modification					
Total investment, Rs.: Nil.			Year of implementation: 2007-2008		
Annual energy cost savings, Rs.: 0.24 Lacs.					
On annual basis	kWh Lacs	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.079	-----	-----	-----	-----
Energy consumption after	0.036	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector, Akurli road, Kandivli (East), Mumbai-400101				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P. Marathe (marathe.anand@mahindra.com)				Signature	
				Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>		Sector : 02 (Automobile)		
Year to be filled by BEE	Continuous to intermittent running of hydraulic motors		Technology: PLC Logic.		
<u>Description of the energy conservation measure:</u>					
Hydraulic Power packs provided for machines 1586 and machine 1698 were running continuously even when activities like tool setting, TPM work is ON. The working of the power packs made intermittent by providing PLC logic in Axle Product Unit.					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable			Not applicable		
Agency that executed the project (with complete address and email): In house modification					
Total investment, Rs.: Nil.			Year of implementation: 2007-2008.		
Annual energy cost savings, Rs.: 9260=00					
On annual basis	kWh ( Lacs )	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.286	-----	-----	-----	-----
Energy consumption after	0.270	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector, Akurli road, Kandivli (East), Mumbai-400101				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P. Marathe (marathe.anand@mahindra.com)				Signature	
				Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b> Installation of natural draft ventilators	Sector : 02 (Automobile)			
Year to be filled by BEE		Technology: Non conventional energy source			
<p><u>Description of the energy conservation measure:</u> Electrical exhaust fans were provided at all locations on shop floor for keeping healthy working environment and maintaining required air changes.</p> <p>Plant took an initiative wherein 59 Natural draft turbine air ventilators are installed on top of the roof at Engine PU. It works on natural Wind and stack effect. No electricity is required. The wind turbine ventilator also provides a sunlight and safe, cool, healthier and more controlled work environment. It also maintains the required air changes.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
					
Agency that executed the project (Supplier): Ganesh Engineering Baroda					
Total investment, Rs.:4.72 Lacs.			Year of implementation:2007-2008.		
Annual energy cost savings, Rs.: 1.34 Lacs.					
On annual basis	kWh ( Lacs )	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.237	-----	-----	-----	-----
Energy consumption after	0.000	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> <a href="#">Mahindra &amp; Mahindra Ltd</a> <a href="#">Automotive Sector,Akurli road,</a> <a href="#">Kandivli (East),Mumbai-400101</a>				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> <a href="mailto:priolkar.sandip@mahindra.com">Mr. S.D Priolkar (priolkar.sandip@mahindra.com)</a> <a href="mailto:marathe.anand@mahindra.com">Mr. A.P.Marathe (marathe.anand@mahindra.com)</a>				Signature	
				Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008



(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b> Lighting optimization at PU office	Sector : 02 (Automobile)			
Year to be filled by BEE		Technology: Lighting optimization			
<u>Description of the energy conservation measure:</u>					
For effective illumination level,40 watts conventional tube light are provided at PU office. After conducting audit specifically for lighting , 24 nos of tube fittings from PU office are recovered by relocating & redirection of existing tubelights					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable			Not applicable		
Agency that executed the project (with complete address and email): In house modification					
Total investment, Rs.: Nil.			Year of implementation:2007-2008.		
Annual energy cost savings, Rs.: 0.24 Lacs.					
On annual basis	kWh	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	4260	-----	-----	-----	-----
Energy consumption after	0	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector,Akurli road, Kandivli (East),Mumbai-400101				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P.Marathe (marathe.anand@mahindra.com)				Signature	
				Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008



(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>		Sector : 02 (Automobile)			
Year to be filled by BEE	Installation of heat pump at washing machine 1768 in Transmission Product Unit.		Technology: Vapor compression cycle.			
<u>Description of the energy conservation measure:</u>						
<p>Kandivli plant is equipped with various washing m/c's for cleaning of machined component. All the washing m/c are associated with electrical heaters for maintaining cleaning solution warm (At 50-55 Deg. C) as quality requirement. High energy consumption on all washing machines is noted due to use of these conventional electrical heaters.</p> <p>In line with latest development &amp; with previous experience, we have installed Heat pump for heating of washing machine (1768) solution &amp; thereby eliminating use of conventional Elec. Heaters. Heat pump works on vapor compression cycle &amp; it consumes only 1/3rd of electrical energy compared to conventional electrical heaters.</p>						
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>			
						
Agency that executed the project (Supplier): Mahindra Intertrade Ltd. Mahindra Tower, Road no 13, Worli, Mumbai-400018						
Total investment, Rs.: 6.00			Year of implementation: 2007-2008.			
Annual energy cost savings, Rs.: 2.04 Lacs.						
On annual basis	kWh ( Lacs )	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other	
Energy consumption before	0.432	-----	-----	-----	-----	
Energy consumption after	0.072	-----	-----	-----	-----	
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----	
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector, Akurli road, Kandivli (East), Mumbai-400101				We authorize Bureau to use this information for dissemination		
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P. Marathe (marathe.anand@mahindra.com)				Signature		
				Date-01/10/08		

Annexure 'B

## Energy Conservation Measure implemented in 2007-2008


(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>	Sector : 02 (Automobile)			
Year to be filled by BEE	Installation of new energy efficient compact hydraulic power pack.	Technology: Zero leakage poppet valves.			
<p><u>Description of the energy conservation measure:</u></p> <p>Earlier we had conventional hydraulic power pack for ubliue test bed in Axle PU. Conventional hydraulic power pack has spool valve for direction controlling which are not 100 % leakage free. Hence power pack motor runs continuously during m/c operation.</p> <p>Referring to latest technology available, plant has installed Energy Efficient HAWE make power pack on test bed. This power pack has unique poppet type valves for direction controlling which are 100% leak free. Hence hydraulic motor runs only during the clamping &amp; decamping of the component.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
					
Agency that executed the project (Supplier): Hawe Hydraulics Pvt Ltd. No. 68,Industrial suburb,Yeshwanthpur, Banglore-560022					
Total investment, Rs.: 1.50 Lacs			Year of implementation:2007-2008.		
Annual energy cost savings, Rs.: 0.86 Lacs					
On annual basis	kWh ( Lacs )	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.354	-----	-----	-----	-----
Energy consumption after	0.203	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> <a href="#">Mahindra &amp; Mahindra Ltd</a> <a href="#">Automotive Sector,Akurli road,</a> <a href="#">Kandivli (East),Mumbai-400101</a>				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> <a href="mailto:priolkar.sandip@mahindra.com">Mr. S.D Priolkar (priolkar.sandip@mahindra.com)</a> <a href="mailto:marathe.anand@mahindra.com">Mr. A.P.Marathe (marathe.anand@mahindra.com)</a>				Signature  Date-01/10/08	

Annexure `B

## Energy Conservation Measure implemented in 2007-2008

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>	Sector : 02 (Automobile)			
Year to be filled by BEE	Energy efficient fume extractor units in Axle Product Unit.	Technology: Retrofitting			
<u>Description of the energy conservation measure:</u>					
<p>Previously high energy consumption due to use of exhaust blowers (2 hp x 3 nos) at main welding booth in Axle PU.</p> <p>Now we have Installed energy efficient localized fume extractor 2 HP in place of exhaust blowers.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable					
Agency that executed the project (with complete address and email): In house modification.					
Total investment, Rs.:60000			Year of implementation:2007-2008.		
Annual energy cost savings, Rs.: 59000=00					
On annual basis	kWh ( Lacs )	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.157	-----	-----	-----	-----
Energy consumption after	0.051	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector,Akurli road, Kandivli (East),Mumbai-400101				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P.Marathe (marathe.anand@mahindra.com)				Signature	
				Date-01/10/08	

Annexure 'B

## Energy Conservation Measure implemented in 2007-2008

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b> Elimination compressed air losses in Axle Product unit	Sector : 02 (Automobile)			
Year to be filled by BEE		Technology: Monitoring & control			
<p><u>Description of the energy conservation measure:</u>                  To meet the higher production volume requirement, gear carrier assembly is also started working during night shift in Axle Product Unit. As the 2" air line for gear carrier assembly is branched from main high pressure line, while providing the air to gear carrier assembly during 3<sup>rd</sup> shift, compressed air also used to get circulated in Axle assembly &amp; Engine assembly leading to losses of compressed air                  After detailed analysis a dedicated air line is provided for gear carrier assembly with shut off valve to prevent air circulation to non -operational areas like axle assembly &amp; Engine assembly.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable			Not applicable		
Agency that executed the project (with complete address and email): In house modification					
Total investment, Rs.:1000			Year of implementation:2007-2008.		
Annual energy cost savings, Rs.: 0.52 Lacs.					
On annual basis	kWh	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	10500	-----	-----	-----	-----
Energy consumption after	1171	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector,Akurli road, Kandivli (East),Mumbai-400101				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P.Marathe (marathe.anand@mahindra.com)				Signature  Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008


(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b> Optimization of water pressure losses at utility pond.	Sector : 02 (Automobile)			
Year to be filled by BEE		Technology: Laminar water flow			
<u>Description of the energy conservation measure:</u>					
Kandivli plant has centralized compressor house at utility section with installed capacity of seven air compressors & six air dryers. All these equipments are of water cooled type & to cater the cooling demand, a dedicated water pond is situated near compressor house .Earlier the practical water demand was fulfilled by running of 4 submersible pumps in parallel combination. The main outlet pipes of the pumps were connected at 90 deg elbow to the main header & in addition to that no's of bends were incorporated in pipe line routing, leading to heavy water pressure losses in pipe line. (Turbulent flow) With a significant efforts during the annual shutdown, we have replaced the header with optimum no's of bends & outlet pipe of the pumps are connected at shoe joint to main header. This has eliminated tremendous amount of water pressure losses in pipe line(Laminar flow) & thus operating of one of the submersible pump is stopped.					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
					
Agency that executed the project (with complete address and email):In house modification					
Total investment, Rs.:5000			Year of implementation:2007-2008.		
Annual energy cost savings, Rs.: 2.74 Lacs					
On annual basis	kWh Lacs	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.537	-----	-----	-----	-----
Energy consumption after	0.053	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector,Akurli road, Kandivli (East),Mumbai-400101				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P.Marathe (marathe.anand@mahindra.com)				Signature	
				Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008


(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b> VFD for washing machine pumps in Engine PU.	Sector : 02 (Automobile)			
Year to be filled by BEE		Technology: Variable frequency drive ( VFD )			
<p><u>Description of the energy conservation measure:</u>                  Kandivli plant has a washing machine 7134 at Engine PU. This washing m/c is used for cleaning of machined component (Engine Crank Case) to achieve required Millipore value. It was observed that the designed capacity of the spray washing pumps (50 h.p) was higher than the actual requirement and the flow is throttled with the help of valve mechanism. It has been studied that same Millipore value can be achieved if the reduced flow rate.                  With investment of nearly Rs 3 Lacs we have installed Variable frequency drive for spray washing pump to optimize the speed of pump motor. Variable frequency drives accomplish part load control by varying electric motor speed, significantly reducing energy waste. With frequency setting at 40 Hz we could able to achieve a drastic reduction in the total energy consumption of the m/c.                  Installation of VFD for washing m/c 7134 IN crankcase Engine PU</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable					
Agency that executed the project (Supplier): Amtech Electronics Ltd. E-6,GIDC electronics zone, Gandhinagar-382028,Gujrat					
Total investment, Rs.:3 Lacs.			Year of implementation:2007-2008.		
Annual energy cost savings, Rs.: 11.04 Lacs.					
On annual basis	kWh Lacs	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	2.238	-----	-----	-----	-----
Energy consumption after	0.288	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector,Akurli road, Kandivli (East),Mumbai-400101				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P.Marathe (marathe.anand@mahindra.com)				Signature  Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008


(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>		Sector : 02 (Automobile)		
Year to be filled by BEE	Occupancy sensor for toilets on 1 <sup>st</sup> floor in Administration Building		Technology: Manual to auto control		
<u>Description of the energy conservation measure:</u>					
<p>It was commonly observed that the tube lights &amp; exhaust fan of the toilets remained ON continuously even during non- working hrs.</p> <p>To capture such kind of losses ECON team has installed Occupancy Sensors at AD building 1<sup>st</sup> floor toilet and interlocked with tube light &amp; exhaust fan operation.</p> <p>Occupancy sensors detect the presence or absence of people and turn lights on and off accordingly.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable					
Agency that executed the project (Supplier): Close Contact, Goregaon, Mumbai.					
Total investment, Rs.:3000=00			Year of implementation:2007-2008.		
Annual energy cost savings, Rs.: 16952=00					
On annual basis	kWh Lacs	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.0406	-----	-----	-----	-----
Energy consumption after	0.0107	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> <a href="#">Mahindra &amp; Mahindra Ltd</a> <a href="#">Automotive Sector,Akurli road,</a> <a href="#">Kandivli (East),Mumbai-400101</a>				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> <a href="mailto:priolkar.sandip@mahindra.com">Mr. S.D Priolkar (priolkar.sandip@mahindra.com)</a> <a href="mailto:marathe.anand@mahindra.com">Mr. A.P.Marathe (marathe.anand@mahindra.com)</a>				Signature  Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008


(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>		Sector : 02 (Automobile)		
Year to be filled by BEE	Occupancy sensor for toilets on 2 <sup>nd</sup> floor in Administration building.		Technology: Manual to auto control		
<u>Description of the energy conservation measure:</u>					
<p>It was commonly observed that the tube lights &amp; exhaust fan of the toilets remained ON continuously even during non- working hrs.</p> <p>To capture such kind of losses econ CFT has installed Occupancy Sensor in the toilets of 2<sup>nd</sup> floor toilet at AD building and interlocked with tube light &amp; exhaust fan operation. Occupancy sensors detect the presence or absence of people and turn lights on and off accordingly.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable					
Agency that executed the project (Supplier): Close Contact, Goregaon, Mumbai.					
Total investment, Rs.:3000			Year of implementation:2007-2008.		
Annual energy cost savings, Rs.: 15078=00					
On annual basis	kWh Lacs	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.0406	-----	-----	-----	-----
Energy consumption after	0.0140	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> <a href="#">Mahindra &amp; Mahindra Ltd</a> <a href="#">Automotive Sector,Akurli road,</a> <a href="#">Kandivli (East),Mumbai-400101</a>				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> <a href="mailto:priolkar.sandip@mahindra.com">Mr. S.D Priolkar (priolkar.sandip@mahindra.com)</a> <a href="mailto:marathe.anand@mahindra.com">Mr. A.P.Marathe (marathe.anand@mahindra.com)</a>				Signature  Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008


(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b> Installation of auto motorized shut off valve for BA-10 assembly compressed air line	Sector : 02 (Automobile)			
Year to be filled by BEE		Technology: Manual to auto			
<p><u>Description of the energy conservation measure:</u>                  BA-10 assembly is situated in transmission product unit &amp; is equipped with all latest pneumatically operated machineries for 5-speed gear box assembly. It is working only in two shifts. Previously the main shut off valve for compressed air line was located at height &amp; difficult to access. Hence compressed air supply remained ON even in the 3<sup>rd</sup> shift resulting into compressed air wastage.                  Now, Econ team has installed auto motorized shut off valve at BA-10 assy &amp; provided the on/off control in the assembly cabinet for ease of operation.                  The project has resulted in the saving of compressed air electrical consumption.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable					
Agency that executed the project (Supplier): Belimo Actuators India Pvt Ltd 204,jaisingh business centre Andheri (East),Mumbai-400099					
Total investment, Rs.:6000			Year of implementation:2007-2008.		
Annual energy cost savings, Rs.: 0.54 Lacs.					
On annual basis	kWh	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	10500	-----	-----	-----	-----
Energy consumption after	900	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> <a href="#">Mahindra &amp; Mahindra Ltd</a> <a href="#">Automotive Sector,Akurli road,</a> <a href="#">Kandivli (East),Mumbai-400101</a>				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> <a href="mailto:priolkar.sandip@mahindra.com">Mr. S.D Priolkar (priolkar.sandip@mahindra.com)</a> <a href="mailto:marathe.anand@mahindra.com">Mr. A.P.Marathe (marathe.anand@mahindra.com)</a>				Signature  Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008


(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>		Sector : 02 (Automobile)			
Year to be filled by BEE	Occupancy sensor for dish washing at canteen.		Technology: Manual to auto			
<p><u>Description of the energy conservation measure:</u>                  We have centralized canteen facility for all employees. In canteen, dish (Plate) washing is done by using bore well water tap which remained ON even if the person (plate washer) is not present at the location.                  Nearly 10 KL of water get wasted due to manual controlling systems.                  Now, we have provided occupancy sensor &amp; interlocked with new motorized auto valve to shut OFF /ON the water supply for dish washing. Occupancy sensor detect the presence or absence of a person who is washing the dish and gives command to motorized water valve which gets ON and OFF accordingly.</p>						
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>			
Not applicable						
Agency that executed the project (Supplier): Close Contact, Goregaon, Mumbai.						
Total investment, Rs.: 2000			Year of implementation: 2007-2008.			
Annual energy cost savings, Rs.: 0.30 Lacs.						
On annual basis	kWh Lacs	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other	
Energy consumption before	0.179	-----	-----	-----	-----	
Energy consumption after	0.126	-----	-----	-----	-----	
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----	
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector, Akurli road, Kandivli (East), Mumbai-400101				We authorize Bureau to use this information for dissemination		
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P. Marathe (marathe.anand@mahindra.com)				Signature		
				Date-01/10/08		

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b> Optimization in energy consumption of water cooler.	Sector : 02 (Automobile)			
Year to be filled by BEE		Technology: Digital control			
<u>Description of the energy conservation measure:</u>					
<p>Water coolers of various make are situated across all the locations in the plant. But all the water cooler units are provided with mechanical thermostat controlling for operation of the compressor. With thermostat precise temp. Setting is not possible. As a result compressor of cooler used to run continuously leading high energy consumption. After brainstorming the AC team came up with the idea &amp; installed digital temp. Controller on water coolers for precise controlling of compressor operation (like in all latest AC models).</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable					
Agency that executed the project (with complete address and email): In house modification					
Total investment, Rs.:9000=00			Year of implementation:2007-2008.		
Annual energy cost savings, Rs.: 8490=00					
On annual basis	kWh Lacs	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.027	-----	-----	-----	-----
Energy consumption after	0.012	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector, Akurli road, Kandivli (East), Mumbai-400101				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P. Marathe (marathe.anand@mahindra.com)				Signature  Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	Title of the measure		Sector : 02 (Automobile)		
Year to be filled by BEE	Motor connection converted from Delta to star in Engine Product Unit.		Technology: Delta to star		
<u>Description of the energy conservation measure:</u>  In Engine product unit, earlier the cooling water pump motor was connected in Delta logic. Due to which the pump motor was consuming 5.5 amperes. With the wiring modification motor has been connected in star logic & now the same motor is consuming just 3.2 amperes to carry out same operation at same base load.					
<b>Picture/ sketch/ drawing before modification</b> (if available)		<b>Picture/ sketch/ drawing after modification</b>			
Not applicable		Not applicable			
Agency that executed the project (with complete address and email): In house modification					
Total investment, Rs.: Nil.			Year of implementation: 2007-2008.		
Annual energy cost savings, Rs.: 0.27 Lacs.					
On annual basis	kWh Lacs	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.100	-----	-----	-----	-----
Energy consumption after	0.053	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector, Akurli road, Kandivli (East), Mumbai-400101				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P. Marathe (marathe.anand@mahindra.com)				Signature  Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>		Sector : 02 (Automobile)		
Year to be filled by BEE	Provision of remote switch for pump operation in Foundry Product Unit.		Technology: Remote Operation.		
<u>Description of the energy conservation measure:</u>					
<p>In sand plant area of Foundry Product Unit water circulating pump is provided for cooling application. Since the location of the pump was at long distance from the operating stage, the pump used to remain ON continuously wasting electrical energy. A separate controlling switch has been provided near the operator stage by laying control cable.</p> <p>Now the operator can switch OFF the pump during non production, lunch, and dinner time.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable			Not applicable		
Agency that executed the project (with complete address and email): In house modification					
Total investment, Rs.:0			Year of implementation:2007-2008.		
Annual energy cost savings, Rs.: 2660=00					
On annual basis	kWh	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	1343	-----	-----	-----	-----
Energy consumption after	843	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector,Akurli road, Kandivli (East),Mumbai-400101				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P.Marathe (marathe.anand@mahindra.com)				Signature	
				Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008


(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>	Sector : 02 (Automobile)			
Year to be filled by BEE	Higher HP to lower HP pump for prince tube well.	Technology: Optimum pump size			
<u>Description of the energy conservation measure:</u>					
<p>Price tube well is one of the critical tube well of the plant, to meet the total bore well water demand of the plant. Earlier it had 10 Hp pump with higher designed water flow rate &amp; water head than the available water table.</p> <p>After studying the available water table (change in water table due to construction work at nearby area), new energy efficient pump (7.5 h.p) is selected with desired parameters and replaced the old pump.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable			Not applicable		
Agency that executed the project (with complete address and email): In house modification					
Total investment, Rs.: 0.30 Lacs			Year of implementation: 2007-2008.		
Annual energy cost savings, Rs.: 0.40 Lacs.					
On annual basis	kWh Lacs	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.36	-----	-----	-----	-----
Energy consumption after	0.29	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector, Akurli road, Kandivli (East), Mumbai-400101				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P. Marathe (marathe.anand@mahindra.com)				Signature  Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b> Optimize the motor speed by using VFD at ACC primer blower in Paint shop.	Sector : 02 (Automobile)			
Year to be filled by BEE		Technology: Variable frequency drive			
<u>Description of the energy conservation measure:</u>					
<p>Kandivli plant has in house facility of paint shop for painting main body as well as accessories. High energy consumption was noted at accessories primer booth due to excess energy consuming by the intake and exhausts blowers. The required air flow was controlled with the help of mechanical dampers.</p> <p>ECON team has installed VFD for all the intake and exhaust blowers. The dampers are in full open condition. The required fine air flow is now achieved by adjusting the speed of the blowers with VFD. The frequency set at VFD is 40 HZ.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable					
Agency that executed the project (Supplier): Amtech Electronics Ltd. E-6,GIDC electronics zone, Gandhinagar-382028,Gujrat					
Total investment, Rs:.5 Lacs.			Year of implementation:2007-2008.		
Annual energy cost savings, Rs.: 6.21 Lacs.					
On annual basis	kWh Lacs	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	2.13	-----	-----	-----	-----
Energy consumption after	1.03	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> <a href="#">Mahindra &amp; Mahindra Ltd</a> <a href="#">Automotive Sector,Akurli road,</a> <a href="#">Kandivli (East),Mumbai-400101</a>				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> <a href="mailto:priolkar.sandip@mahindra.com">Mr. S.D Priolkar (priolkar.sandip@mahindra.com)</a> <a href="mailto:marathe.anand@mahindra.com">Mr. A.P.Marathe (marathe.anand@mahindra.com)</a>				Signature	
				Date-01/10/08	

Annexure ' B

## Energy Conservation Measure implemented in 2007-2008


(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>		Sector : 02 (Automobile)		
Year to be filled by BEE	Optimize use of dust separator motor at Transmission Product Unit.		Technology: Optimization.		
<u>Description of the energy conservation measure:</u>					
Special purpose machines 7070/7071/7074 in Transmission Product Unit were having dust separation system to collect metallic dust. There were two magnetic collection system for each machine. Modification is done in the tank and belt drive and one motor from each machine is eliminated to save electrical energy.					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable			Not applicable		
Agency that executed the project (with complete address and email): In house Modification					
Total investment, Rs.: Nil.			Year of implementation:2007-2008.		
Annual energy cost savings, Rs.: 10000=00					
On annual basis	kWh Lacs	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.01767	-----	-----	-----	-----
Energy consumption after	0.0000	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector,Akurli road, Kandivli (East),Mumbai-400101				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P.Marathe (marathe.anand@mahindra.com)				Signature	
				Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008


(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>		Sector : 02 (Automobile)		
Year to be filled by BEE	LDR auto sensor for lighting at Vacuum furnace.		Technology: LDR Sensor.		
<u>Description of the energy conservation measure:</u>					
<p>In vacuum furnace area of Heat Treatment 4 nos of Mercury Vapor lamp fittings are provided for illumination purpose. The lights were continuously ON during morning period as the operators were busy in the very critical activities of the furnace. A LDR auto sensor has been provided for these mercury vapor lamp fittings. The sensor detects the natural daylight and gives command to switch OFF the lights. It has resulted in the saving of lighting power consumption.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable					
Agency that executed the project (Supplier): Atonic energy Malad, Mumbai					
Total investment, Rs.: 2000			Year of implementation: 2007-2008.		
Annual energy cost savings, Rs.: 0.16 Lacs.					
On annual basis	kWh Lacs	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.038	-----	-----	-----	-----
Energy consumption after	0.009	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> <a href="#">Mahindra &amp; Mahindra Ltd</a> <a href="#">Automotive Sector, Akurli road,</a> <a href="#">Kandivli (East), Mumbai-400101</a>				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> <a href="mailto:priolkar.sandip@mahindra.com">Mr. S.D Priolkar (priolkar.sandip@mahindra.com)</a> <a href="mailto:marathe.anand@mahindra.com">Mr. A.P. Marathe (marathe.anand@mahindra.com)</a>				Signature  Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008

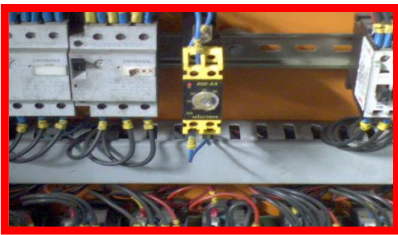
(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>	Sector : 02 (Automobile)			
Year to be filled by BEE	Timer interlocking for transmission assembly air conditioning.	Technology: Timer Interlocking.			
<u>Description of the energy conservation measure:</u>					
<p>4 and 5 Speed assembly is situated in transmission product unit &amp; is equipped with all latest pneumatically operated machineries for 4 and 5-speed gear box assembly. It is working in only in two shifts. The assembly section is provided with the ductile air conditioning system of capacity 80 T.</p> <p>Earlier the entire AC system operation was manual because of which precise control on operation timings was not possible.</p> <p>Now ECON CFT have installed a seven day timer &amp; interlocked with operation of entire AC system thereby reduced the effective running time of AC units.(Running during idle time)</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable					
Agency that executed the project (with complete address and email):In house modification					
Total investment, Rs.:3000			Year of implementation:2007-2008.		
Annual energy cost savings, Rs.: 0.37 Lacs.					
On annual basis	kWh Lacs	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.108	-----	-----	-----	-----
Energy consumption after	0.043	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector,Akurli road, Kandivli (East),Mumbai-400101				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P.Marathe (marathe.anand@mahindra.com)				Signature	
				Date-01/10/08	

Annexure ' B '

## Energy Conservation Measure implemented in 2007-2008

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>		Sector : 02 (Automobile)		
Year to be filled by BEE	Continuous to intermittent running of cutting oil pump in Axle Product unit		Technology: Continuous to intermittent		
<u>Description of the energy conservation measure:</u>					
<p>Earlier in Axle product unit, cutting oil pump used to run continuously even if the machine is idle for m/c 1524 &amp; 1721. There was wastage of oil as well as electrical energy.</p> <p>With the wiring modification Econ team has interlocked the operation of the cutting oil pump motor with main spindle operation. After the modification the cutting oil pump remains ON only when spindle motor is ON and machine is in operation. The project has not only saved electrical energy but also wastage of cutting oil.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable					
Agency that executed the project (with complete address and email): In house modification					
Total investment, Rs.: Nil			Year of implementation: 2007-2008.		
Annual energy cost savings, Rs.: 0.22 Lacs.					
On annual basis	kWh Lacs	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.134	-----	-----	-----	-----
Energy consumption after	0.095	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> <a href="#">Mahindra &amp; Mahindra Ltd</a> <a href="#">Automotive Sector, Akurli road,</a> <a href="#">Kandivli (East), Mumbai-400101</a>				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> <a href="mailto:priolkar.sandip@mahindra.com">Mr. S.D Priolkar (priolkar.sandip@mahindra.com)</a> <a href="mailto:marathe.anand@mahindra.com">Mr. A.P. Marathe (marathe.anand@mahindra.com)</a>				Signature  Date-01/10/08	

## Energy Conservation Measure implemented in 2007-2008


(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b> Removed unwanted lapper compound mixture pump at Axle Product unit	Sector : 02 (Automobile)			
Year to be filled by BEE		Technology: Process Improvement.			
<u>Description of the energy conservation measure:</u>					
In axle product unit lapping compound mixture pump was used for machine 1844. By process improvement, the requirement the pump is eliminated. The project has saved electrical power consumption and lapping compound.					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable			Not applicable		
Agency that executed the project (with complete address and email): In house modification					
Total investment, Rs.: Nil.			Year of implementation:2007-2008.		
Annual energy cost savings, Rs.: 0.20 Lacs.					
On annual basis	kWh Lacs	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.0354	-----	-----	-----	-----
Energy consumption after	0.0000	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector,Akurli road, Kandivli (East),Mumbai-400101				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P.Marathe (marathe.anand@mahindra.com)				Signature	
				Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008


(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b> Optimize the motor speed by using VFD at ACC top coat blowers	Sector : 02 (Automobile)			
Year to be filled by BEE		Technology: Variable frequency drive			
<p><u>Description of the energy conservation measure:</u> Kandivli plant has in house facility of paint shop for painting main body as well as accessories. High energy consumption was noted at accessories primer booth due to excess energy consuming by the intake and exhausts blowers. The required air flow was controlled with the help of mechanical dampers. ECON team has installed VFD for all the intake and exhaust blowers. The dampers are in full open condition. The required fine air flow is now achieved by adjusting the speed of the blowers with VFD. The frequency set at VFD is 40 HZ.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable					
Agency that executed the project (Supplier): Amtech Electronics Ltd. E-6,GIDC electronics zone, Gandhinagar-382028,Gujrat					
Total investment, Rs. 6 Lacs.			Year of implementation:2007-2008.		
Annual energy cost savings, Rs.: 7.09 Lacs.					
On annual basis	kWh Lacs	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	2.43	-----	-----	-----	-----
Energy consumption after	1.18	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<p><b>Company complete address:</b> Mahindra &amp; Mahindra Ltd Automotive Sector,Akurli road, Kandivli (East),Mumbai-400101</p> <p><b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P.Marathe (marathe.anand@mahindra.com)</p>				<p>We authorize Bureau to use this information for dissemination</p> <p>Signature</p> <p>Date-01/10/08</p>	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b> Occupancy sensor for toilets in AD building 4th floor	Sector : 02 (Automobile)
Year to be filled by BEE		Technology: Manual to auto control
<u>Description of the energy conservation measure:</u>  It was more common that the tube lights & exhaust fan of the toilets remained ON continuously especially if the respective unit is operative only for single shift like administration building. To capture such kind of losses econ CFT has installed Occupancy Sensor in the toilets of 4 <sup>th</sup> floor toilet at AD building & interlocked with tube light & exhaust fan operation. Occupancy sensors detect the presence or absence of people and turn lights on and off accordingly.		
<b>Picture/ sketch/ drawing before modification</b> (if available)	<b>Picture/ sketch/ drawing after modification</b>	
Not applicable		
Agency that executed the project (Supplier): M/S Close Contact, Goregaon, Mumbai.		
Total investment, Rs.:3000=00	Year of implementation:2007-2008.	
Annual energy cost savings, Rs.: 16952=00		
On annual basis	kWh Lacs	Coal (Tons)
Energy consumption before	0.218	-----
Energy consumption after	0.188	-----
Energy tariff, Rs/ kWh	5.66	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector,Akurli road, Kandivli (East),Mumbai-400101		We authorize Bureau to use this information for dissemination
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P.Marathe (marathe.anand@mahindra.com)		Signature
		Date-01/10/08

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008


(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>		Sector : 02 (Automobile)			
Year to be filled by BEE	Bore well water instead of municipal water for toilets at PPS office		Technology: Minimizing water head losses			
<u>Description of the energy conservation measure:</u>						
<p>Due to insufficient water head available of bore well water at PPS office, earlier bore well water could not reached up to the overhead storage tank. Hence municipal water was provided for toilets &amp; wash basins etc.</p> <p>To optimize municipal water consumption, we have laid a dedicated 1 ½" water line from main 3" bore well line of canteen &amp; now with increased water head, overhead storage tank can be filled.</p>						
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>			
Not applicable			Not applicable			
Agency that executed the project (with complete address and email): In house modification						
Total investment, Rs.:1000			Year of implementation:2007-2008			
Annual water cost savings, Rs.: 0.36 Lacs.						
On annual basis	kWh Lacs	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Water ( cost)	
Water consumption before	-----	-----	-----	-----	48000	
Water consumption after	-----	-----	-----	-----	12000	
Water tariff, Rs/ KL.	-----	-----	-----	-----	40.00	
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector,Akurli road, Kandivli (East),Mumbai-400101				We authorize Bureau to use this information for dissemination		
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P.Marathe (marathe.anand@mahindra.com)				Signature		
				Date-01/10/08		

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008

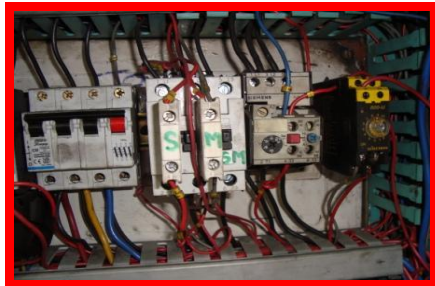
(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>		Sector : 02 (Automobile)			
Year to be filled by BEE	Continuous to intermittent running of hydraulic pump in Engine Product unit		Technology: Continuous to intermittent			
<u>Description of the energy conservation measure:</u>						
<p>Earlier in Engine product unit, hydraulic power pack used to run continuously even if the m/c is idle for m/c 1698/1586</p> <p>With the wiring modification Econ team has interlocked the operation of the hydraulic power pack with m/c operation.</p> <p>The project has saved wastage of electrical energy.</p>						
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>			
Not applicable						
Agency that executed the project (with complete address and email): In house modification						
Total investment, Rs.:1000			Year of implementation:2007-2008.			
Annual energy cost savings, Rs.: 10000=00						
On annual basis	kWh Lacs	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other	
Energy consumption before	0.250	-----	-----	-----	-----	
Energy consumption after	0.232	-----	-----	-----	-----	
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----	
<b>Company complete address:</b> <a href="#">Mahindra &amp; Mahindra Ltd</a> <a href="#">Automotive Sector,Akurli road,</a> <a href="#">Kandivli (East),Mumbai-400101</a>				We authorize Bureau to use this information for dissemination		
<b>Contact person who could be contacted for more information:</b> <a href="mailto:priolkar.sandip@mahindra.com">Mr. S.D Priolkar (priolkar.sandip@mahindra.com)</a> <a href="mailto:marathe.anand@mahindra.com">Mr. A.P.Marathe (marathe.anand@mahindra.com)</a>				Signature		
				Date-01/10/08		

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008


(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>		Sector : 02 (Automobile)		
Year to be filled by BEE	Continuous to intermittent running of chip conveyor in Axle PU		Technology: Continuous to intermittent		
<u>Description of the energy conservation measure:</u>					
<p>Earlier in Axle product unit, chip conveyor used to run continuously even if the m/c is idle for m/c 1511</p> <p>With the wiring modification Econ team has interlocked the operation of the chip conveyor with m/c operation.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable					
Agency that executed the project (with complete address and email): In house modification					
Total investment, Rs.: Nil.			Year of implementation: 2007-2008.		
Annual energy cost savings, Rs.: 0.22 Lacs.					
On annual basis	kWh	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	4476	-----	-----	-----	-----
Energy consumption after	589	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector, Akurli road, Kandivli (East), Mumbai-400101				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P. Marathe (marathe.anand@mahindra.com)				Signature  Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008

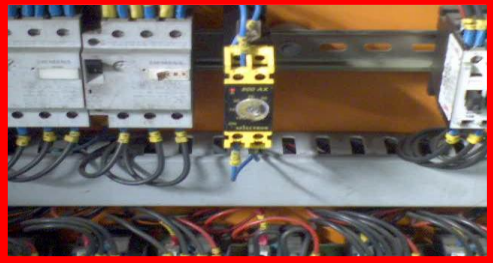
(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>	Sector : 02 (Automobile)			
Year to be filled by BEE	Continuous to intermittent running of flush coolant pump in Axle PU	Technology: Continuous to intermittent			
<u>Description of the energy conservation measure:</u>					
<p>Earlier in Axle product unit, flush coolant pump used to run continuously even if the m/c is idle for m/c 1519 and 1520 .</p> <p>With the wiring modification Econ team has interlocked the operation of the flush coolant pump with m/c operation.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable					
Agency that executed the project (with complete address and email): In house modification					
Total investment, Rs.: Nil.			Year of implementation:2007-2008.		
Annual energy cost savings, Rs.: 10000=00					
On annual basis	kWh	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	5013	-----	-----	-----	-----
Energy consumption after	3246	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> <a href="#">Mahindra &amp; Mahindra Ltd</a> <a href="#">Automotive Sector,Akurli road,</a> <a href="#">Kandivli (East),Mumbai-400101</a>				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> <a href="mailto:priolkar.sandip@mahindra.com">Mr. S.D Priolkar (priolkar.sandip@mahindra.com)</a> <a href="mailto:marathe.anand@mahindra.com">Mr. A.P.Marathe (marathe.anand@mahindra.com)</a>				Signature  Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>		Sector : 02 (Automobile)		
Year to be filled by BEE	Continuous to intermittent running of hydraulic pump in Axle PU		Technology: Continuous to intermittent		
<p><u>Description of the energy conservation measure:</u></p> <p>Earlier in Axle product unit, hydraulic pump used to run continuously even if the m/c is idle for LMW machines . With the wiring modification Econ team has interlocked the operation of the hydraulic pump with m/c auto cycle</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)		<b>Picture/ sketch/ drawing after modification</b>			
Not applicable					
Agency that executed the project (with complete address and email): In house modification					
Total investment, Rs.: Nil.			Year of implementation:2007-2008.		
Annual energy cost savings, Rs.: 0.48 Lacs.					
On annual basis	kWh Lacs	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.125	-----	-----	-----	-----
Energy consumption after	0..40	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<p><b>Company complete address:</b>  <a href="#">Mahindra &amp; Mahindra Ltd</a>  Automotive Sector,Akurli road,  Kandivli (East),Mumbai-400101</p> <p><b>Contact person who could be contacted for more information:</b>  <a href="mailto:priolkar.sandip@mahindra.com">Mr. S.D Priolkar (priolkar.sandip@mahindra.com)</a>  <a href="mailto:marathe.anand@mahindra.com">Mr. A.P.Marathe (marathe.anand@mahindra.com)</a></p>				<p>We authorize Bureau to use this information for dissemination</p> <p>Signature</p> <p>Date-01/10/08</p>	

## Energy Conservation Measure implemented in 2007-2008


(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>	Sector : 02 (Automobile)			
Year to be filled by BEE	Avoid Idle running of machines in Axle Product Unit.	Technology: Continuous to intermittent.			
<u>Description of the energy conservation measure:</u>					
<p>Axle product unit of Kandivli Plant is having various special purpose machines. During Internal Energy Audit by ECON team members it was observed that machines 1633, 1664, 1634, 1661 were running idle without any production during shift change period. The team after discussion has come to a conclusion to implement an ingenious idea of providing a PLC unit for the above machines. The logic has been provided so that machine will switch off after set time period if run idle. The project has given reduction in the electrical power consumption.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable			Not applicable		
Agency that executed the project (with complete address and email): In house modification					
Total investment, Rs.: Nil.			Year of implementation: 2007-2008.		
Annual energy cost savings, Rs.: 10000=00					
On annual basis	kWh Lacs	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.143	-----	-----	-----	-----
Energy consumption after	0.125	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector, Akurli road, Kandivli (East), Mumbai-400101				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P. Marathe (marathe.anand@mahindra.com)				Signature  Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b> Localized cooling system for thermopacs	Sector : 02 (Automobile)			
Year to be filled by BEE		Technology: Optimizing losses			
<u>Description of the energy conservation measure:</u>					
<p>Accessories paint shop oven, Grey primer oven &amp; Body moisture dry of oven from the paint shop are working on indirect heating type for which hot thermic fluid (heated by thermopacs) is used. The plant have three no's of thermopacs which are gas fired &amp; capacity 10 Lacs kcal/hr each. For thermopac, cooling water needed to be circulated through thermo Pac jackets ,for which dedicated pump(2 h.p) was installed near compressor cooling pond.</p> <p>ECON CFT has decided to change the location of the pump. Lower HP ( 1 HP ) pump has been installed with dedicated cooling tower near the thermopac.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable					
Agency that executed the project (with complete address and email): In house modification					
Total investment, Rs.:1000			Year of implementation:2007-2008		
Annual energy cost savings, Rs.: 20267=00					
On annual basis	kWh	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	6087	-----	-----	-----	-----
Energy consumption after	2507	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector,Akurli road, Kandivli (East),Mumbai-400101				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P.Marathe (marathe.anand@mahindra.com)				Signature	
				Date-01/10/08	

## Energy Conservation Measure implemented in 2007-2008


(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>		Sector : 02 (Automobile)		
Year to be filled by BEE	Eliminating use of Window A/C by Layout Change.		Technology: Clubbing of activities.		
<u>Description of the energy conservation measure:</u>					
Kandivli Plant has a supply module office in Foundry Product Unit which deals with procurement of raw material required for Foundry. The unit is having a dedicated production office also for the Foundry. By rearranging the seating arrangement and layout change the office area of Foundry Supply Module has been reduced. Due to the modification two nos.of window air conditioners are disconnected and removed. This has reduced electrical energy consumption.					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable			Not applicable		
Agency that executed the project (with complete address and email): In house modification					
Total investment, Rs.: 2.00 Lacs.			Year of implementation:2007-2008		
Annual energy cost savings, Rs.: 16980=00					
On annual basis	kWh	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	3000	-----	-----	-----	-----
Energy consumption after	0000	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector,Akurli road, Kandivli (East),Mumbai-400101				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P.Marathe (marathe.anand@mahindra.com)				Signature	
				Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>		Sector : 02 (Automobile)		
Year to be filled by BEE	Elimination of use of vehicle lifter at final inspection stage		Technology: Process monitor & control		
<u>Description of the energy conservation measure:</u>					
<p>After complete assembly, vehicle is inspected for various parameters at inspection stage before test drive &amp; dispatch.</p> <p>For under vehicle inspection a hydraulic lifter was provided where vehicle was lifted for inspection.</p> <p>With ingenious idea, we have utilized an existing underground pit for the vehicle inspection thereby eliminated use of hydraulically operated lifter.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable					
Agency that executed the project (with complete address and email): In house modification					
Total investment, Rs.: Nil.			Year of implementation: 2007-2008		
Annual energy cost savings, Rs.: 28123=00					
On annual basis	kWh	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	4969	-----	-----	-----	-----
Energy consumption after	0000	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> <a href="#">Mahindra &amp; Mahindra Ltd</a> <a href="#">Automotive Sector, Akurli road,</a> <a href="#">Kandivli (East), Mumbai-400101</a>				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> <a href="mailto:priolkar.sandip@mahindra.com">Mr. S.D Priolkar (priolkar.sandip@mahindra.com)</a> <a href="mailto:marathe.anand@mahindra.com">Mr. A.P. Marathe (marathe.anand@mahindra.com)</a>				Signature  Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>		Sector : 02 (Automobile)		
Year to be filled by BEE	Body shells transportation capacity enhancement of the vehicle		Technology: Optimum loading of truck/trailer		
<u>Description of the energy conservation measure:</u>					
<p>Earlier the trailer &amp; trucks which were used for transportation of body shells, used to carry 3 or 4 body shells per body due to space constraints. Now these trucks &amp; trailers are modified to accommodate 5 body shells(3camper + 2 savari) per vehicles. Hence total no's of trips has reduced giving significant saving in diesel consumption as well.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
					
Agency that executed the project (with complete address and email):In house modification					
Total investment, Rs.:0			Year of implementation:2007-2008		
Annual energy cost savings, Rs.:4 Lacs					
On annual basis	kWh Lacs	Coal (Tons)	Gas Nm <sup>3</sup>	HSD (Mkcal)	Other
Energy consumption before	-----	-----	-----	2303	-----
Energy consumption after	-----	-----	-----	2189	-----
Energy tariff, Rs/ Ltr	-----	-----	-----	40	-----
<b>Company complete address:</b> <a href="#">Mahindra &amp; Mahindra Ltd</a> <a href="#">Automotive Sector,Akurli road,</a> <a href="#">Kandivli (East),Mumbai-400101</a>				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> <a href="mailto:priolkar.sandip@mahindra.com">Mr. S.D Priolkar (priolkar.sandip@mahindra.com)</a> <a href="mailto:marathe.anand@mahindra.com">Mr. A.P.Marathe (marathe.anand@mahindra.com)</a>				Signature  Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>		Sector : 02 (Automobile)		
Year to be filled by BEE	Increase in lot size of crankcase to be sending to Menon/lokesh		Technology: Optimization of crankcase lot size		
<u>Description of the energy conservation measure:</u>					
<p>Earlier crankcases were transported from foundry to vendor at Kolhapur for grinding process in lot size of 65 or 75 no's per vehicle                  Now with modification of the transport vehicle ,lot size of the crankcase has increased to 105 for sending it to vendor at kolhapur. Thereby the no of transportation has reduced &amp; diesel consumption as well.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable			Not applicable		
Agency that executed the project (with complete address and email): In house modification					
Total investment, Rs.:0			Year of implementation:2007-2008		
Annual energy cost savings, Rs.:3.20 Lacs					
On annual basis	kWh Lacs	Coal (Tons)	Gas Nm <sup>3</sup>	HSD (Mkcal)	Other
Energy consumption before	-----	-----	-----	215	-----
Energy consumption after	-----	-----	-----	124	-----
Energy tariff, Rs/ Ltr	-----	-----	-----	40	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector, Akurli road, Kandivli (East), Mumbai-400101				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P. Marathe (marathe.anand@mahindra.com)				Signature  Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b> In large the lot size of crankcase to be send to fettling vendor.	Sector : 02 (Automobile)			
Year to be filled by BEE		Technology: Optimization in crankcase lot size			
<u>Description of the energy conservation measure:</u>					
Earlier crankcases were transported from foundry to vendor at Kolhapur for fettling process in lot size of 95 no's per vehicle Now with modification of the transport vehicle ,lot size of the crankcase has increased to 105 for sending it to vendor at kolhapur. Thereby the no of transportation has reduced & diesel consumption as well.					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable			Not applicable		
Agency that executed the project (with complete address and email): In house modification					
Total investment, Rs.:0			Year of implementation:2007-2008		
Annual energy cost savings, Rs.:1.82 Lacs					
On annual basis	kWh Lacs	Coal (Tons)	Gas Nm <sup>3</sup>	HSD (Mkcal)	Other
Energy consumption before	-----	-----	-----	170	-----
Energy consumption after	-----	-----	-----	118	-----
Energy tariff, Rs/ Ltr	-----	-----	-----	40	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector,Akurli road, Kandivli (East),Mumbai-400101				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P.Marathe (marathe.anand@mahindra.com)				Signature	
				Date-01/10/08	

## Energy Conservation Measure implemented in 2007-2008

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>		Sector : 02 (Automobile)		
Year to be filled by BEE	Using suitable trucks to dispatch more Savari cargos from Trikaya, Nasik.		Technology: Optimum truck size utilization		
<u>Description of the energy conservation measure:</u>					
<p>Earlier 6 T 18 feet truck was used for transportation of savari cargo fixtures from Trikaya</p> <p>Now ,we have started transporting more no's of savari cargo fixtures by using 9 T 23 feet truck resulting in less no's of transportations &amp; reduced diesel consumption.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable			Not applicable		
Agency that executed the project (with complete address and email):In house modification					
Total investment, Rs.:0			Year of implementation:2007-2008		
Annual energy cost savings, Rs.:5.91 Lacs					
On annual basis	kWh Lacs	Coal (Tons)	Gas Nm <sup>3</sup>	HSD (Mkcal)	Other
Energy consumption before	-----	-----	-----	3071	-----
Energy consumption after	-----	-----	-----	2902	-----
Energy tariff, Rs/ Ltr	-----	-----	-----	40	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector,Akurli road, Kandivli (East),Mumbai-400101				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P.Marathe (marathe.anand@mahindra.com)				Signature  Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>		Sector : 02 (Automobile)		
Year to be filled by BEE	Reduction in transportation cost by In warding of splash apron		Technology: Inwarding of accessories		
<p><u>Description of the energy conservation measure:</u></p> <p>In past, splash apron (Accessory of vehicle body) was procured from pariwar industries demanding high diesel consumption in transportation. Now with significant efforts from Body Product unit , in house facility is made for producing splash apron.(In warding splash apron)</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable			Not applicable		
Agency that executed the project (with complete address and email): In house modification					
Total investment, Rs.: 0			Year of implementation: 2007-2008		
Annual energy cost savings, Rs.: 0.96 Lacs					
On annual basis	kWh Lacs	Coal (Tons)	Gas Nm <sup>3</sup>	HSD (Mkcal)	Other
Energy consumption before	-----	-----	-----	27	-----
Energy consumption after	-----	-----	-----	0	-----
Energy tariff, Rs/ Ltr	-----	-----	-----	40	-----
<p><b>Company complete address:</b>  <a href="#">Mahindra &amp; Mahindra Ltd</a>  <a href="#">Automotive Sector, Akurli road,</a>  <a href="#">Kandivli (East), Mumbai-400101</a></p> <p><b>Contact person who could be contacted for more information:</b>  <a href="mailto:priolkar.sandip@mahindra.com">Mr. S.D Priolkar (priolkar.sandip@mahindra.com)</a>  <a href="mailto:marathe.anand@mahindra.com">Mr. A.P. Marathe (marathe.anand@mahindra.com)</a></p>				<p>We authorize Bureau to use this information for dissemination</p> <p>Signature</p> <p>Date-01/10/08</p>	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008


(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>		Sector : 02 (Automobile)		
Year to be filled by BEE	Optimum utilization of truck size for transportation		Technology: Optimum truck size utilization		
<u>Description of the energy conservation measure:</u>  Earlier 6 Cargos were transported per vehicle in between Mumbai & Trikaya Now with some modification in the truck, its capacity has enhanced to carry 9 cargos per vehicle.					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable			Not applicable		
Agency that executed the project (with complete address and email): In house modification					
Total investment, Rs.:0			Year of implementation: 2007-2008		
Annual energy cost savings, Rs.: 3.27 Lacs					
On annual basis	kWh Lacs	Coal (Tons)	Gas Nm <sup>3</sup>	HSD (Mkcal)	Other
Energy consumption before	-----	-----	-----	1535	-----
Energy consumption after	-----	-----	-----	1442	-----
Energy tariff, Rs/ Ltr	-----	-----	-----	40	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector, Akurli road, Kandivli (East), Mumbai-400101				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P. Marathe (marathe.anand@mahindra.com)				Signature  Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008


(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b> Monitoring of PU wise compressed air consumption	Sector : 02 (Automobile)			
Year to be filled by BEE		Technology: Monitor & control			
<p><u>Description of the energy conservation measure:</u></p> <p>Kandivli has centralized compressor house from where compressed air is being supplied to all product units. Previously due to absence of air flow meters, compressed air demand &amp; consumption could not be monitored &amp; controlled. Now, we have installed Inconel make digital air flow meter for accurate monitoring &amp; controlling compressed air consumption Product unit wise.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)		<b>Picture/ sketch/ drawing after modification</b>			
Not applicable					
Agency that executed the project (Supplier): Inconel flow meters, Pune					
Total investment, Rs.:200000			Year of implementation:2007-2008		
On annual basis	kWh Lacs	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	-----	-----	-----	-----	-----
Energy consumption after	-----	-----	-----	-----	-----
Energy tariff, Rs/ kWh	-----	-----	-----	-----	-----
<p><b>Company complete address:</b>  <a href="#">Mahindra &amp; Mahindra Ltd</a>  Automotive Sector, Akurli road,  Kandivli (East), Mumbai-400101</p> <p><b>Contact person who could be contacted for more information:</b>  <a href="mailto:priolkar.sandip@mahindra.com">Mr. S.D Priolkar (priolkar.sandip@mahindra.com)</a>  <a href="mailto:marathe.anand@mahindra.com">Mr. A.P. Marathe (marathe.anand@mahindra.com)</a></p>				<p>We authorize Bureau to use this information for dissemination</p> <p>Signature</p> <p>Date-01/10/08</p>	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>		Sector : 02 (Automobile)		
Year to be filled by BEE	Monitoring of PU wise Municipal water consumption		Technology: Monitor & control		
<u>Description of the energy conservation measure:</u>  Kandivli plant receives municipal water from BMC which is collected & stored at two major tanks i.e nursery & steelyard tank. Along with the main incoming pipe line from BMC, water flow meter was installed only at major water consuming areas like paint shop, canteen etc. Due to absence of water flow meters, earlier PU wise municipal water demand & consumption could not be monitored. Now, we have installed kranti make water flow meters for accurate monitoring & controlling municipal water consumption PU wise.					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable					
Agency that executed the project (Supplier): M/S Umesh Trading 106, bhandari street, Near Masjid station Mumbai-400003					
Total investment, Rs.: 50000			Year of implementation: 2007-2008		
On annual basis	kWh Lacs	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	-----	-----	-----	-----	-----
Energy consumption after	-----	-----	-----	-----	-----
Energy tariff, Rs/ kWh	-----	-----	-----	-----	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector, Akurli road, Kandivli (East), Mumbai-400101				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P. Marathe (marathe.anand@mahindra.com)				Signature	
				Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>		Sector : 02 (Automobile)		
Year to be filled by BEE	Reduction in transportation cost by In warding of dash panel		Technology: Inwarding of accessories		
<u>Description of the energy conservation measure:</u>					
In past, dash panel (Accessory of vehicle body) was procured directly from Mac steel ,Nashik demanding high diesel consumption in transportation. Now with significant efforts from Body Product unit , in house facility is made for producing dash panel.(In warding dash panel)					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable			Not applicable		
Agency that executed the project (with complete address and email):In house modification					
Total investment, Rs.:0			Year of implementation:2007-2008		
Annual energy cost savings, Rs.:2.5 Lacs					
On annual basis	kWh Lacs	Coal (Tons)	Gas Nm <sup>3</sup>	HSD (Mkcal)	Other
Energy consumption before	-----	-----	-----	70.86	-----
Energy consumption after	-----	-----	-----	0	-----
Energy tariff, Rs/ Ltr	-----	-----	-----	40	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector,Akurli road, Kandivli (East),Mumbai-400101				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P.Marathe (marathe.anand@mahindra.com)				Signature	
				Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>		Sector : 02 (Automobile)		
Year to be filled by BEE	Reduction in transportation cost by In warding of Fenders.		Technology: In warding of accessories		
<u>Description of the energy conservation measure:</u>					
<p>In past, fender (Accessory of vehicle body) was procured directly from reliable auto, Nashik demanding high diesel consumption in transportation. Now with significant efforts from Body Product unit , in house facility is made for producing fenders.(In warding fenders)</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable			Not applicable		
Agency that executed the project (with complete address and email):In house modification					
Total investment, Rs.:0			Year of implementation:2007-2008		
Annual energy cost savings, Rs.:10 Lacs					
On annual basis	kWh Lacs	Coal (Tons)	Gas Nm <sup>3</sup>	HSD (Mkcal)	Other
Energy consumption before	-----	-----	-----	284	-----
Energy consumption after	-----	-----	-----	0	-----
Energy tariff, Rs/ Ltr	-----	-----	-----	40	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector,Akurli road, Kandivli (East),Mumbai-400101				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P.Marathe (marathe.anand@mahindra.com)				Signature  Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>		Sector : : 02 (Automobile)		
Year to be filled by BEE	Eliminated use of electrical heaters at Core heating room in Foundry Product Unit.		Technology: Optimization losses		
<u>Description of the energy conservation measure:</u>					
<p>Foundry Product unit consists of heating room wherein cores were stored at 45 Deg .C to avoid quality losses by moisture contamination on core at open air. High energy consumption was noted due to use of conventional electrical heaters.</p> <p>We have reduced the area of the storage heat room and disconnected total 10 KW heaters.</p> <p>The required temperature is maintained with the help of balanced heaters.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable			Not applicable		
Agency that executed the project (with complete address and email): In house modification					
Total investment, Rs.: Nil.			Year of implementation:2007-2008		
Annual energy cost savings, Rs.: 1.63 Lacs.					
On annual basis	kWh Lacs	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.576	-----	-----	-----	-----
Energy consumption after	0.288	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector,Akurli road, Kandivli (East),Mumbai-400101				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P.Marathe (marathe.anand@mahindra.com)				Signature	
				Date-01/10/08	

## Energy Conservation Measure implemented in 2007-2008



(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b> Optimization of air dryer consumption at compressor house.		Sector : 02 (Automobile)			
Year to be filled by BEE			Technology: Monitor & control			
<u>Description of the energy conservation measure:</u>						
<p>Centralized compressor system is consisting of six no's of air dryers to remove moisture content in the compressed air. Earlier dry air was used to be provided at all product units (PU) including foundry product unit. Foundry PU requires compressed air for cleaning, operation of hoist, molding section &amp; for core room m/c.</p> <p>We have installed a moisture separator and auto timer drain valve exclusively for Foundry Product Unit air receiver. We have eliminated the use of one of the air dryer.</p>						
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>			
Not applicable			Not applicable			
Agency that executed the project (with complete address and email): In house modification						
Total investment, Rs.: 20000			Year of implementation: 2007-2008			
Annual energy cost savings, Rs.: 1.07 Lacs.						
On annual basis	kWh Lacs	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other	
Energy consumption before	0.189	-----	-----	-----	-----	
Energy consumption after	0.000	-----	-----	-----	-----	
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----	
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector, Akurli road, Kandivli (East), Mumbai-400101				We authorize Bureau to use this information for dissemination		
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P. Marathe (marathe.anand@mahindra.com)				Signature		
				Date-01/10/08		

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>	Sector : 02 (Automobile)			
Year to be filled by BEE	Replacement of pneumatic tools with battery operated tools.	Technology: Elimination energy intensive equipment			
<u>Description of the energy conservation measure:</u>					
Compressed air one of the costliest form of the energy & nearly 15% of the total energy of the plant is consumed by the air compressors. At vehicle assembly high pressure (90 psi) compressed air is utilized to operate nut runners, grinders, lifters, hoists etc. Now company has replaced 28 no.s of pneumatic tools with battery operated tools at vehicle PU thereby reduced total compressed air consumption.					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
					
Agency that executed the project (with complete address and email):					
Total investment, Rs.:1700000			Year of implementation:2007-2008		
Annual energy cost savings, Rs.:3.62 Lacs					
On annual basis	kWh Lacs	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	1.25	-----	-----	-----	-----
Energy consumption after	0.60	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> <a href="#">Mahindra &amp; Mahindra Ltd</a> <a href="#">Automotive Sector,Akurli road,</a> <a href="#">Kandivli (East),Mumbai-400101</a>				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> <a href="mailto:priolkar.sandip@mahindra.com">Mr. S.D Priolkar (priolkar.sandip@mahindra.com)</a> <a href="mailto:marathe.anand@mahindra.com">Mr. A.P.Marathe (marathe.anand@mahindra.com)</a>				Signature  Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008


(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>		Sector : 02 (Automobile)		
Year to be filled by BEE	Individual Control for Lighting in Transmission Assembly.		Technology: Individual Control.		
<u>Description of the energy conservation measure:</u>					
<p>In Transmission product unit, we have two different assembly lines at BA-10 I.e. NGT 520 &amp; NGT 530. Previously lighting control of both the lines was located at single place. Due to this even if only one assembly line is operative, lighting of other assembly area used to remain in ON condition. This was resulting wastage of electrical consumption in non productive area.</p> <p>During Internal Audit ECON team has identified a solution to provide separate controls for both NGT 520 and NGT 530 assembly lighting by wiring rerouting.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable			Not applicable		
Agency that executed the project (with complete address and email): In house modification					
Total investment, Rs.: 25000=00			Year of implementation: 2007-2008		
Annual energy cost savings, Rs.: 12735=00					
On annual basis	kWh ( Lacs )	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.144	-----	-----	-----	-----
Energy consumption after	0.121	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> Mahindra & Mahindra Ltd Automotive Sector, Akurli road, Kandivli (East), Mumbai-400101				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> Mr. S.D Priolkar (priolkar.sandip@mahindra.com) Mr. A.P. Marathe (marathe.anand@mahindra.com)				Signature  Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008


(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b>	Sector : 02 (Automobile)			
Year to be filled by BEE	Occupancy sensor for toilets in IDAM/TMPU	Technology: Manual to auto control			
<u>Description of the energy conservation measure:</u>  It is commonly observed that tube lights & exhaust fan of the toilets remained ON continuously even in non- production hrs. To arrest such kind of losses ECON CFT has installed Occupancy Sensor in the toilets of 4 <sup>th</sup> floor toilet at AD building & interlocked with tube light & exhaust fan operation. Occupancy sensors detect the presence or absence of people and turn lights on and off accordingly.					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable					
Agency that executed the project (Supplier): M/S Close Contact, Goregaon, Mumbai.					
Total investment, Rs.:8000			Year of implementation:2007-2008		
Annual energy cost savings, Rs.:99200=00					
On annual basis	kWh Lacs	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	0.218	-----	-----	-----	-----
Energy consumption after	0.043	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> <a href="#">Mahindra &amp; Mahindra Ltd</a> <a href="#">Automotive Sector,Akurli road,</a> <a href="#">Kandivli (East),Mumbai-400101</a>				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> <a href="mailto:priolkar.sandip@mahindra.com">Mr. S.D Priolkar (priolkar.sandip@mahindra.com)</a> <a href="mailto:marathe.anand@mahindra.com">Mr. A.P.Marathe (marathe.anand@mahindra.com)</a>				Signature  Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008



(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b> Optimize the motor speed by using VFD at ACC Body sound dedner blowers	Sector : 02 (Automobile)			
Year to be filled by BEE		Technology: Variable frequency drive			
<p><u>Description of the energy conservation measure:</u> Kandivli plant has in house facility of paint shop for painting main body as well as accessories. High energy consumption was noted at ACC sound dedner booth due to excess energy consuming by the intake and exhausts blowers. The required air flow was controlled with the help of mechanical dampers. ECON team has installed VFD for all the intake and exhaust blowers. The dampers are in full open condition. The required fine air flow is now achieved by adjusting the speed of the blowers with VFD. The frequency set at VFD is 40 HZ.</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
Not applicable					
Agency that executed the project (Supplier): Amtech Electronics Ltd. E-6,GIDC electronics zone, Gandhinagar-382028,Gujrat					
Total investment, Rs: .300000			Year of implementation: 2007-2008		
Annual energy cost savings, Rs.: 4.43 Lacs					
On annual basis	kWh Lacs	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	1.521	-----	-----	-----	-----
Energy consumption after	0.738	-----	-----	-----	-----
Energy tariff, Rs/ kWh	5.66	-----	-----	-----	-----
<b>Company complete address:</b> <a href="#">Mahindra &amp; Mahindra Ltd</a> <a href="#">Automotive Sector, Akurli road,</a> <a href="#">Kandivli (East), Mumbai-400101</a>				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> <a href="mailto:priolkar.sandip@mahindra.com">Mr. S.D Priolkar (priolkar.sandip@mahindra.com)</a> <a href="mailto:marathe.anand@mahindra.com">Mr. A.P. Marathe (marathe.anand@mahindra.com)</a>				Signature  Date-01/10/08	

Annexure 'B'

## Energy Conservation Measure implemented in 2007-2008

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	<b>Title of the measure</b> Energy saving by productivity improvement at pretreatment process	Sector : 02 (Automobile)			
Year to be filled by BEE		Technology: Improved productivity			
<p><u>Description of the energy conservation measure:</u>            Earlier the productivity of pretreatment tank in Body Product unit was 180 Units /day. Loading combination at pretreatment was as follows-</p> <ol style="list-style-type: none"> <li>1.Single body shell + Acc</li> <li>2.Single Flatbed cargo</li> <li>3.One maxi cargo.</li> </ol> <p>For productivity &amp; quality enhancement, company has decided for in warding of cargos.To meet this higher volume demand,we have-</p> <ol style="list-style-type: none"> <li>1) Installed new (enlarge size) pretreatment tanks with improved insulation.</li> <li>2) Bucket size is also enlarged but with reduced weight (From 600 Kg to 350kg).</li> <li>3) Dipping time &amp; traverse speed of crane is optimized.</li> <li>4) Loading combination improved by bucket modification to accommodate-               <ol style="list-style-type: none"> <li>a) Two body shells+ Acc</li> <li>b) Single floated cargo + maxi cargo</li> <li>c) Two maxi cargo</li> </ol> </li> </ol> <p>Thus the productivity of pretreatment tank is doubled i.e 382 Units/day.            This measure has also resulted in substantial saving of thermal energy (PNG/LPG required for water heating in tanks).</p>					
<b>Picture/ sketch/ drawing before modification</b> (if available)			<b>Picture/ sketch/ drawing after modification</b>		
					
Agency that executed the project (with complete address and email):In house modification					
Total investment, Rs.:3000000			Year of implementation:2007-2008		
Annual energy cost savings, Rs.:10.62 Lacs					
On annual basis	kWh 000'	Coal (Tons)	PNG kSCM	Oil (kL)	Other
Energy consumption before	-----	-----	180	-----	-----
Energy consumption after	-----	-----	90	-----	-----
Energy tariff, Rs/ SCM	-----	-----	11.81	-----	-----
<b>Company complete address:</b> <a href="#">Mahindra &amp; Mahindra Ltd</a> <a href="#">Automotive Sector,Akurli road,</a> <a href="#">Kandivli (East),Mumbai-400101</a>				We authorize Bureau to use this information for dissemination	
<b>Contact person who could be contacted for more information:</b> <a href="mailto:priolkar.sandip@mahindra.com">Mr. S.D Priolkar (priolkar.sandip@mahindra.com)</a> <a href="mailto:marathe.anand@mahindra.com">Mr. A.P.Marathe (marathe.anand@mahindra.com)</a>				Signature  Date-01/10/08	

Annexure 'B'

