Name of the Technology/Product

Laboratory Name	CSIR-Central Scientific Instruments Organisation, CSIO (Chennai Centre)
Brief Profile of Technology/Product	**<u>Pump Efficiency Monitoring System (PEMS)</u>** The pump losses are calculated from the *measurement of inlet and outlet fluid temperature and the dynamic head* developed by the pump. Pump Efficiency is then calculated. By monitoring the electrical power to the motor, the pump flow rate is also calculated. ❖ Single unit capable of monitoring on-line power, head, flow & efficiency of the pump. ❖ Power Measurement with accuracy of 1% ❖ Capable of configuring the pump parameters ❖ Capable of displaying all measurements and parameters of the pump on-line ❖ Capable of logging data as .CSV format for analysis of the pump ❖ On-line Flow & Efficiency measurement with an accuracy of 1% ❖ Proper Planning & Maintenance of the pump to operate pump with optimum energy consumption ❖ Refurbishment of the pump at appropriate time periodically to increase the life of the pump ❖ Facilitate operation of pump at Best Operating Point (BOP)
Returns/Benefits	5-10% of Energy savings through operating at BOP and helps life cycle assessment of pumps which can save downtime and money in terms of productivity.
Validation Level	Field tested/ Transferred the technology
IPR Status [also indicating the status of the patent (if any) in 2015]	--
End product price (if not available, estimated price)	Cost of Development /Rs.25lakhs Approx Global Price Varying from Rs.10 lakhs

	Tentative Market Price Rs. 4.0lakhs Approx. Market Potential (in Nos.) 20/year
Technology/Product Collaborator	Department of Information Technology sponsored project
Relevance of Technology in present times	Energy efficiency is one of the key component of meeting the challenges of energy sector to meet the demand supply gap. This product will help to improve the efficiency of motors and energy savings..
Similar technology/product developed	This technology is relevant and affordable for industries and pump houses for maintaining the pumps at their best operating point as money of the pumps are oversized or throttled for regulating the flow. This technology was developed using thermodynamic principle of operation.
Picture of the technology/product (if any, with good resolution)	