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	<b>Project Review and Monitoring Committee (PRMC )</b>	Date : 08 <sup>th</sup> September 2018
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### **3rd PRMC MEETING**

**Date: 8<sup>th</sup> September 2018**

**Venue:Si'Tarc, Coimbatore.**


**Time : 11.00 AM**

#### **Members Present**

- 1) Dr. D.N. Badodkar – Chairman PRMC
- 2) Shri. Sanjay Chavre - Member Secretary - Smart Pump Project / SDO - DHI
- 3) Mr. K.V. Karthik - Chairman - Smart Pump Project
- 4) Dr. M. Sundaram - Convenor - Smart Pump Project
- 5) Mr. C. Muthusamy- Managing Partner - Stark Motors,Member PRMC
- 6) Dr. V. PrasannaMoorthy - Faculty GCT,Coimbatore, Member PRMC
- 7) Dr.B.V.S.S.Prasad – Professor and Head, Mech Engg Dept, IIT-Madras
- 8) Dr.Punit Singh -IISc-Bangalore
- 9) Dr.Prabhu - PSG-Coimbatore
- 10)Dr. L.G. Das – CMERI, Durgapur
- 11)Dr. Pranab Samanta – CMERI, Durgapur

#### **Agenda**

- 1) Leave of Absence.
- 2) Confirmation of minutes of **2<sup>nd</sup>** PRMC Meeting held on **16<sup>th</sup> February 2018**
- 3) Progress of project
  - Motor Part
  - Pump Part
  - Controller part
- 4) Presentations
- 5) Remarks by Chairman.
- 6) Other Subjects.
- 7) Conclusion and Vote of Thanks.

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### **Proceedings:**

Chairman of Smart Pump Project – SSP- K.V.Karthik welcomed the PRMC members for the third PRMC meeting and read the circulated agenda. The meeting proceeded as per the agenda. Karthik requested Dr.B.N.Badodkar to chair the meeting

### **Agenda 1 –**

#### **Leave of Absence**

- 1) Joint Secretary, DHI
- 2) Executive Director - EEPC India
- 3) Deputy Secretary - DOC

Have applied for leave of absence and the same was approved

### **Agenda 2**

#### **Confirmation of Minutes of 2<sup>nd</sup> PRMC Meeting held on 16<sup>th</sup> February 2018**

The minutes of the second PRMC meeting held on 16<sup>th</sup> February 2018 had been circulated and since no comments were received the committee approved the same

### **Agenda 3 - Progress of project**


Mr.Karthik explained the action taken on the points discussed during the last meeting to the committee. He also informed the reasons for delay in execution of the project mainly to the non achievement of the required efficiency in the pump portion.

The presentations of the teams followed

### **Pump Part**

#### **IISc presentation - Dr.Punit Singh,IISc**

Dr.Punit Singh from IISc explained in detail the progress made on the development of new pump for the project. Punit also presented the new test set up made at IISc and informed this is the only set up in the country to test pump alone. Even small torques expended on bushings, shaft and any friction could be measured. Punit went on to show the different prototypes made for the project and in total four designs have been completed. Punit informed to the committee that the time taken is on account of the results not coming to the desired levels. He also explained the scaling of a available pump to verify the efficiency. Punit informed of the two SPD1 and SPD2, SPD2 has hydraulic efficiency of 84-86% that can be further improved by1.5% with coating. The committee appreciated Punit for the test set up and requested him to speed up the design part

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### **PSG Presentation – Dr. Prabhu**

The presentation was mainly on the theoretical effects of the blade angle on performance of pumpsets. The committee requested them to prepare documentation on the inverse design method towards project closure

### **CMERI, Durgapur presentation by Dr.Lal Gopal Das**

- 1) Dr.L.G.Das informed about his research on the design for the duty conditions by using conventional method. He agreed to coordinate with IISc for improvement of the designs. He has been advised to prepare documentation on conventional design of pumps

### **IIT Madras – Dr.B.V.S.S.Prasad and Dr.Dhiman Chaterjee**

- 1) The team informed that they will analyse the designs made when they are sent to them. The team discussed about development of an Indian software for pump design. The committee appreciated the move and informed IIT Madras to make a formal proposal.

Comments:

- 1) The committee accepted the genuine reason for the delay and requested Dr Punit singh to expedite the same
- 2) Other members of the pump part shall co ordinate with IISc

## **Bearing, Shaft and Journal part**


### **CMERI, Durgapur – Dr.Pranab Samanta and Mr.Phani Kumar**

CMERI Durgapur informed the micro machining facility at CMTI has recently accepted for machining the pads. The team is confident of achieving better results once the pad is received.

## **Motor Part**

### **PSG College of Technology - Dr.M. Sundaram**

Presented the progress made on the motor part. Dr Sundaram played the video of the motor performing with the pump at the designed speed of 4000 rpm. Further improvements made on the design to improve the efficiency were shown to the committee. The inputs provided for controller design was also shown to the committee. Further testing and finalisation can be done after the controller part has been complete.

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## Controller Part

Indus electronics presented the controller part. The block diagram of the controller part was presented with the required power electronics. Indus informed that initial design is completed and the components for the final assembly are procured.

The committee appreciated the efforts and requested them to conclude the design of the controller part at the earliest.

Mr.Karthik Chairman SSP presented the time chart of the progress of the project

**SMART PUMP PROJECT - FUNDED BY DHI**  
Time Chart of the Project - Progress as on June - 2017


Activity / Month	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Progress
	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14	M15	M16	M17	M18	M19	
CoE Office Establishment																				Done
Recruitment of JRFs																				Done
Purchase of Software																				Done
Purchase of Raw Material Tester																				95% Done
Analytical Design																				Motor Part - Completed
																				Pump Part 90% - Completed
																				Controller Part 50% - Completed
Simulation and Optimisation																				Pump Part - In Progress
Preparation of Manufacturing Drawing																				Motor Part - Completed
																				Pump Part 50% - Completed
Purchase of Raw Materials																				Under Progress
Tool & Die Making																				Motor Part 75% Completed
Machining of Pumpset Subsystems																				Phase - II
Assembly and Integration with Motor Controller																				Phase - II
Testing																				Phase - II
Commercialisation																				Phase - II

Blue - submitted progress chart  
Green - completed  
Orange - in progress  
Red - stalled without progress

The financial details of amount expended, the purchase committee meetings held for procurement of equipments and the utilization of the grants received were also presented.

## Conclusion and Remarks

- 1) The committee expressed its satisfaction on the progress. The committee accepted that R&D can take time but expressed its opinion that further more can be achieved.
- 2) The PRMC accepted the request and has accepted for extension of time period by six months upto January 31<sup>st</sup> 2019 with the condition that the progress will be shown to the PRMC in November last
- 3) Mr Sanjay Chavre informed that the following needs to be done
  - a) To make documentation about the technology transfer from the research institutes after completing all approved designs
  - b) Conduct training on the new technology for Industries

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- c) Prepare the design manual, quality manual, manufacturing and test manuals
- d) Train the job work industries on magnetizer and magnets
- 4) The request of the industry for development of entire series can be taken as the next phase
- 5) IISc agreed to share the design details with IIT-M for preparation of the technical manual on pumps. PSG CT has accepted to prepare the manuals for motor part.
- 6) Chairman appreciated the efforts of the research institutes, partnering industries and all concerned with the project. He pointed out that regular interactions be held with industry partners to decimate the new advanced technology.

The meeting ended with a vote of thanks to the Chair and members by K.V.Karthik, Chairman Smart Pump Project.