## To;

<u>The HoD ,ECL</u> <u>The Automotive Research Association of India</u> <u>Vetal Hill, off Paud Road, Kothrud,</u> <u>Pune 411038</u>

## OR

The Automotive Research Association of India P. B. No. 832, Pune - 411 004.

ARAI-HTC Chakan Tel no. 02135-396 834

ARAI Kothrud Pune Tel no : (020) 3023 1273 / 75 / 61 Fax : (020) 30231104

## ANNEXURE – 3 LETTER ADDRESSED TO THE PARTICIPANTS GIVING DETAILS OF LODGING/ BOARDING AND TRANSPORT ARRANGEMENT

Dear Participant,

It gives us great pleasure to welcome you to the Workshop on 'Preparedness For Forthcoming BS –VI Implementation and Emission Certification As Per BS-IV For 2,3 & 4 Wheelers

Kindly note the points mentioned below,

1. The Workshop will be held **at Hyderabad**, Andhra Pradesh for transport department officials. The Venue for workshop will be informed to the concerned participants in due course of time.

2. The Course will cover topics on Emission Standards & Measurement techniques for vehicles & Automotive heavy duty engines up to BS IV with advancement in technology , Auto Fuel Policy & BS –VI Norms, Marching towards –VI ,its key factors & Compliance approach, PUC procedure

This workshop also include hands on sessions for Demonstration of PUC testing on vehicles

3. Letter addressed to the Participants giving details of lodging/ boarding and transportation for the Workshop/Training.

Same will be informed to the concerned participants.

4. In case you need any help kindly contact the following ARAI officials.
•ARAI Office Hours : 8.30 am to 5.00 pm (Monday to Friday)
•ARAI-HTC Chakan Tel no. 02135-396 834/32
.ARAI Kothrud Pune 020-3023 1275/ 73 / 61
Contacts details during office /after office hours
Mr. S.S.Ramteke ,Cell : 07709007939/02135-396 834
Dr. H.A. Nakhawa ,Sr.Dy. Director, 020 30231275, Cell: 9860888075/7774 012156
K. Srinivas, Sr. Dy. Director, 020 3023 1273 / Res: 020 25395909, Cell-9975581045
Mr. R. S. Khole, 020 3023 1261 , Res: 020 25232823

The Course starts at 9.30 am everyday.

Looking forward to meet you during the Workshop.

With Regards, Dr H A Nakhawa Sr. Dy. Director ,ECL Email:- <u>nakhawa.ecl@araiindia.com</u>

K. Srinivas Sr.Dy. Director & HoD ECL srinivas.ecl@araiindia.com



# INFORMATION BOOKLET

WORKSHOP- CUM-TRAINING PROGRAMME ON 'PREPAREDNESS FOR FORTHCOMING BS –VI IMPLEMENTATION AND EMISSION CERTIFICATION AS PER BS-IV FOR 2,3 & 4 WHEELERS' 27<sup>th</sup> – 29<sup>th</sup> Nov. 2018

## Conducted by

The Automotive Research Association of India(ARAI) S . No.102 Vetal Hill, Off Paud Road , Kothrud , Pune 411038 Tel. No.:02135-396 834, 020 -30231275/73/61 Fax No.020-30231104 Email :director@araiinidia.com

### **1.BRIEF ABOUT ARAI**

The Automotive Research Association of India (ARAI) located at Pune in Maharashtra is a premier autonomous institute setup by Indian Automotive Industries. The institute is engaged in Research and Development activities for training to Automotive Industry. ARAI is affiliated with the Ministry of Heavy Industry and Public Enterprise, Government of India. ARAI is an Approved Test Laboratory for Type Approval of vehicles and components under Central Motor Vehicle Regulations (CMVR).

#### ARAI has expertise in the following fields.

- i) Emission control, Engine design and Alternative Fuels
- ii) Noise, Vibration and Harshness
- iii) Automotive Materials
- iv) Structural Dynamics
- v) Vehicle Engineering and Evaluation
- vi) Active and Passive Safety
- vii) Auto Electricals

Our address is given below : **The Automotive Research Association of India (A.R.A.I.)** S. No. 102, Vetal Hill, Off Paud Road, Kothrud, PUNE 411 038 (INDIA) Tel No.: 02135-396 834/32,20- 3023 1275/73/61 Fax No.: 020- 30231104

- Email : <u>director@araiindia.com</u>
- Web site : http://www.araiindia.com

### 2. COURSES OFFERED BY ARAI

Training to Motor Transport Department Personnel on

## 'Preparedness For Forthcoming BS –VI Implementation and Emission Certification As Per BS-IV For 2,3 & 4 Wheelers'

#### 3. CONTENTS OF THE COURSE

Course contents for training on 'Preparedness For Forthcoming BS –VI Implementation and Emission Certification As Per BS-IV For 2,3 & 4 Wheelers' are given in Annexure - 1 enclosed herewith.

4. TARGET GROUP

Officers from Motor Transport Department of various state transport authorities

5. FACULTY

Senior executives from ARAI .

- BOARDING AND LODGING FACILITIES Letter addressed to the Participants giving details of lodging/ boarding and transportation for the Workshop/Training is enclosed at Annexure-3.
- A SELF-CONTAINED, SELF-ADDRESSED PROFORMA (PERFORATED), TO BE FILLED UP BY VARIOUS STATES / U.T.S AND SENT TO ARAI FOR NOMINATING THE TRAINEES. Enclosed at Annexure-2 herewith.
- 8. SCHEDULE FOR TRAINING

# 27<sup>th</sup> to 29<sup>th</sup> Nov. 2018

9 COST

The training programme is sponsored by the Ministry of Road Transport and Highways, New Delhi (MoRTH) and as such its cost is to be borne by the MoRTH.

TA/ DA pertaining to the officers participating in the training programmes is to be borne by respective States/U.T.s.

## ANNEXURE – 1

COURSE CONTENTS OF THE TRAINING MODULE ON 'Preparedness For Forthcoming BS –VI Implementation and Emission Certification As Per BS-IV For 2,3 & 4 Wheelers ' (Module duration – 3 Days)

Following topics will be covered in detail during the theory / practical sessions of the Workshop.

- Emission Scenario in India & across the globe
- History of pollution control in India
- Emission control Programme in India (On & Off road Applications)
- CMVR Regulations Automotive emission
- Emission Norms & vehicle technology evaluation in India
- Euro III, IV, V, VI Norms across the globe.
- Technology for clean vehicles Technology option for GHG reduction
- Emission standards & Measurement techniques for vehicles up to BS IV with advancement in vehicle technology

-Source of Automobile emission & their health effects

-Emission Std. & Measurement techniques, Evolution of emission regulations in India with advancement in vehicle technology

-Equipment & their importance in emission setup-Type I & II test -Crank case/Evaporative emission test/Durability /Alternate Type V test to Evaluate D.F.

-Type VI- Cold CO & HC emission test & OBD test

 Emission standards & Measurement tech. for automotive Heavy duty engines up to BS IV with advancement in engine technology

-Different emission tests applicable – Existing & Future -Engine performance test, Emission test procedure and different test, OBD need, test criteria and limits for BS-IV.

ECE R-49/ESC/ETC/ELR and 13 mode mass emission calculation .

- Auto Fuel Policy and Bharat Stage VI Norms
- Marching towards Bharat Stage –VI : Key Factors and Compliance Approach
- PUC Procedure

Overview of PUC, working principles of smoke meter and 4 gas analyser, Requirements& test procedure for free acceleration test and idle CO-HC test

• Demonstration of PUC testing .

Industrial Visit (Nearest available industries)

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