

Centre of Excellence Powertrain

Powertrain includes all aspects related to Engines, Transmissions and Drive Line. The main reason to be considered when developing a new product is to meet the regulations in terms of emissions and fuel consumption. The Indian regulations becoming more stringent, a good infrastructure must be available for the OEMs to:

- **be able to validate and homologate their products**
- **have sufficient support of know-how and facilities to meet the future regulations**

The centre is offering all the R&D activity to engine manufacturers who are wishing to export to other markets as well as remain competitive in the Indian market.

The services offered to both OEMs and engine manufacturers should not only include facilities required for homologation and R&D activities, but should also help them in developing their products.

In view of the above The Powertrain Centre of excellence is proposed at ARAI Pune, because ARAI is well verse about the aspects of powertain.

To full-fill Regulation Requirements Following Testing equipments are installed at Centre:

This testing equipment required in order to perform type approval of vehicles for Euro V.

- **Emissions Vehicle Test Cell (chassis dyno + analysers) for 2 Wheelers, 3 Wheelers and Passenger Cars.**
- **Emissions Engine Test Cell (engine dyno + analysers) for Heavy Duty Vehicles**
- **VT Shed for Passenger Cars**
- **Climatic Chamber (under -7°C) for vehicles up to Passenger Cars**
- **Mileage Accumulation Chassis Dyno for Passenger Cars**

In addition to the basic R&D capabilities and homologation, The centres should be proficient in engine and powertrain development. This centre should progressively develop the capabilities:

- Assisting the engine and powertrain manufacturers in their development process
- Development of parts of the powertrain chain on a turn-key basis
- Providing integrated powertrain solutions for the vehicle industry

Specific projects that this centre could carry out in the short term could include:

- global assessment for new regulations compliance
- conversion of engines to other fuels and to alternate energy sources
- indigenisation of engine and powertrain
- benchmark studies
- injection and turbulence study and improvement
- transmission adaptation to new engines

This kind of activity will leads to the capabilities needed for execution of more complex projects, as:

- Partial development of specific parts
- Development of a complete subsystem
- Integration of new subsystems
- New engine and powertrain on a turn-key basis