

Supplementary Information for Problem Statement A

(A) Remote, Real-Time and Low-Cost Sensor-Based System for the Monitoring of Nitrogen Oxide (NO_x) and Particulate Matter (PM) Emissions from Diesel Vehicles

1. What is the desired price point for the sensors?

There is no desired price point, but it should be kept as low as possible. This is so as to encourage fleet owners to install the eventual system to monitor their fleet performance, for them to meet the emission requirements and carry out remedial maintenance when necessary.

2. What is the expected service life of the sensors?

It should be at least three (3) years, with periodic servicing/calibration of sensors every six (6) months.

3. For the digital platform, is it necessary to have one for NEA and one for the fleet operators?

Yes, both NEA and the fleet operator would require access to the digital platform, including through mobile apps, for monitoring of real-time emissions.

4. What is the distance between the sensor and the vehicle?

The sensors should be mounted such that they can measure the tailpipe emissions directly.

5. Can the solution be sensors only or an integrated solution?

The solution should be a complete integrated system as specified in the innovation call requirements and in this supplement.

6. Who would be responsible for installing the sensors on the vehicles and obtaining the certification required? Will NEA liaise with LTA to obtain the necessary pre-approval for the installation of the sensors on vehicles for the trial?

The solution providers are responsible for installing the sensors and obtaining the necessary approvals from LTA. NEA will work with LTA to facilitate the approval of the proposed solution in the testbed vehicles.

7. Is the geographical location required for problem statement A?

Yes, the geographical location information is required for each polluting vehicle.

8. Who would provide the vehicles for the trial?

NEA will source for and provide the test vehicles to trial the selected proposals. Solution providers may offer diesel vehicles for the trial.

NEA will work with the shortlisted participants on the details of the specific types of diesel vehicles that will be used in the trial. Some examples of diesel vehicles by makes (not exhaustive) on Singapore roads are as follows:

Buses	Taxi	Goods Vehicles
Mercedes-Benz	Hyundai	Isuzu
Scania	Renault	Mitsubishi
Volvo	Mercedes-Benz	Toyota
MAN	-	Nissan

9. Are there any guidelines on the access/use of confidential data, e.g. driver's particulars during the trial?

The solution must comply with the Personal Data Protection Act. Solution providers must declare to NEA all data that will be collected by their proposed system in the submissions.

10. Has NEA tested any such sensors so far?

No.

11. Does NEA have any preferred frequency for data transmission?

NO_x and PM emissions must be monitored, from which the data must be transmitted in real time – defined as every one (1) second – to a centralised server for processing. The five (5)-minute average NO_x and PM emission levels shall be computed and recorded.

12. What sort of accuracy is required for sensors?

The sensor measurements should be reliable. Technology solution providers shall specify the measuring range resolution and accuracy level(s) of their proposed sensors in their proposal.