spot areas. Further, Hon'ble Supreme Court has directed that one smog tower be installed at Connaught Place by the Delhi Government and another be installed at Anand Vihar by Central Pollution Control Board. The Project Appraisal and Approval Committee at CPCB constituted for utilization of Environment Protection Charge (EPC) Fund has in - principle approved the proposal for installation of one smog tower at Anand Vihar in Delhi.

Increase in air pollution in Delhi and NCR

†50. SHRI RAM NATH THAKUR: Will the Minister of ENVIRONMENT, FOREST AND CLIMATE CHANGE be pleased to state:

(a) whether it is a fact that as compared to previous years, this year the level of air pollution in Delhi and NCR has been extremely hazardous for a very long period of time and its ill effect has been noticed especially on the health of children and elders;

(b) if so, the reasons for the unprecedented increase in pollution level and the precautionary steps taken by Government;

(c) whether Supreme Court has suggested to install smog towers at many places in Delhi and NCR; and

(d) if so, whether these smog towers will be installed at various places in Delhi and NCR?

THE MINISTER OF STATE IN THE MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE (SHRI BABUL SUPRIYO): (a) and (b) As per Continuous Ambient Air Quality Monitoring Stations (CAAQMS) data, there is general improvement in air quality of Delhi in 2019. The number of 'Good', 'Satisfactory', and 'Moderate' days has increased to 182 in 2019 as compared to 159 in 2018, 152 in 2017 and 108 in 2016. In 2019, there has been reduction in average annual ' concentration of PM2.5 by 19.3% and in average annual concentration of PM10 by 25.1% over 2016 in Delhi.

However, an increase in pollution level was noticed in Delhi and NCR on certain days in November this year due to adverse meteorological conditions like low surface wind speed, low mixing depth and local sources of emissions like industrial emissions, vehicular emissions, road and soil dust, construction and

†Original notice of the question was received in Hindi.

demolition activities coupled with contribution from stubble burning in Northern States of India.

Central Government has taken a number of regulatory measures for prevention, control and abatement of air pollution in Delhi and NCR. A Comprehensive Air Plan (CAP) for Delhi NCR has been developed identifying the timelines and implementing agencies for actions delineated. The Central Government has notified a Graded Response Action Plan (GRAP) for Delhi and NCR for different levels of pollution. The nature, scope and rigor of measures to be taken are linked to levels of pollution *viz.* severe + or emergency, severe, very poor, moderate to poor and moderate, after due consideration by authorities concerned. Also, Ministry of Environment, Forest and Climate Change has launched National Clean Air Programme (NCAP) in January 2019 to tackle the problem of air pollution in a comprehensive manner with targets to achieve 20 to 30% reduction in PM10 and PM2.5 concentrations by 2024 keeping 2017 as base year. The plan includes 102 non-attainment cities, across 23 States and Union Territories.

Several initiatives taken by the Government are given in Statement (*See* below).

(c) and (d) A High Level Committee (HLC) was constituted based on the direction of Hon'ble ' Supreme Court to assess the feasibility of technologies to control air pollution and give a report on pollution control technique including smog tower. The High Level Committee has recommended the installation of smog tower as a pilot in some sensitive and hot spot areas. Further, Hon'ble Supreme Court has directed that one smog tower be installed at Connaught Place by the Delhi Government and another be installed at Anand Vihar by Central Pollution Control Board.

Statement

Initiatives taken by the Government for the abatement and control of air pollution

Vehicular Emissions

- BS-IV standards adopted from 1st April, 2017. Leapfrogging from BS-IV to BS-VI fuel standards since 1st April, 2018 in NCT of Delhi, in NCR since October 2019 and by 1st April, 2020 in the rest of the country for both fuel as well as vehicles. About ₹ 60000 crore was spent on switching over to BS VI fuels.

- 80% reduction in particulate matter emissions in BS IV heavy duty diesel vehicles with respect to BS III and further 50 % reduction in PM due to BS VI standards with respect to BS IV.
- Operationalization of Eastern Peripheral Expressway & Western Peripheral Expressway in 2018 at a cost of about ₹ 17000 crore to divert non-destined traffic from Delhi. About 60000 vehicles are diverted on these roads daily.
- Introduction of cleaner / alternate fuels like gaseous fuel (CNG, LPG etc.), ethanol blending in petrol.
- In Delhi, about 500 new CNG stations have been opened during the last 5 years.
- Use of RFID tags have been made mandatory for commercial vehicles entering Delhi. This has resulted in decrease in traffic congestion at Toll collection/ Environmental Compensation Charge collection centres.
- Network of metro has expanded in Delhi NCR with total length of 377 km and 274 stations at a cost of about ₹ 70000 crore. It is used by over 30 lakh people every day and due to this about 4 lakh vehicles are avoided on roads, thereby reducing pollution considerably.
- To promote electric vehicles, Faster Adoption and Manufacturing of Electric Vehicles (FAME -2) scheme has been rolled out with an outlay of ₹ 10000 crore for 3 years. DHI has sanctioned 300 buses for Delhi and 100 buses for DMRC under this scheme so far.
- Permit requirement for electric vehicles has been exempted.
- Promotion of public transport and improvements in roads and building of more bridges to ease congestion on roads.

Industrial Emissions

- Stringent emission norms for Coal based Thermal Power Plants(TPPs).
- Badarpur thermal power plant has been closed from 15th October, 2018.
- Pet coke and furnace oil have been banned as fuel in Delhi and NCR States.

Import of pet coke to be done by industries using it as a feedstock/in process across the country.

- Out of about 4700 industrial units in Delhi - NCR, about 2600 units have shifted to PNG
- Installation of on-line continuous (24x7) monitoring devices in all red category industries in Delhi and NCR. 512 industrial units in Delhi- NCR have installed it out of about 603 units.
- Revision of emission standards for industrial sectors from time to time. SOx and NOx standards for boilers have been introduced.
- About 2800 brick kilns have been shifted to zig-zag technology in Delhi and NCR. Only brick kilns with zig zag technology can operate in Delhi and NCR.

Crop Residue Management

- In order to prevent stubble burning, a new Central Sector Scheme on 'Promotion of Agricultural Mechanization for *in-situ* Management of Crop Residue in the States of Punjab, Haryana, Uttar Pradesh and NCT of Delhi' for the period from 2018-19 to 2019-20 is being implemented by Ministry of Agriculture and Farmers' Welfare with the total outgo from the Central funds of ₹ 1178.47 crore.
- The State Governments in the three States have supplied more than 100000 machines and equipment to the individual farmers and Custom Hiring Centres on subsidy for *in-situ* management of crop residue during 2018-20.
- Overall, about 19% and 31% reduction in number of burning events observed in 2019 as compared to that in 2018 and 2017, respectively.

Solid Waste

- Notifications of 6 waste management rules covering solid waste, plastic waste, e-waste, bio-medical waste, C&D waste and hazardous wastes issued in 2016.
- Ban on burning of biomass/garbage.
- 3 Waste-to-Energy (W-t-E) plants are currently operational in Delhi with a total capacity of 5100 Tonnes Per Day (TPD) generating 52 MW.

- A 200 TPD waste to compost plant is also operational in Delhi.
- Bioremediation and biomining of landfill sites have also been undertaken in Delhi.
- Number of mechanised road sweeping machines has been increased significantly and presently 60 machines are deployed for cleaning of roads in Delhi.

Construction and Demolition (C&D) Activities

- SoPs and notification regarding dust mitigation measures for construction and demolition activities have been issued.
- Three C&D waste processing plants with 2650 TPD capacity are operational in Delhi. About 2 lakh ton of end products have been used this year till August.

Monitoring

- Notification of National Ambient Air Quality Standards in 2009 and launch of National Air Quality Index in 2015.
- Ambient air quality is monitored at 793 locations covering 344 cities in 28 States & 7 Union Territories (UTs) across the country under National Air Quality Monitoring Programme (NAMP). Under NAMP, PM2.5 is monitored at 274 locations covering 132 cities.
- Implementation of Air Quality Early Warning System for Delhi in October, 2018 in association with Ministry of Earth Sciences (MoES). The system provides timely alerts to implementing agencies for facilitating proactive actions.

Technical Interventions

- Pilot projects were deployed in Delhi for evaluation of air pollution mitigation technologies:
    - Ambient air purification through Wind Augmentation and Purification Units (WAYUs) for pollution abatement at traffic intersections and Pariyayantra filtration units on 30 buses was evaluated. Though minimal improvement

in ambient air quality was observed, however, WAYU may be explored for providing improved air quality at localised levels.

- Application of dust suppressant -The effectiveness of the dust suppressant lasted up to 6 hours after which it had to be reapplied. About 30% reduction in dust concentrations was observed up to 6 hours. Advisory has been issued to State Boards to use dust suppressant.

- A proposal by IIT-Bombay and IIT-Delhi in association with University of Minnesota submitted before Central Pollution Control Board (CPCB) has proposed large scale air cleaning system with downdraft approach for reducing pollution concentration level by passage of air through filter bank. The Department of Science and Technology (DST) Expert Committee has recommended taking up the project as pilot demonstration for one experimental tower in Delhi. The Project Appraisal and Approval Committee at CPCB constituted for utilization of Environment Protection Charge (EPC) Fund has in-principle approved the proposal.

- Research projects are being carried out by CPCB in collaboration with premier institutions like IIT, NEERI, etc. under Environment Protection Charge (EPC) funds.

- Lack of certification system of ambient air quality monitoring instruments in India was identified. A certification scheme has been established in collaboration with National Physical Laboratory (NPL).

- Regular engagements with technical bodies and experts have been undertaken for knowledge sharing.

Potential of Green Economy

51. LT GEN. (DR.) D.P. VATS (RETD.): Will the Minister of ENVIRONMENT, FOREST AND CLIMATE CHANGE be pleased to state:

(a) whether the Government is aware of the potential for a Green economy in the country and if so, the details thereof;

(b) whether there could be green emission on a large scale as a result of the efforts made to tackle the problem of climate change; and