



Policy to Curb Air Pollution in the National Capital Region



Commission for Air Quality Management in NCR & Adjoining Areas

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July, 2022

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STANDARD LIST OF APPROVED FUELS FOR ENTIRE NCR

- **Petrol** (BS VI with 10 ppm Sulphur) as per Notification of Government of India as amended from time to time — **Vehicular fuel**
- **Diesel** (BS VI with 10 ppm Sulphur) as per Notification of Government of India as amended from time to time — **Vehicular fuel**
- **Hydrogen/Methane** — Vehicular and Industrial purposes
- **Natural Gas (CNG/PNG/LNG) - Vehicular, Industrial and Domestic Purposes**
- **Liquefied Petroleum Gas (LPG)/Propane/Butane - Vehicular, Industrial and Domestic Purposes**
- **Electricity** — **Vehicular, Industrial, Commercial and Domestic Purposes**
- **Aviation turbine fuel**
- **Biofuels** (Bio-alcohols, Bio-diesel, Bio-gas, CBG, Bio-CNG) – for **industrial/vehicular/Domestic purposes as applicable**
- **Refuse Derived Fuel (RDF)** for Power plants, Cement plants, Waste to Energy plants
- **Firewood/Biomass briquettes for religious purposes**
- **Wood/Bamboo Charcoal** for Tandoors and Grills in Hotels/Restaurants/Banquet Halls (with emission channelization/control system) and in Open eateries/Dhabas.
- **Wood charcoal** for cloth ironing.
- **Electricity/CNG/Firewood and Biomass briquettes** for crematoria

FUELS PERMISSIBLE ONLY BEYOND THE JURISDICTION OF GNCTD

- **Biomass/Agriculture refuse and Pellets/briquettes** – for Industrial Boilers, Power plants, Biofuel projects, Cement industry, Waste to Energy plants etc
- **Biomass Pellets/briquettes** – for Tandoors and Grills in Hotels/Restaurants/Banquet Halls (along with mandatory emission channelization/control system) and in Open eateries/Dhabas
- **Metallurgical coke** – For industrial purposes only in standalone Cupola based Foundries
- **"Low Sulphur Fuels" namely LSHS, Very Low Sulphur fuel oil and Ultra-Low Sulphur Fuel Oil** – for industrial purposes in metal smelting/melting/refining/heating furnaces and kilns.

NOTE:

1. Coal with low Sulphur shall be permitted as fuel only in Thermal Power Plants in the NCR.
2. Specific requirement of any other fuel(s), other than in the lists above, by a class/category of industries/other entities, owing to technical, technological and/or process requirements shall be considered by CAQM on merits.
3. Any other clean fuel notified by the Govt. of India, from time to time, shall be included in the list appropriately.
4. All other fuels will be deemed as "unapproved" in as far as the NCR is concerned.

Abatement of air pollution from Diesel Generator (DG) sets

SUGGESTIONS FROM PUBLIC AND EXPERTS: ABATEMENT OF AIR POLLUTION FROM DG SETS

DG SETS

- Small DG sets (less than 2 KVA) should not be permitted to operate
- Solar-powered generators and inverters should be promoted
- Pollution control measures from DG sets: Ensure the availability of gas-based generator sets at reasonable prices
- **Ensure the retrofitting/conversion of DG sets to gas-based generators at reasonable prices**
- Awareness of rules, regulations and standards for DG sets
- Ensure uninterrupted power supply

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RENEWABLE ENERGY

- Rooftop solar power mandatory for apartments and commercial offices
- Net metering for installing solar panels
- Solar power generators and inverters should be promoted
- Institute long-term action plan for non-conventional energy use
- Ban the use of generators in societies — make the use of solar energy compulsory

Dependence on DG sets is very high for captive power generation in this region. Frequent and long outages and unreliable supply of quality electricity is increasing this dependence in both residential and industrial/commercial areas. A number of buildings in NCR are operating without connected load from the grid and are dependent almost entirely on captive power generation. Stopping of DG set operations during winter is part of the Graded Response Action Plan.

During the winter of 2021-22, the CAQM had issued direction (Direction No. 44) on steps for effective control of air pollution in the wake of prevailing air quality scenario in Delhi-NCR – the direction (dt 16.11.2021)¹⁹ had imposed a strict ban on DG sets in Delhi-NCR.

The ongoing action includes compliance with emissions standards, replacing DG sets with gas-based generators, and introducing dual fuel (gas and diesel) mode in DG sets wherever natural gas is available. The existing DG sets are also required to be retrofitted with emission control devices to abate particulate matter pollution. The available data shows that upfront cost of DG sets is comparatively less than gas operated sets. But due to the lower operational costs, the additional cost incurred for gas-based sets can be recovered quickly.

Address reliable supply of electricity and clean electricity: Dependence on DG sets could be reduced by mandating targeted reduction in power disruptions and ensuring uninterrupted electricity supply. As the next generation strategies across all sectors require transformative changes in energy systems as well as reduce dependence/eliminate captive power generation like DG sets, it is necessary to have an explicit focus on the access to reliable, and affordable clean electricity. Thus, Delhi and NCR region requires to pay attention to reliable electricity supply within the framework of clean air action plan. This is urgently needed not only to replace DG sets but also to support massive access to electricity in nearly all sectors for clean air action — vehicle electrification, access to electricity in industry, and transition to induction stoves for clean cooking.

According to the Draft Regional Plan 2041 of the NCPRB, per-capita energy consumption in NCR is 1,694 kWh (2018-19), which is much higher than the

northern region (953 kWh). NCR energy demand density is 1.9 MU/km²/year. As per the Report on 19th Electric Power Survey (19th EPS) of India (Volume-II) (NCR) prepared by the CEA, Ministry of Power, total electricity consumption of NCR in year 2018-19 was 83,849 MU (with 14.68 per cent T&D losses), against the requirement of 98,271 MU. During 2013-14 to 2017-18, NCR has observed annual growth rate of 4.87 per cent in terms of electrical energy requirement. Peak demand for the region was 15,430 MW in year 2018-19. The domestic sector was the biggest consumer of electricity (35 per cent) followed by industry and the commercial sector consuming about 22 per cent and 15 per cent, respectively of the total electricity consumption of NCR.

This needs to be reviewed at regional, ward and neighborhood scale across Delhi and NCR to assess the current deficit in transmission and distribution systems for immediate remedial action. Infrastructure to supply electricity must be strengthened to prevent power cuts and ensure supply of reliable electricity so that dependence on diesel generator sets can be reduced and minimized. DISCOM reforms have to be accelerated in a time bound manner to enable this quickly to minimize and eliminate power outages during summer and winter.

The industries and large establishments including big residential complexes in NCR are spending disproportionately high amount on inefficient captive power back-ups, gen-sets and Inverters. The cost of back-up power is much higher than the electricity tariff – that can be up to 15 times the tariff per kWh by the utilities. Leverage the Central government schemes and programmes (Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY), Integrated Power Development Scheme (IPDS), National Smart Grid Mission (NSGM) etc.) to provide 24x7 electricity to all households in next five years with smart technologies.

This strategy will have to be aligned with the renewable energy programmes – grid scale and rooftop solar – in the region. Delhi and NCR states have adopted renewable energy programmes including rooftop solar programmes. Rooftop solar power with enhanced grid capacity particularly in rural set-ups needs to be encouraged and supported. This needs targeted expansion to support clean air action. Sub-region-wise plans need to be created with targets for deployment that is measurable and monitorable for implementation.

The CAQM directive: In this regard, the CAQM has already issued a direction on February 22, 2022 to the DISCOMS to comprehensively assess the power demand and initiate adequate measures and plans sufficiently in advance towards ensuring uninterrupted power supply; and ensure uninterrupted power supply in the NCR,

particularly for period between October-February when the air quality index in the region generally remains in poor, very poor or severe category; further, it is directed that Government of NCT of Delhi and NCR State Governments shall take up the matter effectively with the respective power distribution companies to ensure uninterrupted power supply specially during the month of October to February.

Non-compliance of these Directions shall be construed as contravention of the provisions of Commission for Air Quality Management in NCR and Adjoining Areas Act 2021 and should lead to penal action against the power distribution companies/ officials concerned under the relevant laws as well as imposition and levying of environmental compensation charges.

The targeted action plan and timelines in this regard are in table 9 –

Table 9: Diesel generators sets: Targeted action plan and timelines

Policy interventions	Sub-region	Responsible authorities	Timeline
DISCOMS to strengthen transmission and distribution systems and ensure 100% reliable power availability, especially during winter months.	Delhi and all sub-regions in NCR	DISCOMS, Power departments of NCR States	By 30.09.2022
Uninterrupted use of conventional DG Sets only for emergency purposes, during periods under the GRAP. There shall be no restrictions on Generator sets fully running on PNG/ LPG/BIO-GAS/PROPANE/ BUTANE for any application, even for periods under the GRAP.	Entire NCR		Implementation w.e.f. 01.10.2022. The emergency services for which DG set operations shall be permitted as exceptions in the entire NCR, whenever orders for banning the use of DG sets are enforced under the GRAP, shall be as under: Elevators / Escalators / Travelators etc. in various installations. Commercial entities / residential societies shall, however, ensure that DG set operation and supply therefrom is purely limited to operation of elevators / escalators / travelators etc. Medical Services (Hospital/Nursing Home/ Health care facilities) including units involved in manufacturing of life saving medical equipment/devices, drugs and medicines. Railway Services / Railway Stations. Metro Rail Corporation & MRTS Services, including trains and stations. Airports and Inter-State Bus Terminals (ISBTs). Sewage Treatment Plants. Water pumping Stations. Projects related to national security, defence & of national importance. Entities involved in telecommunications and IT/ data services.

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Policy interventions	Sub-region	Responsible authorities	Timeline
<p>Limited use of DG sets under periods of restriction under the GRAP, for industrial operations in areas where PNG infrastructure and supply is available.</p> <p>There shall be no restrictions on use of Generator sets fully running on PNG/LPG/BIO-GAS/PROPANE/BUTANE for industrial operations, even for periods under the GRAP.</p>	All areas in NCR	SPCB, Industry department	<p>Implementation w.e.f 01.10.2022.</p> <p>Diesel Gen sets shall be permitted to operate for a maximum of 2 hours on a per day basis, to take care of exigencies of power supply failures etc. provided that: The DG Sets have been suitably converted to run on dual fuel mode i.e., natural gas and diesel.</p> <p>AND</p> <p>Such DG Sets are also equipped with Retrofitted Emission Controlled Devices (RECD) in accordance with the CPCB guidelines towards a minimum PM capturing efficiency of 70% for in-use DG sets up to 800 KW gross power category, further subject to such a retro fitment carried out through an agency which has a valid certification from any of the 5 agencies authorized by CPCB in this context.</p> <p>A detailed log of the intervals / time durations for which the DG Sets have been used shall be maintained methodically, preferably such data being captured in an electronic mode in the DG Sets itself.</p>
Limited use of DG sets under periods of restriction under the GRAP, for industrial operations in areas where PNG infrastructure and supply is not available.	All areas in NCR	SPCB, Industry department	<p>Implementation w.e.f. 01.10.2022.</p> <p>Diesel Generator sets shall be permitted to operate for a maximum of 1 hour for a day, to take care of exigencies of power supply failures etc. provided that: Such DG Sets are equipped with Retrofitted Emission Controlled Devices (RECD) in accordance with the CPCB guidelines towards a minimum PM capturing efficiency of 70% for in-use DG sets up to 800 KW gross power category, further subject to such a retro fitment carried out through an agency which has a valid certification from any of the 5 agencies authorized by CPCB in this context.</p> <p>A detailed log of the intervals / time durations for which the DG Sets have been used shall be maintained methodically, preferably such data being captured in an electronic mode in the DG Sets itself.</p>
Expeditious retro-fitment of all DG sets running in the NCR with Emission Control Devices as per CPCB guidelines for DG sets up to 800 KW capacity.	All areas in NCR	CPCB , SPCBs/ DPCC, Concerned industries/ units	-
Retro-fitment of dual fuel mode (gas / diesel) for DG sets in industrial areas where gas is readily available.	All areas in NCR		-
CPCB to develop suitable guidelines for Emission Control for DG sets of more than 800 KW capacity.		CPCB	By 31.12.2022