

Environment Pollution (Prevention & Control) Authority for the National Capital Region

Report No. 76

November 9, 2017

Supplementary Report on IAs filed on order of Hon'ble Supreme Court of October 24, 2017 directing action on EPCA report no. 72 regarding ban on sale and use of furnace oil and petroleum coke in NCR

The Hon'ble Supreme Court in its order of October 24, 2017 had banned the use of pet coke and furnace oil (FO) in NCR from November 1, 2017 and had asked industries to meet standards stipulated in draft notification issued by MOEF&CC by December 31, 2017.

The IAs filed by different parties make the following points:

- a. The draft notification for emission standards includes pet coke and therefore, industries should be allowed to use pet coke and furnace oil and meet the stipulated standards.
- b. Huge costs have been incurred by industry to comply with these standards and equipment has been installed/will be installed.
- c. The alternatives are not available or have not been made clear. Natural gas is not available, for instance, says industry in Manesar and therefore, the move to cleaner fuels is not possible.

We would like to make the following points, with supporting details on why the Hon'ble Court's order is crucial in the fight against air pollution and why it must not be modified:

Issue 1: The need to distinguish between fuel quality and emissions standards

- 1.1 Importance of imposing a ban on most polluting fuels**
- 1.2 Importance of imposing a ban in the pollution hotspot of NCR**
- 1.3 Contribution of pollution from industrial areas of NCR**

Issue 2: Why industry investment in pollution control equipment is necessary even without use of pet coke and FO

- 2.1 Draft notification on SO₂ and NO_x standards are for entire country and do not stipulate the use of pet coke or FO**
- 2.2 How the switch to pet coke is itself recent and the result of increasing imports**

Issue 3: Availability of alternatives

- 3.1 Alternatives are available for switch over immediately**
- 3.2 Natural gas is available in NCR and can be supplied to industries immediately**
- 3.3 There is availability of gas in Manesar, Haryana and Bhiwadi, Rajasthan**
- 3.4 Pollution monitoring track-record of companies does not invite confidence**
- 3.5 Piece-meal ban on these fuels will be difficult to implement**

Issue 1: The need to distinguish between fuel quality and emissions standards

1.1. Importance of imposing a ban on most polluting fuels

The quality of fuel used for combustion is a key determinant to the quantum and toxicity of emissions. It is for this reason, India has progressively cleaned by petrol and diesel, going from BS-0 in mid-1990s to BS-VI in 2020. As a result, Sulphur levels will be reduced from 10,000 ppm to 10 ppm. The improvement in fuel allows for effective pollution control.

In contrast, pet coke has some 65,000-75,000 ppm of Sulphur and FO has over 20,000 ppm. Therefore, what the October 24, 2017 order of the Hon'ble Court has done in effect is to distinguish between the fuel quality and the emission standard. The ban on pet coke and FO removes the option of use of the most polluting fuels and now allows industry to choose cleaner fuels and then to meet the standards that have been imposed.

It is for this reason the Air Act of 1980 (section 19.1 and 19.3), specifies that governments may prohibit the use of fuel, which is likely to cause air pollution, in air pollution control areas. In other words, once an area is agreed to be high in air pollution, an approved list of fuels, can only be used.

1.2 Importance of imposing a ban in the pollution hotspot of NCR

NCR air pollution is at public health emergency levels and requires drastic action. Last winter, Delhi (data for NCR was not available as there were no monitoring stations) 53 per cent of the days of November were in the severe plus – public health emergency level; 32 per cent of December and 45 per cent of January. Till this winter, pollution was slightly lower because of certain efforts like the move to BS IV, closure of Badarpur power plant; ban on diesel generators in Delhi and ban on brick kilns which have not converted to cleaner zigzag technology in NCR.

But as the recent smog episode has shown, the region needs to take drastic measures to attain clean air quality.

The current levels are very poor or even severe and severe plus. This level of pollution is hazardous to human beings, as stated in the government's own health advisory. The MOEF&CC's advisory says that at severe levels, exposure may cause respiratory effects *even on healthy people*.

The ban on the most polluting fuels, pet coke and furnace oil in NCR, is one such drastic action needed in this pollution hotspot.

1.3 Contribution of pollution from industrial areas of NCR

Data shows that industrial areas of NCR have the highest air pollution.

It is important to point out, that till recently, there was no monitoring of pollution levels in industrial estates. However, pursuant to the orders of this Hon'ble Court, three monitors have been set up in Bhiwadi (Rajasthan), Faridabad (Haryana) and Ghaziabad (UP). All these stations are showing extremely high levels of pollution (*see table 1 and Annexure 1*).

Table 1: Percentage of days in each AQI category from October 16 to November 16, 2017 in industrial areas

S.No.	City	Poor	Very Poor	Severe
1	Bhiwadi	5%	57%	38%
2	Faridabad	13%	60%	20%
3	Ghaziabad	0%	45%	55%

Issue 2: Why industry investment in pollution control equipment is necessary even without use of pet coke and FO

2.1: Draft notification on SO₂ and NO_x standards are for entire country and do not stipulate the use of pet coke or FO

The standards are to be implemented nationwide and not just for NCR. Therefore, it is not accurate to say that the draft notification includes pet coke and furnace oil and therefore, it has stipulated that it must be used in NCR (see table below).

Table 2: Draft notification (MOEF&CC) issued on standards for SO₂ and NO_x

S. No.	Type of Industrial Boiler (fuel wise)	Standards	
		SO ₂	NO _x
105A	Agro based fuel*	-	-
105B	Natural Gas*	-	-
105C	Petcoke and Petcoke blend	600 mg/Nm ³ at 6% dry O ₂ , for solid fuel and	300 mg/Nm ³ at 6% dry O ₂ , for solid fuel and 3% dry O ₂ for liquid fuel
105D	Other fuels	3% dry O ₂ for liquid fuel	

*It is required to meet stack height criteria notified vide GSR 176(E) dated April 02, 1996.

In fact, what the standards show is as follows:

- Industry can use *other fuels*, which include coal, light diesel oil or diesel and meet standards as stipulated (300 NO_x mg/Nm³ and SO₂ 600 mg/Nm³). It does not stipulate that industry must use pet coke.
- There are no emission standards for natural gas*, this is because it is accepted that it is a cleaner fuel and has no PM or SO₂ emissions and much lower NO_x emissions. In power plants, NO_x standard for coal based plants is 600 mg/Nm³, while for gas based power plants it is 30 mg/Nm³. This standard is for plants that use coal, which has much lower Sulphur and not pet coke.

Therefore, industry has a choice. It can move towards use of relatively cleaner fuel but install equipment to remove NO_x and SO₂. Or it can move to natural gas, which may be more expensive but will not require capital or running cost of pollution control.

Alternatively, they can move to electric furnaces, which would be much cleaner. There is surplus electricity capacity in NCR and this option would also allow for the excess capacity to be better utilized.

Table 3: Sulphur levels in fuel and standards

	Fuel	Sulphur levels	Standards for SO ₂ in mg/Nm ³	Standards NO _x in mg/Nm ³
1	Pet coke	65000-75000 ppm	600	300
2	Coal	4000 ppm	600	300

3.	Furnace oil	25,000 ppm	600	300
4	Light Diesel Oil (LDO)	7-10,000 ppm	600	300
5	Diesel	50 ppm	600	300
6	Natural Gas	NIL	NIL	NIL*

*In coal power plant, NOX standard is 600mg/Nm³, while for natural gas plants the standard is 50 mg/Nm³. The SO2 standards for coal power plants are 600 mg/Nm³, while there is no standard for gas. Only in 2017 plants and beyond (still not implemented) coal power plants are required to meet 100 mg/Nm³ for NOx and SO2. Gas still is much cleaner.

2.2 How the switch to pet coke is itself recent and the result of increasing imports

Industry was using pulverized coal till recently. However, there has been a fall in prices of pet coke globally. This is because countries like China, who were key importers of pet coke, a refinery by-product have stopped its import because of domestic pollution concerns. Exporting countries like the US, have similar domestic concerns and have put strict restrictions on the use of pet coke in their country. This has meant that this extremely dirty fuel is being dumped into global markets and we are importing it under Open General License (OGL).

In the last 3 years, the import of this end of barrel product has increased hugely (*see Table 4 and annexure 2*). Last year (2016-17), India has imported more than its own domestic production. It is for this reason, EPCA report no 72 has also recommended that there should be a ban on the imports of pet coke and that India should use its domestic production (12-13 million tonnes) as feedstock in cement and petroleum industries.

Table 4: Cumulative Import trends of Petroleum Coke into India, 2007-2018 (in million tonnes)

Import Trends (in million tonnes)	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18 (Till July)
Petroleum Coke	1.72	2.15	2.87	1.02	1.81	3.34	3.57	5.81	10.04	14.37	4.43

Source: EXIM database, Ministry of Commerce & Industry

But it is important to note that the same industries have switched to using this extremely polluting product in the last few years as its availability has increased. The prior use was pulverized coal. While this is not the best option, there is no question, that use of coal will be less polluting than pet coke. Therefore, a switch-back again is possible and can be done over-night.

Issue 3: Availability of alternatives

3.1 Alternatives are available for switch over immediately

As explained above, industry has a choice to make:

It can use ready alternative fuels, like pulverized coal or light diesel oil, which will not require any changes in its burners. But then it would need to install pollution control equipment, which in turn would be expensive to run and would need to be strictly monitored for compliance.

The cost of these fuels, which were previously used in industry is higher than pet coke and FO – which is why industry has switched to dirty fuels. But it is also a fact that these polluting fuels have a huge health cost as is evident in the toxic air of NCR. Therefore, this additional cost of using cleaner fuels, combined with pollution monitoring equipment needs to be paid.

The other option is to move to cleaner fuels like natural gas. In this case, there will be initial costs of conversion to change the burner to natural gas and also to get the pipeline infrastructure inside the plant. But the running cost of natural gas is roughly the same as FO but higher if the plant is substituting pet coke. Again, this is a cost of clean air that needs to be paid. In this region pollution control needs drastic and big solutions. The transition to clean fuels like natural gas and electricity in all industries, power plants and vehicles is necessary.

The use of electricity is yet another option as it would be much cleaner. This would require changing furnaces to electric. However, supply is not a constraint. At the meeting organized by EPCA on 31.10.2017 to discuss compliance with the directions of the Hon'ble Court of 27.10.2017, the joint secretary of the Union ministry of power said that there was surplus power availability in NCR. He also said the Union government would be willing to assist states to improve power distribution and supply (**see Annexure 3 for minutes**). This could be a long-term solution for the region.

3.1 Natural gas is available in NCR and can be supplied to industries immediately

EPCA report no 72 has already listed the regions of NCR, which are being supplied by different agencies – IGL, GAIL India, GAIL City Gas, Haryana City Gas, Adani Gas.

The report had stated that infrastructure was available for supply of natural gas to industries in NCR. It had also stated that pipelines had already been laid to the industrial areas and it had customers in all such areas.

EPCA on 31.10.2017 had convened another meeting with all gas company representatives to discuss implementation of the directions of the Hon'ble Court. The minutes of the meeting are attached (**see annexure 3 for minutes**). Gas companies explained that they have the necessary pipeline infrastructure to meet the needs across NCR. There is also no shortage of natural gas. In addition, they said that they have customers in the industrial areas and have been supplying gas for the past 10 years in some cases. The key resistance to moving to natural gas is the availability of cheaper alternatives. In fact, the current tax system incentivizes the use of these dirtier options, they explained. Under GST, manufacturing companies get a credit of 18 per cent when they use pet coke or FO. But as natural gas is not under GST, the state VAT – ranging from 6 per cent in Rajasthan to 26 per cent in UP – is charged.

Therefore, clearly, availability of gas is not a problem in this region and this transition can happen.

3.3: There is availability of gas in Manesar, Haryana and Bhiwadi, Rajasthan

A specific reference was made about the lack of availability of gas in Manesar, Gurgaon. This is inaccurate.

GAIL India as well as Haryana City Gas both supply gas in this region (*see Annexure 4 for map of pipeline of GAIL extending to Bhiwadi and to Neemrana in Rajasthan and going through industrial area of Manesar in Haryana*).

GAIL India has customers in Manesar and also in Bhiwadi. In Manesar it has been supplying gas to Maruti Suzuki as well as Hero Honda, Denso Corporation and Omax Auto, amongst others. In Bhiwadi, it has been supplying to companies like Saint Gobain, which manufacture glass and need regular and uninterrupted supply.

Therefore, there is no question that gas network and suppliers exist and cannot be used as a ruse to delay the much-needed transition to cleaner fuels in this hot-spot.

3.4: Pollution monitoring track-record of companies does not invite confidence

Industries, opposing the ban on pet coke and FO, have been at pains to say that they will meet the standards imposed by MOEF&CC. However, it must be noted that their track-record to monitor pollution is, to put it politely, poor.

IA filed by M/s Sangal Papers Ltd in Annexure A/4 (page 109 of paperbook) provides the photocopy of stack emission monitoring and analysis report dated 4.6.2016 issued by Newcon Consultants and Laboratories. This analysis interestingly shows that while the industry uses 40-45 tonnes per day of pet coke, its Sulphur emissions are only 68mg/Nm³.

This is nothing short of a technology miracle as it was using dirtiest fuel but with practically no emissions, without any pollution control equipment to speak of. In fact, this same industry is now installing (as it has stated to the Hon'ble Court) expensive equipment to combat pollution. But if the IA filed in court says that its emissions are so low that the industry has already met the standards without installing any equipment, it does not stand to reason why they need to invest more in pollution control (*see Annexure 5, extracted from paperbook*).

This shows how monitoring of pollution is fraught with problems. The pollution control boards have permitted industries to out-source pollution monitoring to third party laboratories. As can be expected, this means reports are filed and compliance is shown on record.

The draft notification of October 23, 2017 requires all industries to install continuous online SO₂ emission monitoring systems (CEMs) with links to CPCB and state boards. But it is important to note that this online system also has huge challenges. It has been noted that unless strict protocols are followed, the system can be easily manipulated and data modified. For instance, the monitoring equipment can be installed wrongly; then its readings can be wrong because the monitoring equipment is not certified; or it is not calibrated; or worse, the software for recording and transmission is tampered with. Therefore, the introduction of CEMs, however necessary, will require very strict protocols

for regular inspection and validation. The online system needs boots on the ground, which is often difficult because of the sheer lack of pollution control board staff.

This is why it is important that industry in this hot-spot region be required to make the transition to cleanest fuel. Half measures will not be enough to bring the region out of the pollution quagmire.

3.5: Piece-meal ban on these fuels will be difficult to implement

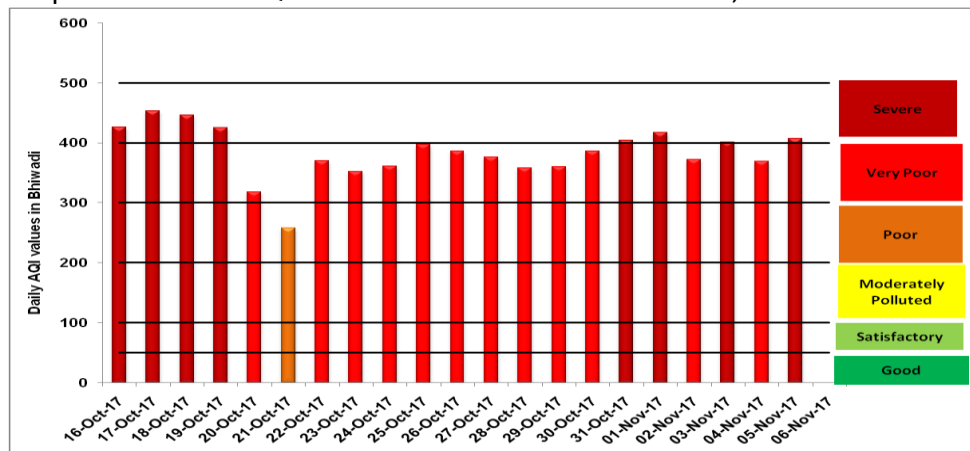
It is important to get a ban on the use of these fuels across NCR so that there is better compliance and enforcement. EPCA has in its meeting on October 31, 2017 discussed the implementation of the ban with all oil manufacturing companies (*see Annexure 3 for minutes*). The oil companies – IOC, BPL, HPCL, Reliance, Essar – have given assurance to EPCA that they will institute procedures to take affidavits from their suppliers that there will be no sale or distribution in all districts of NCR. This is effective from November 1, 2017 as per the directions of the Hon'ble Supreme Court.

The issue now is to ensure also that imports to this region are regulated. EPCA has initiated discussions with the Ministry of Commerce to understand how to effectively enforce the directions. It is examining if importers of these fuels can be required to get a license. This would require moving these fuels from OGL to restricted category. Under the current procedure this can only be done if the Ministry of Petroleum and Natural Gas (MOPNG) makes a recommendation to MOEF&CC and MOEF&CC in turn asks the Ministry of Commerce for this to be done. EPCA is examining if anything can be done to expedite this process or to require for licenses for import to NCR.

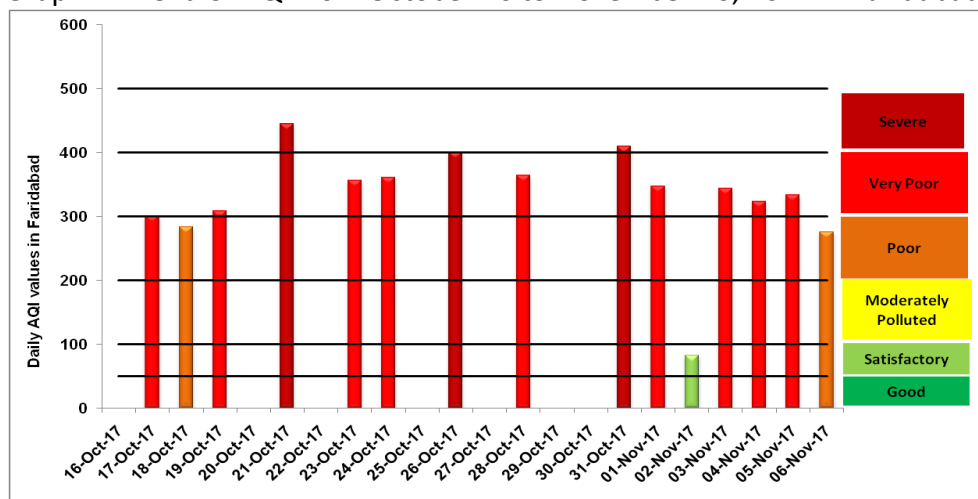
But it is important that the ban is extended to the entire region as it is a common air-shed and it will also make enforcement more effective.

Annexure 1: AQI of industrial areas

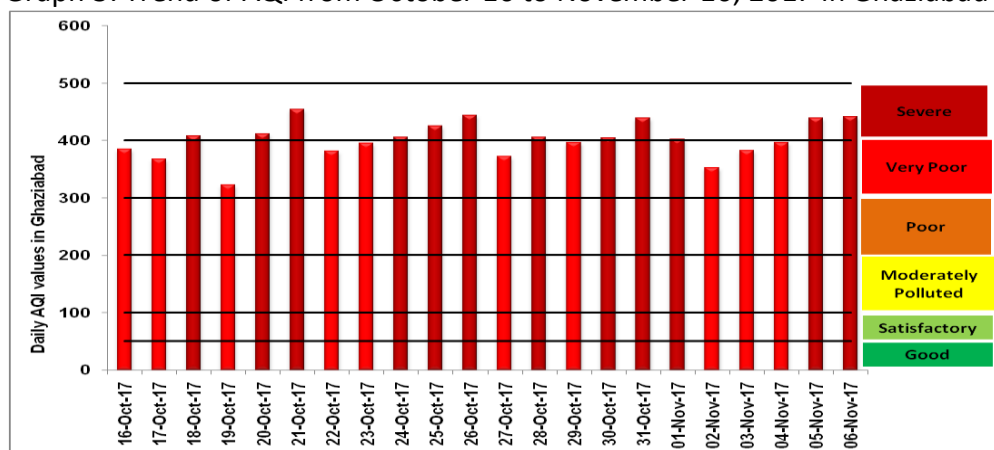
Graph 1: Trend of AQI from October 16 to November 16, 2017 in Bhiwadi



Graph 2: Trend of AQI from October 16 to November 16, 2017 in Faridabad



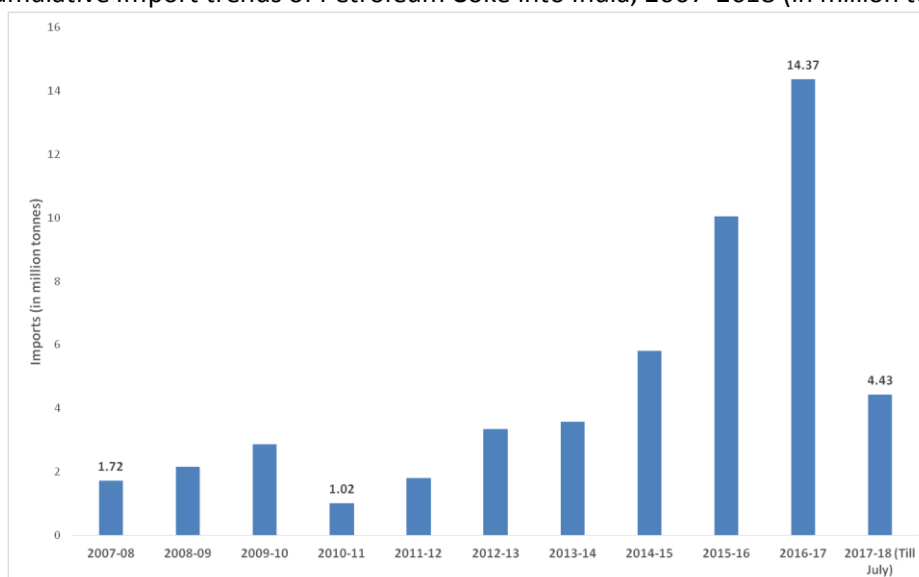
Graph 3: Trend of AQI from October 16 to November 16, 2017 in Ghaziabad



Source: Analysis of CPCB AQI data

Annexure 2: Import of pet coke in India: trends and countries from where it is being imported

Graph 1: Cumulative Import trends of Petroleum Coke into India, 2007-2018 (in million tonnes)



Source: EXIM database, Ministry of Commerce & Industry

Petroleum Coke Import Trends –

- In 2016-17, imports of Petcoke increased over 2015-16 by 43.1% in terms of volume and 106.9% in terms of value
- This year (2017-18), in just 4 months up to July, India has already imported some 4.43 million metric tonnes of pet coke, as against 14.37 million tonnes imported in 2015-16
- Long term trends show a steady increase in imports, from 1.72 million tonnes in 2007-08 to a peak of 14.37 million tonnes in 2016-17. The Compounded Annual Growth Rate (CAGR) since 2010-11 is **45.92%** annually.
- There are 46 countries that India imports Petcoke from. Data shows that a total of **51.13 million tons of Pet Coke** has been imported into India since April 2007. The top 3 countries listed below are responsible for more than 85% of India's PetCoke imports in this period.

Table 2: Import trends of Petroleum Coke by country of origin into India, 2007-2018 (in '000 tonnes).

Country of Import	2014-15	2015-16	2016-17	2017-18 (Till Jul)	% Contribution
United States of America	4,204.19	5,487.07	8,590.63	2,197.07	57.9%
Saudi Arabia	291.39	3,208.78	3,836.94	1,525.70	17.3%
China	690.20	645.86	781.07	298.86	10.6%
Kuwait	159.58	989.54	564.67	330.00	3.3%
Indonesia	127.19	307.39	164.75	86.78	3.1%
Canada	230.14	109.20	470.18	170.50	2.4%
United Kingdom	42.94	35.32	138.46	41.45	1.3%
Malaysia		16.50	33.00		0.7%
Chile			40.55		0.5%
Spain			63.50	27.00	0.5%
All other countries	61.92	132.13	198.53	47.51	2.3%

Source: EXIM database, Ministry of Commerce & Industry

Annexure 3: Minutes of EPCA, October 31, 2017

**Minutes of the meeting of Re-constituted EPCA held under the
Chairmanship of Shri Bhure Lal at 3:00 noon on 31.10.2017 in the office of
Centre for Science and Environment, Core 6A, Fourth Floor, India Habitat Centre**

Agenda items: Ban on use of Furnace oil and Pet Coke in NCR in compliance of the Hon' ble Supreme Court order dated 24.10.2017 in W.P. (C) 13029 of 1985 M.C. Mehta vs UoI.

In attendance:

Chairman and Members EPCA

1. Bhure Lal, Chairman, EPCA
2. Sunita Narain, Director general, CSE
3. Varsha Joshi, IAS, Principal Secretary cum Commissioner Transport, GNCTD
4. A.Sudhakar, Member Secretary, CPCB
5. S.M. Ali, Member Secretary, DPCC
6. Mr. A.K. Baghi, Associate Professor, Dept. of Chemistry, Dayal Singh College, D.U.
7. Sanjiv Agarwal, AE, DJB
8. Rohit Kumar, JE, DJB
9. P K Gaur, NDMC
10. Manoj Kumar, DEMS

Representative of Concerned Agencies

1. N K Gupta, AD, CPCB
2. Dr Anil Kumar, Director, Environment, GNCTD
3. M P George, Scientist D, DPCC
4. B L Chawla, SEE, DPCC
5. ShyamSundar, EE, DPCC
6. Dr. P K M K Das, RO, HSPCB
7. Shri Aniruddha Kumar, IAS, Joint Secretary, Ministry of Power, Gol + 1
8. R K Baderia, GM, Environment Engg. , NTPC
9. V Ravi Babu, GM, NTPC
10. S K Sinha, GGM, NTPC Dadri
11. R K Verma, NTPC Dadri
12. S K Majumdar, AGM, NTPC Dadri
13. Sandeep Gupta, AGM, NTPC
14. AlokRaizada, AGM, NTPC
15. BMS Rawat, AGM, NTPC
16. B L Sharma, GM (O&M), NTPC Jhajjar
17. Prashant Kumar, Ex. Director (Technical), Mohapatra
18. Brajesh Kumar, Senior VP, BYPL

19. Vijay Panpalia, ASVP, BRPL
20. Uttam Kumar, Manager, TPDDL
21. Ashish Kumar Dutta, AGM
22. Vishal Bhatia, DGM, IGL
23. D Sawant, GM, GAIL
24. Ajay Sinha, DGM, GAIL Gas

25. P.K. Pandey, VP (Marketing)
26. AnoopDhar, VP, Haryana City Gas
27. Amitabh Ranjan, VP, Haryana City Gas

28. Rajiv Sharma, Adani Gas Ltd.
29. Bhashit Dholakia, Adani Gas Ltd

30. Manohar Kukreja, GM, IOCL
31. G K Sardana, DGM, IOCL
32. S C Das, IOCL
33. G Shanker, GM, IOCL
34. Sanjay Luthra, GM
35. R K Chaudhary, GM, IOCL
36. Rameshwar Singh, DGM, IOCL
37. Debashish Nandi, IOCL
38. Noor Khan, Chief Manager, IOCL
39. Raghavendra Singh, SM, IOCL
40. H Vyas, Ed. Tech., State Level Oil Coordinator

41. Dinesh Sharma, Head (Specified products), HPCL Mittal Energy Gas Ltd.
42. Rohit Arya, DM, HPCL Mittal Energy Ltd.
43. Umesh P Singh, Chief Manager, HPCL
44. Anil Kumar Gupta, Chief Regional Manager, HPCL
45. Ashok Kumar T, HPCL

46. Sanjay Kargaonkar, Territory Manager, BPCL
47. Tanmay Jaiswal, Chief Manager, BPCL

48. Mahesh Advani, Head-Sales, ESSAR Pvt. Ltd.
49. RohitDudeja, DGM, ESSAR Oil Ltd.
50. N K Bansal, Director (Operations & Maintenance), FIPI
51. Chranjeet Singh, SIA, SBD
52. Davinder Saproo, AGM

53. S. Mohanty, Sr. Vice President, Reliance Industries Limited.

EPCA informed that the Hon'ble Supreme Court vide order dated 24.10.2017 in W.P. (C) 13029 of 1985: M.C. Mehta vs UoI has placed a ban on use of Furnace oil and Pet Coke in the state of U.P., Haryana and Rajasthan from November 01, 2017. Since the ban was imposed based on the EPCA Report No. 72 "Mandating Acceptable Fuels and Recommending Ban on Sale and use of Furnace oil and Pet Coke in NCR" which was for NCR, EPCA has come out with a clarification that ban is to be imposed on the districts of the three states falling in NCR. EPCA said that this clarification has already been put on EPCA website and been communicated to Chief Secretary of the three States on October 27, 2017. EPCA in its letter to the state government has said as follows:

- a. **The ban on pet coke and furnace oil is confined to NCR as it is based on the EPCA report no 72, which was restricted to NCR. State governments of Rajasthan, Haryana and UP are expected to notify this ban for districts in their state in NCR. But if this notification is not done then regardless, the ban comes into effect from November 1, 2017.**
- b. **All industries (categories listed), regardless of location, are expected to comply with standards for SOX and NOx as in the draft notification presented to court by MoEF&CC on October 24, 2017. All these industries will be required to install Online Continuous Emission Monitoring System (OCEMS) to monitor emissions of SOx.**

This meeting is called to discuss the following issues to ensure implementation and compliance with the directions of the Hon'ble Supreme Court:

1. Preparedness of power discoms and utilities to provide uninterrupted power to Delhi and NCR districts of Uttar Pradesh, Haryana and Rajasthan, in view of the ban on the use of pet coke/furnace oil.
2. Utilization and state of readiness of piped natural gas for industrial and domestic energy requirements.
3. Steps to be taken by oil marketing companies to ensure compliance with the directions
4. Steps to be taken so that import of these commodities, which are currently allowed under OGL, are restricted in the above-mentioned states/region.

Agenda 1. Preparedness of power discoms and utilities to provide uninterrupted power to Delhi and NCR districts of Uttar Pradesh, Haryana and Rajasthan, in view of the ban on the use of pet coke/furnace oil.

Joint Secretary, Union Ministry of Power informed EPCA that power generation is not a problem. This region and the country has surplus power and therefore, they are in position to meet additional demand. The issue he said would be of the last mile distribution and therefore, what needed to be understood is the preparedness of state electricity boards and distribution companies to supply power. However, he said that the Union ministry would be willing to assist if there is any problem in the supply and to help in the improvement of the infrastructure.

It was agreed that if there is any problem that is faced by industries to source this power, EPCA would convene further meetings, including with state distribution companies.

Agenda 2: Utilization and state of readiness of piped natural gas for industrial and domestic energy requirements.

EPCA reviewed the availability of gas and preparedness of companies to supply gas to industries and other customers with all the companies that have distribution rights in NCR. Availability of natural gas in NCR for use as industrial fuel

Gas Selling Companies	State/City	Region catered
IGL	New Delhi	Delhi
	Uttar Pradesh	Ghaziabad
		GautamBudh Nagar
Gail India Ltd	Haryana	Rewari (including Dharuhera&Bawal)
		Bhiwadi
	Rajasthan	Neemrana
Gail Gas Ltd.	Uttar Pradesh	Meerut
	Haryana	Sonepat
Haryana City Gas Distribution Limited	Haryana	Gurgaon
Adani	Uttar Pradesh	Khurja
	Haryana	Faridabad
		Palwal

Natural Gas company representatives informed EPCA that they have infrastructure ready for supply of natural gas to industries in NCR. Pipeline is already laid in the industrial areas. Any industry that applies will be provided connection.

EPCA said that it has been told by industries that gas companies demand high initial deposit and take too long to give gas connection. EPCA said that the efforts to clean air of Delhi-NCR should not be jeopardized by gas companies. **EPCA directed that the gas companies should provide good customer service and provide gas at competitive rates.**

Natural gas company representative informed EPCA that they have visited some industries in NCR for sale of gas but they were informed that they have other alternative fuels such as coal and carbon black feed stock (CBFS) available for combustion.

EPCA discussed the characteristics of CBFS with oil companies and was informed it falls into the category of furnace oil. The companies explained that CBFS is another name for furnace oil. EPCA clarified that this would mean that the ban is also on this product.

As far as other fuels are concerned, EPCA made its position clear that it was not asking for bans on further kinds of fuels, including coal. However, it would be difficult for industries to comply with the draft standards issued by MOEF&CC if they were using high sulphur fuels. Therefore, the strategy is to ban; remove the most polluting fuels from use in NCR and then allow the rest of the fuels to compete under strict emission standards.

The issue of cost was also discussed. Gas companies said that they were at a disadvantage because natural gas was not under GST. Therefore, while tax on pet coke/furnace oil was

credited back to industries, this was not the case in gas. But they said they would do their best to ensure that customers were satisfied with their service.

EPCA agreed to monitor this and to resolve any issues that would arise in supply between industries and gas companies if necessary.

Agenda 3. Steps to be taken by oil marketing companies to ensure compliance with the directions

Reliance Industries representative informed that furnace oil and pet coke are supplied to channel partners/ distributors through online SAP software and the supply to the channel partners can be easily stopped. He further informed that affidavits have been taken from channel distributors to not supply any of these fuels in NCR and that in case any non-compliance is observed legal action can be easily initiated.

Essar Industries representative informed that they will be able to restrict supply of fuel to distributors in NCR. There will be no despatch of product from tomorrow onwards. Further, indemnity bond will be signed with the suppliers and any suppliers found in breach of contract will have to bear the consequences.

IOCL representative informed that they will also be able to restrict sale of these fuels in districts in NCR and further bonds have been signed with distributors supplying these fuels outside NCR to not supply in any case in NCR. HPCL and BPCL representative also informed that as they supply these fuels directly to customer and this will be stopped from November 01, 2017.

All oil marketing companies expressed that the bonds signed with suppliers to not to supply these fuels in NCR are enforceable documents. EPCA appreciated the efforts made by oil companies. **EPCA directed all three SPCBs to tighten enforcement and any case of violation be immediately reported to the concerned oil company which will take action against the supplier for breach of the agreement/ contract.**

EPCA further directed SPCBs to carry out random inspection of industries to check the type of fuel used by these post the ban and give report to EPCA.

Oil companies discussed about supply of CBFS to the industries that are using it as feedstock. EPCA said that supply of CBFS for use as feedstock is allowed as its report had recommended ban on the use of pet coke as a combustion fuel. EPCA said that in no case should pet coke and furnace oil be supplied or used as fuel for combustion in NCR.

Oil companies also raised concern that even as they will stop the sale in NCR, there is ready availability of these fuels through import. The import of furnace oil and pet coke is allowed under OGL.

EPCA agreed that this was a matter of concern and it would take it up with the Ministry of Commerce.

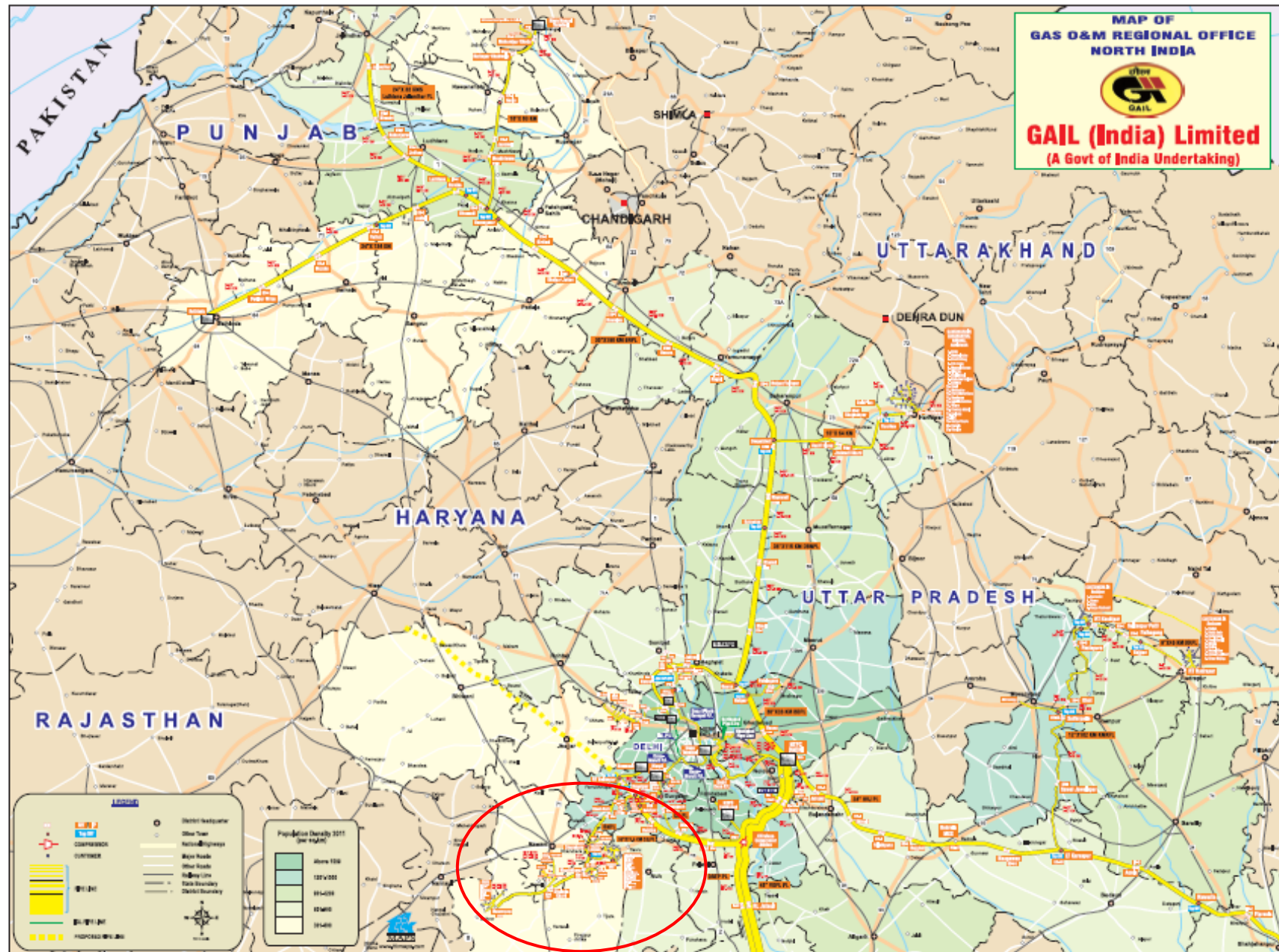
During the meeting, EPCA also discussed the matter of providing temporary power connection for events/ functions and other requirements within 24 hours by DISCOMS in light of ban on use of DG sets in Delhi. Secretary, Power informed that all efforts are being made by DISCOMS to provide power connection within 24 hours. However, it is technically not possible to provide connection more than 50 KW in 24 hours as there are safety issues to be addressed by DISCOMS while providing such connections. However, connections less than 50 KW will be provided within 24 hours. Secretary, Power further informed that in addition the issue of high security fees and high one time fees is also being looked into by DERC for ease of customers.

The conclusions of the meeting and following agenda is as below:

1. **Adequate power is available for supply to industries in the region as an alternative fuel. The Union ministry is prepared to assist to get infrastructure upgraded for distribution if required.**
2. **Gas companies have gas and distribution network to supply in the region.**
3. **EPCA will work closely to monitor and to assist industries in case they is any problem with supply of gas.**
4. **Oil companies will ensure that they put in systems to strictly restrict sale of furnace oil and pet coke in NCR.**
5. **The strategy is to ban the dirtiest of fuels in NCR and then to allow industries to use other fuels, including coal or gas but ensuring that they meet emission standards (draft issued on MOEF&CC website).**
6. **CBFS is also banned as it is a furnace oil and cannot be used as a substitute.**
7. **Pet coke use is allowed as feedstock but not for combustion.**

It was agreed that strict enforcement would be required so that the gains of this important direction to ban the dirtiest and most polluting fuels is not lost.

Annexure 4: Map of GAIL's gas distribution network in North India



Annexure 5: SCANNED DOCUMENT OF TEST FROM PAPERBOOK

Annexure A/4 109

Newcon Consultants & Laboratories
 An ISO 9001 : 2008, ISO 14001 : 2004, OHSAS 18001 : 2007 Certified Laboratory NABL ISO/IEC
 17025 : 2005 (Chemical Testing, Cert. No. T-1761, Biological Testing, Cert. No. T-3285),
 Accredited Laboratory, Recognized with MOEF & U.P. Pollution Control Board
 Website : www.newconlab.com

TEST CERTIFICATE
STACK EMISSION MONITORING AND ANALYSIS REPORT

Page 1 Of 1

TEST REPORT NO : NCL/SPBSM/974/05/2016		DATE OF REPORT : 04/06/2016	
Name And Address Of Customer		SANGAL PAPERS LTD. VILLAGE-BHAUNSA, P.O.- SANDHAN, 22 KM. STONE MEETRUT MAWANA ROAD, MEERUT, U.P., INDIA	

SAMPLING DETAIL			
Analysis Start Date	29/05/2016	Analysis End Date	3/06/2016
Date Of Sampling	28/05/2016	Sampling Done By	NCL
Sampling Protocol	AS PER CPCB GUIDELINES	Duration Of Sampling	30 Minutes
Equipment Used	Vayubodhan Stack Sampler VSS1 (S.No. : 321-OTC-07)		

DETAILS OF STACK			
Stack Attached To	Boiler	Stack Dia At The Top	3000 mm
Capacity	34 TPH	Material Of Construction	RCC
Type Of Fuel Used	Pet Coke	Normal Operation Schedule	24 HRS
Quantity Of Fuel Used	40-45 Ton/Day		
Stack Height Above The Ground level	45.0 Mtr		
Attached APCs	Therm Cyclone & Wet Scrubber		

PHYSICAL OBSERVATIONS			
Ambient Temperature	43°C	Flue Gas Temperature	122°C
Velocity Of Flue Gases	6.2 Mtr/Sec	Sampling Flow Rate For SPM	10 LPM
Sampling Flow Rate For Gases	2.6 LPM	Quantity Of Emission Discharged	157000 Nm³/hr

TEST RESULT					
S.No.	Parameter	Unit	Protocol	Result	Specification/ Limit (As Per CPCB)
1	Particulate Matters (PM)	mg/Nm³	IS-11255 (P-1)	114	150
	Sulphur Dioxide (SO₂)	mg/Nm³	IS-11255 (P-2)	68	Not Specified
3	Oxides of Nitrogen (NOx)	mg/Nm³	IS-11255 (P-7)	86	Not Specified
4	Carbon Monoxide (CO)	% by Vol	IS-13270	0.36	1% By Volume

At the time of monitoring, Boiler was running at current load of 20 TPH

*** End Of Report ***

FOR NEWCON CONSULTANTS & LABORATORIES

CHECKED BY

INTIKHAB KHAN
M.Sc (Env. Science)

AUTHORIZED SIGNATORY

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