

# Analysis of Industrial Fuel Policy in Delhi & NCR States



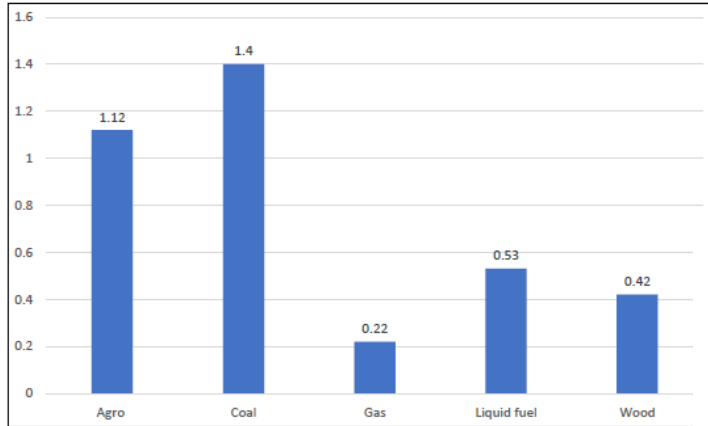


# REPORT ON ASSESSMENT OF INDUSTRIAL AIR POLLUTION IN DELHI-NCR

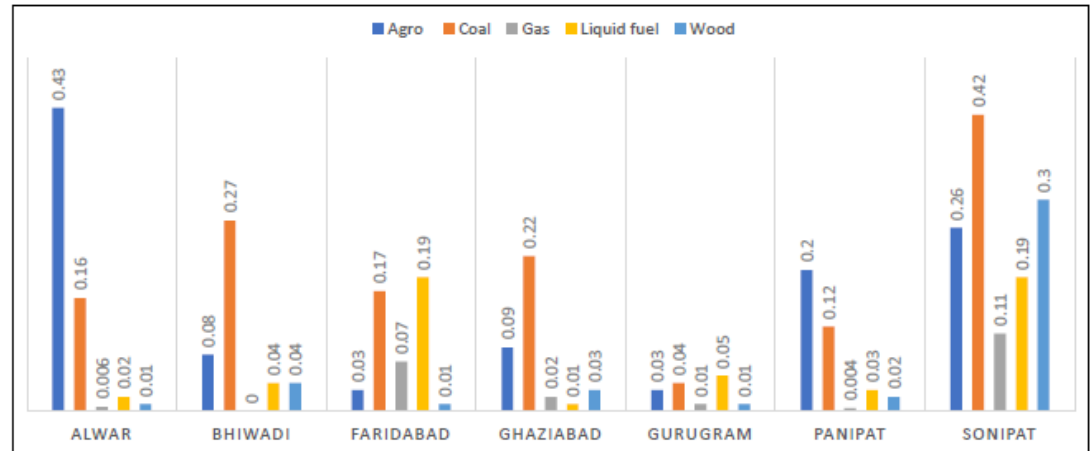


# Coal is still the **KING**

**Total Annual Fuel Consumption**  
(in million tonnes per year)



**District-wise Annual Fuel Consumption**  
(in million tonnes per year)



# SPCB can push for clean fuel for pollution control

Air Act clearly mentions:

*“If the **State Government, after consultation with the State Board**, is of opinion that the use of any fuel, other than an approved fuel, in any air pollution control area or part thereof, may cause or is likely to cause air pollution, **it may, by notification in the Official Gazette, prohibit the use of such fuel in such area or part thereof with effect from such date** (being not less than three months from the date of publication of the notification) as may be specified in the notification”.*



# Delhi NCT



# Delhi NCT: History

- 1993 CNG had become available in Delhi
- By 1998 , Delhi was converted to 100% unleaded fuel based on a Supreme court order
- In 1998 Supreme Court order came to make CNG mandatory for vehicles, buses, auto rikshaws etc. by April 2001
- By 1<sup>st</sup> December, 2002, Over the years, cities around Delhi again listed as most polluting.
- Then PNG was made mandatory for Industries
- Out of 1555 fuel consuming industries, around 1200 shifted to PNG



# Delhi NCT: List of Approved Fuel

S.No	List of approved fuels	
1.	Petrol (BS VI with 10 ppm sulphur) as per the notification of Government of India as amended from time to time	
2.	Diesel (BS VI with 10 ppm sulphur) as per the notification of Government of India as amended from time to time	-
3.	Liquid Petroleum Gas (LPG)	
4.	Natural Gas/Compressed Natural Gas (CNG)	
5.	Aviation Turbine Fuel	
6.	a) Firewood for crematoriums and for other religious purposes b) Wood charcoal for tandoors and grills of hotels/restaurants/banquet Halls/eating houses having emission channelization / control system c) Wood charcoal for use in clothes ironing	
7.	Biogas	
8.	Refuse Derived Fuel (only for Waste-energy Plants)	
9.	Any other clean fuel notified by the govt. of NCT of Delhi/Govt. of India subsequent to this notification	

Coal, pet coke, furnace oil and kerosene were banned

Besides the fuels mentioned above, coal with low sulphur content (less than 0.4%) permitted for use in thermal *power plants only*.



# Delhi NCT: *Quest towards cleaner fuel*

- Banning coal in the region
- Providing gas supply infrastructure in 47 out of 50 industrial areas: 3 areas – Karawal Nagar, Anand Parvat and Jawahar Nagar Industrial areas
- Subsidies from DPCC : Rs 1 lakh for industries using more than 500 units and 50 k subsidy for less than 500 units.





# Delhi NCT: Issues and Roadblocks

- Unaccounted number of fuel using illegal industries
- Polluting industries on Delhi border (operating in other states but polluting Delhi)
- Illegal supply of coal and other polluting fuels in Delhi NCT
- Price of gas still higher compared to coal



# Rajasthan



# Rajasthan: History

- Industrial Development since 1950s
- 347 RIICO industrial areas with more than 40,000 units in the state
- One of the largest producers of metals, stones, dairy, processed food oils etc.
- **Industrial Development policy 2019** in place – includes waste management, water/energy conservation, rain water harvesting etc. but **no mention of cleaner fuel.**
- In the name of fuel policy – only a list of approved fuels



# Rajasthan: List of Approved Fuels

S.No	List of approved fuels
1.	Petrol (MS) including branded MS (as per the notification of Govt. of India as amended from time to time)
2.	Diesel (HSD) including branded HSD (as per the notification of Govt. of India as amended from time to time)
3.	Kerosene (SKO) (as per the notification of Govt. of India as amended from time to time)
4.	Liquid Petroleum Gas (LPG) /Propane/Butane
5.	Natural Gas/Compressed Natural Gas (CNG)/Piped Natural Gas (PNG) /LNG
6.	Aviation Turbine Fuel
7.	Firewood/Wood Charcoal
8.	All types of Biofuel/Biogas
9.	Refused Derived Fuel (From Waste to Energy Plants)
10.	Coal/Coke/Lignite
11.	Biomass/Agriculture refuse and/or briquettes made from biomass/agriculture refuse.
12.	Dung cake
13.	Waste suitable for co-processing in Cement Kilns approved by Central Pollution Control Board
14.	LDO/LSHS/Naptha
15.	Hydrogen/Methane

- No specific criteria behind the list finalization.
- Pet coke and furnace oil were banned.
- Lime Kilns and cement plants are permitted to use pet coke as a fuel
- Kerosene, Coal/coke/lignite and LSHS are approved fuels.



# Rajasthan: *Quest towards cleaner fuel*

- Declaration of Approved fuel list in January, 2019.
- Recent order: On 2<sup>nd</sup> March, 2019, RSPCB directs all units in Bhiwadi to shift to PNG by 31<sup>st</sup> March, 2019.
- Making PNG available in selected districts: Only Alwar (Bhiwadi), Kota and Bharatpur have existing gas pipeline infrastructure
- Brought in a new Renewable Energy Policy 2019 – State is saving 5 lakh tonnes of coal every year

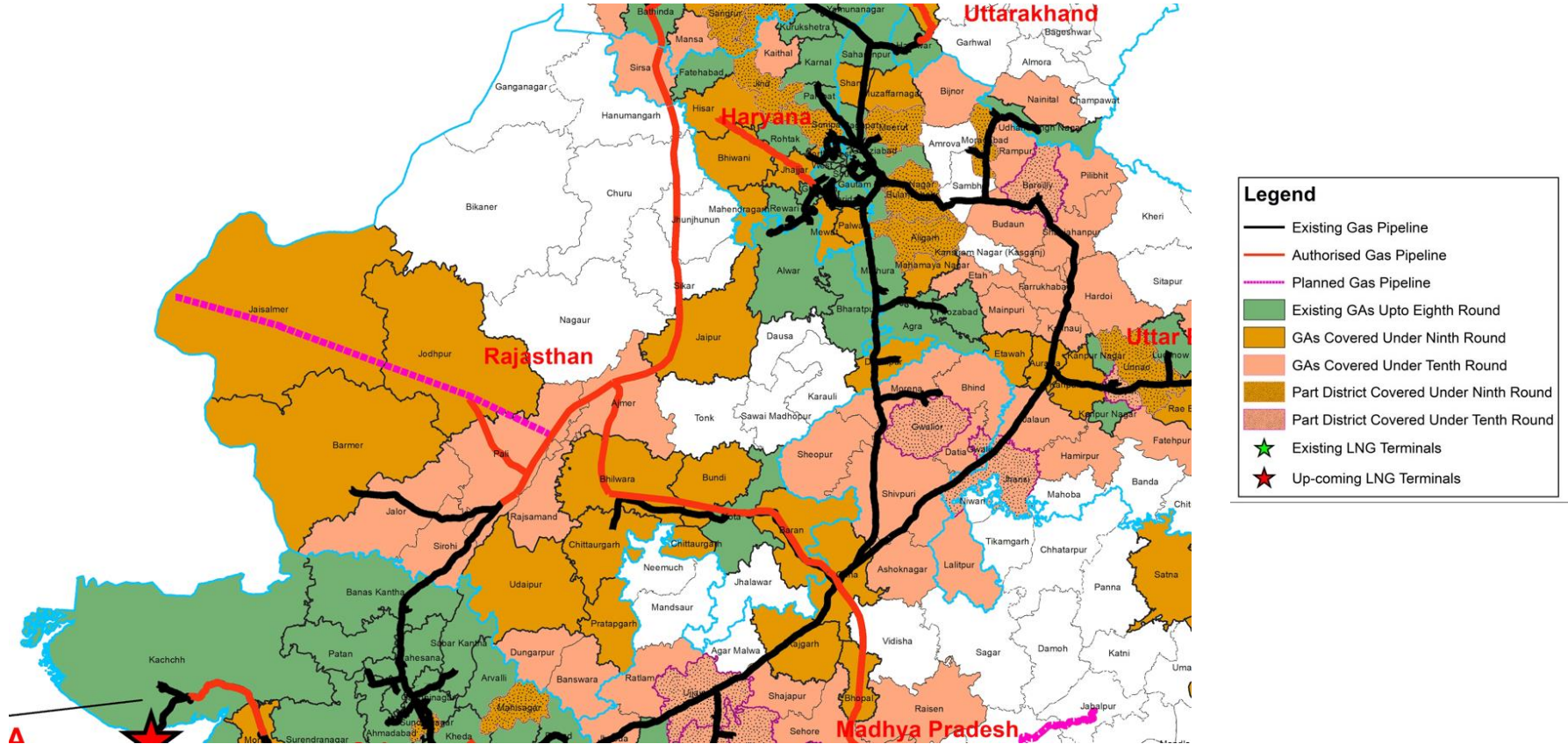


# Rajasthan: Issues and Roadblocks

- High price of gas compared to coal –
  - 10% VAT currently
  - 15% VAT in Gujarat
  - Current price between Rs. 38-40/Scm
- Lack of a well-defined analysis and criteria behind the approved fuel list
- Non-availability of gas infra in major industrial areas of the state
- Polluting fuels like coal approved and easily available, mandatory charges by gas companies
- No intermediary cleaner fuels declared
- Legal litigations between gas companies – Bhiwadi case
- Capital cost with no incentives
- No mention of cleaner fuel in the industrial policy of the state



# Rajasthan: Gas Infrastructure Map 2019



# Haryana





# Haryana: History

- Leading industrial state: Leader in manufacture of cars (48%), cranes (80%), excavators (52%) and two wheelers (39%)
- 40% of the state under NCR (14/22 districts) – hence **big influence of Delhi**
- **Industrial Development and Business Promotion policy 2015**
  - **Mentions developing a gas distribution network in all areas** of the state in shortest time period
  - Making PNG available in 50% of the districts
- Has an approved fuel list



# Haryana: List of Approved Fuels

S.No	List of approved fuels
1.	Petrol (as per the norms prescribed by Govt. of India from time to time)
2.	Diesel (as per the norms prescribed by Govt. of India from time to time)
3.	Liquid Petroleum Gas (LPG) and PNG for domestic and commercial use.
4.	Natural Gas/Compressed Natural Gas (CNG) for vehicles
5.	Piped Natural Gas (PNG) and LPG for boilers, furnaces, lime kilns and thermic fluid heaters.
6.	Aviation Turbine Fuel
7.	Coal for boilers, furnaces, thermic fluid heaters, lime kilns and brick kilns
8.	Low Sulphur diesel fuel (LSDF) for boilers, furnaces, lime kilns, thermic fluid heater and incinerators.
9.	Biomass/ agriculture refuse such as rice husk, mustard husk, bagasse, almond husk, walnut husk either in the form of briquettes or loose to be used in boilers, furnaces and brick kilns.
10.	Firewood and dung cake for domestic use, crematoriums and for other religious purposes
11.	Wood charcoal for use in cloth ironing
12.	Biogas, bio fuel and char coal
13.	Refuse Derived Fuel for power plants, cement plants including waste-energy plants.

- Pet coke and furnace oil and kerosene were banned.

- Coal is an approved fuel across the state.

-Lime Kilns and cement plants are permitted to use pet coke as a fuel

-Better list than Rajasthan but no specific criteria behind the list finalization.

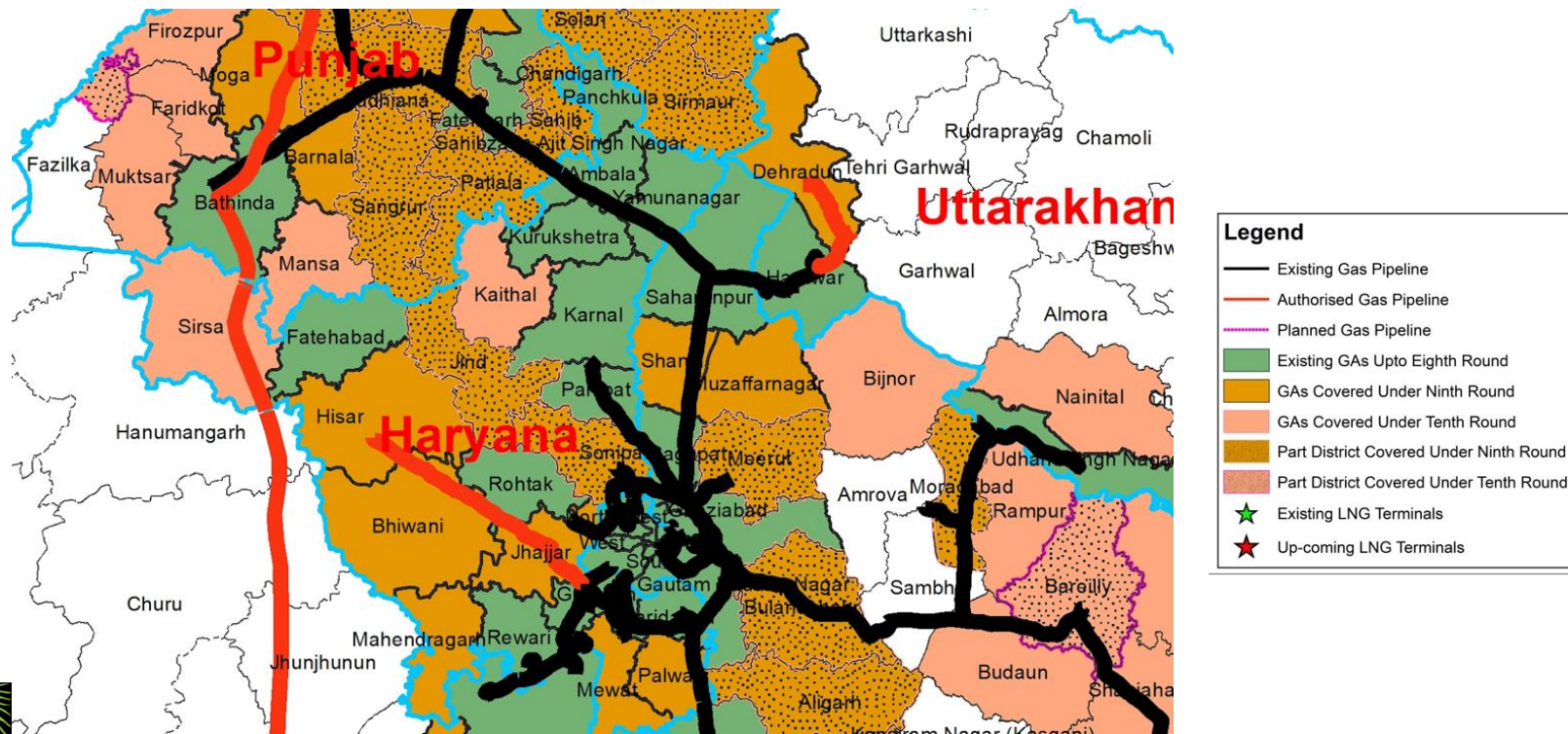


# Haryana: Issues and Roadblocks

- High price of gas compared to coal –
  - 6.3% VAT currently
  - 15% VAT in Gujarat
  - Current price in Rewari is Rs. 31.33/Scm (due to fall in crude oil prices)
- Lack of a well-defined analysis and criteria behind the approved fuel list
- Non-availability of natural gas infrastructure even in districts marked green in the PNGRB map
- Low rate of PNG switch of industries in the state – 81 using gas out of 948 in Faridabad and 11 out of 125 in Gurugram
- Polluting fuels like coal approved and easily available
- Legal litigations between gas companies – Gurugram case
- Mandatory charges by gas companies
- Continuous capital cost investment and no incentive for fuel switch



# Haryana: Gas Infrastructure Map 2019



# Uttar Pradesh



# Uttar Pradesh: History

- List of Approved fuels still not officially declared – Submitted to State Govt. for Approval
- Leader in manufacture of leather (25%), Sugar (28%), textile (5.6%) and chemicals (6%)
- Only 10 districts out of 75 have existing gas infra
- **Industrial Development and Employment Promotion Policy 2017**
  - Mentions developing a gas grid in the state
  - Mentions inclusion of prominent industrial areas in the gas grid through GAIL and other oil companies



# Uttar Pradesh: *Quest towards cleaner fuel*

- UPPCB direction to industries to switch to PNG in NCR –August 2019 within 15 days
- Strict compliance in Taj Trapezium Zone (TTZ): Subsidy on Natural gas
- Presence of Gas supply infrastructure in major districts – 10 districts
- Addressing cleaner fuel in State industrial development policy 2017



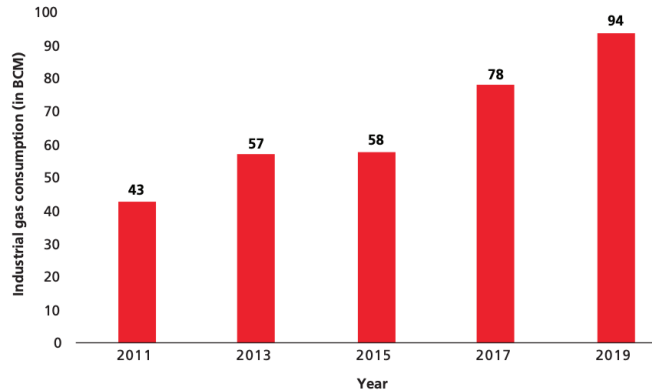
# Uttar Pradesh: Issues and Roadblocks

- High price of gas compared to coal –
  - 10% VAT currently
  - 15% VAT in Gujarat
  - Current price in Ghaziabad is Rs. 31.33/Scm (due to fall in crude oil prices)
- Delay in release of approved fuel list
- Non-availability of natural gas infrastructure even in districts marked green in the PNGRB map
- No subsidy in the NCR region like Agra
- Mandatory charges by gas companies
- Continuous capital cost investment and no incentive for fuel switch



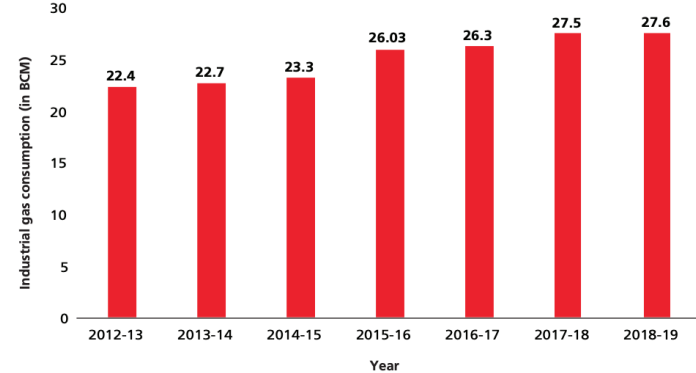


# Natural gas penetration: *Policy flaw*



Source: International Energy Agency<sup>3</sup>

China – 43 to 94 BCM

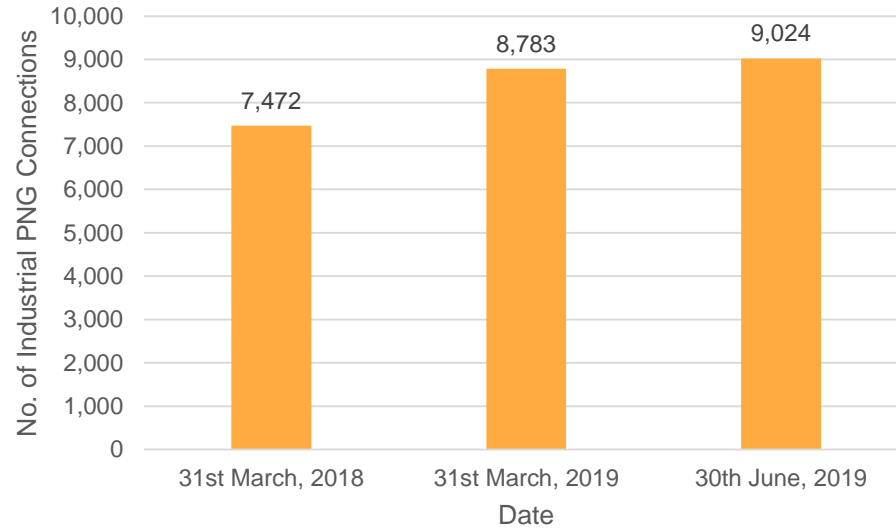


Source: Indian Petroleum and Natural Gas Statistics, 2018-19<sup>4</sup>

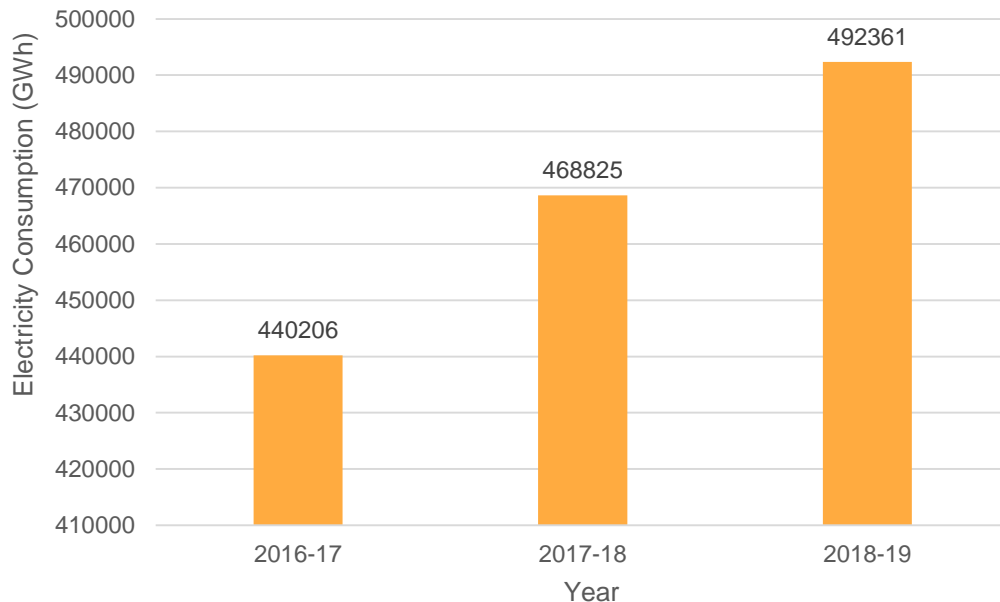
India – 22.4 to 27.6 BCM



# PNG connections



# Industrial Electricity Consumption



- Rate of growth from 1960 -1970 – 11.57%
- Rate of growth from 1990 -2000 – 4.43%
- Rate of growth from 2000 -2010 – 10.36%
- Rate of growth from 2010 -2017 – 4.7%



# Recommendations for Delhi NCT

- Ensure either legalization and fuel switch or closure of illegal industries
- Even more cheaper price for cleaner fuels
- Need for setting responsibility and a check mechanism to control the entry of illegal fuel in NCT



# Recommendations for NCR States

- A common and comprehensive fuel policy for Delhi NCR
- Need **restriction on coal/ban** on coal in approved fuel list(like Delhi)
- Ensure adequate supply and infrastructure of **cleaner and intermediary fuel**
- Making cleaner fuel cheaper– include **gas in GST**
- Improvements in electricity supply and cost
- Replacing small boilers with **centralized boiler**
- Effective Plan for **illegal** industries



# Thank You

