

City Profile

DUSTBUSTERS WORKGROUP

City/Country Name: Kathmandu, NEPAL

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- 1. General Overview:** Major sources of air pollution (Landfills, vehicles, industry, construction)
- Industries (mainly around 200 plus Bull's Trench Brick Kilns and one cement factory, which is closed now)
 - More than 0.2 million vehicles
 - AND road dust (due to unpaved roads, road digging)

Emission inventory:

Comparison of Emission Inventory in 1993 & 2001

SOURCES	TSP (TONS/YR)			PM10 (TONS/YR)		
	1993	2001	% increase	1993	2001	% increase
Mobile Sources						
Vehicle Exhaust	570	1971	245	570	3259	471
Road Resuspension	1530	7008	358	400	1822	356
<i>Subtotal</i>	<i>2100</i>	<i>8979</i>	<i>328</i>	<i>970</i>	<i>5081</i>	<i>424</i>
Stationary Sources						
Industrial/commercial fuel	582			292		
Domestic fuel combustion	2328			1166		
Brick kilns	5180	6676	29	1295	1688	30
Himal Cement	6000	3612	-40	800	455	-43
Industrial boilers		28			15	
Refuse burning	385	687	78	190	339	78
<i>Subtotal</i>	<i>14475</i>	<i>10904</i>	<i>-25</i>	<i>3472</i>	<i>2498</i>	<i>-28</i>
TOTAL	16575	19884	20	4712	7580	61

Note:

In 1993, the study was done by the World Bank, URBAIR Report

In 2001, the study was done by Environment Sector Programme Support (ESPS)

- 2. SPM and/or PM10 concentrations in city:** Latest data (Approximate annual average)

PM10 annual average of all six monitoring locations is 133.11 $\mu\text{g}/\text{m}^3$

PM10 concentration at different locations (monthly average)

	Putalisadak	Matsyagaon	TU	Bhaktapur	Patan Hospital	Thamel
March 2003	240	66	115	200	226	179
April 2003	254	89	120	192	240	200
May 2003	270	87	116	175	237	N/A
June 2003	221	75	80	102	180	127
July 2003	116	23	26	36	123	63
August 2003	125.0	22.3	30.0	39.1	117.9	65.1
September 2003	126.2	24.8	32.3	44.6	127.6	69.7
October 2003	135.4	32.0	45.3	66.4	119.0	104.6
November 2003	187.66	53.10	78.24	106.07	174.66	168.34
December 2003	302.6	43.9	91.6	143.9	205.4	214.1
January 2004	284.6	56.7	109.0	184.5	245.1	214.4
February 2004	245.8	70.0	117.1	193.8	240.8	201.0
Annual	209.01	53.57	80.04	123.61	186.38	146.04

(This table is to understand the monthly variation of the PM10. Usually rain starts from June/July and last till September/October). So one can see the reduction of PM10 due to rain.)

3. General Laws

(Governance framework, legal provisions for dust control)

I do not see any special law on dust control. There are few laws and implemented actions for overall air quality management.

Description

General overview of the various laws (in descending order) which help control air pollution. Please note if these laws are enforced.

His Majesty's Government of Nepal (HMG)

To curb air pollution problems in the Kathmandu valley, HMG has introduced several policies.

- HMG first responded to the growing problem of air pollution in Kathmandu in November 1991, by stopping the import of three-wheelers into the valley.
- In 1995, HMG introduced tail pipe emission standards of 65 HSU for diesel vehicles and 3 percent CO for petrol operated vehicles in Kathmandu (detail in the table).
- HMG, then realising the need for an independent body to look after the environmental issues including air pollution, established the Ministry of Population and Environment (MoPE) in 1995.

- Furthermore, on 26 December 1999, HMG made a public announcement regarding the distribution of unleaded petrol.
- In 2000, MoPE introduced the Nepal Vehicular Mass Emission-2056 for new vehicles, which is similar to the European Emission - I (EURO - I) Norm.
- MoPE in the later part of 2000 announced a ban in all public vehicles older than 20 years and all two stroke three wheelers in Kathmandu valley effective from 16 November 2001. This decision however has not been implemented.
- Government has banned the import of new two-stroke vehicles since 1999.

Emission Standard for In-use Vehicles in Nepal

For Gasoline Vehicles	Permissible Smoke Unit (CO in %)
Up to 1980 manufactured four wheeler Vehicle	4.5
1981 and later manufactured vehicle	3.0
Up to 1991 manufactured three wheeler Vehicle	4.5
For two wheeler Vehicle	4.5
For Diesel Vehicles	Hatridge Smoke Unit (HSU)
Up to 1994 manufactured all types of Vehicles	75
1995 and after manufactured vehicles	65

- Recently, HMG announced to ban polluting Bull’s Trench Kilns from Kathmandu valley after one and half year and it has already announced to stop the registration of these kilns.
- Also, government has decided to shift the Himal Cement Factory outside the valley and currently this industry is not functioning.

4. Special Laws/Delegated Legislation

(Municipal bye-laws, regulations, rules)

Similar with the central law system, municipalities do not have special laws on dust control. Also, there is not such independent effort taken by municipalities on AQM except from the central level.

Description

Overview of the various instruments and important provisions dealing with dust control.

5. Observations and analysis

State the level of control these special laws have on the environment. State whether the law gives state functionaries, environment protection agencies and citizens the legislative cover to control dust in urban environments. Must refer to specific provisions given in 3 and 4.

So far no special emphasis on dust control. Focus is only on the vehicle's tail pipe emission. However, some achievements on shifting of bull's trench brick kiln technology to VSBK and Fixed chimney. This process is still going on.

- Import of three wheeler in banned. Mainly this was done for the diesel three-wheelers keeping in mind.

- Emission testing of in-use vehicles is going on. But this has not so far been effective tool for AQM as the emission failed vehicles are allowed to ply on the streets except few places like airport, king way, and few tourist areas.
- Unleaded gasoline is being sold. So there is less problem of lead in air these days.
- EURO I standard for new vehicles import.
- Old vehicle ban program has not been implemented so far.
- Import of two-stroke vehicle is banned.
- Brick kilns are shifting their technology to VSBK and fixed chimney.
- Himal cement is still closed due to the public pressure due to the excessive air pollution it caused to the vicinity.

6. Resources

Please give online links, where possible.

www.mope.gov.np

www.kmc.gov.np

www.nepalnews.com

www.environmentnepal.com.np