POLITICAL ECONOMICS IN THE VEHICLE EMISSION REDUCTION PROGRAMME IN SRI LANKA

Don S Jayaweera

Introduction to Vehicle Emission Reduction Programme in Sri Lanka

- Discussions initiated in early 90s with the Colombo Metropolitan Environment Improvement Programme (MEIP).

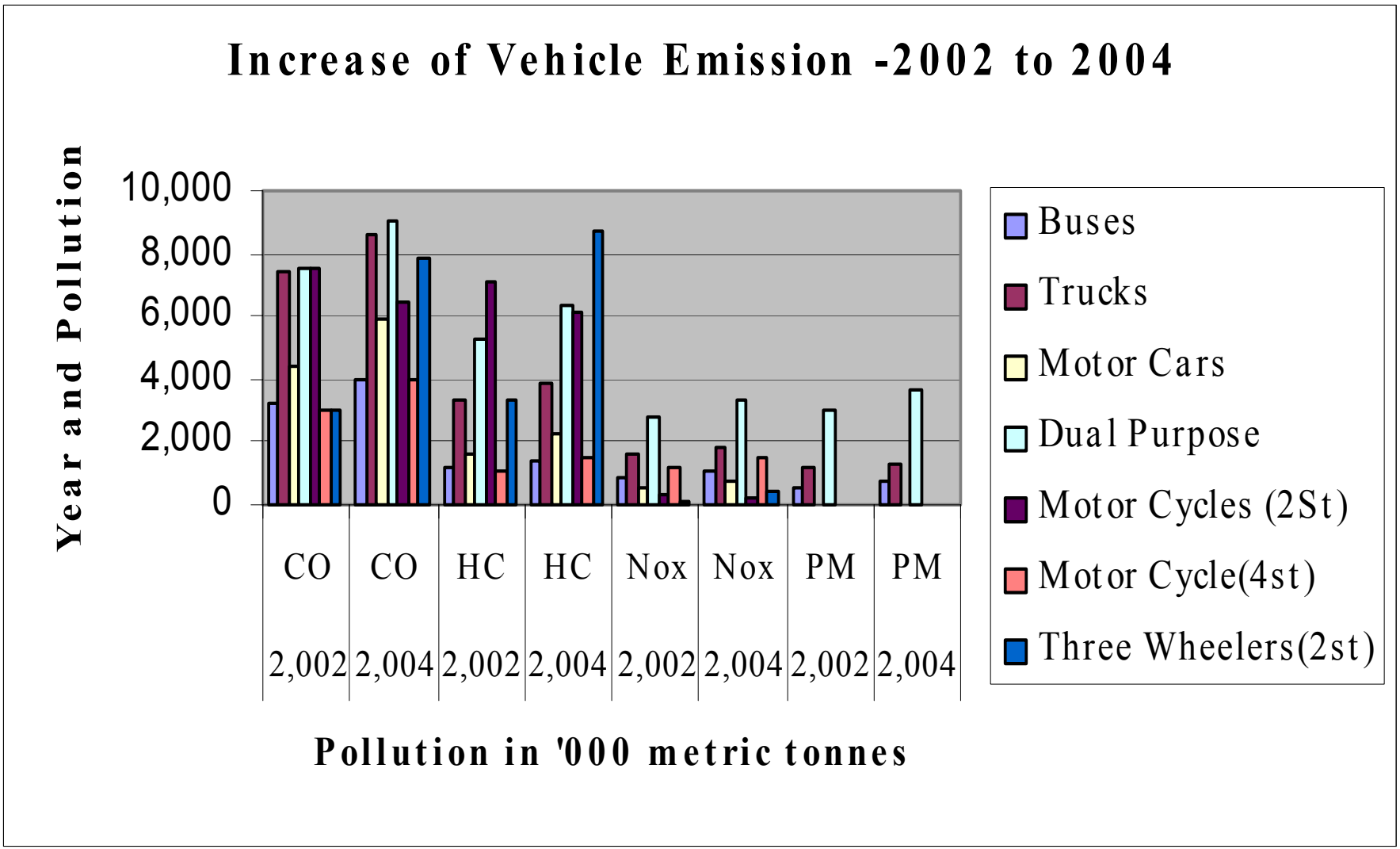
- Actions finalised under the **Clean Air 2000** Action Plan.

Reasons to initiate

- Case filled in the Supreme Court (case no. 569/98) in 1998.

- Data collected showed increased levels of Particulate Matter (PM 10) and Lead levels in ambient air.

Increasing trend of pollutants



Achievements

- Regulations enacted for air emissions
- Establishment of Air Resources Management Centre (AirMAC)
- Creating awareness among middle – income groups

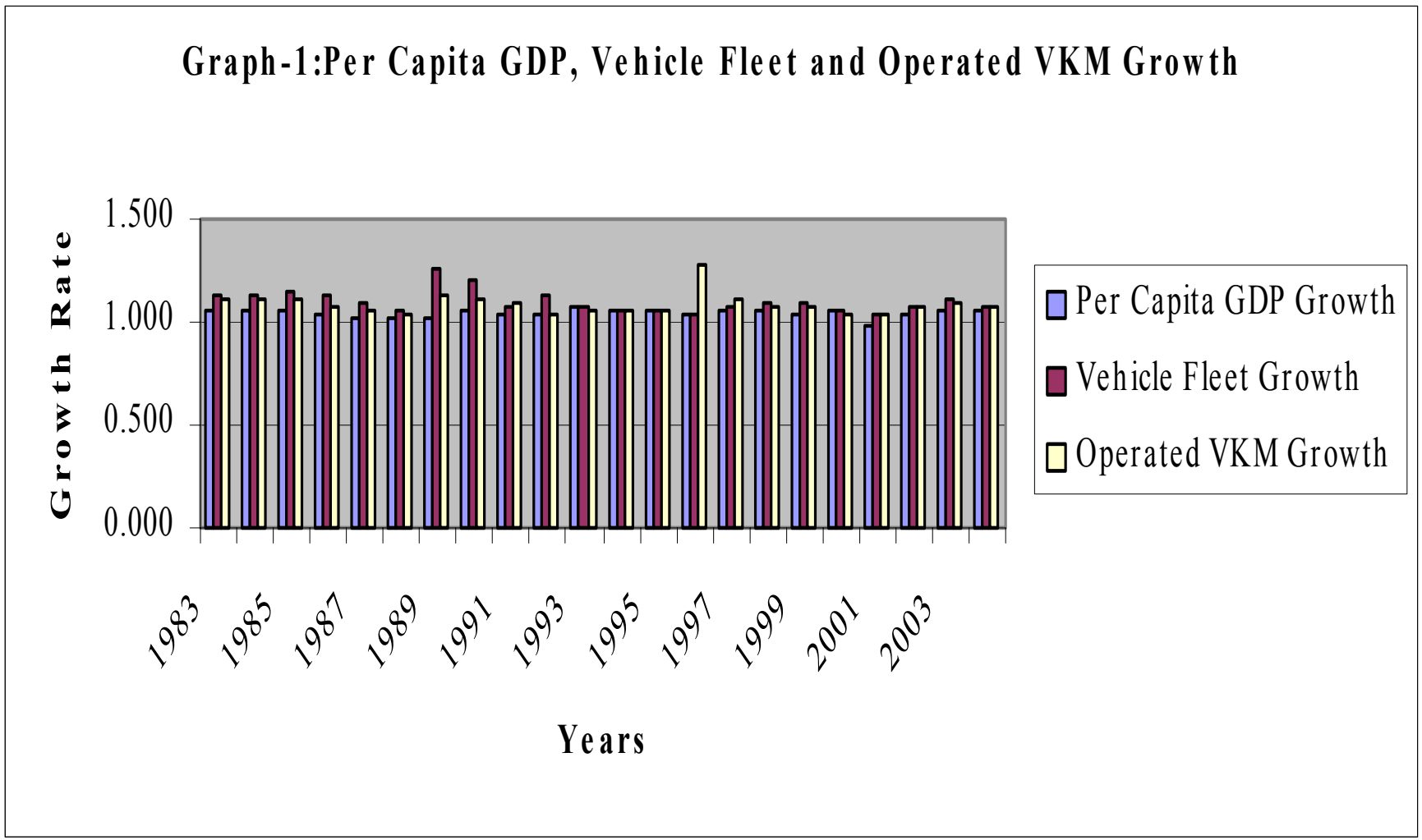
Regulations enacted

- National Environmental (Air Emission, Fuel and Vehicle Importation Standards) Regulations no 01 of 2000
  - Gazette 1137/35 of 23 June – Regulations to be effective from 1st January 2003
  - Gazette 1268/18 of 27 December 2002 – Regulations to be effective from 1st July 2003
  - Gazette 1295/11 of 30 June 2003 – revised standards

Salient Features of Economy

- GDP -- in 1983 is US$ 135
  -- in Nov. 2004 is US$ 1055
- GDP Growth -- 4% in 2002
  -- 5.5% at present
- Gini coefficient -- 0.42 in 1999
  -- 0.4637 in 2002
- Increase in GDP resulted in un-balance in the vehicle fleet

Growth in vehicle fleet



Salient features...

- Price gap – Diesel vs. Petrol (in 1997) is 1:5
- Increase in growth of small vehicles due to;
  - hidden subsidies
  - relaxed import policy
  - lowered tax structure

Import Duty and Vehicle Taxes applied in 2003 and before November 2004

Vehicle Category/Description	Import Duty on CIF %	VAT % on Value	Surcharges on Duty %
Imported Car (Petrol)	27.5	15	10
Imported Car (Diesel)	27.5	15	10
Imported Van/Dual Purpose (Petrol)	27.5	15	10
Imported Van/Dual Purpose (Diesel)	27.5	15	10
Imported Lorry (Petrol)	27.5	15	10
Imported Lorry (Diesel)	27.5	15	10
Imported Bus (Diesel)	27.5	15	10
Imported Motor cycles (2-stroke and 4-stroke)	15	15	10
Imported Three Wheelers (2-stroke and 4-stroke)	15	15	10
Imported Engine Parts	3	15	10
Imported Body Parts	12	15	10
Imported Body Parts (Rims, Silencers Etc)	27.5	15	10

Source: Sri Lanka Customs

- Negative economic value of used vehicles

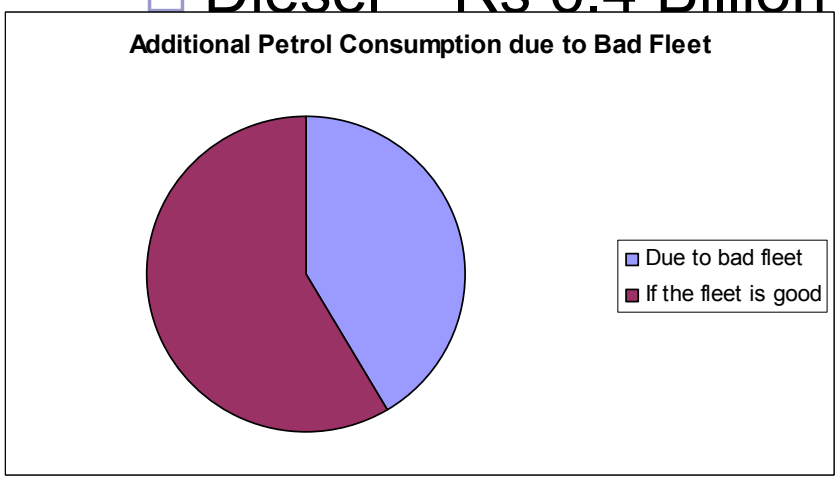
  Cars/ Vans – Rs 343,978 (per unit)

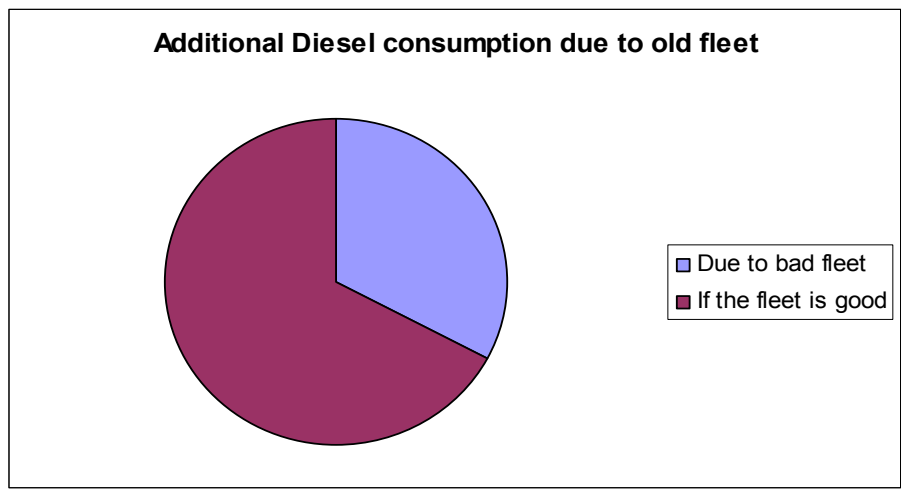
  Dual purpose/ 4WD – Rs 414,250

- Money transfer for used vehicles (2004)
  - Cars - Rs 2,450 Million
  - Vans/ Dual purpose / 4WD - Rs 2,150 Million
  - Three wheelers - Rs 1,550 Million

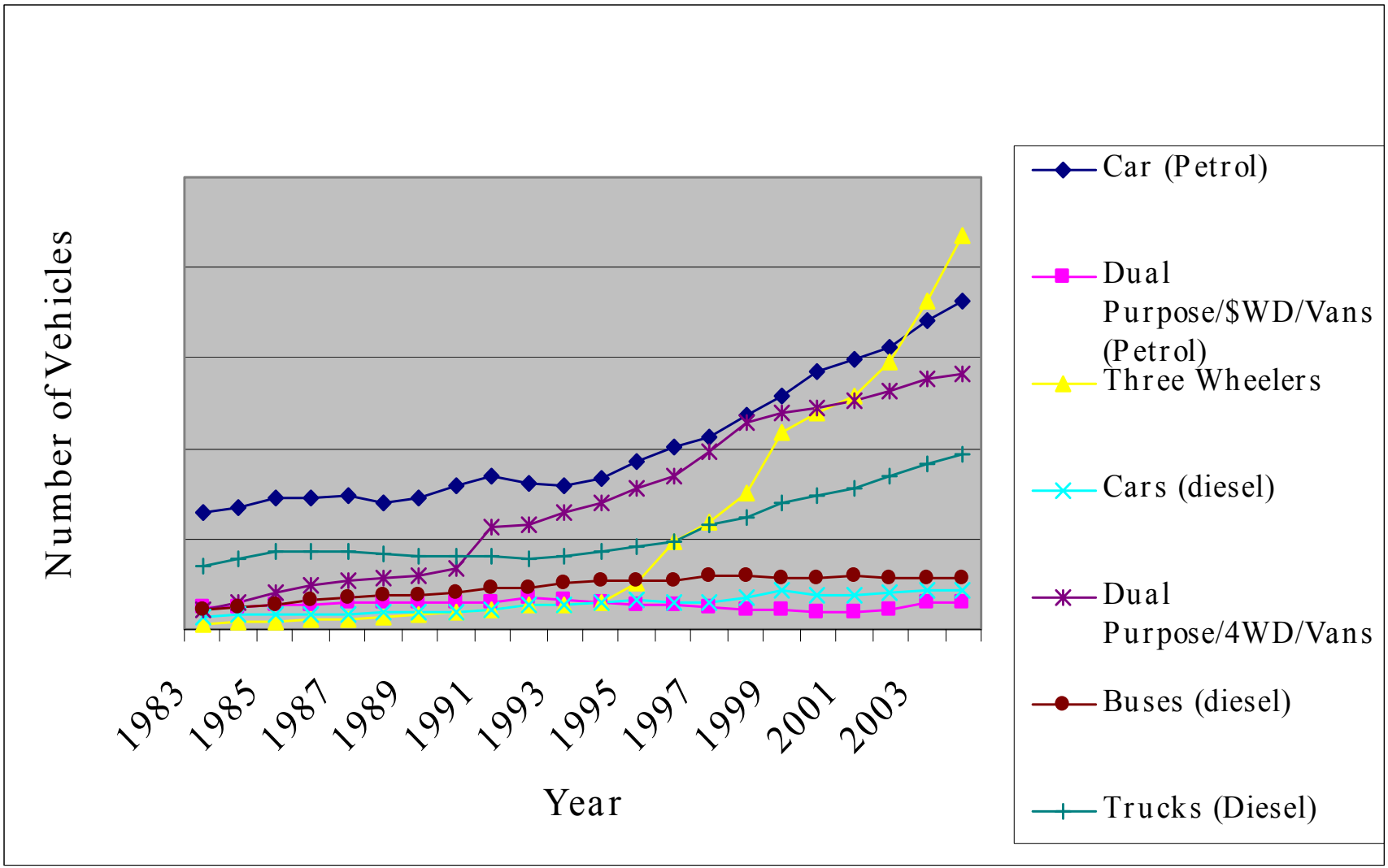
- Additional Fuel Consumption in 2004
  - Petrol – 214,324,890 litres
  - Diesel – 457,340,348 litres

- Additional expenditure on fuel to produce same passenger and freight Kms
  - Petrol – Rs 1.6 Billion
  - Diesel – Rs 6.4 Billion





Active Vehicle Fleet Growth (Excluding Motorcycles)



Fuel inefficient vehicle fleet

Year	Car (petrol)	Dual Purpose/4WD/ Van (petrol)	Motorcycles	Three Wheelers	Cars (Diesel)	Dual Purpose/4WD/ Van (Diesel)	Buses Diesel	Trucks Diesel	Total
1983	64,947	11,620	74,769	3,290	6,546	11,036	10,893	34,761	217,862
1984	67.717	12,531	88,973	3,830	7,537	14,910	11,702	39,131	246,331
1985	72,00	13,000	108,500	4,071	8,037	20,000	13,304	43,400	282,312
1986	72,745	14,089	134,008	4,716	8,286	24,551	15,467	43,169	317,030
1987	73,977	14,565	159,029	5,982	8,699	26,313	16,903	42,285	347,954
1988	69,677	14,795	182,095	7,253	8,904	28,472	18,240	41,624	371,059
1989	72,452	14,865	243,328	8,019	9,482	29,940	19,211	40,721	438,017
1990	79,760	15,056	320,452	9,365	9,608	33,295	20,571	40,210	528,317
1991	84,943	15,241	325,099	10,671	10,552	56,630	22,360	39,740	565,214
1992	80,574	17,083	403,197	12,882	12,853	57,677	23,379	39,308	646,958
1993	78,694	16,576	445,035	13,532	13,952	63,965	25,243	40,974	697,972
1994	83,539	15,275	468,475	14,920	15,454	70,539	27,429	42,749	738,351
1995	92,802	14,089	480,395	24,905	15,715	78,155	27,290	46,332	779,683
1996	101,355	12,995	476,758	48,497	14,947	84,269	27,213	48,050	814,084
1997	106,747	12,013	499,208	59,119	15,267	98,472	29,021	57,793	877,641
1998	117,848	11,083	526,321	75,666	17,805	114,764	28,986	61,872	954,345
1999	129,607	10,220	553,028	108,430	21,568	119,800	28,818	70,282	1,041,753
2000	142,661	9,418	576,424	120,086	18,267	122,614	28,501	73,341	1,091,313
2001	149,052	10,012	599,015	128,679	18,423	126,665	29,021	78,233	1,139,101
2002	155,478	11,123	641,797	147,692	19,505	131,735	28,674	84,757	1,220,761
2003	170,040	14,490	715,838	181,774	21,437	138,116	27,780	91,197	1,360,671
2004	181,888	14,288	773,189	217,112	21,696	141,769	28,474	97,360	1,475,776

Taxes & Ownership Cost paid by vehicle Owners

Vehicle Category	Taxes
Passenger Car (gasoline)	21.91
Passenger car (diesel)	18.21
Vans/ 4WD/ Dual purpose	11.56
Buses	11.98
Small Trucks	11.68
Medium Trucks (2-Axle)	11.84
Axle Truck	21.06
Articulated Truck	22.28

Private and Public Road Maintenance, Variable Cost per Vehicle Km –October, 2004

Road User Category	Variable User Cost (in SLRs.)	Variable Road Maintenance Cost (in SLRs)
Cars (Gasoline)	11.91	7.35
Cars (Diesel)	11.21	11.35
Vans/ 4WD/ Dual Purpose/Jeeps	10.86	11.94
Buses (Large and Medium)	10.98	13.25
Small Trucks	10.68	12.66
Medium Truck (2-Axel)	10.84	17.06
Large Trucks (3-Axel)	11.06	21.39
Articulated Trucks	11.28	18.77

Car Journey Time Survey Results (1997 & 2003)

Road Link	Journey Time (km per hour) 1997	2003	Speed Red. %
Colombo - Galle Road	28 km	22 km	30%
Colombo - Ranapura Rd	32 km	24 km	33%
Colombo - Kandy Road	23 km	16 km	42%
Colombo – Puttalam Rd	28 km	14 km	50%
Sri J'pura - Kollupitiya Rd	26 km	16 km	60%
Colombo Horana Road	27 km	14 km	70%
Wel'pitiya - Kaduwela Rd	28 km	16 km	75%

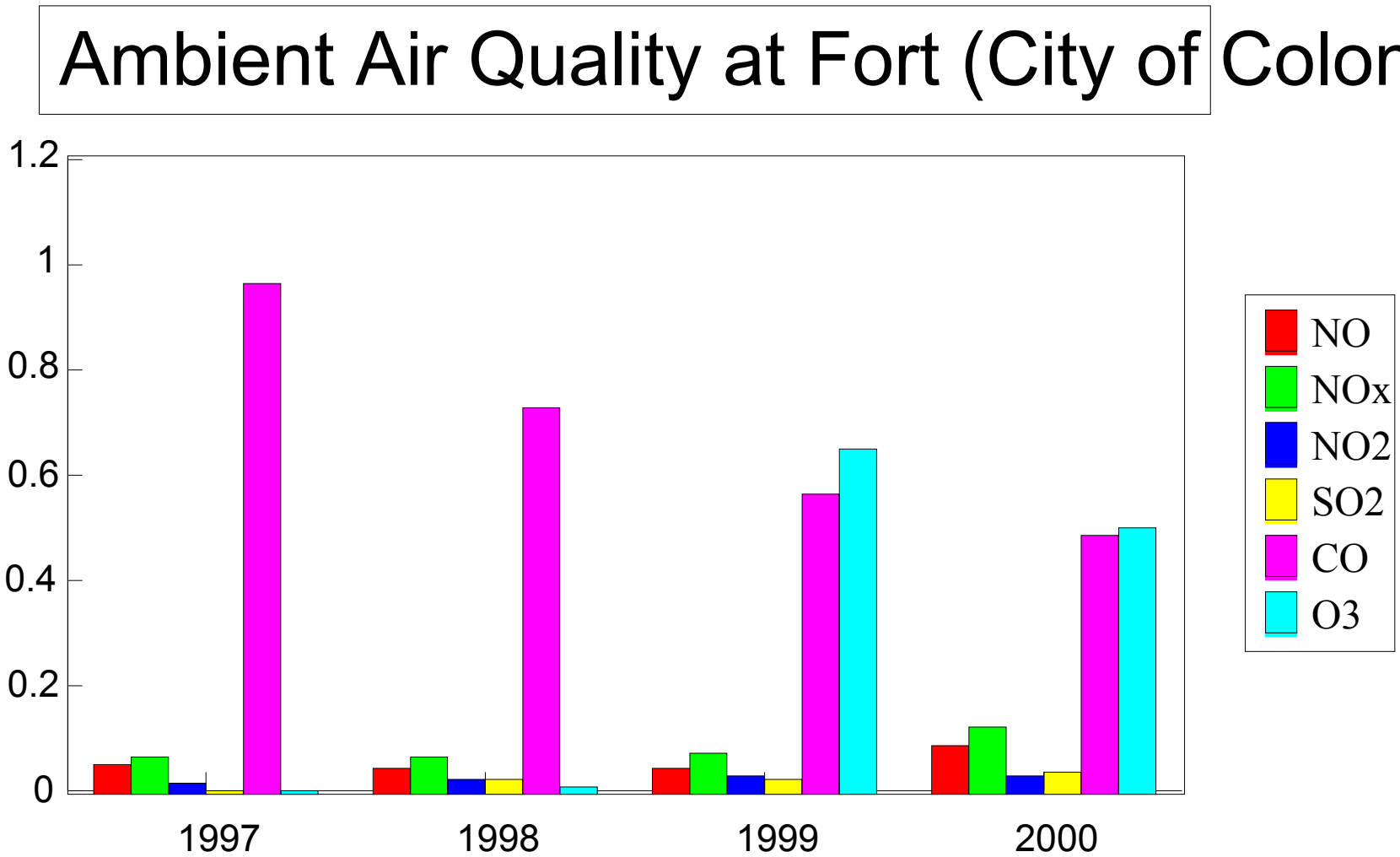
Traffic Composition during Peak Period

Road Link	Private Motorists	Public Buses	Three Wheelers and School and Office Vans	Freight Vehicles
Peliyagoda-Puttalam Road	37%	**10%**	37%	14%
Colombo – Galle Road	50%	**11%**	30%	9%
Colombo – Kandy Road	37%	**9%**	31%	15%
Colombo – Ratnapura Road	56%	**10%**	31%	3%
Kollupitiya - Sri J'Pura Rd	52%	**10%**	32%	6%
Colombo – Horana Road	54%	**11%**	32%	3%
Wel'pitiya – Kaduwela Rd	51%	**10%**	30%	9%
Average for all roads	51%	**10%**	31%	8%

Political Economics of VER Program

- Local political authorities have not identified the Vehicle Emission Reduction Program as important
- State oil company was not willing to support the program until a strong voice brought up by the civil society (ex: Unleaded petrol)

Ambient Air Quality



Level of Air Pollution by Transport Sector

- During last four years Hydrocarbon (HC) and carbon monoxide (CO) levels have increased
- Duel purpose vehicles, Vans & 4WDs are the main causes for Particulate Matter (PM) and NOx.
- Volatile Organic Compounds (VOC), Hydrocarbons and NOx from engine exhaust has a reaction due to sunlight.
- Particulate matter & SOx from exhaust, tyre & break system and Fuel

Regulatory program

- Three approaches to the program:
  - **Regulation for vehicle importation and manufacturing as national technology mandate and market less polluting fuels**
  - **Mandate to curb motorists' vehicle use and keep their vehicle emission control system in working order**
  - **Requirements that transportation infrastructure investment be consistent with government commitments to meet national air quality standards.**

Private motorisation

- Increased private motorisation results in pollution and traffic congestion
- This results in increased heath expenditure in 3 to 4 fold during last 4 years

Conclusion

- Need of the hour:
  - Evaluate the economics of politics
  - Educate the population demonstrating implications of wrong policies

THANK YOU