Alarming Dangerous Situation by Air Pollution-I

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ABSTRACT

Day by day increasing air pollution is creating serious problem in our life. This pollution affects all living things. There are so many reasons for air pollution. Since air pollution is one kind among various types of pollution but it affects directly to all human kinds. The air pollution produced by automobiles makes tremendous harmful effects on the health of peoples and environment. In this paper the mathematical result for amount of production of CO_2 by burning of petrol from 2-Wheelers is elaborated.

Keywords : Pollution, Automobiles, Health, Mathematical Result, CO_2.

I. INTRODUCTION

According to the Centre for Science and Environment, two-wheelers account for 31 per cent of the pollution whereas cars and other four-wheeler vehicles are responsible for 20 per cent of vehicular pollution [1]. The number of two- and three-wheeled vehicles on India's roads is high both in terms of absolute numbers and percentage of the vehicle fleet. Two-wheelers alone represented over 72 percent of registered vehicles in the country in 2005, up from 66 percent in 1991 [2]. In India, the growth rate of 2-Wheelers is very dangerous for health of Indians.

The factors for the growth of Indian motorcycles:

- The Gross Domestic Product has grown to 8%
- The average family income has increased
- The finance have become easier to access
- The reduction in taxes and duties
- Introduction of international standards in India
- The economic and fuel-efficient engines
- The teenager and the youth using more and more motorcycles. [3]

II. METHODS AND MATERIAL

S D MODELING FOR CO2 PRODUCTION PER DAY

A system dynamic modeling for the increasing numbers of 2-Wheelers per year in india and the amount of CO2 produced accordingly as;
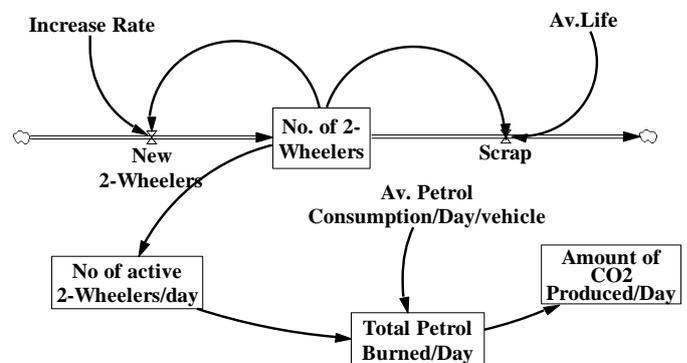
Figure-1 : A system dynamic modeling for Amount of CO2 produced/Day

The above model is formed on VENSIM-PLE modeling software. It contains all factual details for increasing 2-Wheelers per year. No. of active 2-Wheelers per day gives the information about the

total number of 2-Wheelers which are actually running for a day. This is considered that only 35% of total 2-Wheelers run per day and consume only one liter of petrol per day each.

Here number of 2-Wheelers is providing the details of the counting of 2-Wheelers for next twenty years in future if its growth rate is constant. The growth rate of 2-Wheelers is taken as the present growth rate of FY-2017-18, which is about 25% of existing 2-Wheelers. This Growth rate may vary according to various situations. On the basis of various reports and literatures, it is also considered that only 35% of the total 2-Wheelers run for a day and consume only one liter petro/day approximately. If one liter of petrol burns by these 2-Wheelers then how much quantity of CO_2 is formed per year? The above system dynamic modeling contains all the features.

A. PROGRMMING

(1) "Amount of CO2 Produced/Day"=

   "Total Petrol Burned/Day"*2.3

   Units: Kg

(2) "Av.Petrol Consumption/Vehicle/Day"=1

   Units: Lt/Day

(03) Average Life=15

   Units: **undefined**

(04) FINAL TIME = 20

   Units: Year

   The final time for the simulation.

(05) Increase Rate=0.25

   Units: Dmnl

(06) INITIAL TIME = 0

   Units: Year

   The initial time for the simulation.

(07) "New 2-Wheelers"=

   Increase Rate*"No of 2-Wheelers"

   Units: lac

(08) "No of 2-Wheelers"= INTEG

   ("No of 2-Wheelers"-

   Scraps+"New 2-Wheelers", 202)

   Units: lac

(09) "No. of active 2-Wheelers/Day"=

   "No of 2-Wheelers"*0.35*100000

   Units: Dmnl

(10) SAVEPER =

   TIME STEP

   Units: Year [0,?]

   The frequency with which

   output is stored.

(11) Scraps=

   "No of 2-Wheelers"/Average Life

   Units: lac

(12) TIME STEP = 1

   Units: Year [0,?]

   The time step for the simulation.

(13) "Total Petrol Burned/Day"=

   "Av.Petrol Consumption/Vehicle/Day"*"

   No. of active 2-Wheelers/Day"

   Units : Liter

B. OBSERVATION TABLE

Time (Year)	No of 2-Wheelers" (Lac)	No of active 2-Wheelers/Day	Amount of CO_2 Produced/Day (Kg.)
0	202	7.07e+006	1.6261e+007
1	441.033	1.54362e+007	3.55032e+007
2	962.923	3.37023e+007	7.75153e+007
3	2102.38	7.35833e+007	1.69242e+008
4	4590.2	1.60657e+008	3.69511e+008
5	10021.9	3.50768e+008	8.06766e+008
6	21881.2	7.65843e+008	1.76144e+009
7	47774	1.67209e+009	3.84581e+009
8	104307	3.65073e+009	8.39668e+009
9	227736	7.97076e+009	1.83328e+010
10	497224	1.74028e+010	4.00265e+010
11	1.08561e+006	3.79962e+010	8.73912e+010
14	1.12988e+007	3.95458e+011	9.09553e+011
15	2.4669e+007	8.63416e+011	1.98586e+012
16	5.38607e+007	1.88513e+012	4.33579e+012
17	1.17596e+008	4.11586e+012	9.46647e+012
18	2.56751e+008	8.98629e+012	2.06685e+013
19	5.60573e+008	1.96201e+013	4.51261e+013
20	1.22392e+009	4.28371e+013	9.85254e+013

Table -1 : The details of the amount of CO2 formed per year with increased quantity of 2-Wheelers
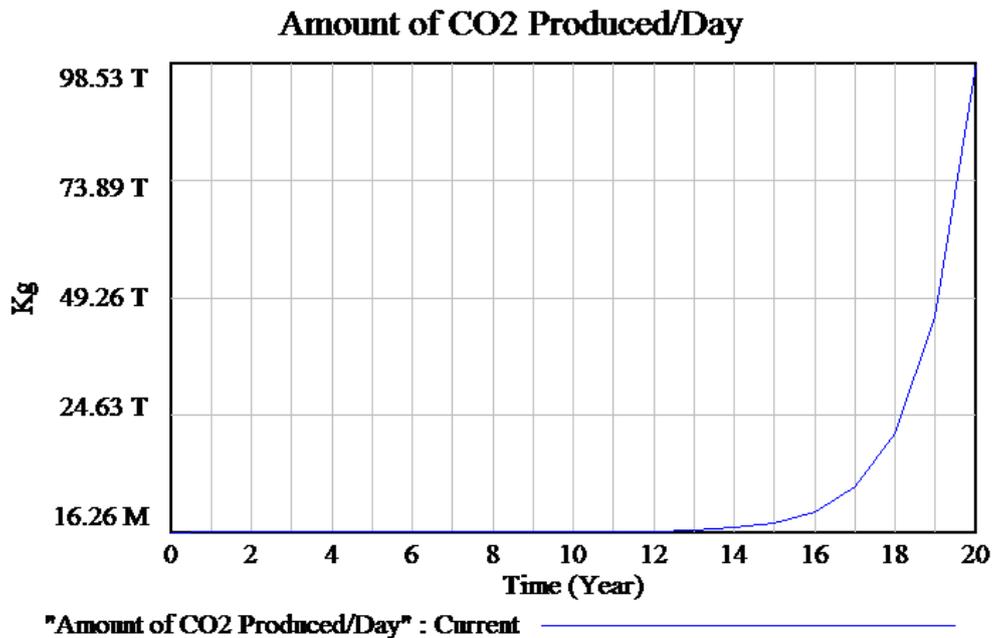
C. GRAPHICAL INTERPRETATIONS

Figure-2 : Representing the amount of CO2 produced/year for next 20 years

III. RESULTS AND DISCUSSION

From the above results obtained from table-1 and figure-2, it is clear that the order of production level of CO_2 will reach up to more than 16 Trillion Kilogram per day. This level of CO_2 is much enough to provide adverse effect, less or more, all living kinds of India. The Carbon dioxide accounts for less than 1 percent of the atmospheric gases. However, a delicate balance exists between carbon dioxide and other gases [6]. If the percentage of carbon dioxide increases more than 1% in air then this contributes to air pollution in its role in the greenhouse effect.

Another environmental effect of carbon dioxide on air pollution is climate change. The earth's surface temperature has risen over the last 100 years, according to studies done by the National Oceanic and Atmospheric Administration (NOAA). Scientists believe carbon dioxide pollution is the primary culprit. The effects are highly complex. Evidence shows, however, that ocean water levels have increased, resulting in a loss of shoreline and coastal wetlands [7].

Carbon dioxide is a contributor to the environmental effect known as acid rain.

Carbon dioxide emissions impact human health by displacing oxygen in the atmosphere. Breathing becomes more difficult as carbon dioxide levels rise. In closed areas, high levels of carbon dioxide can lead to health complaints such as headaches and other respiratory problems.

IV.CONCLUSION

The above results are given for 2-Wheelers only; if other types of automobiles are taken into account then the coming data would be more dangerous. Although CO_2 is not inherently toxic, it is the major cause of climate change, which has its own slate of public health impacts. These include heat stress, more powerful storms, and extremes of drought and flooding, spread of infectious disease, and even nutritional deficiency. That's why the EPA found in 2009 that CO_2 is dangerous to human health. If the increasing rate of 2-Wheelers would not be reduced then it will create more disaster in our country.

V. REFERENCES

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