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## Topic 2

Typical compositions of Gasoline & LPG are as given below.

Type of fuel	Composition ( Wt %)					Remarks
	C	H	O	N	S	
Gasoline	85	15	-	-	-	-
LPG	-	-	-	-	-	Propane : 30 % Butane : 70 %

**Source : Indian Oil Corporation Limited ; PCRA Data Control Book**

LPG Composition : Propane :  $C_3H_8$  ; Butane :  $C_4H_{10}$

12 Kg of carbon releases 44 kg of carbon dioxide. {  $C + O_2 \rightarrow CO_2$  }  
 Therefore 1 Kg Carbon releases  $44 / 12 = 3.7$  Kg of Carbon Di Oxide

### Gasoline

1 Kg of Gasoline contains 0.85 Kg of Carbon  
 Hence complete combustion of Gasoline yields  $3.7 * 0.85 = 3.145$  Kg of Carbon Di Oxide

### LPG

#### 1 Kg of LPG

Carbon in Propane :  $0.3 * (36 / 44) = 0.25$  Kg  
 Carbon in Butane :  $0.7 * (48 / 58) = 0.58$  Kg

Total carbon in LPG = 0.83 Kg

Hence complete combustion of LPG yields  $3.7 * 0.83 = 3.071$  Kg of Carbon Di Oxide

Based on the above, it can be concluded that one Kg of Gasoline releases more carbon dioxide than 1 Kg of LPG. Ultimate analysis of fuel is required to calculate the emissions.