Exercise 4: Filling in data for – Fugitive emissions for fuel

1. Go to **Sheet 1.8.1** and enter amount of **coke produced**. Coke production can be found in the **Test fuel data.xls** under **Transformation** (blue) not Energy (turquoise) but is in the wrong units (The value must be converted from kilotonnes oil equivalent (ktoe) to tonnes (t) [**Tip**: divide by net calorific value in toe/t (see Sheet 1.1.2) then multilply by 1000.]

2. Enter default EFs for **NMVOC** and **NH₃**.

3. Go to **Sheet 1.8.2** and enter **crude oil production** on second row under 'Fugitive emissions from facilities/platforms'. Again, the value given in the **Test fuel data.xls** must be converted from ktoe to kt by dividing by the calorific value for crude oil, but do not multiply by 1000 this time. (The other categories are to be left blank for the purposes of this exercise.)

4. Enter default EFs for **NMVOC**

5. Go to **Sheet 1.8.3** and enter **throughput of crude oil** in oil refineries as given in the **Test fuel data.xls** under **Transformation** (blue) not Energy (turquoise). (The value must be converted from kilotonnes oil equivalent (ktoe) to kilotonnes (kt)).

6. Enter default EFs for **NMVOC**

7. Go to **Sheet 1.8.4** and enter a) **kt gasoline handled at refinery despatch station** (= production of **motor gasoline** plus **aviation gasoline** transformed from crude oil at oil refineries in **Test fuel data.xls**.) IEA value (in ktoe) must be first be divided by net calorific value to get kt.

8. Also in **Sheet 1.8.4** and enter b) **kt gasoline handled during transport in depots** and **c) kt gasoline handled at gas service stations** (= **consumption** of **motor gasoline** in road transport sector for both in **Test fuel data.xls**.). IEA value (in ktoe) must be first be divided by net calorific value to get kt.

9. Enter default EFs for **NMVOC** in Sheet 1.8.4.

10. Go to **Sheet 1.8.5** and enter **natural gas production in TJ/yr**. (**Note**: Natural Gas Production is given as ktoe in **Test fuel data.xls so you must** convert this to TJ (1 ktoe = 41.868 TJ))

11. Also in **Sheet 1.8.5** and enter **natural gas distribution in TJ/yr**. (**Note**: This will be equal to Total Primary Energy Supply of Natural Gas and given as ktoe in **Test fuel data.xls** (Again you must convert this to TJ (1 ktoe = 41.868 TJ))

| Sector | Sub-sector | Total emissions (kilotonnes pollutant per year (kt/yr)) | | | | | | |
		SO$_2$	NO$_x$	CO	NMVOC	NH$_3$	PM$_{10}$	PM$_{2.5}$
5. Fugitive emissions from fuels	Production of coke				1.40	3.27	0.00	0.00
	Oil exploration and crude oil production and transport				217.74			
	Oil refining	0.00	0.00	0.00	61.55			
	Distribution and handling of gasoline				91.73			
	Production and distribution of natural gas.				283.84			
	Flaring during oil and gas extraction		0.00	0.00	0.00			