

EMFAC-HK

Using the Program

Objectives

- Install EMFAC-HK v 2.1 software
- Step by step tutorial to demonstrate examples of emission data routinely run by EMFAC-HK
- Discuss EMFAC-HK 2.1 input/output screens
- Perform exercises using EMFAC-HK v 2.1

System Requirements / Installation

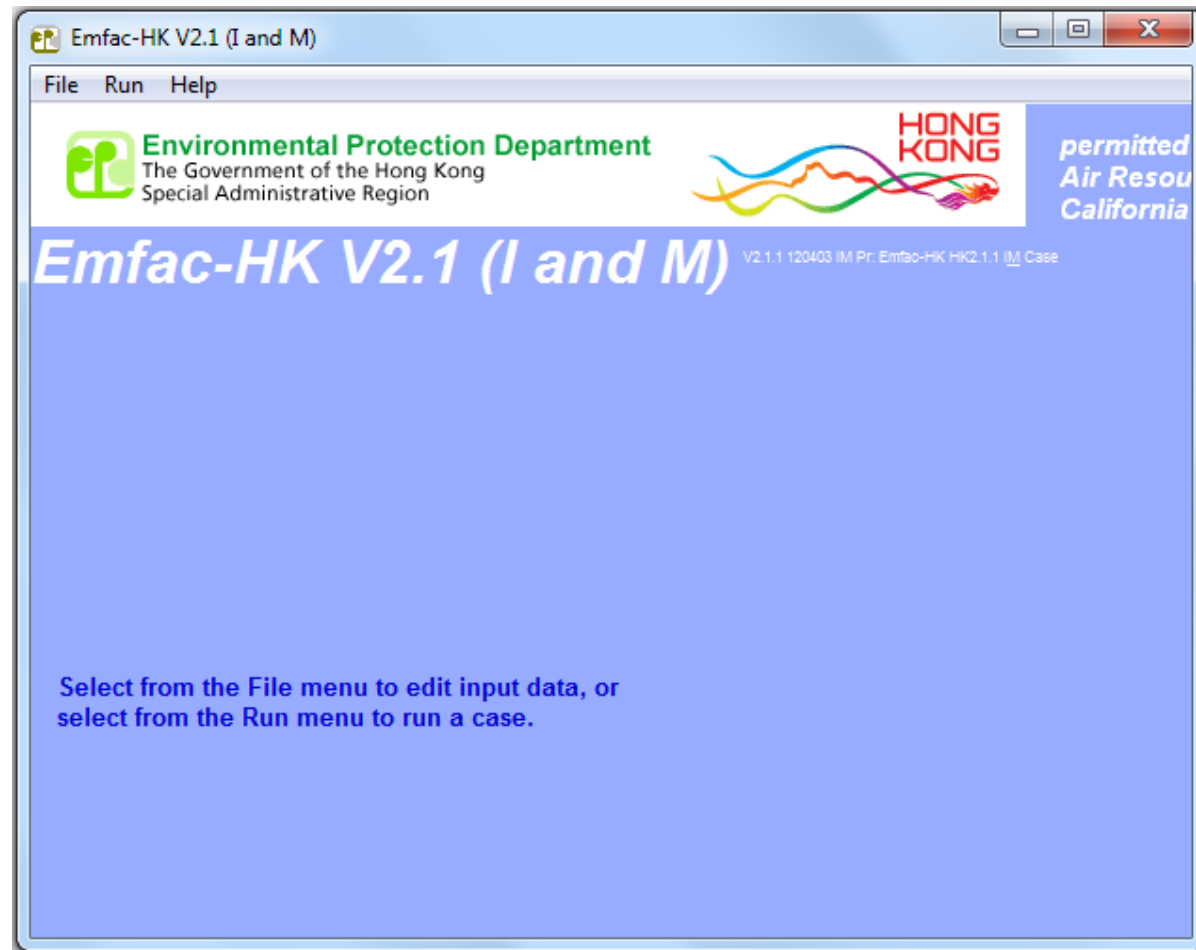
- **Executables -**
http://www.epd.gov.hk/epd/english/environmentinhk/air/guide_ref/emfac.html
- **x86 compatible Microsoft 32-bit or 64-bit OS**
(preferably Microsoft Windows XP Service Pack 3, Windows Vista, or Windows 7 operating systems)
- **45 MB of Hard Disk space**
- **Minimum 64 MB RAM (128 MB recommended)**
- **Available Hard Disk Space 350 MB**

Installation

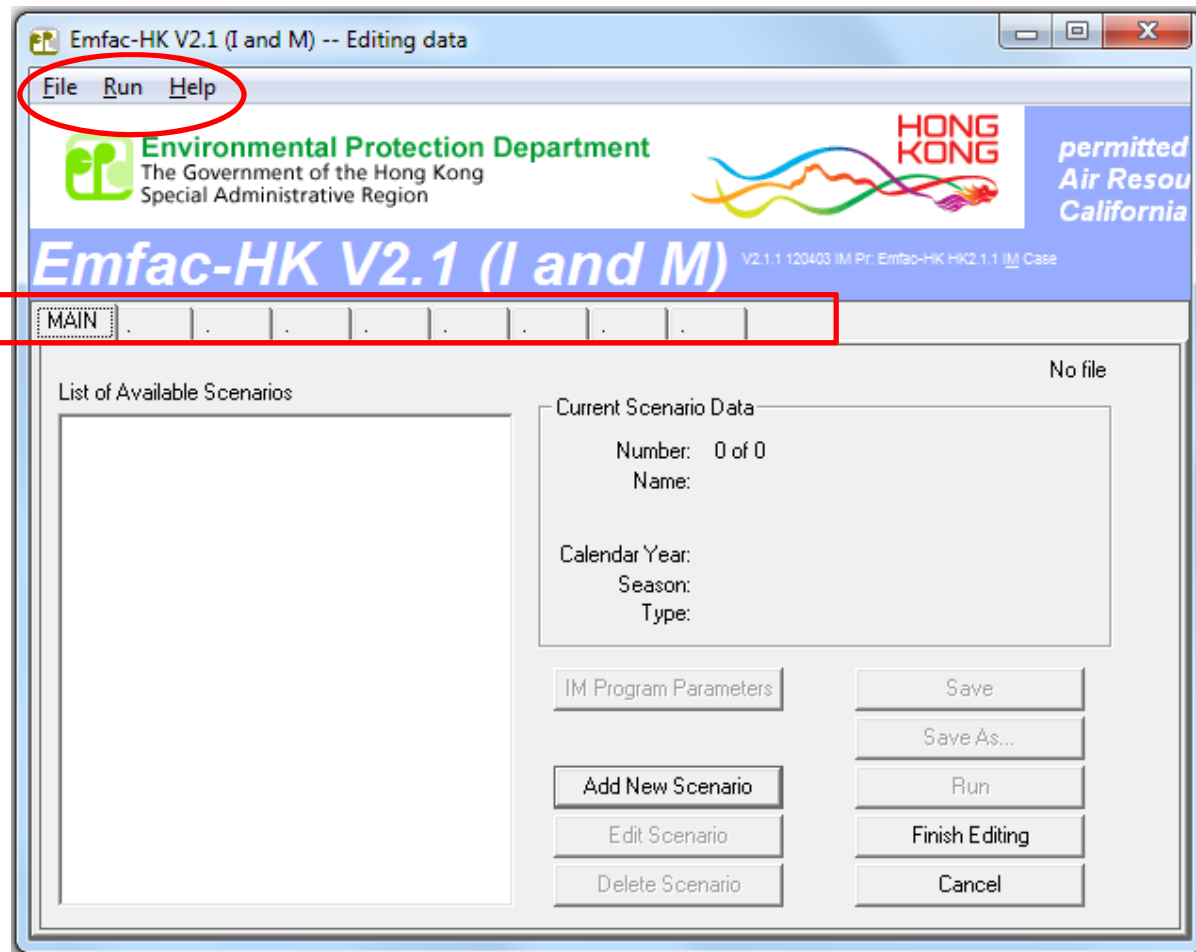
- Program:
 - EmfacHKV21BCInstaller.exe
 - Emfac_HK_v2.1 Base Case (BC) Installation Packet
 - Installs EmfacHKV2_1_BC.exe and supporting libraries in default, or user-specified directory
 - EmfacHKV21IMInstaller.exe
 - Emfac_HK_v2.1 Inspection & Maintenance (I&M) Installation Packet
 - Installs EmfacHKV2_1_I&M.exe and supporting libraries in default, or user-specified directory

Running the Program

Opening Screen



Main Screen



Tabs must be performed in sequence.

Adding or Editing Scenarios

The screenshot shows the 'Emfac-HK V2.1 (I and M) -- Editing data' window. The title bar includes the application name and standard window controls. The menu bar contains 'File', 'Run', and 'Help'. The header area features the Environmental Protection Department logo and text: 'Environmental Protection Department', 'The Government of the Hong Kong Special Administrative Region', the 'HONG KONG' logo, and 'permitted Air Resou California'. Below this is a blue banner with 'Emfac-HK V2.1 (I and M)' and version information: 'V2.1.1 120403 IM Pr: Emfac-HK HK2.1.1 IM Case'. The main content area is titled 'Basic scenario data - Select Area, Calculation Method, Calendar Year(s), and Season'. It contains three steps: 'Step 1 - Geographic Area' with a 'Select an Area Type' label and a text box containing 'SAR'; 'Step 2 - Calendar Years' with a 'Select' button and a 'Select a Calendar Year' label; and 'Step 3 -- Season or Month' with a dropdown menu showing 'Annual'. At the bottom are 'Cancel', 'Next >', and 'Finish' buttons.

Emfac-HK V2.1 (I and M) -- Editing data

File Run Help

Environmental Protection Department
The Government of the Hong Kong
Special Administrative Region

HONG KONG

permitted
Air Resou
California

Emfac-HK V2.1 (I and M) V2.1.1 120403 IM Pr: Emfac-HK HK2.1.1 IM Case

Input 1

Basic scenario data - Select Area, Calculation Method, Calendar Year(s), and Season

Step 1 - Geographic Area
Select an Area Type

SAR

Step 2 - Calendar Years

Select

Select a Calendar Year

Step 3 -- Season or Month

Annual

Cancel Next > Finish

Step 1: Geographic Area

The screenshot shows the 'Emfac-HK V2.1 (I and M) -- Editing data' window. The title bar includes 'File', 'Run', and 'Help' menus. The header area features the Environmental Protection Department logo and the text 'The Government of the Hong Kong Special Administrative Region', along with the 'HONG KONG' logo and 'permitted Air Resou California'. The main content area is titled 'Basic scenario data - Select Area, Calculation Method, Calendar Year(s), and Season'. It is divided into three steps: Step 1 - Geographic Area, Step 2 - Calendar Years, and Step 3 - Season or Month. In Step 1, 'Area Type: SAR' is displayed, and a dropdown menu is open showing 'SAR' and 'Hong Kong'. In Step 2, a 'Select' button is present above the text 'Select a Calendar Year'. In Step 3, a dropdown menu is open showing 'Annual'. At the bottom, there are 'Cancel', 'Next >', and 'Finish' buttons.

Emfac-HK V2.1 (I and M) -- Editing data

File Run Help

Environmental Protection Department
The Government of the Hong Kong
Special Administrative Region

HONG KONG

permitted
Air Resou
California

Emfac-HK V2.1 (I and M) V2.1.1 120403 IM Pr. Emfac-HK HK2.1.1 IM Case

Input 1

Basic scenario data - Select Area, Calculation Method, Calendar Year(s), and Season

Step 1 - Geographic Area

Area Type: SAR

SAR

Hong Kong

SAR

Step 2 - Calendar Years

Select

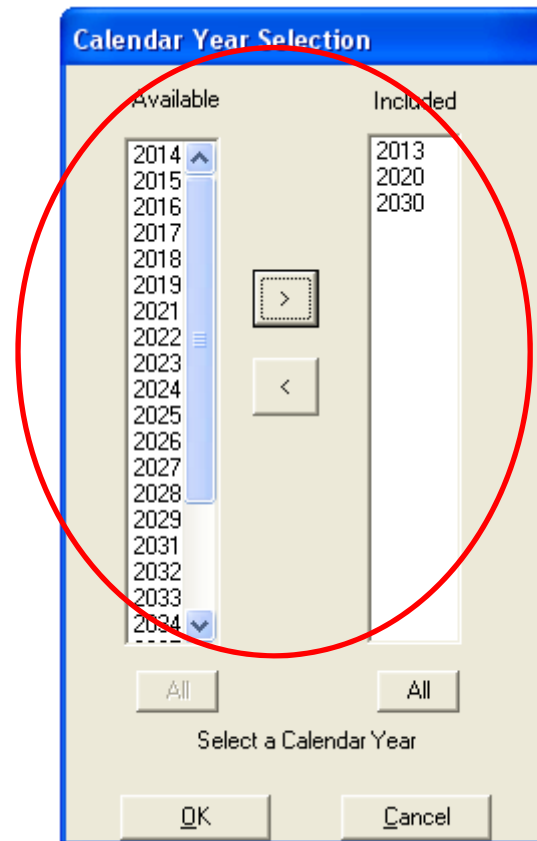
Select a Calendar Year

Step 3 - Season or Month

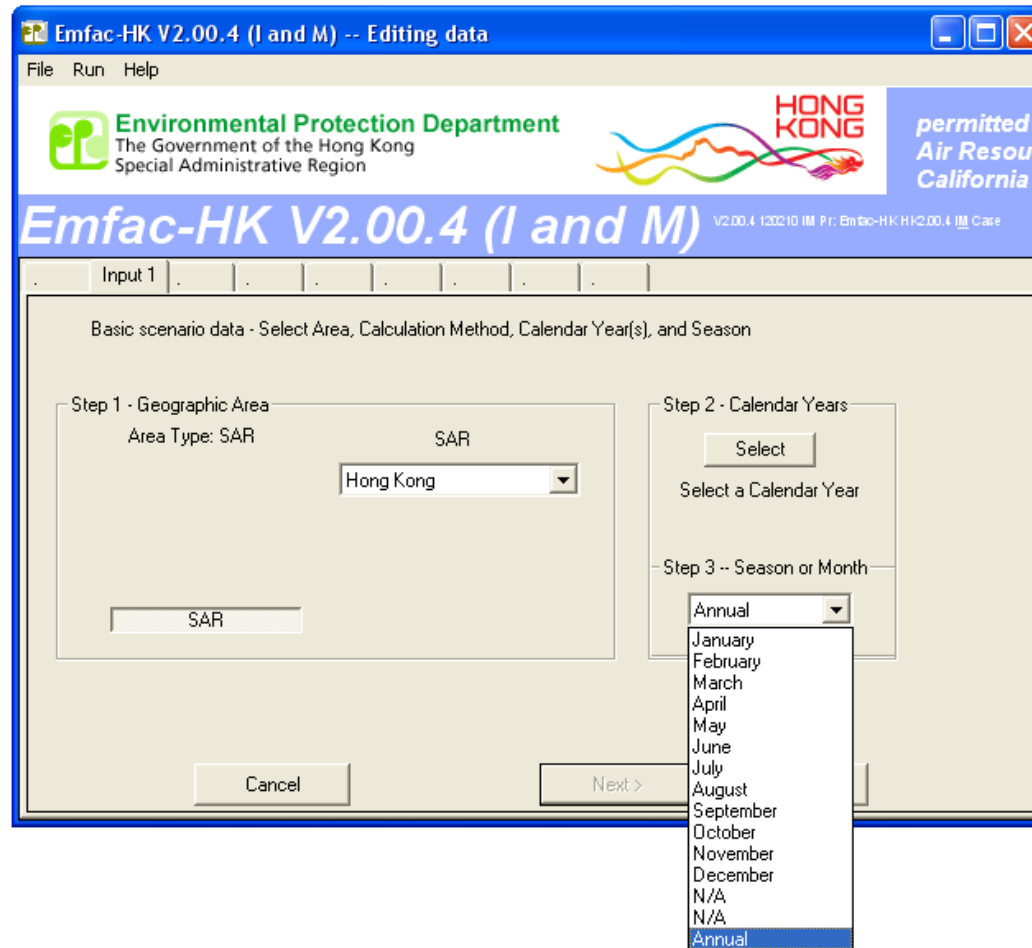
Annual

Cancel Next > Finish

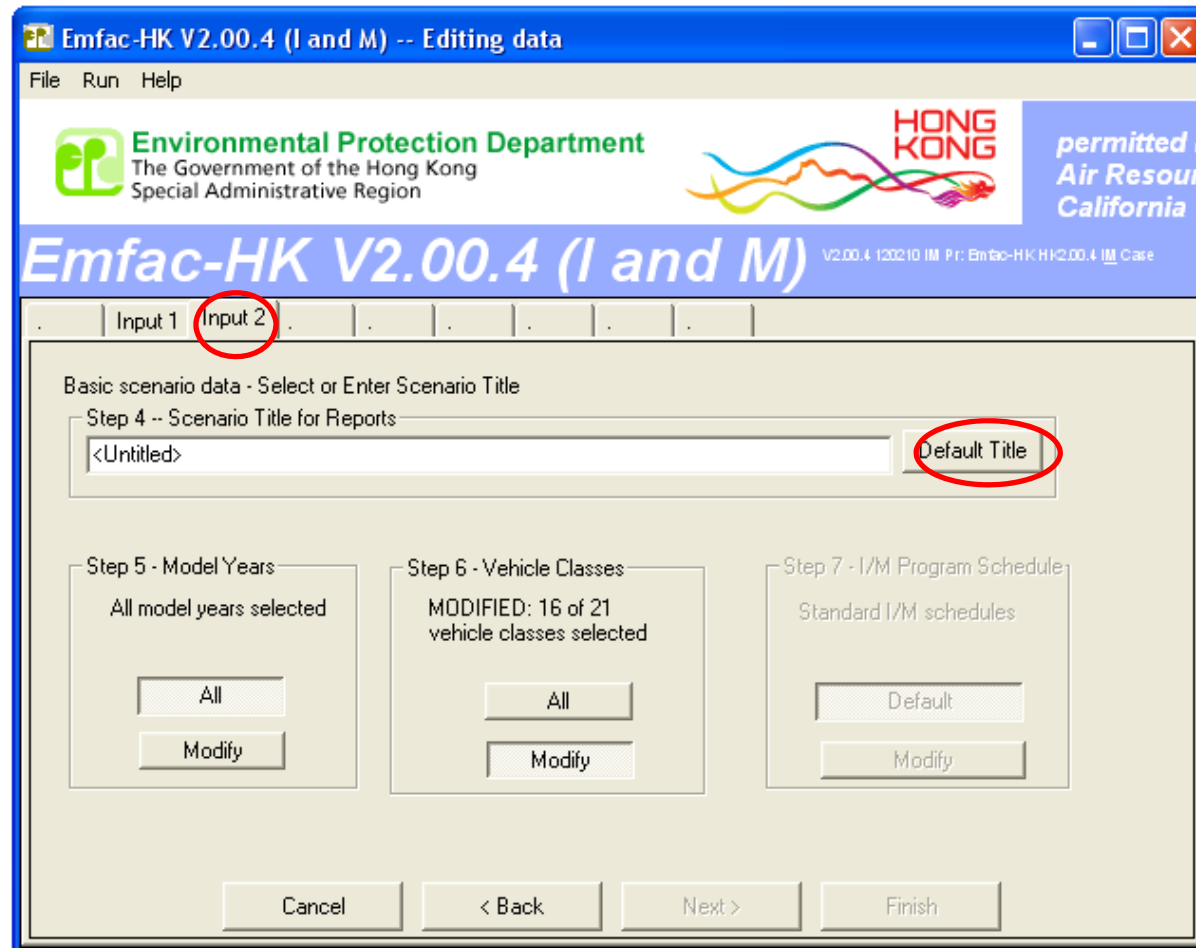
Step 2: Calendar Year Selection (I&M Version)



Step 3: Annual or Month Selection



Steps 4-7: Scenario Details Screen



Step 7: I/M Options/Program Schedule deactivated in GUI.

Step 5: Model Year Selection

Before Changes

Model Year Selection

Available	Included
	1965
	1966
	1967
	1968
	1969
	1970
	1971
	1972
	1973
	1974
	1975
	1976
	1977
	1978
	1979
	1980
	1981
	1982
	1983

All model years selected

OK Cancel

After Changes

Model Year Selection

Available	Included
1965	2000
1966	2001
1967	2002
1968	2003
1969	2004
1970	2005
1971	
1972	
1973	
1974	
1975	
1976	
1977	
1978	
1979	
1980	
1981	
1982	
1983	

All model years selected

OK Cancel

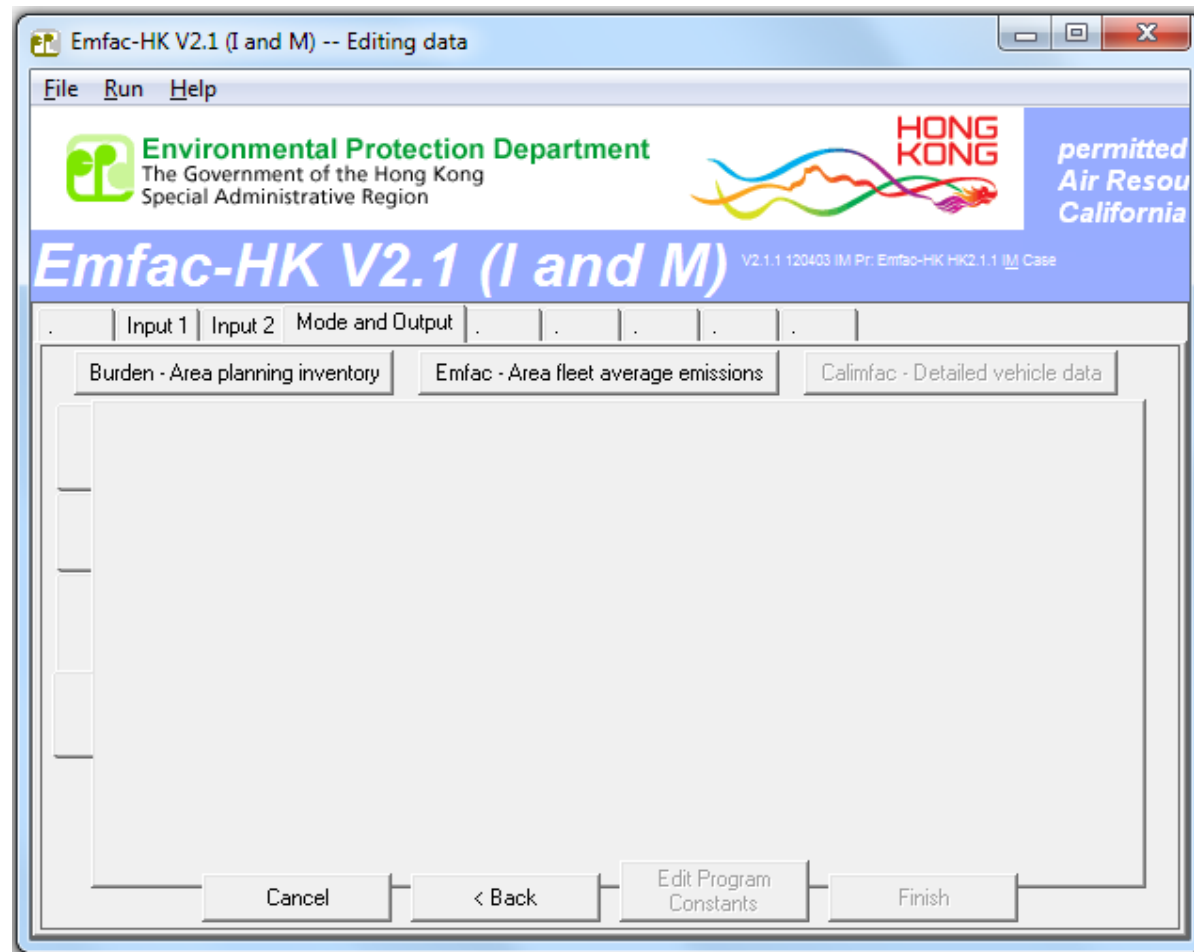
Step 6: Vehicle Class Selection

Vehicle Class Selection

<input checked="" type="checkbox"/> Private Cars (PC)	<input checked="" type="checkbox"/> Heavy Goods Vehicles <=15t	<input checked="" type="checkbox"/> Franchised Bus (SD)
<input type="checkbox"/> <Placeholder (P1)>	<input checked="" type="checkbox"/> Heavy Goods Vehicles >15t	<input checked="" type="checkbox"/> Franchised Bus (DD)
<input checked="" type="checkbox"/> Taxi	<input type="checkbox"/> <Placeholder (P2)>	<input checked="" type="checkbox"/> Motorcycles (MC)
<input checked="" type="checkbox"/> Light Goods Vehicles <=2.5t	<input type="checkbox"/> <Placeholder (P3)>	<input type="checkbox"/> <Placeholder (P4)>
<input checked="" type="checkbox"/> Lt Goods Vehicles 2.5-3.5t	<input checked="" type="checkbox"/> Public Light Buses	<input type="checkbox"/> <Placeholder (P5)>
<input checked="" type="checkbox"/> Light Goods Vehicles >3.5t	<input checked="" type="checkbox"/> Private Light Bus <=3.5t	
	<input checked="" type="checkbox"/> Private Light Bus >3.5t	
	<input checked="" type="checkbox"/> Non-franchised Bus <=6.4t	
	<input checked="" type="checkbox"/> Non-franchised Bus 6.4-15t	
	<input checked="" type="checkbox"/> Non-franchised Bus >15t	

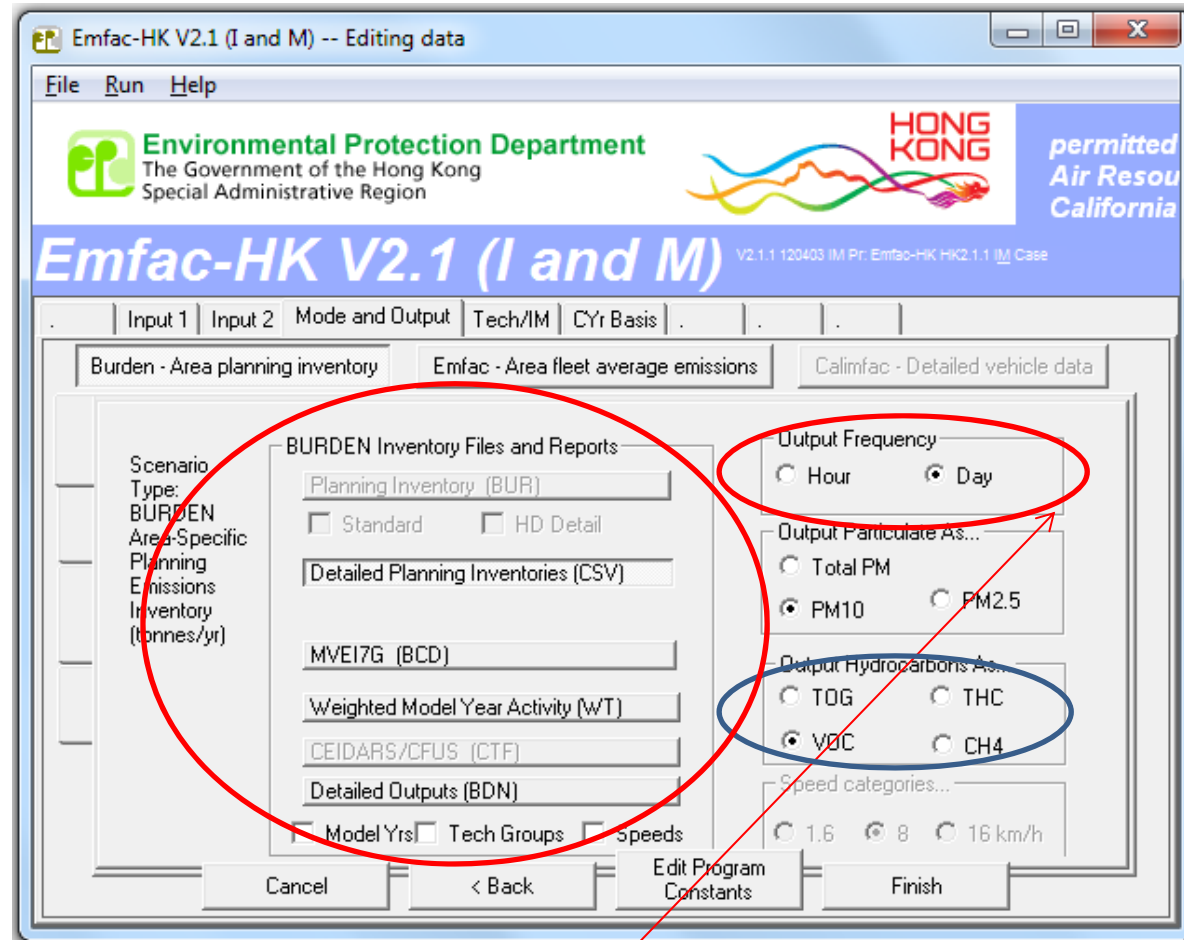
MODIFIED: 16 of 21 vehicle classes selected

Mode and Output Screens



Version 2.1 has separate tabs for each operating mode.

BURDEN Output Options



Hour frequency increases output by factor of 25

Detailed Planning Inventory (*.csv)

HK_2015_2020_2030_Burden.csv - Microsoft Excel

Home Insert Page Layout Formulas Data Review View Add-Ins

Clipboard: Cut, Copy, Paste, Format Painter

Font: Calibri, 10, Bold, Italic, Underline, Text Color, Background Color

Alignment: Wrap Text, Merge & Center

Number: General, Currency, Percentage, Date, Time, Text, Fraction, Scientific

Styles: Normal, Bad, Good, Neutral, Calculation, Check Cell

Cells: Insert, Delete, Format

Editing: AutoSum, Fill, Clear, Sort & Filter, Find & Select

A15 Run Exh

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1	Title : Hong Kong SAR Annual 3 Yrs 2015 to 2030 Default Title																			
2	Version : Emfac-HK V2.1 (I and M) V2.1.1 120403 I&M Pr: Emfac-HK HK2.1.1 I&M Case																			
3	Run Date : 2012/04/10 10:41:48																			
4	Scen Year: 2015 -- All model years in the range 1971 to 2015 selected																			
5	Season : Annual																			
6	Area : Hong Kong SAR																			
7	I/M Stat : HK I/M program in effect																			
8	Emissions: Tonnes Per Day																			
9	*****																			
10		PC-NCAT	PC-CAT	PC-DSL	PC-LPG	PC-TOT	TAXI-NCAT	TAXI-CAT	TAXI-DSL	TAXI-LPG	TAXI-TOT	LGV<=2.5t	LGV<=2.5t	LGV<=2.5t	LGV<=2.5t	LGV<=2.5t	LGV2.5-3.5	LGV2.5-3.5	LGV2.5-3.5	LGV2.5-3.5
11	Vehicles	381	460553	1543	0	462476	0	0	6	18237	18243	29	122	1001	0	1152	6	1105	42811	
12	VKT	8300	12734294	44399	0	12786993	0	0	2120	6908678	6910798	1877	8575	77105	0	87558	326	75411	3083650	
13	Trips	571	690829	2314	0	693715	0	0	22	72942	72965	115	487	4004	0	4607	23	4419	171226	
14	VOC Emissions																			
15	Run Exh	0.01735	0.36939	0.00499	0	0.39174	0	0	0.00108	0.45326	0.45433	0.01102	0.01036	0.00481	0	0.02619	0.00106	0.01418	0.13354	
16	Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	Start Ex	0.00484	0.12363	0	0	0.12846	0	0	0	0.07527	0.07527	0.00154	0.00295	0	0	0.00448	0.00024	0.00396	0	
18	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
19	Total Ex	0.02219	0.49301	0.00499	0	0.5202	0	0	0.00108	0.52852	0.5296	0.01256	0.01331	0.00481	0	0.03067	0.0013	0.01814	0.13354	
20																				
21	Diurnal	0.00377	0.27071	0	0	0.27448	0	0	0	0	0	0.00048	0.00033	0	0	0.00081	0.00004	0.00147	0	
22	Hot Soak	0.00266	0.15965	0	0	0.16231	0	0	0	0	0	0.00098	0.00068	0	0	0.00166	0.00008	0.00283	0	
23	Running	0.01219	0.19929	0	0	0.21148	0	0	0	0	0	0.00452	0.00112	0	0	0.00564	0.00037	0.00494	0	
24	Resting	0.00509	0.28072	0	0	0.28072	0	0	0	0	0	0.00050	0.00036	0	0	0.00105	0.00006	0.00184	0	

MVEI7G CSV file (*.bcd.csv)

Debug_HK20Data.bcd.csv - Microsoft Excel

Home Insert Page Layout Formulas Data Review View Developer Acrobat

From Access From Web From Text From Other Sources Existing Connections Refresh All Properties Edit Links Connections Sort & Filter Filter Clear Reapply Advanced Text to Columns Remove Duplicates Data Validation Consolidate What-If Analysis Group Ungroup Subtotal Show Detail Hide Detail Outline

F3 6751

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	CALYR	START MYR	END MYR	REGION	SAR	STARTS	POPULATION	VKT/1000	VEH TYPE	VEH TECH	POLLUTANT	PROCESS	EMISSIONS	BASIS
2	2008	1965	2008	SAR Average	Hong Kong SAR Average	6751	4471	104	PC	NCAT	CO	Run Exh	5.2646	Day
3	2008	1965	2008	SAR Average	Hong Kong SAR Average	6751	4471	104	PC	NCAT	NOx	Run Exh	0.2657	Day
4	2008	1965	2008	SAR Average	Hong Kong SAR Average	6751	4471	104	PC	NCAT	SOx	Run Exh	0	Day
5	2008	1965	2008	SAR Average	Hong Kong SAR Average	6751	4471	104	PC	NCAT	PM	Run Exh	0.0021	Day
6	2008	1965	2008	SAR Average	Hong Kong SAR Average	6751	4471	104	PC	NCAT	Pb	Run Exh	0.0001	Day
7	2008	1965	2008	SAR Average	Hong Kong SAR Average	6751	4471	104	PC	NCAT	ROG	Run Exh	0.3957	Day
8	2008	1965	2008	SAR Average	Hong Kong SAR Average	6751	4471	104	PC	NCAT	CO2	Run Exh	33.1422	Day
9	2008	1965	2008	SAR Average	Hong Kong SAR Average	6751	4471	104	PC	NCAT	CO	Idle Exh	0	Day
10	2008	1965	2008	SAR Average	Hong Kong SAR Average	6751	4471	104	PC	NCAT	NOx	Idle Exh	0	Day
11	2008	1965	2008	SAR Average	Hong Kong SAR Average	6751	4471	104	PC	NCAT	SOx	Idle Exh	0	Day
12	2008	1965	2008	SAR Average	Hong Kong SAR Average	6751	4471	104	PC	NCAT	PM	Idle Exh	0	Day
13	2008	1965	2008	SAR Average	Hong Kong SAR Average	6751	4471	104	PC	NCAT	Pb	Idle Exh	0	Day
14	2008	1965	2008	SAR Average	Hong Kong SAR Average	6751	4471	104	PC	NCAT	ROG	Idle Exh	0	Day
15	2008	1965	2008	SAR Average	Hong Kong SAR Average	6751	4471	104	PC	NCAT	CO2	Idle Exh	0	Day
16	2008	1965	2008	SAR Average	Hong Kong SAR Average	6751	4471	104	PC	NCAT	CO	Start Ex	0.2129	Day
17	2008	1965	2008	SAR Average	Hong Kong SAR Average	6751	4471	104	PC	NCAT	NOx	Start Ex	0.0107	Day
18	2008	1965	2008	SAR Average	Hong Kong SAR Average	6751	4471	104	PC	NCAT	SOx	Start Ex	0	Day
19	2008	1965	2008	SAR Average	Hong Kong SAR Average	6751	4471	104	PC	NCAT	PM	Start Ex	0.0001	Day
20	2008	1965	2008	SAR Average	Hong Kong SAR Average	6751	4471	104	PC	NCAT	Pb	Start Ex	0	Day
21	2008	1965	2008	SAR Average	Hong Kong SAR Average	6751	4471	104	PC	NCAT	ROG	Start Ex	0.0348	Day
22	2008	1965	2008	SAR Average	Hong Kong SAR Average	6751	4471	104	PC	NCAT	CO2	Start Ex	1.357	Day
23	2008	1965	2008	SAR Average	Hong Kong SAR Average	6751	4471	104	PC	NCAT	CO	Total Ex	5.4775	Day
24	2008	1965	2008	SAR Average	Hong Kong SAR Average	6751	4471	104	PC	NCAT	NOx	Total Ex	0.2764	Day
25	2008	1965	2008	SAR Average	Hong Kong SAR Average	6751	4471	104	PC	NCAT	SOx	Total Ex	0	Day
26	2008	1965	2008	SAR Average	Hong Kong SAR Average	6751	4471	104	PC	NCAT	PM	Total Ex	0.0022	Day
27	2008	1965	2008	SAR Average	Hong Kong SAR Average	6751	4471	104	PC	NCAT	Pb	Total Ex	0.0001	Day
28	2008	1965	2008	SAR Average	Hong Kong SAR Average	6751	4471	104	PC	NCAT	ROG	Total Ex	0.4305	Day
29	2008	1965	2008	SAR Average	Hong Kong SAR Average	6751	4471	104	PC	NCAT	CO2	Total Ex	34.4992	Day
30	2008	1965	2008	SAR Average	Hong Kong SAR Average	6751	4471	104	PC	NCAT	CO	Hot Soak	0	Day
31	2008	1965	2008	SAR Average	Hong Kong SAR Average	6751	4471	104	PC	NCAT	NOx	Hot Soak	0	Day
32	2008	1965	2008	SAR Average	Hong Kong SAR Average	6751	4471	104	PC	NCAT	SOx	Hot Soak	0	Day
33	2008	1965	2008	SAR Average	Hong Kong SAR Average	6751	4471	104	PC	NCAT	PM	Hot Soak	0	Day
34	2008	1965	2008	SAR Average	Hong Kong SAR Average	6751	4471	104	PC	NCAT	Pb	Hot Soak	0	Day

Weighted Model Year Activity Output (*.WT)

UltraEdit - [C:\Documents and Settings\Arney\My Documents\My Projects\VERGEMFAC\HongKong\Task 6 - Testing\EPD Comments\20110216\Debug_HK20Data.wt]

File Edit Search Insert Project View Format Column Macro Scripting Advanced Window Help

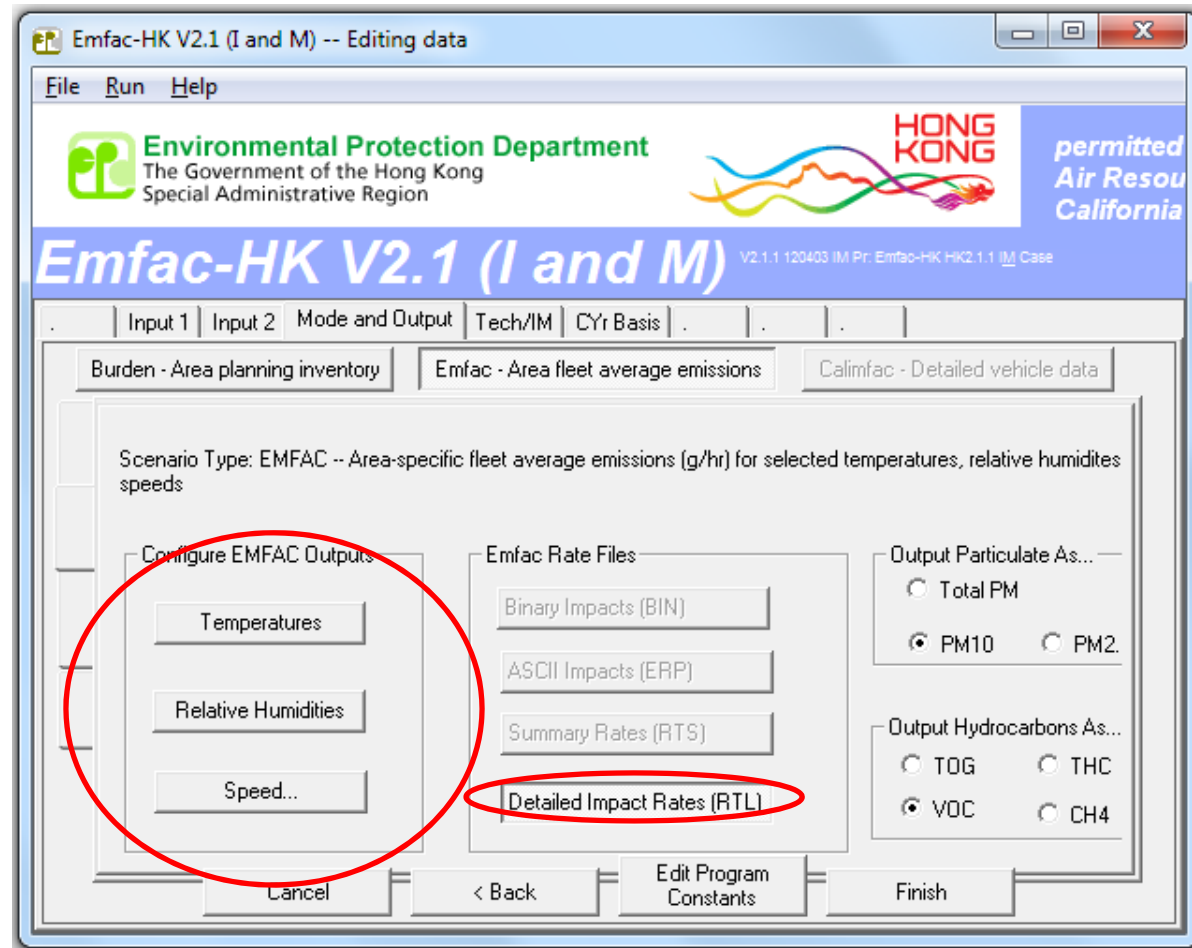
C:\Documents and Settings\Arney\N

```

1
2 Calendar Year: 2008
3 Model Years: 1965 to 2008
4 Title: Hong Kong SAR Annual CYr 2008 Default Title
5 Area: Hong Kong
6 SubArea: Average
7 Program: Emfac-HK working draft V1.99.6.2 110210 Sp: InProgress; GUI (HK Units); 330 TG; HK2.0 Data; HK TG Desc;
8 Run Date: 2011/02/17 13:08:17
9
10 SCEN VEH VEH POP VKT/1000 TRIPS ACCRUAL ODOMETER
11 YEAR CLS TBCH MYR (number) (km/day) (per day) (km/yr/veh) (km/veh)
12
13 2008 1 NCAT 1965 21. 0.28 32. 4810. 241367.
14 2008 1 NCAT 1966 3. 0.04 5. 4824. 236557.
15 2008 1 NCAT 1967 6. 0.08 9. 4839. 231733.
16 2008 1 NCAT 1968 4. 0.05 6. 4853. 226894.
17 2008 1 NCAT 1969 11. 0.15 17. 4868. 222041.
18 2008 1 NCAT 1970 26. 0.35 39. 4884. 217173.
19 2008 1 NCAT 1971 16. 0.21 24. 4900. 212289.
20 2008 1 NCAT 1972 25. 0.34 38. 4916. 207389.
21 2008 1 NCAT 1973 47. 0.64 71. 4933. 202473.
22 2008 1 NCAT 1974 35. 0.47 53. 4951. 197540.
23 2008 1 NCAT 1975 23. 0.31 35. 4969. 192589.
24 2008 1 NCAT 1976 23. 0.31 35. 4988. 187620.
25 2008 1 NCAT 1977 41. 0.56 62. 5007. 182632.
26 2008 1 NCAT 1978 44. 0.61 66. 5028. 177625.
27 2008 1 NCAT 1979 43. 0.59 65. 5048. 172597.
28 2008 1 NCAT 1980 84. 1.17 127. 5070. 167549.
29 2008 1 NCAT 1981 85. 1.19 128. 5093. 162479.
30 2008 1 NCAT 1982 87. 1.22 131. 5116. 157386.
31 2008 1 NCAT 1983 32. 0.45 48. 5141. 152270.
32 2008 1 NCAT 1984 42. 0.59 63. 5166. 147129.
33 2008 1 NCAT 1985 104. 1.48 157. 5193. 141963.
34 2008 1 NCAT 1986 175. 2.50 264. 5221. 136770.
35 2008 1 NCAT 1987 209. 3.01 316. 5251. 131549.
36 2008 1 NCAT 1988 352. 5.09 532. 5282. 126298.
37 2008 1 NCAT 1989 552. 8.04 834. 5315. 121016.
38 2008 1 NCAT 1990 860. 12.61 1299. 5350. 115701.
39 2008 1 NCAT 1991 1492. 22.02 2253. 5387. 110351.
40 2008 1 NCAT 1992 2. 0.03 3. 5427. 104964.
41 2008 1 NCAT 1993 7. 0.10 11. 5469. 99537.
42 2008 1 NCAT 1994 15. 0.23 23. 5515. 94068.
43 2008 1 NCAT 1995 5. 0.08 8. 5564. 88553.
44 2008 1 NCAT 1996 0. 0.00 0. 0. 0.
45 2008 1 NCAT 1997 0. 0.00 0. 0. 0.

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EMFAC Mode Options



EMFAC Mode Options – Select/Edit Temperatures (°C)

Select/Edit temperature for Emfac calculations

Enter data for temperature. Click button to enable new value.

Enter values of speed and temperature

<input checked="" type="radio"/> Delete temperature 1	<input type="text" value="0"/>	<input type="radio"/> Enter temperature 13	<input type="text"/>
<input type="radio"/> Delete temperature 2	<input type="text" value="5"/>	<input type="radio"/> Enter temperature 14	<input type="text"/>
<input type="radio"/> Delete temperature 3	<input type="text" value="10"/>	<input type="radio"/> Enter temperature 15	<input type="text"/>
<input type="radio"/> Delete temperature 4	<input type="text" value="15"/>	<input type="radio"/> Enter temperature 16	<input type="text"/>
<input type="radio"/> Delete temperature 5	<input type="text" value="20"/>	<input type="radio"/> Enter temperature 17	<input type="text"/>
<input type="radio"/> Delete temperature 6	<input type="text" value="25"/>	<input type="radio"/> Enter temperature 18	<input type="text"/>
<input type="radio"/> Delete temperature 7	<input type="text" value="30"/>	<input type="radio"/> Enter temperature 19	<input type="text"/>
<input type="radio"/> Delete temperature 8	<input type="text" value="35"/>	<input type="radio"/> Enter temperature 20	<input type="text"/>
<input type="radio"/> Delete temperature 9	<input type="text" value="40"/>	<input type="radio"/> Enter temperature 21	<input type="text"/>
<input type="radio"/> Enter temperature 10	<input type="text"/>	<input type="radio"/> Enter temperature 22	<input type="text"/>
<input type="radio"/> Enter temperature 11	<input type="text"/>	<input type="radio"/> Enter temperature 23	<input type="text"/>
<input type="radio"/> Enter temperature 12	<input type="text"/>	<input type="radio"/> Enter temperature 24	<input type="text"/>

Sort the array (done after exit)

OK Cancel

EMFAC Mode Options – Select/Edit Relative Humidity (%)

Select/Edit rel hum for Emfac calculations

Enter data for rel hum. Click button to enable new value.

Enter values of speed and temperature

<input checked="" type="radio"/> Delete rel hum 1	0	<input type="radio"/> Enter rel hum 13	
<input type="radio"/> Delete rel hum 2	10	<input type="radio"/> Enter rel hum 14	
<input type="radio"/> Delete rel hum 3	20	<input type="radio"/> Enter rel hum 15	
<input type="radio"/> Delete rel hum 4	30	<input type="radio"/> Enter rel hum 16	
<input type="radio"/> Delete rel hum 5	40	<input type="radio"/> Enter rel hum 17	
<input type="radio"/> Delete rel hum 6	50	<input type="radio"/> Enter rel hum 18	
<input type="radio"/> Delete rel hum 7	60	<input type="radio"/> Enter rel hum 19	
<input type="radio"/> Delete rel hum 8	70	<input type="radio"/> Enter rel hum 20	
<input type="radio"/> Delete rel hum 9	80	<input type="radio"/> Enter rel hum 21	
<input type="radio"/> Delete rel hum 10	90	<input type="radio"/> Enter rel hum 22	
<input type="radio"/> Delete rel hum 11	100	<input type="radio"/> Enter rel hum 23	
<input type="radio"/> Enter rel hum 12		<input type="radio"/> Enter rel hum 24	

Sort the array (done after exit)

OK Cancel

EMFAC Mode Options – Select/Edit Speed Profiles (kph)

Select/Edit speed for Emfac calculations

Enter data for speed. Click button to enable new value.
Enter values of speed and temperature

<input checked="" type="radio"/> Delete speed 1	0	<input type="radio"/> Delete speed 13	120
<input type="radio"/> Delete speed 2	10	<input type="radio"/> Delete speed 14	130
<input type="radio"/> Delete speed 3	20	<input type="radio"/> Enter speed 15	
<input type="radio"/> Delete speed 4	30	<input type="radio"/> Enter speed 16	
<input type="radio"/> Delete speed 5	40	<input type="radio"/> Enter speed 17	
<input type="radio"/> Delete speed 6	50	<input type="radio"/> Enter speed 18	
<input type="radio"/> Delete speed 7	60	<input type="radio"/> Enter speed 19	
<input type="radio"/> Delete speed 8	70	<input type="radio"/> Enter speed 20	
<input type="radio"/> Delete speed 9	80	<input type="radio"/> Enter speed 21	
<input type="radio"/> Delete speed 10	90	<input type="radio"/> Enter speed 22	
<input type="radio"/> Delete speed 11	100	<input type="radio"/> Enter speed 23	
<input type="radio"/> Delete speed 12	110	<input type="radio"/> Enter speed 24	

* Idling (0 km/hr) is not displayed in the output file

Sort the array (done after exit)

OK Cancel

EMFAC Impact Rate Detail Format (*.RTL)

HK_2015_EMFAC.rtl.csv - Microsoft Excel

Home Insert Page Layout Formulas Data Review View Add-Ins

Clipboard Font Alignment Number Styles Cells Editing

Calibri 12

General

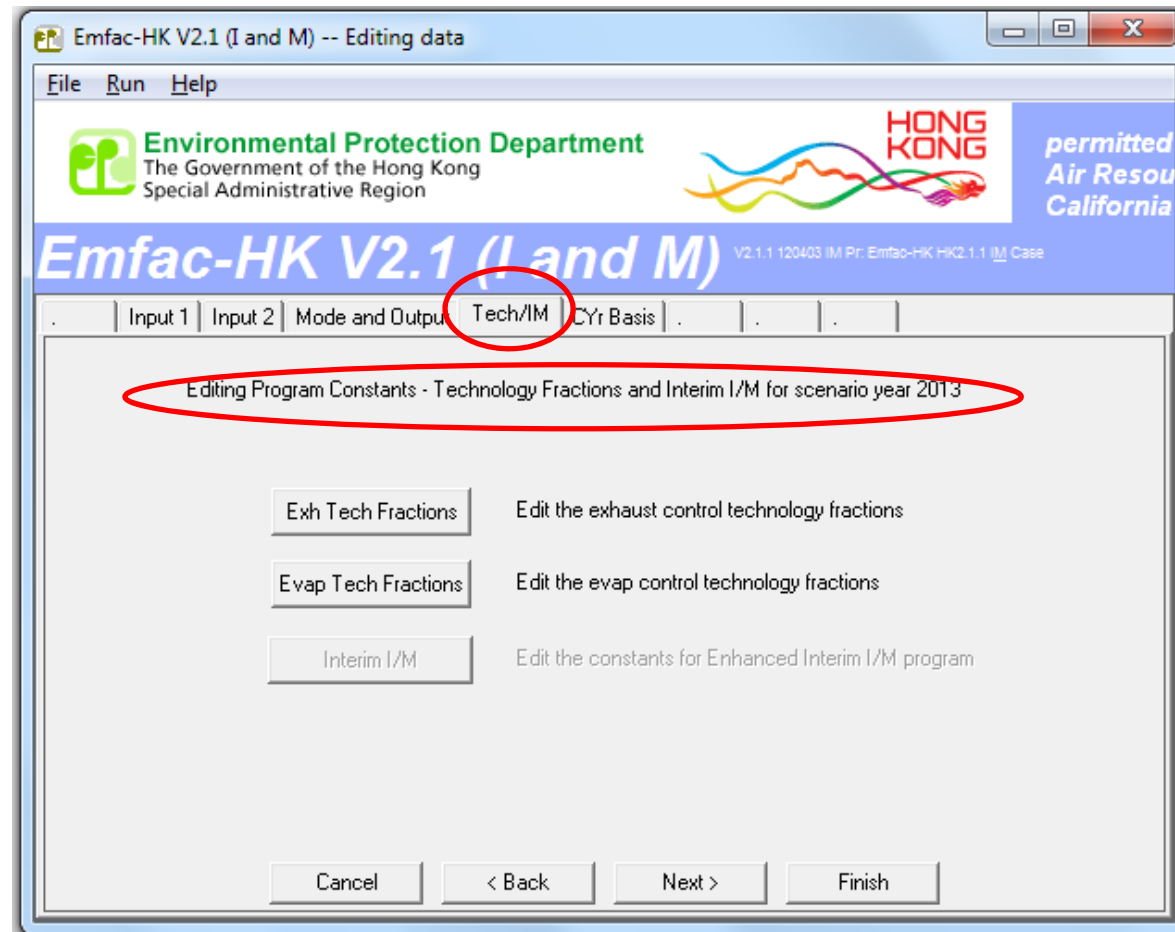
Normal Bad Good Neutral Calculation Check Cell

AutoSum Fill Clear Sort & Filter Find & Select

A1 Title : Hong Kong SAR Annual Cvr 2015 Default Title

1	Title : Hong Kong SAR Annual Cvr 2015 Default Title																									
2	Version : Emfac-HK V2.1 (I and M) V2.1.1 120403 I&M Pr: Emfac-HK HK2.1.1 I&M Case																									
3	Run Date : 2012/04/10 10:43:09																									
4	Scen Year: 2015 -- All model years in the range 1971 to 2015 selected																									
5	Season : Annual																									
6	Area : Hong Kong																									
7	*****																									
8	Year: 2015 -- Model Years 1971 to 2015 Inclusive -- Annual																									
9	Emfac-HK V2.1 (I and M) Emission Factors: V2.1.1 120403 I&M Pr: Emfac-HK HK2.1.1 I&M Case																									
10																										
11	SAR Average Hong Kong SAR Average																									
12																										
13	Table 1: Running Exhaust Emissions (grams/km; grams/idle-hour)																									
14																										
15	Pollutant Name: Volatile Org Cpds Temperature: 25C Relative Humidity: 40%																									
16																										
17	Speed	PC	PC	PC	PC	PC	TAXI	TAXI	TAXI	TAXI	TAXI	LGV3	LGV3	LGV3	LGV3	LGV3	LGV4	LGV4	LGV4	LGV4	LGV4	LGV4	LGV6	LGV6	LGV6	L
18	km/hr	NCAT	CAT	DSL	LPG	ALL	NCAT	CAT	DSL	LPG	ALL	NCAT	CAT	DSL	LPG	ALL	NCAT	CAT	DSL	LPG	ALL	NCAT	CAT	DSL	L	
19																										
20	10	5.7953	0.1153	0.288	0	0.1195	0	0	1.1457	0.282	0.2822	16.6227	4.1253	0.1616	0	0.9027	9.3446	0.677	0.1122	0	0.1267	0	0	1.9453		
21	20	3.8593	0.0706	0.2154	0	0.0736	0	0	0.8566	0.1563	0.1565	12.4642	1.8887	0.1208	0	0.5586	7.0002	0.3179	0.0839	0	0.0902	0	0	0.8979		
22	30	2.7542	0.0466	0.1666	0	0.0488	0	0	0.6626	0.0932	0.0934	9.0795	1.4335	0.0935	0	0.4174	5.0922	0.2301	0.0649	0	0.0694	0	0	0.3446		
23	40	2.1077	0.033	0.1333	0	0.0347	0	0	0.5302	0.0619	0.0621	6.4689	1.3147	0.0748	0	0.3333	3.6206	0.2043	0.0519	0	0.056	0	0	0.2579		
24	50	1.7311	0.0252	0.1104	0	0.0266	0	0	0.439	0.0453	0.0455	4.6321	1.186	0.0619	0	0.27	2.5853	0.1886	0.043	0	0.0467	0	0	0.1979		

Editing Fundamental Data



Editing Exhaust Technology Fractions

Exhaust Technology Fractions

Edit Exhaust Technology Fractions by

Vehicle Class

Model Year

EXHAUST Technology Groups Total: 100.0000% OK

of Tech Groups

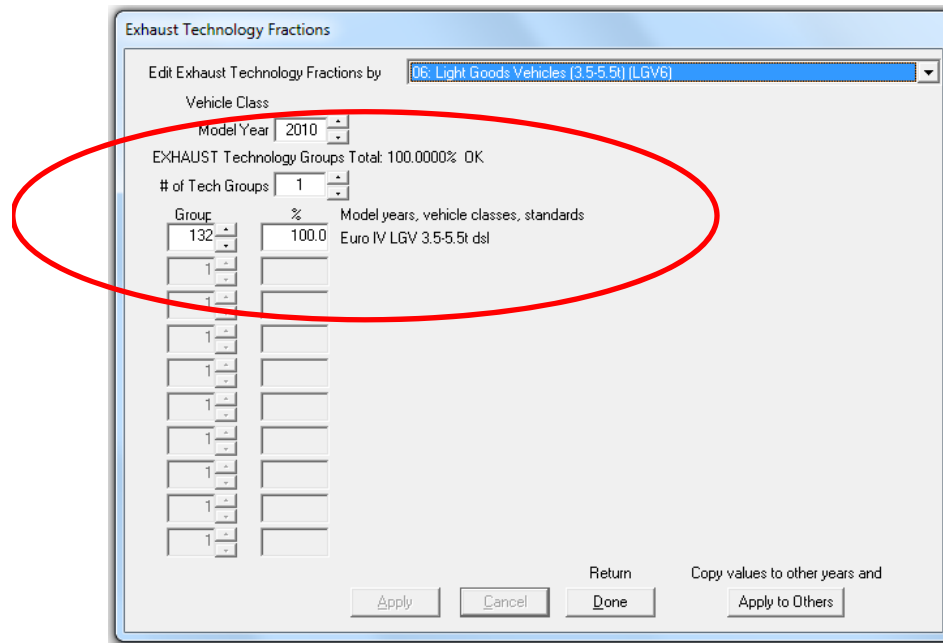
Group	%	Model years, vehicle classes, standards
<input type="text" value="8"/>	35.6866	ULP PC and LGV<=2.5t petrol
<input type="text" value="10"/>	61.3433	PC Euro I petrol
<input type="text" value="171"/>	0.4328	pre-Euro PC dsl with traps
<input type="text" value="172"/>	0.194	pre-Euro PC dsl with DOC
<input type="text" value="173"/>	2.3433	Euro I PC diesel
<input type="text" value="1"/>		
<input type="text" value="1"/>		
<input type="text" value="1"/>		
<input type="text" value="1"/>		
<input type="text" value="1"/>		

Return Copy values to other years and

Editing Exhaust Technology Fractions (cont.)

Before Edit

“During” Edit



Exhaust Technology Fractions

Edit Exhaust Technology Fractions by: 06: Light Goods Vehicles (3.5-5.5t) (LGV6)

Vehicle Class

Model Year: 2010

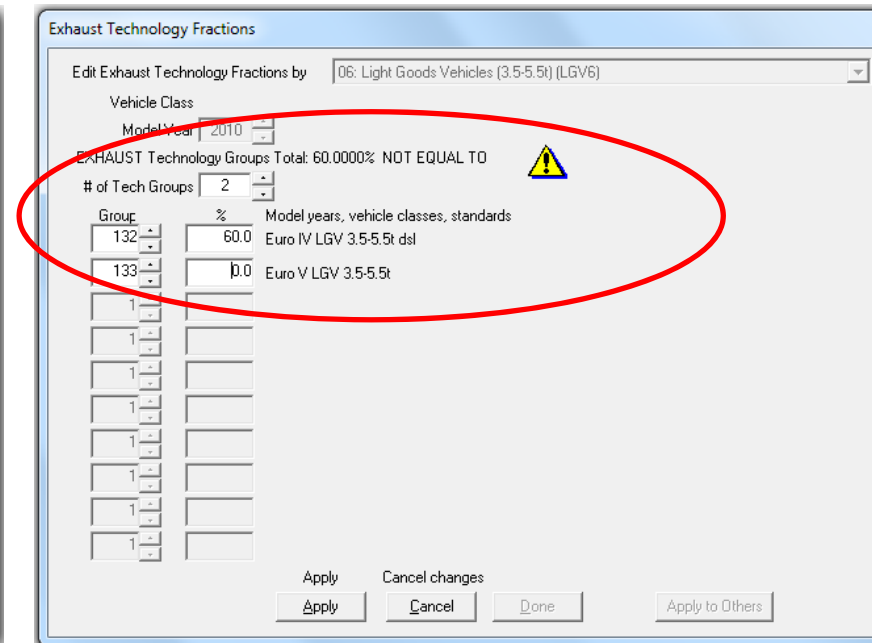
EXHAUST Technology Groups Total: 100.0000% OK

of Tech Groups: 1

Group	%	Model years, vehicle classes, standards
132	100.0	Euro IV LGV 3.5-5.5t dsl

Return Copy values to other years and

Apply Cancel Done Apply to Others




Exhaust Technology Fractions

Edit Exhaust Technology Fractions by: 06: Light Goods Vehicles (3.5-5.5t) (LGV6)

Vehicle Class

Model Year: 2010

EXHAUST Technology Groups Total: 60.0000% NOT EQUAL TO 

of Tech Groups: 2

Group	%	Model years, vehicle classes, standards
132	60.0	Euro IV LGV 3.5-5.5t dsl
133	0.0	Euro V LGV 3.5-5.5t

Apply Cancel changes

Apply Cancel Done Apply to Others

Introducing another Exhaust TG. Note warning is displayed that total percentage is not 100%, yet. New percentage entered will be 40%.

Editing Evap Technology Fractions

Evap Technology Fractions

Edit Evap Technology Fractions by 01: Private Cars (PC)

Vehicle Class

Model Year 2013

EVAP Technology Groups Total: 100.0000% OK

of Tech Groups 1

Group	%	Model years, vehicle classes, standards
14	100.0	PC Euro III+, 1-day Diurnal
1		
1		
1		
1		
1		
1		
1		
1		
1		
1		

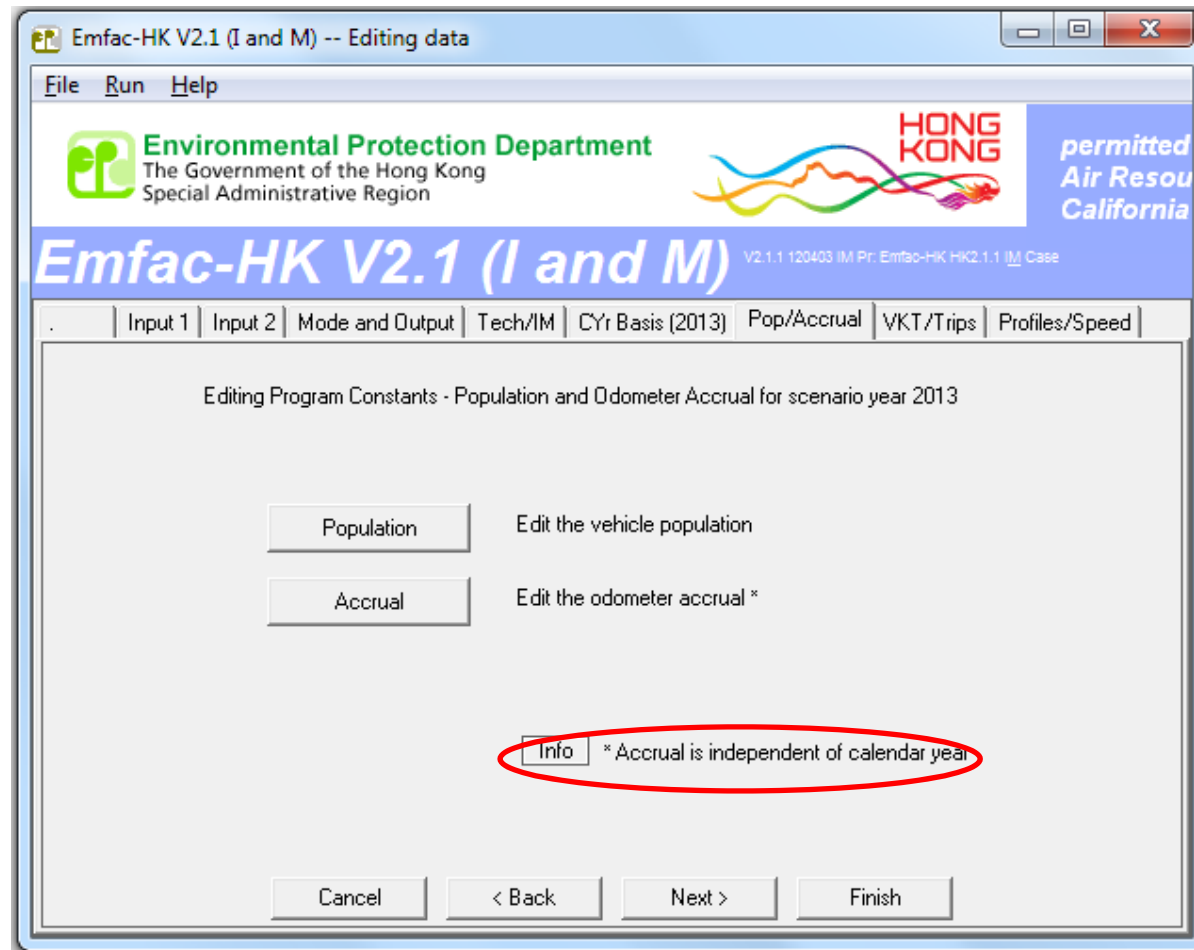
Return Copy values to other years and

Apply Cancel Done Apply to Others

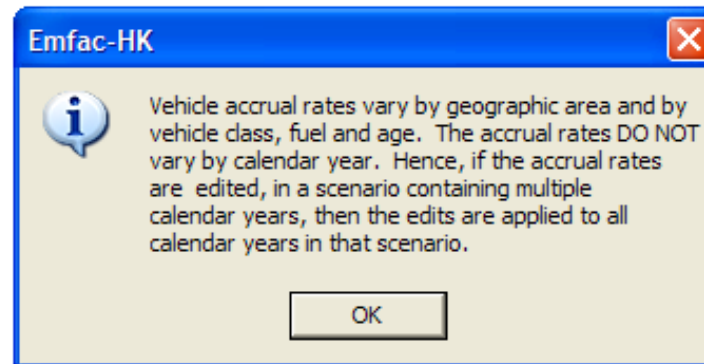
Changing Activity Data

- edit fundamental activity data such as population, accrual rates, trips and vehicle kilometers traveled.
- dialogs are sequenced noting the inter-dependencies among the data

Population and Accrual Edits



Info on Accrual Rates



Editing Total Population

Editing Population data for scenario 1: Hong Kong SAR Annual 3 CYrs 2013 to 2030 Default Title

Total Population for area

Editing Mode Editing Population (registered vehicles with adjustments)

Revised Total Population

Previous Total Population

Editing Population by Vehicle Class and Fuel Type

Editing Population data for scenario 1: Hong Kong SAR Annual 3 CYrs 2013 to 2030 Default Title

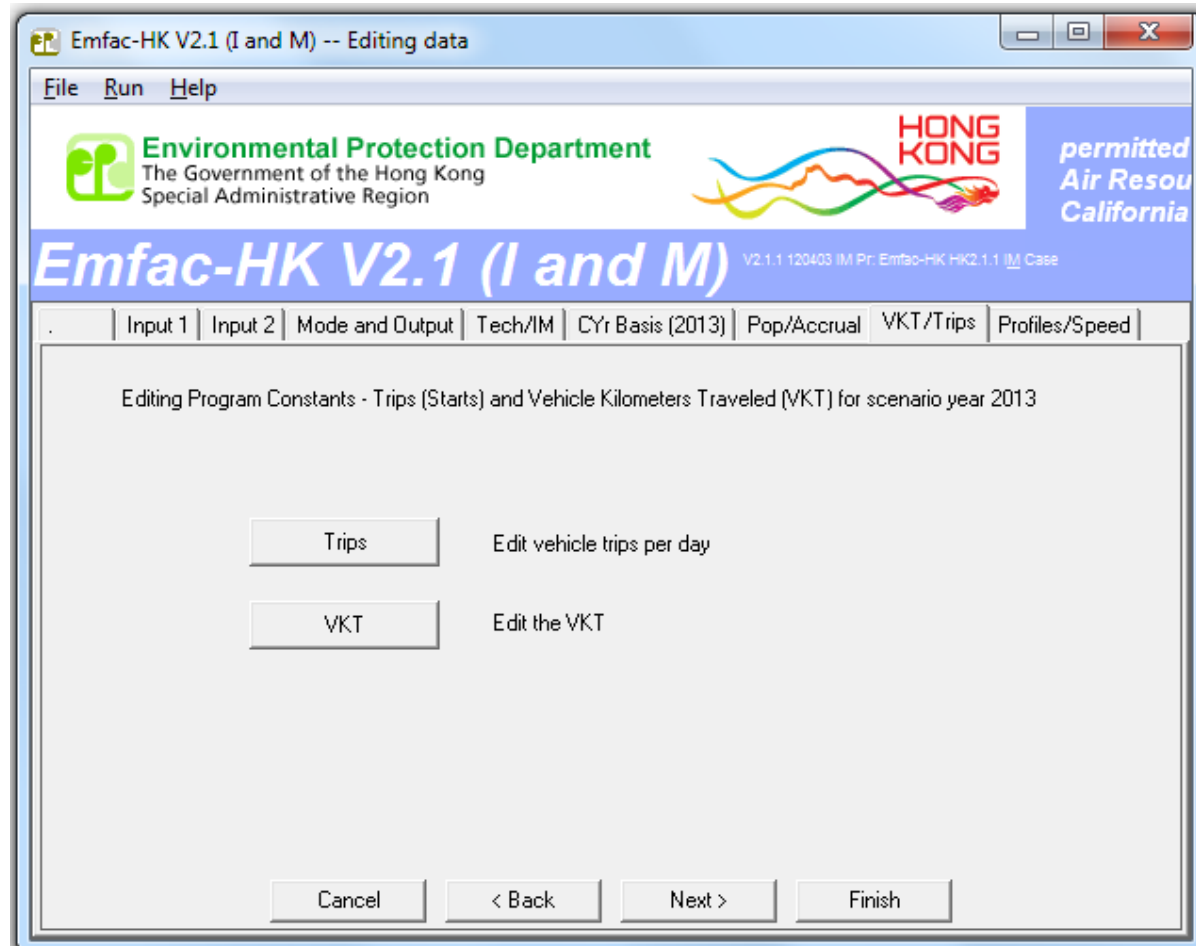
Total Population for area:

Editing Mode:

Editing Population (registered vehicles with adjustments)

Vehicle Class	Fuel (1=Petrol/2=Diesel/3=LPG)		
	1	2	3
01 - Private Cars (PC)	443125.6	1448.9	0.0
02 - <Placeholder (P1)>	0.0	0.0	0.0
03 - Taxi	0.0	3.5	18239.5
04 - Light Goods Vehicles<=2.5t	161.7	978.6	0.0
05 - Lt Goods Vehicles 2.5-3.5t	1172.2	42313.4	0.0
06 - Light Goods Vehicles>3.5t	0.0	25811.2	0.0
07 - Heavy Goods Vehicles<=15t	0.0	10766.9	0.0
08 - Heavy Goods Vehicles >15t	0.0	30523.0	0.0
09 - <Placeholder (P2)>	0.0	0.0	0.0
10 - <Placeholder (P3)>	0.0	0.0	0.0
11 - Public Light Buses	0.0	1182.5	3165.5
12 - Private Light Bus <=3.5t	2163.6	299.4	0.0
13 - Private Light Bus >3.5t	11.4	1067.7	961.9
14 - Non-franchised Bus<=6.4t	0.0	3215.0	0.0
15 - Non-franchised Bus 6.4-15t	0.0	2305.0	0.0
16 - Non-franchised Bus >15t	0.0	2344.0	0.0
17 - Franchised Bus (SD)	0.0	381.0	0.0
18 - Franchised Bus (DD)	0.0	5349.0	0.0
19 - Motorcycles (MC)	41652.9	0.0	0.0
20 - <Placeholder (P4)>	0.0	0.0	0.0
21 - <Placeholder (P5)>	0.0	0.0	0.0

Editing Trip and VKT Profiles



Editing Total VKT

Editing VKT data for scenario 1: Hong Kong SAR Annual 3 CYrs 2013 to 2030 Default Title

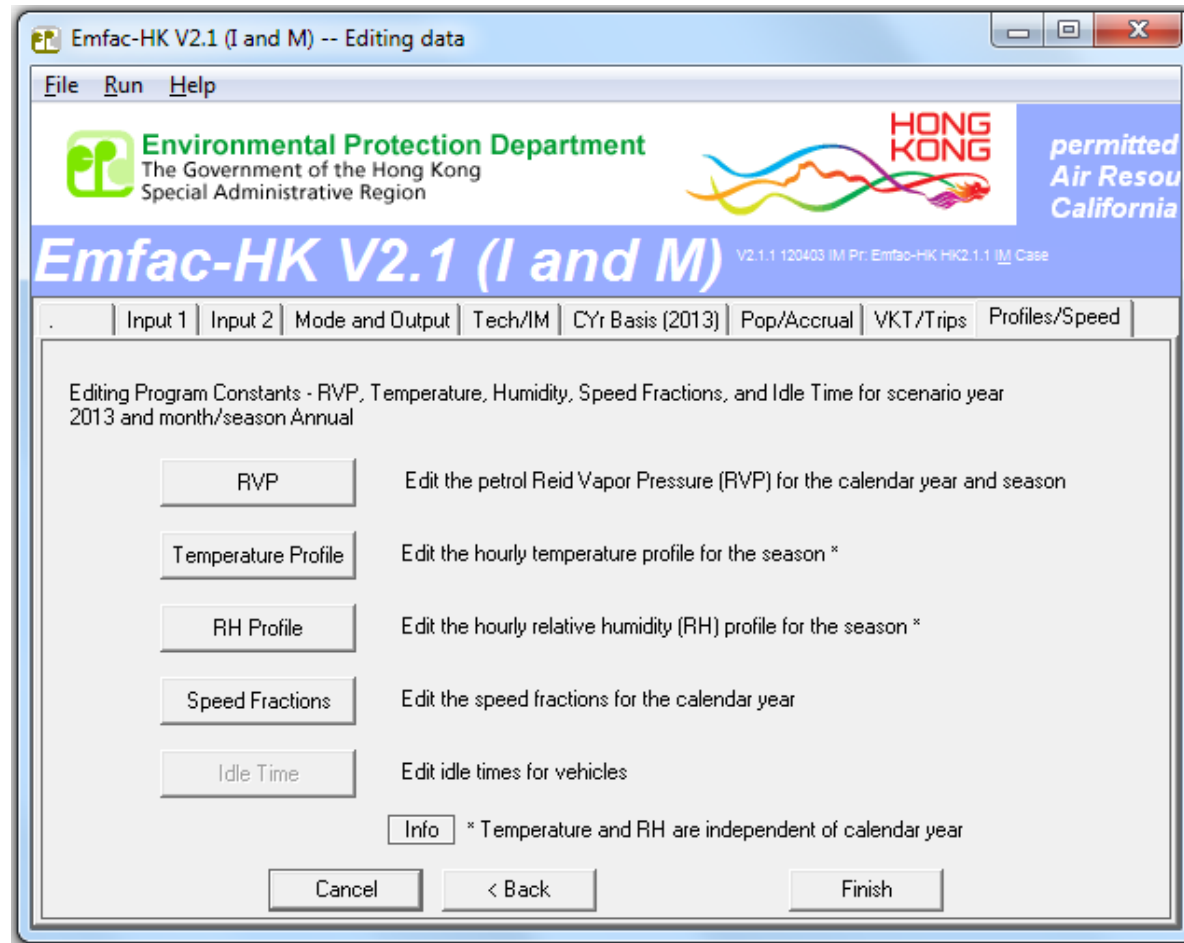
Total VKT for area

Editing Mode Editing VKT (vehicle km traveled per weekday)

Revised Total VKT

Previous Total VKT

Editing Profiles/Speed



Editing Speed Profiles

Speed Fractions by Scenario Year and Vehicle Class

Area: Hong Kong SAR Scenario Year: 2013

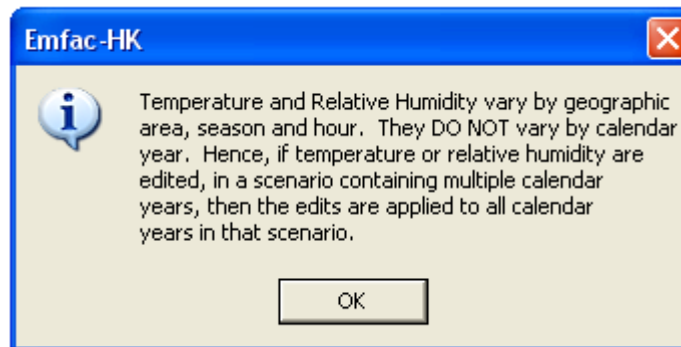
Hong Kong SAR

VKT-Weighted Average Basis: 1.6 KPH 8 KPH 16 KPH Vehicle Class: 01: Private Cars (PC)

		Hour (1 to 24)							
		1	2	3	4	5	6	7	8
Speed Bin (8,16,24,...) (1:18)	1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	4	0.0541	0.0541	0.0541	0.0541	0.0541	0.0541	0.0541	0.0589
	5	0.0980	0.0980	0.0980	0.0980	0.0980	0.0980	0.0980	0.1053
	6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	7	0.1993	0.1993	0.1993	0.1993	0.1993	0.1993	0.1993	0.2072
	8	0.0603	0.0603	0.0603	0.0603	0.0603	0.0603	0.0603	0.0748
	9	0.2731	0.2731	0.2731	0.2731	0.2731	0.2731	0.2731	0.2670
	10	0.1817	0.1817	0.1817	0.1817	0.1817	0.1817	0.1817	0.1692
	11	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	12	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	13	0.1203	0.1203	0.1203	0.1203	0.1203	0.1203	0.1203	0.1026
	14	0.0132	0.0132	0.0132	0.0132	0.0132	0.0132	0.0132	0.0150
	15	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	16	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	17	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	18	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total 100.00 % OK


Info Message for 'Profiles' Option for Temperatures and Relative Humidity



Editing Temperature Profile

Diurnal Temperature Profile

Area: Hong Kong SAR
Month: Annual
VKT-Weighted Average of 1 Sub-areas



Hong Kong SAR

Copy with Headings Paste Data Only

Temperatures (C)

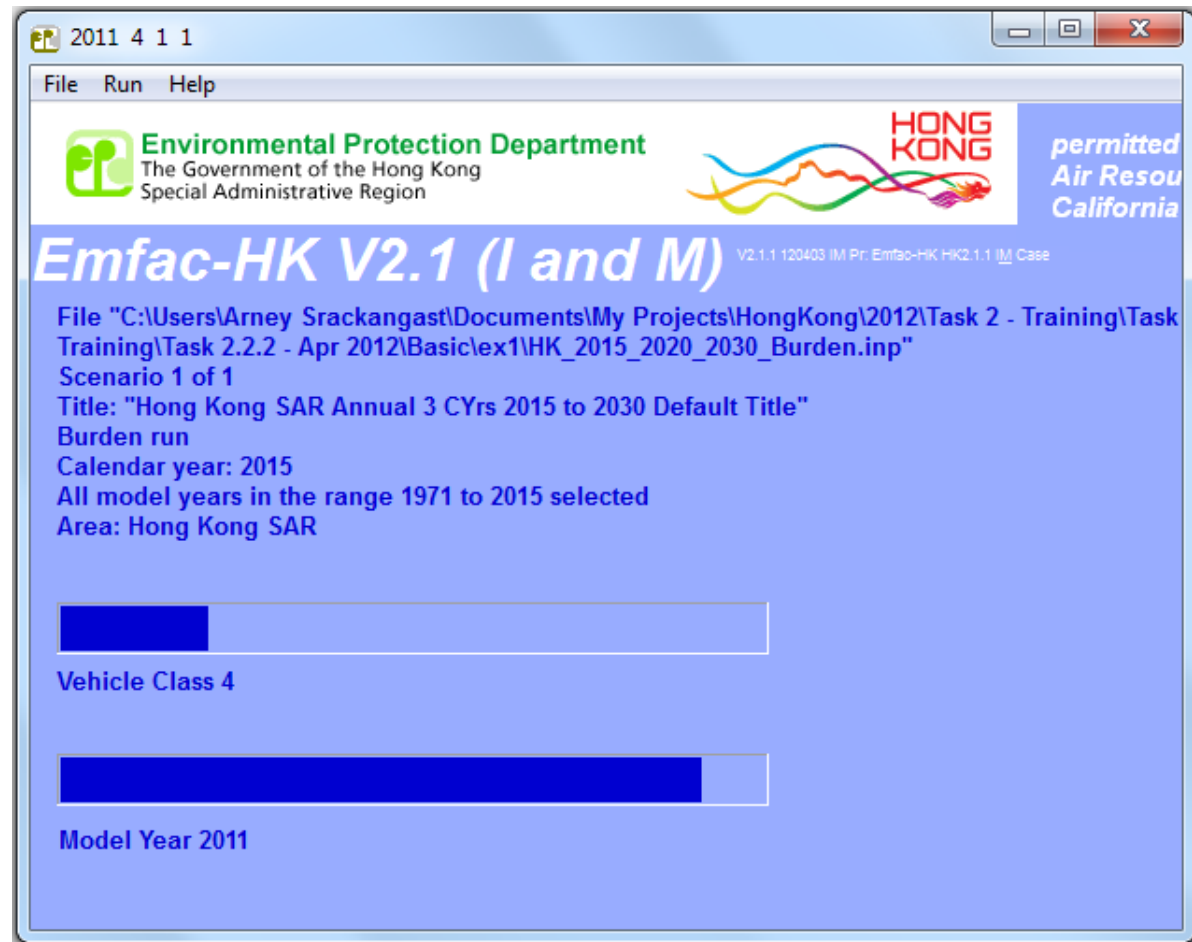
Hour											
0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
21.8	21.7	21.6	21.4	21.3	21.2	21.1	21.2	21.9	22.8	23.5	24.2
1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
24.6	24.9	25.0	24.9	24.6	24.0	23.3	22.8	22.5	22.3	22.1	22.0

Modify Values for Range of Hours

to Constant Value for Range

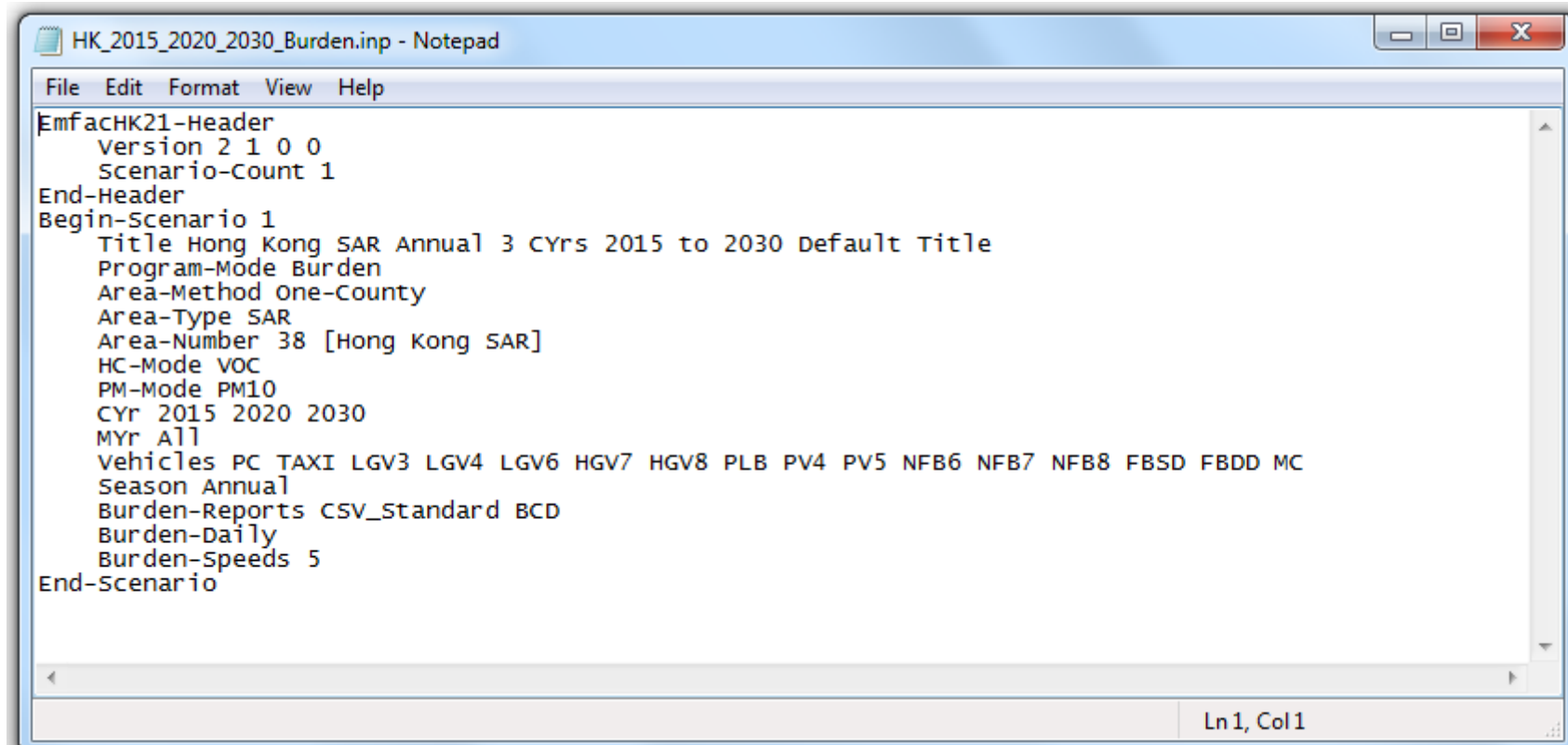
Apply Cancel Done

Final Run or Progress Screen



EMFAC-HK Version 2.1

Example Input File



```
HK_2015_2020_2030_Burden.inp - Notepad
File Edit Format View Help
EmfachK21-Header
  Version 2 1 0 0
  Scenario-Count 1
End-Header
Begin-Scenario 1
  Title Hong Kong SAR Annual 3 CYrs 2015 to 2030 Default Title
  Program-Mode Burden
  Area-Method One-County
  Area-Type SAR
  Area-Number 38 [Hong Kong SAR]
  HC-Mode VOC
  PM-Mode PM10
  CYr 2015 2020 2030
  MYr All
  Vehicles PC TAXI LGV3 LGV4 LGV6 HGV7 HGV8 PLB PV4 PV5 NFB6 NFB7 NFB8 FBSD FBDD MC
  Season Annual
  Burden-Reports CSV_Standard BCD
  Burden-Daily
  Burden-Speeds 5
End-Scenario
Ln1, Col1
```