

## **Appendix 7**

Detailed Breakdown of the  
Emission Inventory for the Base  
and Development Cases in  
2030



# Detailed Breakdown of the Emission Inventory for the Base and Development Cases in 2030

Appendix 7 Table 1: Comparison of Emissions (te/y) from the base and development case in 2030

Emissions (te/y)	Base case				Development case			
	NOx	PM10	PM2.5	VOC	NOx	PM10	PM2.5	VOC
<b>Airport-related</b>	<b>2,064.2</b>	<b>32.4</b>	<b>28.1</b>	<b>308.3</b>	<b>3,753.8</b>	<b>57.5</b>	<b>49.0</b>	<b>578.5</b>
Aircraft	1,497.2	17.0	14.5	303.8	2,938.6	33.1	28.2	572.8
<i>Ground level exhaust (plus brake/tyre)</i>	<i>579.4</i>	<i>13.2</i>	<i>10.8</i>	<i>281.5</i>	<i>1,151.4</i>	<i>26.0</i>	<i>21.1</i>	<i>529.3</i>
Start-up				169.0				296.3
Taxi-out	38.8	0.8	0.8	26.1	83.1	1.9	1.9	61.7
Hold	40.1	0.8	0.8	26.3	35.9	0.8	0.8	25.8
Take-off roll	253.0	1.0	1.0	1.3	492.5	1.8	1.8	2.2
Landing roll	15.6	0.2	0.2	3.2	32.0	0.3	0.3	5.9
Brake and Tyre		4.9	2.4			9.9	5.0	
Taxi-in	45.3	0.8	0.8	25.2	125.1	2.2	2.2	73.7
APUs	149.6	4.1	4.1	9.1	313.1	7.7	7.7	20.0
Engine testing	6.1	0.0	0.0	1.6	11.8	0.1	0.1	3.1
Push Back	31.1	0.6	0.6	19.7	57.8	1.3	1.3	40.5
<b>Ground level fugitive</b>				<b>5.1</b>				<b>10.5</b>
<i>Elevated (lto-cycle)</i>	<i>917.8</i>	<i>3.8</i>	<i>3.8</i>	<i>17.3</i>	<i>1,787.2</i>	<i>7.1</i>	<i>7.1</i>	<i>33.0</i>
Initial-climb	300.7	1.0	1.0	1.3	583.1	1.9	1.9	2.3
Climb-out	433.5	1.4	1.4	2.0	869.3	2.7	2.7	3.9
Approach	183.6	1.4	1.4	14.0	334.7	2.6	2.6	26.8
<b>Airside vehicles</b>	<b>24.5</b>	<b>1.8</b>	<b>1.3</b>		<b>47.5</b>	<b>3.4</b>	<b>2.4</b>	
<b>Landside vehicles</b>	<b>522.6</b>	<b>12.2</b>	<b>10.8</b>		<b>726.4</b>	<b>18.4</b>	<b>16.0</b>	
<i>Road network 1</i>	<i>516.7</i>	<i>11.7</i>	<i>10.4</i>		<i>715.9</i>	<i>16.9</i>	<i>15.1</i>	
Cars (1)	248.7	5.5	4.8		398.2	8.7	7.7	
LGV (1)	19.9	3.0	2.7		29.6	4.4	4.0	
HGV (1)	67.8	1.0	0.9		101.9	1.4	1.3	
Buses (1)	180.2	2.2	2.0		186.2	2.4	2.1	
Car parks (plus rentals), Coaches and Taxis	5.9	0.6	0.4		10.6	1.4	0.8	
<b>Stationary sources</b>	<b>19.9</b>	<b>1.5</b>	<b>1.5</b>	<b>4.4</b>	<b>41.2</b>	<b>2.6</b>	<b>2.4</b>	<b>5.7</b>
Heating Plant	19.9	1.5	1.5		41.2	2.6	2.4	
Fire training, fuel handling and storage	0.0			4.4	0.0			5.7
<b>Non-airport</b>	<b>13,036.6</b>	<b>536.6</b>	<b>481.0</b>		<b>13,001.8</b>	<b>533.1</b>	<b>477.8</b>	
Cars (1)	4,483.1	104.8	92.3		4,467.1	104.4	92.0	
LGV (1)	2,548.4	346.3	311.7		2,534.2	343.1	308.8	
HGV (1)	6,005.1	85.5	77.0		6,000.5	85.6	77.0	

Emissions (te/y)	difference				percentage difference			
	NOx	PM10	PM2.5	VOC	NOx	PM10	PM2.5	VOC
<b>Airport-related</b>	<b>1,689.6</b>	<b>25.0</b>	<b>20.9</b>	<b>270.3</b>	<b>82%</b>	<b>77%</b>	<b>75%</b>	<b>88%</b>
Aircraft	1,441.4	16.1	13.7	269.0	96%	95%	94%	89%
<i>Ground level exhaust (plus brake/tyre)</i>	572.0	12.8	10.3	247.8	99%	97%	95%	88%
Start-up	0.0	0.0	0.0	127.3				75%
Taxi-out	44.3	1.1	1.1	35.6	114%	130%	130%	136%
Hold	-4.1	0.0	0.0	-0.6	-10%	-5%	-5%	-2%
Take-off roll	239.6	0.9	0.9	1.0	95%	88%	88%	79%
Landing roll	16.5	0.2	0.2	2.7	106%	96%	96%	84%
Brake and Tyre	0.0	5.1	2.6	0.0		104%	106%	
Taxi-in	79.9	1.5	1.5	48.5	177%	189%	189%	192%
APUs	163.5	3.5	3.5	10.9	109%	86%	86%	120%
Engine testing	5.8	0.0	0.0	1.5	95%	94%	94%	95%
<b>Ground level fugitive</b>				<b>5.5</b>				<b>108%</b>
<i>Elevated (lto-cycle)</i>	869.4	3.4	3.4	15.8	95%	89%	89%	91%
Initial-climb	282.4	0.9	0.9	1.0	94%	88%	88%	80%
Climb-out	435.8	1.3	1.3	1.9	101%	92%	92%	92%
Approach	151.2	1.2	1.2	12.9	82%	88%	88%	92%
<b>Airside vehicles</b>	<b>23.1</b>	<b>1.7</b>	<b>1.2</b>		<b>94%</b>	<b>94%</b>	<b>94%</b>	
<b>Landside vehicles</b>	<b>203.9</b>	<b>6.1</b>	<b>5.2</b>		<b>39%</b>	<b>50%</b>	<b>48%</b>	
<i>Road network 1</i>	199.2	5.3	4.7		39%	45%	45%	
Cars (1)	149.6	3.3	2.9		60%	59%	59%	
LGV (1)	9.6	1.4	1.3		48%	49%	49%	
HGV (1)	34.0	0.5	0.4		50%	50%	50%	
<b>Buses (1)</b>	<b>6.0</b>	<b>0.1</b>	<b>0.1</b>	<b>0.0</b>	<b>3%</b>	<b>5%</b>	<b>5%</b>	
Car parks (plus rentals), Coaches and Taxis	4.7	0.9	0.5		80%	149%	140%	
<b>Stationary sources</b>	<b>21.3</b>	<b>1.1</b>	<b>0.9</b>	<b>1.3</b>	<b>107%</b>	<b>72%</b>	<b>60%</b>	<b>29%</b>
Heating Plant	21.3	1.1	0.9		107%	73%	60%	
Fire training, fuel handling and storage	0.0			1.3	14%			29%
<b>Non-airport</b>	<b>-34.8</b>	<b>-3.5</b>	<b>-3.2</b>		<b>0%</b>	<b>-1%</b>	<b>-1%</b>	
Cars (1)	-16.0	-0.4	-0.3		0%	0%	0%	
LGV (1)	-14.2	-3.2	-2.9		-1%	-1%	-1%	
HGV (1)	-4.6	0.0	0.0		0%	0%	0%	