



**Third Report on the implementation of Directive 1999/13/EC on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain activities and installations in Ireland**

**For the reporting period:  
1 January 2008 – 31 December 2010**

**In accordance with the questionnaire for Member States contained in Commission Decision 2007/531/EC**

**Report date: September 2011**

**ENVIRONMENTAL PROTECTION AGENCY**

An Ghníomhaireacht um Chaomhnú Comhshaol  
PO Box 3000, Johnstown Castle Estate, Co. Wexford, Ireland

Telephone: +353-53-9160600; Fax: +353-53-9160699

E-mail: [info@epa.ie](mailto:info@epa.ie)

Website: [www.epa.ie](http://www.epa.ie)

Lo Call: 1890 335599

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**Report on the implementation of Directive 1999/13/EC on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain activities and installations in Ireland**

## **ACKNOWLEDGEMENTS**

This project was prepared by the Office of Environmental Enforcement (OEE) within the Environmental protection Agency (EPA). The project was carried out by the Clean Technology Centre (CTC) at Cork Institute of Technology (CIT).

A special note of thanks to the local authorities for their input regarding their own local authority functional areas.

An acknowledgement also to EPA staff from the Office of Climate, Licensing and Resource Use and the Office of Environmental Enforcement for their contributions.

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**NOTE ON REPORT FORMAT**

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This report is divided into two sections:

Section 1 Executive Summary.

Section 2 Questionnaire. Contains answers to the Commission's questionnaire as set out in Commission Decision 2007/531/EC.

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## SECTION 1      EXECUTIVE SUMMARY

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### ***1.1 Introduction***

Ireland has fully transposed Directive 1999/13/EC into Irish law. Ireland is using both the Integrated Pollution Prevention and Control (IPPC) licensing system and the Accredited Inspection Contractor (AIC) scheme to implement the Directive.

### ***1.2 Background***

Under Council Directive 1999/13/EC on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain activities and installations, Member States are required to report to the Commission every three years on the implementation of the Directive as set out in Article 11(1).

The Commission has prepared a questionnaire for such reporting purposes which for the third report is set out in Commission Decision 2007/531/EC. The content of the questionnaire has changed somewhat since the previous questionnaire.

This third report on the implementation of the Directive covers the period 1<sup>st</sup> January 2008 to 31<sup>st</sup> December 2010. The first and second reports were submitted to the European Commission and are available at [www.epa.ie](http://www.epa.ie).

### ***1.3 Summary of Activities***

Ireland has carried out the following in the implementation of Directive 1999/13/EC:

- Full transposition of the Directive into Irish law including the amending Deco-paints Directive (2004/42/CE).
- Development of a scheme to implement the requirements of the Directive for installations not covered by the IPPC Directive, known as the Accredited Inspection Contractor (AIC) scheme.
- In order to prepare this report:
  - a questionnaire survey of all Local Authorities on their implementation of the Directive was carried out.
  - A review of all IPPC licence files to identify and to prepare answers for this questionnaire
- Websites maintained by the EPA and the Department of the Environment, Heritage and Local Government ([www.epa.ie/whatwedo/advice/air/solvents/](http://www.epa.ie/whatwedo/advice/air/solvents/) and [www.environ.ie/en/Environment/Atmosphere/AirQuality/VolatileOrganicCompounds/](http://www.environ.ie/en/Environment/Atmosphere/AirQuality/VolatileOrganicCompounds/)).
- Local Authorities and the EPA operate Inspection Plans in accordance with the Recommendation for Minimum Criteria for Environmental Inspections (RMCEI 2001/331/EC).
- Annual workshops on the solvents Directive and deco-paints Directive are held. These are organised by the EPA, and attended by the Department of the Environment and Local Government, and all local authorities.

- An Environmental Enforcement Network solvents working group meets twice yearly, comprising of the EPA, the Department of the Environment and Local Government and six representatives from the local authorities.
- A number of prosecutions have been taken by both the EPA and some of the local authorities in relation to breaches of requirements under the solvents Directive. This includes prosecutions by two local authorities (3 dry cleaners in total), the suspension of authorisation for another dry cleaner by another local authority, as well as 3 prosecutions by the EPA for solvents related non-compliances.

For information on additional work carried out on implementing the Directive before this reporting period, please see the first and second reports<sup>1</sup>.

#### ***1.4 Number of Irish Installations which fall under Directive 1999/13/EC***

The following summary data shows an estimate of the numbers of installations which fall under Directive 1999/13/EC in Ireland as at 31 December 2010. More detail is given in the answer given to question no. 2 in the questionnaire section of this report.

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<sup>1</sup> Any reference to "the first report" or "second report" throughout this document means the first and second reports to the European Commission on the implementation of Directive 1999/13/EC on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain activities and installations in Ireland. The first report covers the reporting period: 1 January 2003 – 31 December 2004, while the second report 1 January 2005 – 31 December 2007. Both have been published by the Environmental Protection Agency and Department of the Environment Heritage, and Local Government. Both are available at [www.epa.ie](http://www.epa.ie).

### Summary Table: Data at the end of the reporting period - 31 December 2010 - IPPC and Non-IPPC installations

As at 31 December 2010		Total registered /authorised (IPPC and AIC)	Total IPPC licensed (as per Irish IPPC legislation)	Total licensable under the EU IPPC Directive	Total authorised according to solvents Directive (1999/13/EC	Total registered/ authorised using the reduction scheme	Total granted derogations under Art 5(3)(a)	Total granted derogations under Art 5(3)(b)	Total new/ substantially changed during reporting period	Suspected but not yet registered under AIC scheme
1	Heatset web offset printing (> 15)	1	1		1					
2	Publication rotogravure (> 25)									
3	Other rotogravure, flexography, rotary screen printing, laminating or varnishing (> 15) rotary screen printing (> 30)	5	5	2	5				1	
4	Surface cleaning using compounds specified in Articles 5(6) and (8) (>1)	1	1	1						9
5	Other surface cleaning (> 2)	8	7	5	6			2	1	7
6	Vehicle coating (< 15) & vehicle refinishing									
7	Coil coating (> 25)									
8	Other coating, incl. metal, plastic, textile, fabric, film and paper coating (> 5)	25	23	5	23	2		4	3	12
9	Winding wire coating (> 5)									1
10	Coating of wooden surfaces (> 15)	1	1	1						
11	Dry cleaning	263			263				22	84
12	Wood impregnation (> 25)	1	1		1					
13	Coating of leather (> 10)									
14	Footwear manufacture (> 5)									
15	Wood and plastic lamination (> 5)	1	1		1					5
16	Adhesive coating (> 5)	2	2		2					3
17	Manufacture of coating preparations, varnishes, inks and adhesives (> 100)	9	9	5	2					
18	Rubber conversion (> 15)									
19	Vegetable oil & animal fat extraction and vegetable oil refining activities (> 10)									1
20	Manufacturing of pharmaceutical products (> 50)	2	1	1	2	1				1
<b>TOTAL*</b>		<b>314</b>	<b>47</b>	<b>20</b>	<b>306</b>	<b>3</b>		<b>4</b>	<b>27</b>	<b>123</b>

\* For IPPC, the total number of installations is not always the sum of the installations for individual activities, since some installations carry out more than one activity.



## 1.5 *Conclusions on Implementation*

Some overall trends:

- **Implementation of the solvents Directive.**
  - **IPPC:** The implementation of the IPPC Directive has, for the most part, taken the requirements of the Solvents Directive into account. A full review of all potentially relevant licences identified a number of existing IPPC licences that remain to be amended to fully reflect the requirements of the Directive. For these sites, the activity is already regulated – the licence just needs some minor amendments to fully reflect the Directive. The EPA will prepare a plan by the end of October 2011 to bring into compliance with the Solvents Directive those sites/licences not currently in compliance with the Directive.
  - **Non-IPPC:** There were 267 non-IPPC solvents Directive installations registered at the end of 2010 compared with 235 installations at the end of 2007 in the last reporting period. Local authorities have issued 769 annual Certificates of Compliance across the reporting period. While it is acknowledged that there are non-IPPC installations not yet registered, the working figure of 123 suspected installations is likely to be an over-estimate.
- **Solvent recovery.** In the IPPC sector, there is an overall increasing trend in solvent related wastes being sent off-site for recovery rather than disposal. This can be for use as a fuel or for material recovery. The same wastes from these companies were often sent for disposal in earlier years. In some cases it has led to sites falling outside the scope of the Directive, since the calculation of the term 'consumption' subtracts solvent sent for use as a fuel or material recovery.
- **Site closures.** Unfortunately, as in the previous reporting period, there have been a number of sites which have ceased trading. This is particularly the case for IPPC activities.
- **Emissions reduction.** Apart from the single largest emitter (who has reduced estimates of emissions through direct quantification of fugitive emissions), estimated solvent emissions for all other sites have still reduced between 2008 and 2010 by 36%. This is due to a combination of individual sites reducing solvent use (either through deliberate measures to reduce solvent use or through reduced economic activity), increased levels of abatement, as well as sites falling below the solvents Directive thresholds being omitted from these emissions figures. In particular for the latter, increased solvent sent for recovery rather than disposal has caused some sites to fall below the solvents Directive thresholds.

- **Solvent usage.** While not requested by the questionnaire, the following table shows information on solvent usage across the years in solvents Directive activities. The increase in usage between 2008 and 2010 is due to additional facilities being authorised in both AIC and IPPC cases.

**Estimated total VOC usage in activities covered by the solvents Directive, 2008 to 2010**

<b>Total VOC usage by all 20 solvents Directive activities</b>	<b>2008 (tonnes)</b>	<b>2009 (tonnes)</b>	<b>2010 (tonnes)</b>
IPPC activities	11,850	11,886	12,238
AIC activities	79	94	192
<b>All activities</b>	<b>11,929</b>	<b>11,980</b>	<b>12,430</b>

The fact that the Irish IPPC licensing system includes an additional category not included in the IPPC Directive, for *the manufacture or use of coating materials with a capacity of more than 10 tonnes per annum*, is significant in that it means that it is only those using less than 10 tonnes that come under the AIC system. This is because the Irish IPC licensing system preceded the IPPC Directive. Ireland chose to retain this category when legislation was reviewed to incorporate the IPPC Directive.

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## Section 2: Questionnaire

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This section details Ireland's responses to the questions contained in the Commission's questionnaire on the implementation of Directive 1999/13/EC as set out in Commission Decision 2007/531/EC.

The questions from Decision 2007/531/EC are repeated in blue italics and the response given.

### *Question 1      General Description*

*Please report relevant changes in national legislation during the reporting period concerning Directive 1999/13/EC.*

#### **Question 1 – Response**

The national legislation implementing the Directive has been detailed in the first report<sup>2</sup>. There have been no relevant changes to this legislation between 2008 to 2010 with the exception of S.I. 165 of 2010, *Emissions of Volatile Organic Compounds from Organic Solvents (Amendment) Regulations 2010* which adapted the legislation to Regulation (EC) No. 1272/2008 on the classification, labelling and packaging of substances and mixtures.

### *Question 2      Coverage of Installations*

*2.1. For each of the 20 activities of Annex II A, please indicate for the first (1.1.2008) and the last day (31.12.2010) of the reporting period separately how many installations fall into the categories set out below:*

- total number of installations (\*),*
- total number of installations which are also covered by Directive 96/61/EC (IPPC Directive),*
- total number of installations, which are registered/authorised according to Directive 1999/13/EC,*
- total number of installations which are registered/authorised using the reduction scheme,*
- total number of installations which have been granted derogation according to Article 5(3)(a) of Directive 1999/13/EC. Give a list in an annex to this questionnaire with the reasons for every derogation issued,*
- total number of installations which have been granted derogation according to Article 5(3)(b) of Directive 1999/13/EC. Give a list in an annex to this questionnaire with the reasons for every derogation issued.*

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<sup>2</sup> Any reference to "the first report" or "second report" throughout this document means the first and second reports to the European Commission on the implementation of Directive 1999/13/EC on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain activities and installations in Ireland. The first report covers the reporting period: 1 January 2003 – 31 December 2004, while the second report 1 January 2005 – 31 December 2007. Both have been published by the Environmental Protection Agency and Department of the Environment Heritage, and Local Government. Both are available at [www.epa.ie](http://www.epa.ie).

- *For the purpose of this questionnaire 'total number of installations' shall additionally include those installations, which do not fall under the scope of Directive 1999/13/EC, but are regulated by national law according to the provisions of the Directive. Installations for coating of road vehicles as defined in Directive 70/156/EEC, or part of them, carried out as part of vehicle repair, conservation or decoration outside of manufacturing installations, shall not be included.*

*2.2. For each of the 20 activities of Annex II A, please indicate how many installations fall into the categories set out below during the reporting period:*

- *total number of new or substantially changed installations, which were registered/authorised according to Directive 1999/13/EC.*

## **Question 2 – Response**

Tables 2-1 to 2-2 summarise the information required for both parts 2.1 and 2.2 of this question. Tables 2-1, 2-1a, and 2-1b are for the start of 2008, while Tables 2-2, 2-2a, and 2-2b detail the data for the end of 2010. Tables 2-1 and 2-2 detail the data for all installations, Tables 2-1a and 2-2a for IPPC installations only, and Tables 2-1b and 2-2b for non-IPPC installations only.

The data contained in Tables 2-1, 2-1a and 2-1b is that reported for the previous reporting period, as at 31 December 2007/1 January 2008. The range in numbers given for two of the activities in Table 2-1 and 2-1b, dry cleaning and other surface cleaning, are estimates provided by local authorities for those installations not yet registered at the time.

The following are explanations for the first 4 columns in Table 2-2:

- *Column 1: Total registered /authorised (IPPC and AIC):* This is the total number of authorisations under each class of activity, as at 31 December 2010. It includes those under both IPPC and AIC systems. The sum of the individual activities is slightly larger than the total number of authorisations as at 31 December 2010.
- *Column 2: Total IPPC licensed (as per Irish IPPC legislation):* This is the total number of authorisations in accordance with the Irish IPPC licensing legislation, under each class of activity, as at 31 December 2010. Since the Irish IPPC system has an additional class of activity compared to the IPPC Directive, namely for any site with organic solvent usage above a threshold of 10 tonnes per annum, there are more sites IPPC licensed than fall under the scope of the IPPC Directive.
- *Column 3: Total licensable under the EU IPPC Directive:* This is the total number of authorisations that fall under the scope of the IPPC Directive, under each class of activity, as at 31 December 2010.
- *Column 4: Total authorised according to solvents Directive (1999/13/EC):* This is the total number of authorisations that have incorporated all the relevant requirements of the solvents Directive into the authorisation (licence or certificate of compliance), under each class of activity, as at 31 December 2010. It includes those under both IPPC and AIC systems. There are a number of existing IPPC licences that remain to be amended to fully reflect the requirements of the solvents Directive. For these sites, the activity is already regulated – the licence just needs some minor amendments to fully reflect the Directive. The EPA will prepare a plan by the end of October 2011 to bring into compliance with the Solvents Directive those sites/licences not currently in compliance with the

Directive. This will include determining whether a number of bitumen manufacturing sites come within the scope of the Solvents Directive or not (it is assumed for the purposes of this report that the sites are relevant).

A separate column has been added to Table 2-2 and 2-3 to distinguish between sites which are IPPC licensed in Ireland and those which also fall under the EU IPPC Directive.

The Annex to this report contains a list of derogations given and the reasons for every derogation issued.

As part of the preparation for this report:

- The EPA commissioned a survey of all city and county councils (a total of 34 authorities), who are the competent authorities for non-IPPC installations, on their implementation of the Solvents Directive. This questionnaire included all the necessary information required for the preparation of this questionnaire report to the Commission. The results of the survey were utilised in compiling the responses to this questionnaire report.
- A review of all IPPC licences and their reports was undertaken to determine the installations that are still subject to the requirements of the solvents emissions Directive. The relevant information required for the preparation of this report was extracted from reporting and other documentation relating to the installations.

**Table 2-1 Data at the *start* of the reporting period - 1 January 2008<sup>3</sup> - IPPC and Non-IPPC installations**

<b>As at 1 January 2008</b>		Total registered /authorised (IPPC and AIC)	Total IPPC licensed (as per Irish IPPC legislation)	Total authorised according to solvents Directive (1999/13/EC)	Total registered/ authorised using the reduction scheme	Total granted derogations under Art 5(3)(a)	Total granted derogations under Art 5(3)(b)	Total new/ substantially changed during reporting period	Suspected but not yet registered under AIC scheme
1	Heatset web offset printing (> 15)	4	4	4				2	
2	Publication rotogravure (> 25)								
3	Other rotogravure, flexography, rotary screen printing, laminating or varnishing (> 15) rotary screen printing (> 30)	5	5	5					
4	Surface cleaning using compounds specified in Articles 5(6) and (8) (>1)	1	1	1					
5	Other surface cleaning (> 2)	14	11	14				2	34 to 84
6	Vehicle coating (< 15) & vehicle refinishing								
7	Coil coating (> 25)								
8	Other coating, incl. metal, plastic, textile, fabric, film & paper coating (> 5)	28	25	25	3		3	3	19
9	Winding wire coating (> 5)								3
10	Coating of wooden surfaces (> 15)	1	1	1					
11	Dry cleaning	229		229				27	109 to 116
12	Wood impregnation (> 25)	2	2	2					
13	Coating of leather (> 10)								
14	Footwear manufacture (> 5)								2
15	Wood and plastic lamination (> 5)	3	3	3					29
16	Adhesive coating (> 5)								9
17	Manufacture of coating preparations, varnishes, inks and adhesives (> 100)	17	17	17				1	
18	Rubber conversion (> 15)								
19	Vegetable oil & animal fat extraction & vegetable oil refining activities (> 10)								
20	Manufacturing of pharmaceutical products (> 50)	10	10	10				2	4
<b>TOTAL</b>		<b>292</b>	<b>57</b>	<b>289</b>	<b>3</b>		<b>3</b>	<b>37</b>	<b>209 to 266</b>

<sup>3</sup> As reported in previous report. Note, the range for 2 classes of activity are estimates by local authorities for those installations not yet registered.

**Table 2-1a Data at the *start* of the reporting period - 1 January 2008 - IPPC installations**

<b>As at 1 January 2008</b>		Total IPPC licensed (as per Irish IPPC legislation)	Total authorised according to solvents Directive (1999/13/EC	Total registered/ authorised using the reduction scheme	Total granted derogations under Art 5(3)(a)	Total granted derogations under Art 5(3)(b)	Total new or substantially changed registered/ authorised during reporting period
1	Heatset web offset printing (> 15)	4	4				2
2	Publication rotogravure (> 25)						
3	Other rotogravure, flexography, rotary screen printing, laminating varnishing (> 15) rotary screen printing (> 30)	5	5				
4	Surface cleaning using compounds specified in Articles 5(6) and (8) (>1)	1	1				
5	Other surface cleaning (> 2)	11	11				2
6	Vehicle coating (< 15) & vehicle refinishing						
7	Coil coating (> 25)						
8	Other coating, including metal, plastic, textile, fabric, film & paper coating (> 5)	25	22	1		3	3
9	Winding wire coating (> 5)						
10	Coating of wooden surfaces (> 15)	1	1				
11	Dry cleaning						
12	Wood impregnation (> 25)	2	2				
13	Coating of leather (> 10)						
14	Footwear manufacture (> 5)						
15	Wood and plastic lamination (> 5)	3	3				
16	Adhesive coating (> 5)						
17	Manufacture of coating preparations, varnishes, inks & adhesives (> 100)	17	17				1
18	Rubber conversion (> 15)						
19	Vegetable oil & animal fat extraction & vegetable oil refining activities (> 10)						
20	Manufacturing of pharmaceutical products (> 50)	10	10				3
<b>TOTAL*</b>		<b>57</b>	<b>54</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>11</b>

\* For IPPC, the total number of installations is not always the sum of installations for individual activities, since some carry out more than one activity.

**Table 2-1b Data at the start of the reporting period - 1 January 2008<sup>4</sup> - Non-IPPC installations**

<b>As at 1 January 2008</b>		Total registered /authorised AIC system	Total authorised according to solvents Directive (1999/13/EC	Total authorised using the reduction scheme	Total granted derogations under Art 5(3)(a)	Total granted derogations under Art 5(3)(b)	Total new/ substantially changed installations registered/ authorised during reporting period	Suspected but not yet registered under AIC scheme	Total number of installations (registered/ authorised + suspected but not yet registered under AIC scheme)
1	Heatset web offset printing (> 15)								
2	Publication rotogravure (> 25)								
3	Other rotogravure, flexography, rotary screen printing, etc. (> 30)								
4	Surface cleaning using compounds specified in Articles 5(6) & (8) (>1)								
5	Other surface cleaning (> 2)	3	3					34 to 84	37 to 87
6	Vehicle coating (< 15) & vehicle refinishing								
7	Coil coating (> 25)								
8	Other coating (> 5)	3	3	2				19	22
9	Winding wire coating (> 5)							3	3
10	Coating of wood (> 15)								
11	Dry cleaning	229	229				27	109 116	338 to 345
12	Wood impregnation (> 25)								
13	Coating of leather (> 10)								
14	Footwear manufacture (> 5)							2	2
15	Wood and plastic lamination (> 5)							29	29
16	Adhesive coating (> 5)							9	9
17	Manufacture of coating preparations, varnishes, inks & adhesives (> 100)								
18	Rubber conversion (> 15)								
19	Vegetable oil etc. activities (> 10)								
20	Manuf. of pharma products (> 50)							4	4
<b>TOTAL</b>		<b>235</b>	<b>235</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>27</b>	<b>209 266</b>	<b>444 to 501</b>

<sup>4</sup> As reported in previous report. Note, range for 2 classes of activity are estimates by local authorities for those installations not yet registered.



**Table 2-2: Data at the end of the reporting period - 31 December 2010 - IPPC and Non-IPPC installations**

<b>As at 31 December 2010</b>		Total registered /authorised (IPPC and AIC)	Total IPPC licensed (as per Irish IPPC legislation)	Total licensable under the EU IPPC Directive	Total authorised according to solvents Directive (1999/13/EC)	Total registered/ authorised using the reduction scheme	Total granted derogations under Art 5(3)(a)	Total granted derogations under Art 5(3)(b)	Total new/ substantially changed during reporting period	Suspected but not yet registered under AIC scheme
1	Heatset web offset printing (> 15)	1	1		1					
2	Publication rotogravure (> 25)									
3	Other rotogravure, flexography, rotary screen printing, laminating or varnishing (> 15) rotary screen printing (> 30)	5	5	2	5				1	
4	Surface cleaning using compounds specified in Articles 5(6) and (8) (>1)	1	1	1						9
5	Other surface cleaning (> 2)	8	7	5	6			2	1	7
6	Vehicle coating (< 15) & vehicle refinishing									
7	Coil coating (> 25)									
8	Other coating, incl. metal, plastic, textile, fabric, film and paper coating (> 5)	25	23	5	23	2		4	3	12
9	Winding wire coating (> 5)									1
10	Coating of wooden surfaces (> 15)	1	1	1						
11	Dry cleaning	263			263				22	84
12	Wood impregnation (> 25)	1	1		1					
13	Coating of leather (> 10)									
14	Footwear manufacture (> 5)									
15	Wood and plastic lamination (> 5)	1	1		1					5
16	Adhesive coating (> 5)	2	2		2					3
17	Manufacture of coating preparations, varnishes, inks and adhesives (> 100)	9	9	5	2					
18	Rubber conversion (> 15)									
19	Vegetable oil & animal fat extraction and vegetable oil refining activities (> 10)									1
20	Manufacturing of pharmaceutical products (> 50)	2	1	1	2	1				1
<b>TOTAL*</b>		<b>314</b>	<b>47</b>	<b>20</b>	<b>306</b>	<b>3</b>		<b>4</b>	<b>27</b>	<b>123</b>

\* For IPPC, the total number of installations is not always the sum of the installations for individual activities, since some installations carry out more than one activity.

**Table 2-2a: Data at the end of the reporting period - 31 December 2010 - IPPC installations**

<b>As at 31 December 2010</b>		Total IPPC licensed (as per Irish IPPC legislation)	Total licensable under the IPPC Directive	Total authorised according to solvents Directive (1999/13/EC)	Total registered/ authorised using the reduction scheme	Total granted derogations under Art 5(3)(a)	Total granted derogations under Art 5(3)(b)	Total new or substantially changed registered/ authorised during reporting period
1	Heatset web offset printing (> 15)	1		1				
2	Publication rotogravure (> 25)							
3	Other rotogravure, flexography, rotary screen printing, laminating or varnishing (> 15) rotary screen printing (> 30)	5	2	5				1
4	Surface cleaning using compounds specified in Articles 5(6) and (8) (>1)	1	1					
5	Other surface cleaning (> 2)	7	5	5			2	
6	Vehicle coating (< 15) & vehicle refinishing							
7	Coil coating (> 25)							
8	Other coating, incl. metal, plastic, textile, fabric, film & paper coating (> 5)	23	5	21	1		4	3
9	Winding wire coating (> 5)							
10	Coating of wooden surfaces (> 15)	1	1					
11	Dry cleaning							
12	Wood impregnation (> 25)	1		1				
13	Coating of leather (> 10)							
14	Footwear manufacture (> 5)							
15	Wood and plastic lamination (> 5)	1		1				
16	Adhesive coating (> 5)	2		2				
17	Manufacture of coating preparations, varnishes, inks and adhesives (> 100)	9	5	2				
18	Rubber conversion (> 15)							
19	Vegetable oil & animal fat extraction & vegetable oil refining activities (> 10)							
20	Manufacturing of pharmaceutical products (> 50)	1	1	1				
<b>TOTAL*</b>		<b>47</b>	<b>20</b>	<b>39</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>4</b>
* For IPPC, the total number of installations is not always the sum of the installations for individual activities, since some installations carry out more than one activity.								

**Table 2-2b: Data at the end of the reporting period - 31 December 2010 - Non-IPPC installations**

	<b>As at 31 December 2010</b>	Total registered /authorised AIC system	Total authorised according to solvents Directive (1999/13/EC	Total authorised using the reduction scheme	Total granted derogations under Art 5(3)(a)	Total granted derogations under Art 5(3)(b)	Total new/ substantially changed installations registered/ authorised during reporting period	Suspected but not yet registered under AIC scheme	Total number of installations (registered/ authorised +suspected but not yet registered under AIC scheme)
1	Heatset web offset printing (> 15)								
2	Publication rotogravure (> 25)								
3	Other rotogravure, flexography, rotary screen printing, laminating or varnishing units (> 15) rotary screen printing (> 30)								
4	Surface cleaning using compounds specified in Articles 5(6) and (8) (>1)							9	9
5	Other surface cleaning (> 2)	1	1				1	7	8
6	Vehicle coating (< 15) and vehicle refinishing								
7	Coil coating (> 25)								
8	Other coating, including metal, plastic, textile, fabric, film and paper coating (> 5)	2	2	1				12	14
9	Winding wire coating (> 5)							1	1
10	Coating of wooden surfaces (> 15)								
11	Dry cleaning	263	263				22	84	347
12	Wood impregnation (> 25)								
13	Coating of leather (> 10)								
14	Footwear manufacture (> 5)								
15	Wood and plastic lamination (> 5)							5	5
16	Adhesive coating (> 5)							3	3
17	Manufacture of coating preparations, varnishes, inks and adhesives (> 100)								
18	Rubber conversion (> 15)								
19	Vegetable oil & animal fat extraction (> 10)							1	1
20	Manufacturing of pharma products (> 50)	1	1	1				1	2
<b>TOTAL</b>		<b>267</b>	<b>267</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>23</b>	<b>123</b>	<b>390</b>

### ***Installations authorised under the IPPC system***

There are 47 IPPC installations whose activities come under the solvents Directive as at 31 December 2010.

In relation to installations authorised under the IPPC system:

- A number of IPPC sites have ceased operation since the previous report. Some new sites have opened and been IPPC licensed. A few existing activities which were outside the remit of IPPC/solvents Directive were brought under the system.
- There are a number of IPPC licences which need to be amended, in order to fully reflect the solvents Directive.

### ***Installations authorised under the AIC system – Dry Cleaners***

Dry cleaners are the single largest solvents Directive activity in terms of numbers of individual installations. The number of dry cleaning installations that have been registered and authorised under the AIC system stands at 263 installations as at 31 December 2010. It is important to note that some of these have AIC reports outstanding, so that is not to say 263 installations are fully authorised or fully compliant.

This number of 263 dry cleaning installations is an increase since the previous report, where the number registered/authorised was 229 dry cleaning installations at the end of 2007 as shown in Table 2-5. This is not a net increase in dry cleaning activity per se, albeit there have been premises both closing and opening in the period, but rather the pursuit by local authorities of un-registered, dry cleaning installations.

**Table 2-5: Dry Cleaning Installations – Summary of registered numbers of installations 2007 - 2010**

<b>No of registered dry cleaners at year end</b>			
2007	2008	2009	2010
229	264	267	263

Table 2-6 shows a summary of activity in the sector, at least in terms of those “within the system”.

**Table 2-6: Dry Cleaning Installations – Summary of changes in the registered numbers of installations for the reporting period 2008 - 2010**

Closures <i>during</i> reporting period	14	Total closures
Closures <i>since</i> reporting period	4	18
Installations that stopped dry cleaning <sup>5</sup>		3
New facilities <i>during</i> reporting period	16	Total openings
New facilities <i>since</i> reporting period	2	18

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<sup>5</sup> While still laundering, etc. One of these is temporarily contracting out dry cleaning due to a problem with the dry cleaning machine.

### ***Estimates of installations not yet authorised under the AIC system – Dry Cleaners***

It is noted that, based on the data available, not all of the existing non-IPPC installations have been registered. These are an estimated 123 activities in total of which 84 are dry cleaners. These installations are being pursued by Local Authorities in accordance with their risk based inspection plans and using the enforcement powers available to them under the Air Pollution Act 1987 as amended.

### ***Installations authorised under the AIC system – Other than Dry Cleaners***

Table 2-7 shows the number of installations registered with local authorities (i.e. non-IPPC) for activities other than dry cleaning.

**Table 2-7: Non-IPPC Installations other than dry cleaners – Summary of registered numbers of installations 2007 and 2010**

<b>Number registered at year end</b>	<b>2007</b>	<b>2010</b>
Other coating	3	2
Other surface cleaning	3	1
Pharmaceutical product manufacture	0	1
<b>TOTAL</b>	<b>6</b>	<b>4</b>

### ***Estimates of installations not yet authorised under the AIC system – Other than Dry Cleaners***

There are an estimated 123 un-registered activities in total of which 39 are those other than dry cleaners.

As reported previously, there has been a degree of disparity among Local Authorities in the implementation of the Solvents Regulations. This has been compounded during this reporting period by the recruitment ban in place across the local authorities as well as non renewal of contracts of non-permanent staff.

Within these constraints, many of the local authorities have authorised all known installations in their area. In addition, this reporting period sees the continuing use by some local authorities of their enforcement powers available to them. This includes one successful prosecution of a dry cleaner by Waterford City Council, and 2 successful prosecutions of dry cleaners by South Dublin County Council, as well as a suspension of authorisation by Dublin City Council for one dry cleaner as a result of non-compliance with the solvents Directive.

### ***Use of the Reduction Scheme***

At the start of the reporting period, there were 3 existing installations authorised to use the reduction scheme of Annex IIB. All 3 came under the activity no. 8 other coating, with 1 being IPPC licensed (since it exceeded the Irish IPPC solvent usage threshold of 10 tpa) while the other 2 were AIC activities. During the reporting period an existing activity was also IPPC licensed using the reduction scheme.

At the end of the reporting period, there are 2 activities authorised to use the reduction scheme:

- One of the previously authorised AIC activities is still operational and is authorised to use the reduction scheme.
- Another AIC facility has been authorised during the period to use the reduction scheme.

- The second previously authorised AIC activity is no longer registered.
- One of the IPPC licensed sites was an existing activity, but only licensed during the reporting period.
- One of the IPPC licensed sites ceased operation during the period.

### **Question 3      Substitution**

*For each of the 20 activities of Annex II A, please indicate for the end of the reporting period (31.12.2010) which substances or preparations, classified as carcinogens, mutagens, or toxic to reproduction (R45, R46, R49, R60, R61) under Council Directive 67/548/EEC, are still used and in which (estimated) amounts (tonnes per year).*

### **Question 3 – Response**

The following table 3-1 indicates known usage of materials classified as carcinogens, mutagens, or toxic to reproduction with the specified risk phrases (CMRs) as at the end of 2010. Table 3-1 shows individual compounds concerned, while Table 3-2 provides information by class of activity.

**Table 3-1 Estimated amounts of CMR materials in use as at December 2010, by individual substance**

CMR Substance	Class	Usage (tonnes)		
		2008	2009	2010
Dimethylacetamide (DMAC) (CAS 127-19-5) (R61)	8	35	21	43
N-methylpyrrolidone (CAS 872-50-4) (R61)	5 <sup>6</sup>	3.9	3.8	24
	8	0	11.7	3.8
	20	0	0	2.1
Diisobutyl phthalate (CAS 84-74-2) (R61)	3	0	5.9	7.2
1,2 Dichloroethane (CAS 107-06-2) (R45)	20	0.11	0.11	0.045
Dimethylformamide (CAS 68-12-2) (R61)	8	0.01	0.006	0.00007
2-methoxyethanol (CAS 109-86-4) (R60, 61)	8	0.01	0.006	0.00008
Trichloroethylene (CAS 79-01-6) (R45)	8	0.003	0.0008	0.0001
<b>Total</b>		<b>39</b>	<b>43</b>	<b>80</b>
Excluding 1 activity no longer relevant in 2010				<b>78</b>

**Table 3-2 Estimated amounts of CMR materials in use as at December 2010, by class of activity**

Class	Usage (tonnes)		
	2008	2009	2010
3 Other printing	0	5.9	7.2
5 Other surface cleaning	3.9	3.8	24
8 Other coating	35	33	47
20 Pharmaceutical product manufacture	0.1	0.1	0.05
<b>TOTAL</b>	<b>39</b>	<b>43</b>	<b>78</b>

<sup>6</sup> Unsure if all of this material is used for surface cleaning or for other purposes. Activity is licensed under class 5, even though this material is a specified substance.

In terms of the materials classified as CMRs it can be seen that usage is small relative to the total solvent used in the sector (see question 6).

There are none of the specified CMRs that require substitution in use by the authorised non-IPPC activities (since perchloroethylene is classed as R40 and not in the above list).

#### **Question 4      Monitoring**

*For each of the 20 activities of Annex II A, please indicate the following figures during the reporting period:*

- Number of installations who have reported 'once a year' or 'on request' according to Article 8(1) of the Directive;*
- Number of installations which are monitored continuously for compliance according to Article 8(2) of the Directive;*

#### **Question 4 – Response**

Ireland has implemented an annual reporting obligation for all installations. For non-IPPC installations which come under the Accredited Inspection Contractor (AIC) system annual reporting is through the submission of an AIC inspection report to the competent authority. For installations which come under the IPPC system, reporting is through the submission of the licensee's Annual Environmental Report (AER).

The number of installations that have complied with this annual reporting requirement are set out in Tables 4-1 and 4-2 for IPPC installations and Table 4-3 for dry cleaners and other non-IPPC installations.

It can be seen from these tables that there is a high compliance with the annual reporting requirement for IPPC facilities. However, for non-IPPC dry cleaners there is a somewhat lower rate of compliance.

Table 4-4 outlines the summary combined numbers for 2010 for both IPPC and non-IPPC installation

**Table 4-1: Number of installations that have complied with the annual reporting requirement – IPPC**

<b>Number of IPPC installations that have complied with the annual reporting requirement</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
Yes	47	47	45 <sup>7</sup>
Yes as a % of installations	100%	100%	100%
No	0	0	0

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<sup>7</sup> Note: while there are 47 relevant existing installations at the end of 2010, 2 are only in the licence application stage and therefore are not yet required to prepare annual environmental reports.

**Table 4-2: Number of installations that have complied with the annual reporting requirement – IPPC, by class of activity**

<b>Class of Activity</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
1. Heatset web offset printing	1	1	1
2. Publication rotogravure	N/A	N/A	N/A
3. Other printing	5	4	5
4. Surface cleaning using specified compounds	1	1	1
5. Other surface cleaning	6	7	7
6. Vehicle coating and vehicle refinishing	N/A	N/A	N/A
7. Coil coating	N/A	N/A	N/A
8. Other coating	20	21	21
9. Winding wire coating	N/A	N/A	N/A
10. Coating of wooden surfaces	1	1	1
11. Dry cleaning	N/A	N/A	N/A
12. Wood impregnation	1	1	1
13. Coating of leather	N/A	N/A	N/A
14. Footwear manufacture	N/A	N/A	N/A
15. Wood and plastic lamination	1	1	1
16. Adhesive coating	2	3	2
17. Manufacture of coatings	7	9	7
18. Rubber conversion	N/A	N/A	N/A
19. Vegetable oil and animal fat extraction	N/A	N/A	N/A
20. Manufacturing of pharmaceutical products	3	2	1
<b>TOTAL<sup>8</sup></b>	<b>47</b>	<b>47</b>	<b>45</b>

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<sup>8</sup> Note: Some sites have more than one activity. Where this is the case, the reporting has been noted in both classes, but the total is for total number of installations only.



**Table 4-3: Information on annual reporting – non-IPPC installations**

<b>DRY CLEANING (CLASS 10)</b>	
<b>No. of Installations</b>	
Number of installations that have complied with the annual reporting requirement	199 (76%)
Number of installations for which there are overdue annual (AIC) reports outstanding	64 (24%)
<b>AIC Reports and Certificates of Compliance</b>	
No of AIC reports received for 2008, 2009 and 2010	780
No of Certificates of Compliance issued for 2008, 2009 and 2010	769
<b>OTHER CLEANING (CLASS 5)</b>	
<b>No. of Installations</b>	
Number of installations that have complied with the annual reporting requirement	1
Number of installations for which there are overdue AIC reports outstanding	0
<b>AIC Reports and Certificates of Compliance</b>	
No of AIC reports received for 2008, 2009 and 2010	2
No of Certificates of Compliance issued for 2008, 2009 and 2010	2
<b>OTHER COATING (CLASS 8)</b>	
<b>No. of Installations</b>	
Number of installations that have complied with the annual reporting requirement	2
Number of installations for which there are overdue AIC reports outstanding	1
<b>AIC Reports and Certificates of Compliance</b>	
No of AIC reports received for 2008, 2009 and 2010	5
No of Certificates of Compliance issued for 2008, 2009 and 2010	5
<b>PHARMACEUTICAL PRODUCT MANUFACTURE (CLASS 20)</b>	
<b>No. of Installations</b>	
Number of installations that have complied with the annual reporting requirement	1
Number of installations for which there are overdue AIC reports outstanding	0
<b>AIC Reports and Certificates of Compliance</b>	
No of AIC reports received for 2008, 2009 and 2010	1
No of Certificates of Compliance issued for 2008, 2009 and 2010	1

**Table 4-4: Information on annual reporting – IPPC and non-IPPC installations**

<b>Class of Activity</b>	<b>Installations</b>
1. Heatset web offset printing	1
2. Publication rotogravure	N/A
3. Other printing	5
4. Surface cleaning using specified compounds	1
5. Other surface cleaning	8
6. Vehicle coating and vehicle refinishing	N/A
7. Coil coating	N/A
8. Other coating	23
9. Winding wire coating	N/A
10. Coating of wooden surfaces	1
11. Dry cleaning	199
12. Wood impregnation	1
13. Coating of leather	N/A
14. Footwear manufacture	N/A
15. Wood and plastic lamination	1
16. Adhesive coating	2
17. Manufacture of coatings	7
18. Rubber conversion	N/A
19. Vegetable oil and animal fat extraction	N/A
20. Manufacturing of pharmaceutical products	2
<b>TOTAL</b>	<b>251</b>

### ***Continuous monitoring for compliance***

The number of installations where VOC emissions are monitored continuously for compliance are set out in Table 4-5. It should be noted that the condition set out under Article 8(2) in relation to the requirement for continuous monitoring is only in relation to emission points that emit more than an average of 10 kg/hour of total organic carbon. Most of these installations are well below this average value but have continuous monitoring in place in any case.

Due to the scale of the threshold for this requirement, only IPPC facilities are relevant.

**Table 4-5: Number of installations with continuous VOC emissions monitoring, including by Class of activity**

<b>Total no of installations with continuous VOC monitoring as at December 2010:</b>	8 installations of the 47 IPPC licensed
<b>By Class of Activity:</b>	
3. Other printing	2 installations
5. Other surface cleaning	2 installations
8. Other coating	3 installations
10. Coating of wooden surfaces	1 installation

## Question 5 Compliance

For each of the 20 activities of Annex II A, please indicate the following figures during the reporting period:

- Number of operators who have been found to have breached the requirements of this Directive
  - (a) related to non-compliance with 'once-a-year' or 'on request' reporting;
  - (b) related to non-compliance with other requirements of the Directive?
- For how many operators the competent authorities have suspended or withdrawn the authorisation in the case of non-compliance pursuant to Article 10(b) of the Directive?

### Question 5 – Response

#### IPPC installations

Table 5-1 outlines total non-compliances for IPPC installations, while Table 5-2 splits this into individual classes of activity.

**Table 5-1: Non-compliances – IPPC installations**

Number of IPPC installations:	
For which there are overdue Annual Environmental Reports outstanding	Having non-compliances with other requirements of the Directive
0 installations (Note: For 8 installations insufficient information was provided in AERs to determine if compliant with all relevant aspects of the Directive)	21 installations

**Table 5-2: Non-compliances – IPPC installations, by class**

Number of IPPC installations:	
Class	Having non-compliances with other requirements of the Directive
1 printing (heatset web offset)	1
3 printing (other)	5
8 Other coating	11
12 wood impregnation, 15 laminating	1
16 Adhesive coating	2
17 Coating manufacture	1
<b>Total</b>	<b>21 Installations</b>

Non-compliances include breaches of emission limit values, breaches of fugitive emission limits, or not showing in the AER the site's performance against the fugitive emission limit set in licence.

Many non-compliances have been minor or transitory in nature. In other cases breaches have been regular occurrences – in 3 such sites, steps have been taken which have resulted in the sites now complying with the Directive's requirements, as well as a 4<sup>th</sup> site which has now reduced solvent to below the threshold under the Directive.

There have been some non-compliances at IPPC installations which have been pursued using the usual procedures. These non-compliances include the following during the reporting period:

- Following on from earlier warnings, on the 13th March 2009 at Waterford District Court, PPI Adhesive Products Ltd. pleaded guilty to five charges brought by the EPA in relation to offences under Sections 8 and 86(6) of the Environmental Protection Agency Acts, 1992 to 2007 for breaches of its IPPC Licence (No. P0093-01).  
The company admitted breaching conditions of its licence including exceeding an emission limit value to atmosphere and failing to maintain a programme for the identification and reduction of fugitive emissions to air which was to the satisfaction of the EPA. Fines were imposed and costs awarded to the EPA.
- On the 17th April at Westport District Court, Allergan Pharmaceuticals (Ireland) Limited pleaded guilty to two charges brought by the EPA in relation to offences under Section 8 and Section 86(6) of the Environmental Protection Agency Acts 1992 and 2003 for breaches of its IPPC Licence (No. P0126-01). The Company admitted breaching conditions of its licence including failing to carry out monitoring of emissions. Fines were imposed.
- On the 7th October 2009 at Cork District Court, Millipore Ireland B.V., pleaded guilty to charges brought by the EPA in relation to offences under Sections 8 and 86(6) of the Environmental Protection Agency Act, as amended, for a breach of its (IPPC Licence (No. P0571-02).  
The company admitted breaching conditions of its licence including causing or allowing emissions from the facility of environmental significance which were not specified emissions. Fines were imposed and costs awarded to the EPA.

### ***Non-IPPC installations***

Table 5-3 outlines the non-compliances for non-IPPC installations, divided by class.

**Table 5-3: Non-compliances – non-IPPC installations**

<b>DRY CLEANING (CLASS 11)</b>	
Number of installations for which there are overdue annual (AIC) reports outstanding	64 (24%)
Number of installations having non-compliances with other requirements of the Directive	12 (5%)

<b>OTHER CLEANING (CLASS 5)</b>	
Number of installations for which there are overdue annual (AIC) reports outstanding	0
Number of installations having non-compliances with other requirements of the Directive	0
<b>OTHER COATING (CLASS 8)</b>	
Number of installations for which there are overdue annual (AIC) reports outstanding	1 (of 2)
Number of installations having non-compliances with other requirements of the Directive	0
<b>PHARMACEUTICAL PRODUCT MANUFACTURE (CLASS 20)</b>	
Number of installations for which there are overdue annual (AIC) reports outstanding	0
Number of installations having non-compliances with other requirements of the Directive	0

Table 5-4 combines the information in Tables 5-1 to 5-3 for non-compliances for IPPC and non-IPPC installations, divided by class.

**Table 5-4: Summary of Non-compliances – IPPC and non-IPPC installations**

Class of Activity	Non-Compliances IPPC and non-IPPC	
	(a) related to non-compliance with 'once-a-year' or 'on request' reporting	(b) related to non-compliance with other requirements of the Directive
1. Heatset web offset printing	0	1
2. Publication rotogravure	N/A	N/A
3. Other printing	0	5
4. Surface cleaning using specified compounds	0	0
5. Other surface cleaning	0	0
6. Vehicle coating and vehicle refinishing	N/A	N/A
7. Coil coating	N/A	N/A
8. Other coating	1	11
9. Winding wire coating	N/A	N/A
10. Coating of wooden surfaces	0	0
11. Dry cleaning	64	12
12. Wood impregnation	0	1
13. Coating of leather	N/A	N/A
14. Footwear manufacture	N/A	N/A
15. Wood and plastic lamination	0	0
16. Adhesive coating	0	2
17. Manufacture of coatings	0	1
18. Rubber conversion	N/A	N/A

19. Vegetable oil and animal fat extraction	N/A	N/A
20. Manufacturing of pharmaceutical products	0	0
<b>TOTAL</b>	<b>65</b>	<b>33</b>

In terms of non-IPPC installations, a summary of all activities is provided in Table 5-5. In particular, the following are of note:

- 2 dry cleaners were successfully prosecuted by South Dublin County Council.
- A dry cleaners was successfully prosecuted in Waterford District Court by Waterford City Council on the 8<sup>th</sup> October 2010 for not having a Certificate of Compliance prior to the 18<sup>th</sup> August 2010.
- The authorisation of one dry cleaner was suspended by Dublin City Council as a result of non-compliance with the solvents Directive.

**Table 5-5: Enforcement activities for non-IPPC installations during the reporting period**

Successful prosecutions	3
Suspension	1
Prosecutions recommended	6
Section 16 notice under Air Pollution Act, 1987	16
Section 26 notice under Air Pollution Act 1987	3
Warning letters	486
Reminder letters	58

Inspections of non-IPPC facilities is set out in Table 5-6. This information is from the questionnaire sent out to local authorities during 2011 for the preparation of this report.

**Table 5-6: Enforcement activities for non-IPPC installations during the reporting period – questionnaire returns**

<b>Number of site inspections carried out by local authority personnel in the reporting period</b>
604

In terms of non-IPPC installations, the following has been found in relation to breaching the requirements of the Directive.

### ***Un-registered activities***

There are an estimated 123 installations that may be under the scope of the Directive but who have not yet registered. This estimate was provided by each local authority for their functional area. It is felt that this may be somewhat of an overestimate, but at the same time it is acknowledged that it is likely there are un-registered installations operational. The breakdown of this estimate across the relevant classes of activity are shown in Table 5-7. In particular, the reference to 30 possible un-registered installations under Class 6 “original coating of vehicles or coating of trailers (solvent consumption > 0.5 tonnes per annum)” is likely to be as a result of confusion of this class with vehicle refinishers for repair which are covered by the separate deco-paints legislation. Thus this value has been excluded from the total. In terms of dry cleaners, some local authorities have identified the actual premises which have not registered.

In terms of these unregistered activities, the AIC has prepared a list of potential sites and provided this to the EPA and local authorities. This list is to be followed up by local authorities.

**Table 5-7: Estimated no. of installations that may be under the scope of the Directive but who have not yet registered**

<b>Class of activity</b>	<b>Number known/suspected to exist but not yet registered</b>
4 Surface cleaning using compounds with specified risk phrases (R45, R46, R49 R60, R61, or R40 and halogenated) (solvent consumption > 1 tonne per annum)	9
5 Other surface cleaning (solvent consumption > 2 tonnes per annum)	7
6 Original coating of vehicles or coating of trailers (solvent consumption > 0.5 tonnes per annum)	(note 30 were indicated – assumed VR)
8 Other coating, including metal, plastic, textile, fabric, film and paper coating (solvent consumption > 5 tpa)	12
9 Winding wire coating (> 5 tpa)	1
11 Dry cleaning (no threshold)	84
12 Wood impregnation (> 25 tpa)*	0
14 Footwear manufacture (> 5 tpa)	0
15 Wood and/or plastic lamination (> 5 tpa)	5
16 Adhesive coating (> 5 tpa)	3
17 Manufacture of coating preparations, varnishes, inks and adhesives (> 100 tpa)*	0
18 Rubber conversion (> 15 tpa)*	0
19 Vegetable oil and animal fat extraction and vegetable oil refining activities (> 10 tpa)*	1
20 Manufacturing of pharmaceutical products (> 50 tpa)	1
<b>TOTAL</b>	<b>123</b>

*For each of the 20 activities of Annex II A, please indicate the following figures during the reporting period:*

- For how many operators have the competent authorities suspended or withdrawn the authorisation in the case of non-compliance pursuant to Article 10(b) of the Directive?*

In terms of non-IPPC installations there has been one suspension of authorisation for a dry cleaner by Dublin City Council as a result of non-compliance with the solvents Directive.

In the reporting period, the EPA has not required the suspension or withdrawal of authorisation pursuant to Article 10(b) for any of the installations that are under the Directive. The EPA's Office of

Environmental Enforcement has the power to obtain High Court Injunctions against operators of installations. No such High Court Injunctions were sought in the reporting period.

## **Question 6 Emissions**

- 6.1. Please indicate for the total number of installations for the years 2008 and 2010 the estimated tonnes of VOCs emitted.
- 6.2. Please indicate for each of the 20 activities of Annex II A for the years 2008 and 2010 the estimated tonnes of VOCs emitted (optional).

### **Question 6 – Response**

Table 6-1 provides the **reported** data for emissions to air, which has been used to provide **estimated** data for emissions to air in Table 6-2. The following comments can be made on the differences between the reported and estimated air emissions outlined in Tables 6-1 and 6-2.

- Fugitive and point source emissions. There were 9 IPPC sites which did report on fugitive emissions. It has not been possible to provide estimates of fugitive emissions where these have not been reported. Therefore, Table 6-2 is still an incomplete picture since it does not include fugitive emissions for 9 of the 47 IPPC sites.
- Total organic carbon (TOC). Some sites report emissions in terms of actual solvents. However, 6 expressed emissions results as TOC, even fugitive emissions, so this is an underestimate for such sites. An average factor of 56.5% carbon content was used to factor up for emissions of actual solvents. This factor was generated using the top 3 solvents imported into Ireland in 2008.
- Unreported AIC data. Some sites did not report emissions in their AIC reports. An average emission factor of solvent per unit of solvent used was taken where such data was available (available in 530 individual reports). This has been used to estimate total emissions for dry cleaning – the average is 0.64 kg emitted per kg used, and average emissions per dry cleaning installation is 244 kg.
- Un-registered AIC activities. Of course, emissions of any suspected un-registered activities are not included in the above.

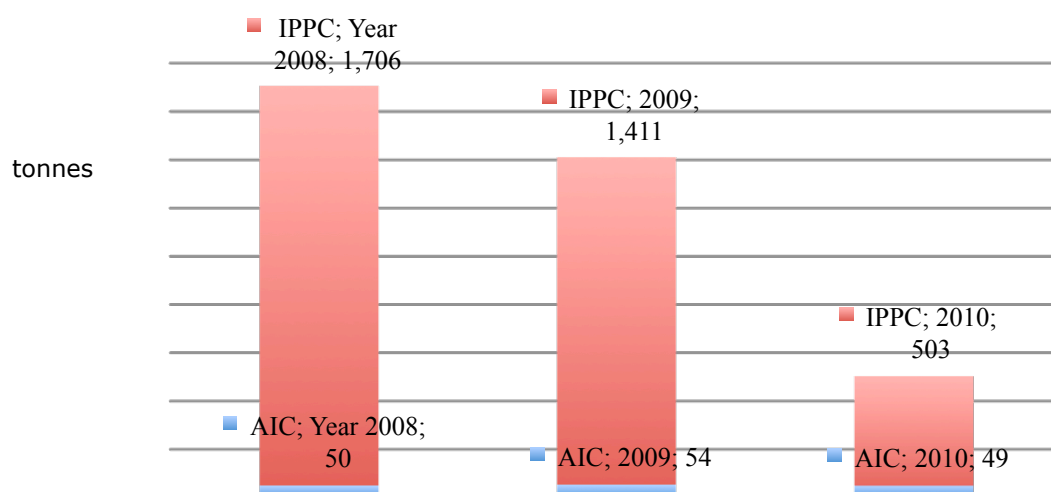
Table 6-2 summarises the estimated total VOC emissions for the years 2008 to 2010 for activities under the solvents Directive. All 3 years have been reported on, not just 2008 and 2010. This data has also been shown split into the estimate for IPPC activities and that for AIC activities.

**Table 6-1: Reported total VOC emissions to air from solvents Directive activities, 2008 to 2010** (excluding estimates and TOC scale up)

<b>Total VOC emissions from all 20 solvents Directive activities</b>	<b>2008 (tonnes)</b>	<b>2009 (tonnes)</b>	<b>2010 (tonnes)</b>
IPPC activities	1,706	1,411	503
AIC activities	50	54	49
<b>Total</b>	<b>1,756</b>	<b>1,465</b>	<b>553</b>



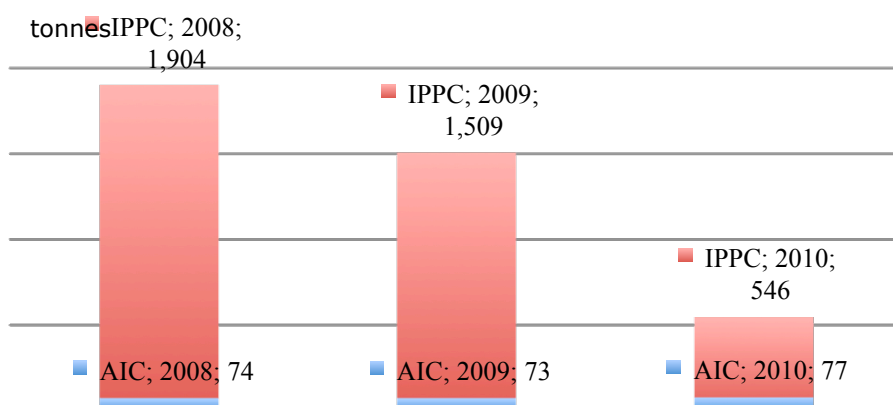
**Figure 6-1: Reported total VOC emissions to air from solvents Directive activities, 2008 to 2010** (excluding estimates and TOC scale up)



**Table 6-2: Estimated total VOC emissions to air from solvents Directive activities, 2008 to 2010**

Total VOC emissions from all 20 solvents Directive activities	2008 (tonnes)	2009 (tonnes)	2010 (tonnes)
IPPC activities	1,904	1,509	546
AIC activities	74	73	77
<b>Total</b>	<b>1,977</b>	<b>1,581</b>	<b>624</b>

**Figure 6-2: Estimated total VOC emissions to air from solvents Directive activities, 2008 to 2010**



Comments on the apparent reduction in emissions between 2008 and 2010 for IPPC activities:

- A small number of IPPC companies account for the majority of IPPC emissions – with one company in particular, a printer of food packaging, accounting for 65% of all estimated IPPC emissions in 2008 (the next company, by comparison, accounted for just 7% of all emissions in 2008). The main reason for the drop in IPPC emissions between 2009 and 2010 is not as a result of a reduction in emissions (albeit some sites are reducing emissions), but to a change in the solvent mass balance methodology utilised by this single largest emitter. In 2008 (and 2009), this company calculated fugitive emissions as the difference between all inputs and outputs in the solvent mass balance. For 2010, the company refined this methodology by calculating fugitive emissions directly through measurement and engineering estimate. Thus, the estimated total emissions for this site went from a value of 1233 tonnes in 2008 to a value of 117 tonnes in 2010. The company is still the largest emitter, albeit now accounting for a lower percentage of overall estimated emissions - 21% in 2010.
- Leaving aside the single largest emitter, estimated solvent emissions for all other sites have still reduced between 2008 and 2010 by 36%. This is due to a combination of individual sites reducing solvent use (either through deliberate measures to reduce solvent use or through reduced economic activity), increased levels of abatement, as well as sites falling below the solvents Directive thresholds being omitted from these emissions figures. In particular for the latter, increased solvent sent for recovery rather than disposal has caused some sites to fall below the solvents Directive thresholds.

Table 6-3 splits the estimated total VOC emissions for the years 2008 and 2010 across each of the individual activities under the solvents Directive, for both IPPC and AIC activities. The percentage decrease between 2008 and 2010 is shown for each activity. For some activities there has been an increase in emissions (negative percentage indicates an increase).

**Table 6-3: Total estimated VOC emissions to air for individual solvents Directive activities, 2008 and 2010**

N.O.: not occurring; N.E.: not estimated; N.D.: no data.

Total estimated VOC emissions from solvents Directive activities		2008			2010			% reduction
		IPPC	AIC	All	IPPC	AIC	All	
1	Heatset web offset printing (> 15)	134	N.O.	<b>134</b>	20	N.O.	<b>20</b>	85%
2	Publication rotogravure (> 25)	N.O.	N.O.	<b>N.O.</b>	N.O.	N.O.	<b>N.O.</b>	N.O.
3	Other rotogravure, flexography, rotary screen printing, laminating or varnishing units (> 15) rotary screen printing on textile/cardboard (> 30)	1307	N.O.	<b>1307</b>	202	N.O.	<b>202</b>	85%
4	Surface cleaning using compounds specified in Articles 5(6) and (8) (>1)	3	N.E.	<b>3</b>	3	N.E.	<b>3</b>	0%
5	Other surface cleaning (> 2)	8	N.E.	<b>8</b>	18	3	<b>20</b>	-150%
6	Vehicle coating (< 15) and vehicle refinishing	N.O.	N.O.	<b>N.O.</b>	N.O.	N.O.	<b>N.O.</b>	N.O.
7	Coil coating (> 25)	N.O.	N.O.	<b>N.O.</b>	N.O.	N.O.	<b>N.O.</b>	N.O.
8	Other coating(> 5)	400	9	<b>409</b>	274	7	<b>281</b>	31%
9	Winding wire coating (> 5)	N.O.	N.O.	<b>N.O.</b>	N.O.	N.O.	<b>N.O.</b>	N.O.
10	Coating of wooden surfaces (> 15)	11	N.O.	<b>11</b>	6	N.O.	<b>6</b>	49%
11	Dry cleaning	N.O.	64	<b>64</b>	N.O.	64	<b>64</b>	0%
12	Wood impregnation (> 25)	N.D.*	N.O.	<b>N.D.</b>	N.D.*	N.O.	<b>N.D.</b>	N.D.
13	Coating of leather (> 10)	N.O.	N.O.	<b>N.O.</b>	N.O.	N.O.	<b>N.O.</b>	N.O.
14	Footwear manufacture (> 5)	N.O.	N.O.	<b>N.O.</b>	N.O.	N.O.	<b>N.O.</b>	N.O.
15	Wood and plastic lamination (> 5)	N.D.*	N.O.	<b>N.D.</b>	N.D.*	N.O.	<b>N.D.</b>	N.D.
16	Adhesive coating (> 5)	10	N.O.	<b>10</b>	15	N.O.	<b>15</b>	-60%
17	Manufacture of coating preparations, varnishes, inks and adhesives (> 100)	7	N.O.	<b>7</b>	5	N.O.	<b>5</b>	37%
18	Rubber conversion (> 15)	N.O.	N.O.	<b>N.O.</b>	N.O.	N.O.	<b>N.O.</b>	N.O.
19	Vegetable oil & animal fat extraction (> 10)	N.O.	N.O.	<b>N.O.</b>	N.O.	N.O.	<b>N.O.</b>	N.O.
20	Manufacturing of pharmaceutical products (> 50)	22	N.O.	<b>22</b>	3	3	<b>7</b>	70%
<b>TOTAL</b>		<b>1,904</b>	<b>74</b>	<b>1,977</b>	<b>546</b>	<b>77</b>	<b>624</b>	68%

Table 6.3 shows average emissions of perchloroethylene for those installations that reported this data.

**Table 6-3: Dry Cleaning – Average Usage and Emissions of Perchloroethylene per individual installation**

Average solvent emitted per individual installation	244 kg
No. of facilities with data	530

Table 6.4 shows emissions of perchloroethylene expressed as a percentage of perchloroethylene used. One of the problems with estimating emissions for dry cleaners is that the amount of solvent contained in the waste is one of the most significant and at the same time the most uncertain value in the mass balance. It is uncertain for several reasons – dry cleaners often only know that they shipped a set number of drums – actual weight, solvent content and inventory being held are unknown or guesstimated. However, the large dataset (530 individual reports) is robust.

**Table 6-4: Dry Cleaning – Emissions of Perchloroethylene expressed as a percentage of usage**

Perchloroethylene emissions as a percentage of usage	
Average	64%
No. of reports with data	530

While not requested by the questionnaire, the following table 6-5 shows information on solvent **usage** across the years in solvents Directive activities. This information was gathered at the time of recording data in order to feed into national inventories.

**Table 6-5: Estimated total VOC usage in activities covered by the solvents Directive, 2008 to 2010**

Total VOC usage by all 20 solvents Directive activities	2008 (tonnes)	2009 (tonnes)	2010 (tonnes)
IPPC activities	11,850	11,886	12,238
AIC activities	79	94	192
<b>All activities</b>	<b>11,929</b>	<b>11,980</b>	<b>12,430</b>

The increase in usage between 2008 and 2010 is due to additional facilities being authorised in both AIC and IPPC cases. In the AIC case this is a combination of additional dry cleaning facilities and one pharmaceutical facility. In the IPPC case this was a combination of existing installations brought under the licensing net for the first time (e.g. printing, coating), as well as some new installations, across a number of sectors (pharmaceutical, medical devices).

## Question 7 Costs

- 7.1. Please estimate the total costs, e.g. the sum of costs for permitting, monitoring, inspections, etc., for all national authorities concerned in Euro per year or alternatively man-years for the implementation of Directive 1999/13/EC in 2010 (optional).
- 7.2. Please estimate the administrative costs for this reporting in man-months and in Euro (optional).

### Question 7 – Response

The authorities responsible in Ireland for the implementation of the solvents emissions Directive are the Environmental Protection Agency, responsible for IPPC activities, and the 34 Local Authorities, responsible for AIC activities.

The following table 7-1 shows an estimate of man-years spent by these relevant authorities for each of the years of the reporting period for implementing Directive 1999/13/EC. Note that data was provided by only 31 of the 34 local authorities for this question.

**Table 7-1: Administrative costs for the implementation of Directive 1999/13/EC – man years**

Costs for implementation of Directive 1999/13/EC	<b>EPA (man-years)</b>	<b>Local authorities (man-years)</b>	<b>Total (man-years)</b>
2008	2.5	3.6	<b>6.1</b>
2009	2.4	4.0	<b>6.4</b>
2010	2.3	4.1	<b>6.4</b>
<b>TOTAL</b>	<b>7.2</b>	<b>11.7</b>	<b>18.9</b>

Table 7.2 provides an approximate estimate of the cost in Euros for the implementation of Directive 1999/13/EC, based on the man years in Table 7-1 and an average daily rate or cost (based on the EPA average rate).

**Table 7-2: Administrative costs for the implementation of Directive 1999/13/EC – approximate estimate of cost in Euros**

Costs for implementation of Directive 1999/13/EC	<b>EPA (€)</b>	<b>Local authorities (€)</b>	<b>Total (€)</b>
2008	€313,000	€450,000	€763,000
2009	€300,000	€500,000	€800,000
2010	€284,000	€512,000	€796,000
<b>TOTAL</b>	<b>€897,000</b>	<b>€1,462,000</b>	<b>€2,359,000</b>

The following table 7-3 shows an estimate of man-years spent by the relevant authorities, as well as the external consultant used, for reporting to the European Commission on the implementation of Directive 1999/13/EC.

**Table 7-3: Administrative costs for the preparation of this report**

<b>Costs for preparation of report</b>	<b>EPA</b>	<b>External consultant</b>	<b>Total</b>
Man-months	1	3.6	<b>4.6</b>
Cost (€)	€10,000	€38,000	<b>€48,000</b>

### **Question 8**      *Publication of reports by Member States on this questionnaire*

*Please give information, e.g. the URL address of a website, where the public could directly access the reports by Member States on the answers to this questionnaire.*

#### **Question 8 – Response**

This report is available at: [www.epa.ie/whatwedo/advice/air/solvents/](http://www.epa.ie/whatwedo/advice/air/solvents/)

### **Question 9**      *Improvements*

*Which aspects should be emphasised regarding*

- The implementation/future revision of Directive 1999/13/EC;*
- Future questionnaires?*

#### **Question 9 – Response**

##### ***Implementation/future revision of Directive 1999/13/EC***

Directive 1999/13/EC is significantly more prescriptive than many other environmental instruments such as the IPPC Directive.

The presence of installations that come under the scope of the legislation can be difficult in some cases for the enforcement authorities to identify. For example the following was the response provided by one local authority to this question:

*"Thresholds for various solvent consumption are difficult to quantify & therefore difficult to enforce."*

Other than dry cleaning which is straightforward with no threshold, identification involves determining if:

- a particular activity is being carried on; if it is,
- do the materials in use for this activity contain any VOCs; if they do,
- does their use constitute use as a solvent; if yes
- is the amount being used above the threshold; if yes,
- is any waste being collected; if it is,
- is it being sent for recovery or disposal;
- if it is being sent for recovery what is its solvent content;
- and does this solvent being sent for recovery cause the consumption to be reduced to under the threshold and so make the activity no longer relevant.

The activities which can prove particularly difficult to identify are those involving the surface cleaning of products.

A useful instrument would be a mandatory requirement for suppliers of all VOC materials to provide information to the authorities on the quantities of VOCs supplied to individual companies. In fact, one local authority made just this point when asked for input on this question:

*"The formulation of a national register for importers and producers of solvents, with a receipt and sign for system so it would make it easier to see who are the solvent users."*

While a laudable motivation, the use of 'consumption' as a criterion for being above or below the threshold, as opposed to 'input' creates the above outlined difficulties. Perhaps an alternative approach would be to set the thresholds based on input but to impose requirements to justify any particular solvent waste arising going for disposal rather than recovery.

### ***Question on status of a permit when a site falls below a threshold***

There are cases where a site may find itself falling below the consumption threshold for a particular activity, for example its production levels vary, or it starts sending solvent waste for recovery rather than disposal.

There is then a question as to whether to maintain the permit or licence for future possible increases. Thus there are activities which are licensed in accordance with the solvents Directive but may not actually be above the threshold for the activity concerned in a given year.

### ***IPPC versus solvents Directive***

A few sites are of the opinion, that since they are under the scope of the IPPC Directive that the solvents Directive does not apply. However, the EPA does take the solvents emissions Directive into account when licensing IPPC sites.

### ***Detailed nature of the definitions within the Directive***

Nuances of the legislation make it difficult to apply and enforce; for example, the activity surface cleaning of products does not include that solvent used for cleaning equipment. This difficulty is true not just for companies, but for enforcing authorities. The nature of the activities covered are so diverse that a lot of different licensing personnel, licensing different sectors, have to consider the solvents Directive.

Many sites, and indeed enforcers, are unaware of the subtle definition of consumption, where solvent sent for recovery off-site is subtracted.

A difficulty arose in interpretation for manufacture of integrated circuits in terms of determining solvent usage and emissions *only attributable to surface cleaning of products*. There are two such plants in Ireland.

Making integrated circuit manufacture fit into the activity "surface cleaning of products" seems a bit unnecessary when there is a BREF available for the surface treatment of metals and plastics. In addition, a specific BAT has been determined in Ireland for integrated circuit manufacture. For one of these plants, the solvents Directive waste gas emission limit for surface cleaning has been applied to all emissions from the site.

There are industrial activities that use solvent but are outside the remit of Directive 1999/13/EC, e.g. of particular relevance to Ireland – the manufacture of bulk active pharmaceutical ingredients. Sites that have both manufacture of bulk active pharmaceutical ingredients and finished pharmaceutical products end up being licensed in accordance with solvents Directive across all the site's activities.

Definitions in the solvents Directive should be revised to be consistent with terminology used in the waste framework Directive – e.g. the solvent management plan output term O8 (organic solvents contained in preparations recovered for reuse but not as input into the process, as long as not counted under O7.). But as defined in the solvents Directive, reuse includes solvent sent for use as a fuel.

Sites with more than one relevant activity present an additional complication for regulators.

### ***Future Questionnaires***

This was the first reporting period that requested emissions data to be included, which caused some problems. When the template of the AIC report was designed all relevant information to the Commission Questionnaire was placed on pages 1 and 2 so it could just be a clerical exercise to record the information. However, in line with the earlier questionnaires, emissions was not included on these 2 pages, but still contained within the body of the report. To further complicate the matter, one of the AICs adapted the report template. Thus there was difficulty in some cases extracting emissions data from the reports. Thus, 8 of the 34 authorities, accidentally reported “g emissions/kilogramme clothes cleaned” rather than just the total weight. 5 of these 8 local authorities have submitted corrected information.

There was one comment back that the local authority questionnaire used to extract data was long and complex. However, the complexity is necessary in order to answer all the questions in the Commission questionnaire.

### ***Question 10 Any other comments***

#### **Question 10 – Response**

##### ***Solvent use and emissions***

While the major reason for the apparent reduction in emissions is due to the change in mass balance methodology by the main emitter, there has been a reduction in solvent emissions either through abatement, or even more favourably through reduced solvent use. An example includes:

- a printer using solvent based inks has switched to water based inks during the reporting period. This has reduced solvent from about 30 tpa usage to less than the solvents Directive threshold of 15 tonnes per annum.

However, continued closure of industrial sites is also a contributory factor to reduced emissions.

In addition, sites which are still using and emitting solvent, but are no longer under the scope of the solvents Directive (and may or may not be under the scope of Irish IPPC licensing), are not included in the estimate for emissions.



## Annex

*List of Activities with derogations issued under Article 5(3)(b), i.e. activities which cannot be operated under contained conditions*

<b>Company name and licence number</b>	<b>Reasons for derogation</b>	<b>Other comments</b>
Shannon Aerospace Ltd. Licence no. P0069-02	The EPA concluded that the reduction scheme was not technically and economically feasible based on information submitted by the licensees. The operators were required to demonstrate that the installation provides no significant risk to human health or the environment and that BAT is being used.	Shannon Aerospace are still relevant to the Directive and are still utilising the derogation.  The IPPC licence still contains waste gas emission limit values, albeit at levels which are less strict than the Directive.  The requirements of other areas of the Solvents Regulations are included in the requirement for an annual Solvent Management Plan (in accordance with the Directive's guidelines), a programme for the identification and reduction of fugitive emissions. The Schedule of Objectives and Targets includes a requirement for a target to reduce fugitive emissions.
Lufthansa Technik Painting Shannon Ltd. licence no. P0497-02		Still relevant to the Directive and are still utilising the derogation.  The IPPC licence still contains waste gas emission limit values, albeit at levels which are less strict than the Directive.  The requirements of other areas of the Solvents Regulations are included in the requirement for an annual Solvent Management Plan (in accordance with the Directive's guidelines), a programme for the identification and reduction of fugitive emissions. The Schedule of Objectives and Targets includes a requirement for a target to reduce fugitive emissions.

<b><i>Company name and licence number</i></b>	<b><i>Reasons for derogation</i></b>	<b><i>Other comments</i></b>
Dublin Aerospace Ltd. (previously SR Technics Ireland Ltd.) licence no. P0480-02	The EPA concluded that the reduction scheme was not technically and economically feasible based on information submitted by the licensees. The operators were required to demonstrate that the installation provides no significant risk to human health or the environment and that BAT is being used.	<p>SR Technics ceased its operation during 2009. The IPPC licence was transferred to Dublin Aerospace Ltd. who is now operating the same activities, albeit at a reduced level.</p> <p>As part of the changeover, the EPA required the company to complete a dispersion modelling study for a new air emission point coming from a combined stack for two new painting booths in Hangar 1 (referenced as emission point A46), and to report on the calculated collection efficiency for the filtering device installed for the new spray booths.</p> <p>This assessment showed that the maximum Predicted Environmental Concentration (PEC) for activities conducted on site were well within the Environmental Assessment Levels (EALs) for all pollutants considered at all off-site locations.</p> <p>Analysis of the media used to filter emissions from the new spray booths demonstrates that at the time the measurements were taken a collection efficiency of 95% was calculated.</p> <p>The IPPC licence still contains waste gas emission limit values, albeit at levels which are less strict than the Directive.</p>

<b><i>Company name and licence number</i></b>	<b><i>Reasons for derogation</i></b>	<b><i>Other comments</i></b>
Liebherr Container Cranes Ltd. licence no. P0146-02	The EPA concluded that the reduction scheme was not technically and economically feasible based on information submitted by the licensee. The operator was required to demonstrate that the installation provides no significant risk to human health or the environment and that BAT is being used.	<p>The IPPC licence still contains waste gas emission limit values, albeit at levels which are less strict than the Directive. A continued programme of identification, quantification and reduction of fugitive emissions is required in the site's IPPC licence. There is a limitation on solvent use in the licence that the operator cannot go above in line with the IPPC class of activity: "the organic solvent consumption capacity of the installation shall not exceed 150kg per hour or 200 tonnes per year."</p> <p>The requirements of other areas of the Solvents Regulations are included in the requirement for an annual Solvent Management Plan, a programme for the identification, quantification and reduction of fugitive emissions, and the exclusion of VOCs carrying certain risk phrases. The Schedule of Objectives and Targets includes the minimisation of VOC emissions to atmosphere, the implementation of a fugitive emissions reduction programme, optimisation of spraying operations and increasing coating efficiency, conversion to in-line paint mixing equipment, optimisation of solvent recovery and re-use and substitution of solvent-based paints with high-solids (lower solvent) coatings.</p>