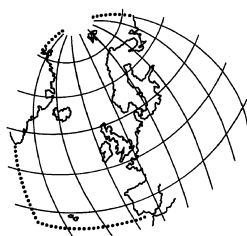


**Overview Assessment:**

**Implementation of  
PARCOM Decision 90/3 on  
Reducing Atmospheric Emissions from  
Existing Chlor-Alkali Plants**



**OSPAR Commission  
2008**

The Convention for the Protection of the Marine Environment of the North-East Atlantic (the “OSPAR Convention”) was opened for signature at the Ministerial Meeting of the former Oslo and Paris Commissions in Paris on 22 September 1992. The Convention entered into force on 25 March 1998. It has been ratified by Belgium, Denmark, Finland, France, Germany, Iceland, Ireland, Luxembourg, Netherlands, Norway, Portugal, Sweden, Switzerland and the United Kingdom and approved by the European Community and Spain.

*La Convention pour la protection du milieu marin de l'Atlantique du Nord-Est, dite Convention OSPAR, a été ouverte à la signature à la réunion ministérielle des anciennes Commissions d'Oslo et de Paris, à Paris le 22 septembre 1992. La Convention est entrée en vigueur le 25 mars 1998. La Convention a été ratifiée par l'Allemagne, la Belgique, le Danemark, la Finlande, la France, l'Irlande, l'Islande, le Luxembourg, la Norvège, les Pays-Bas, le Portugal, le Royaume-Uni de Grande Bretagne et d'Irlande du Nord, la Suède et la Suisse et approuvée par la Communauté européenne et l'Espagne.*

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## Executive Summary

This document provides an overview and assessment of the implementation of PARCOM Decision 90/3 on Reducing Atmospheric Emissions from Existing Chlor-Alkali Plants. It is based on national implementation reports from nine of the 15 Contracting Parties which were requested to submit reports on the national measures taken, and their effectiveness, to give effect to the provisions of the Decision in their territories. The remaining Contracting Parties have reported that they do not have relevant plants. OSPAR 2008 agreed to publish this overview assessment, prepared by Spain.

The reports show that each country that reported is actively implementing the measure through a wide range of initiatives designed to reduce atmospheric emissions from existing chlor-alkali plants.

OSPAR 2008 agreed that implementation reporting could cease for all Contracting Parties because reporting of effectiveness is in place through the annual data collection on losses of mercury from the chlor-alkali industry.

## Récapitulatif

*Le présent rapport comporte un récapitulatif et une évaluation de la mise en œuvre de la Décision PARCOM 90/3 sur la réduction des émissions atmosphériques des installations existantes d'électrolyse des chlorures alcalins. Il se fonde sur les rapports nationaux de mise en œuvre communiqués par neuf des quinze Parties contractantes. Ces dernières sont tenues de communiquer, des rapports sur les mesures nationales qu'elles ont prises ainsi que sur leur efficacité afin d'appliquer les dispositions de la Décision dans leur territoire. Les autres Parties contractantes ont notifié qu'elles n'ont aucune installation pertinente. OSPAR 2008 a convenu de publier cette évaluation générale préparée par l'Espagne.*

*Cependant les rapports indiquent que la mise en œuvre de cette mesure est en vigueur dans les pays qui ont communiqué leur rapport, ceci par le biais d'une vaste gamme d'initiatives destinées à promouvoir la réduction des émissions atmosphériques des installations existantes d'électrolyse des chlorures alcalins.*

*OSPAR 2008 a convenu que la notification de la mise en œuvre cesse pour toutes les Parties contractantes, car le contrôle est en place à travers la collecte de données annuelles sur les pertes de mercure provenant de l'industrie des chlorures alcalins.*

## **1. Introduction**

### **1.1 PARCOM Decision 90/3**

The need for reduction of the burden of mercury on the marine environment in the most effective way and the environmental problems likely to arise when dealing with the disposal of 12 000 tonnes of pure mercury arising from the phase-out of mercury cells gave rise to the introduction of measures in the chlor-alkali industry.

PARCOM Decision 90/3 recommends that existing mercury cell chlor-alkali plants be phased out as soon as practicable. The objective is that they should be phased out completely by 2010. It applies to existing mercury based chlor-alkali plants and required these to meet by 31 December 1996 a standard of 2g Hg/t Cl<sub>2</sub> capacity for emissions to the atmosphere, unless there was a firm commitment that the plant was to be converted to mercury-free technology by the year 2000.

### **1.2 Implementation reporting**

#### **1.2.1 General reporting requirements**

Under Article 22 of the OSPAR Convention, Contracting Parties shall report to the Commission at regular intervals on the national measures (legal, regulatory, or other) taken by them to implement the provisions of the decisions and recommendations adopted under the OSPAR Convention and on the effectiveness of these national measures. This implementation reporting forms the basis for OSPAR to assess the compliance by Contracting Parties with the Convention and ultimately to evaluate the effectiveness of programmes and measures under the Convention.

Detailed provisions on implementation reporting and related assessments by OSPAR are laid down in OSPAR's Standard Implementation Reporting and Assessment Procedure (reference number 2003-23, update 2005). Unless stated otherwise in the OSPAR instrument concerned, the practice has been in general that an implementation report should be submitted to the appropriate OSPAR subsidiary body in the intersessional period four years after the adoption of a measure and every four years thereafter until fully implemented. Implementation reporting does not apply to Contracting Parties with reservations (or non-acceptance) on an OSPAR measure unless and until the reservation (or non-acceptance) is lifted.

#### **1.2.2 Reporting requirements under PARCOM Decision 90/3**

This report is the third overview assessment of the implementation of PARCOM Decision 90/3. It is based on implementation reports supplied via the OSPAR Secretariat to Spain by Belgium, Finland, France, Germany, the Netherlands, Spain, Sweden, Switzerland and the United Kingdom. The individual implementation reports as supplied by these Contracting Parties are at Annex 1.

OSPAR 2008 agreed to publish the overview assessment prepared by Spain and agreed that implementation reporting could cease for all Contracting Parties because reporting of effectiveness is in place through the annual data collection on losses of mercury from the chlor-alkali industry.

## **2. Overview of compliance**

PARCOM Decision 90/3 is not applicable in Denmark, Iceland, Ireland, Luxembourg, Norway and Portugal since these Contracting Parties have no relevant plants. Table A provides a summary of those Contracting Parties who have submitted implementation reports and the means of implementation.

**Table A: Overview assessment of Implementation on PARCOM Decision 90/3 on Reducing Atmospheric Emissions from Existing Chlor-Alkali Plants**

Contracting Party	Report available	Reservation	Applicable	MEANS OF IMPLEMENTATION		
				By legislation	Administrative Action	Negotiated Agreement
<b>Belgium</b>	Yes	No	Yes	X		
<b>Denmark</b>	—	No	No relevant plants			
<b>Finland</b>	Yes	No	Yes	X		
<b>France</b>	Yes	No	Yes	X		
<b>Germany</b>	Yes	No	Yes	X		
<b>Iceland</b>	—	No	No relevant plants			
<b>Ireland</b>	—	No	No relevant plants			
<b>Luxembourg</b>	—	No	No relevant plants			
<b>The Netherlands</b>	Yes	No	No relevant plants			
<b>Norway</b>	—	No	No relevant plants			
<b>Portugal</b>	—	No	No relevant plants			
<b>Spain</b>	Yes	No	Yes		X	X
<b>Sweden</b>	Yes	No	Yes	X	X	
<b>Switzerland</b>	Yes	No	Yes		X	X
<b>United Kingdom</b>	Yes	No	Yes	X	X	

Nine Contracting Parties have supplied information, eight of them on the basis of the format for reporting on the implementation.

## 2.1 Implementation Reports on compliance with PARCOM Decision 90/3

### Belgium

The plants located in the Flemish region (all about one plant - 2003 report) are subject to the Flemish environmental legislation that states that the mercury-cell technique may not be used anymore after the year 2010 (Ref: VLAREM II, section 5.7.5.1 paragraph 3). In addition, Belgium informs that The Flemish environmental legislation also defines an emission limit value of 2g Hg/t Cl<sub>2</sub> capacity for emissions to the atmosphere for existing mercury based chlor-alkali plants (Ref: VLAREM II, section 5.7.5.1 paragraph 2).

### Finland

The mercury cell process is still in use because of economical reasons. Changing the process type in this time table to more environment friendly ones would have been fatal for the economy of the whole plant.

The mercury cell processes will phase out completely by the end of 2015 (only one plant reported in 2003).

### France

France has informed that they have now six mercury-based plants, **one plant less than the previous report**. The impact assessment carried out following the request of the Ministry of Environment (official memo dated 7 March 2000), concluded that there was no significant impacts on health of populations and environment as result of mercury discharges coming from French Chlor-Alkali plants.

Impacts on human health and environment of the concerned plants will be re-assessed shortly. On the other hand, a protocol for dismantling the plants when installations be closed down or converted to mercury-free electrolysis is under preparation.

In addition to that, the French norm (2 February 1998) applicable for the authorization of these plants has been modified (6 August 2007) and reflects that:

- new mercury-based chlor-alkali installations are forbidden
- Emission limit values have been reduced:
  - Air: 1.5 g Hg/t capacity until 2010; 1.2 g Hg/t capacity, beyond 2010.
  - Water: 0.3 g/t capacity (direct emission from the plant) and 0.6 g/t capacity (emission from the industrial site).
- mercury-based chlor-alkali installations are forbidden beyond 31 December 2019.

### Germany

According to the national legislation all new chlor-alkali-plants will operate based on mercury- and asbestos-free technology. During the remaining lifetime of mercury cell plants BAT have to be applied for the further reduction of Hg emissions from electrolysis.

This includes:

Minimising mercury losses to air, water and with products by

- employing equipment, materials and plant designs to minimise losses of Hg due to evaporation and/or spillages;
- good housekeeping practice;
- good maintenance routines including planning of periodical maintenance and repair works;
- collecting and treating Hg-containing gas streams from all possible sources, including hydrogen-gas;
- minimising handling, storage, treatment and disposal of Hg-contaminated waste;
- decommissioning plants in a way that environmental impacts during and after shutdown processes are prevented and human health is safeguarded.

The industry is in the process of converting existing mercury based plants to mercury-free techniques.

At the end of 2006, six out of originally 15 (1991) chlor-alkali plants had been completely converted to mercury-free electrolysis. Another two plants had closed down some mercury-cells and substituted that capacity by membrane cells.

It is anticipated, that by the end of 2007 one additional plant will have completely substituted its mercury-based capacity by membrane technology and that by the end of 2009 another two plants will have completed conversion to mercury-free electrolysis.

The following Table shows the phase-out by end of 2007 and the anticipated phase-out scenario by the end of 2009:

Year	Chlorine capacity (kt/a)	[%] Base year: 1991
1991	2478	100
2001	1595	64
2005	1291	52
2007	1104	45
<b>2009</b>	<b>862</b>	<b>35</b>

Socio-economic factors have to be considered in defining the time scale for phasing out the remaining mercury-based cells.

The requirement for plants to meet 2g Hg/t Cl<sub>2</sub> is met by all mercury-cell plants in Germany.

#### The Netherlands

The Netherlands states that "Plants using mercury cell technology have been **converted or ceased production**"

#### Spain

The Spanish Chlor-Alkali sector (plant by plant) is considered in agreement with the IPPC Directive and according to the Chlor-Alkali BREF taking into account the technical, economical and environmental situation. By the moment there is not specific timetable on conversion.

Specifically in Spain, Ministry and Industry have signed a new Voluntary Agreement for the reduction of the mercury emissions along 2006-2011.

Among others, the new agreement establishes lower and progressive emission limit values:

- Air Hg emissions: 0.8+15% g Hg/t capacity until 2008 and 0.8 g Hg/t capacity until 2010.
- Total Hg emissions (air+water+content in products): 0.9+25% g/t capacity until 2008 and 0.9+15% g/t capacity until 2010.

Before 2011, each plant will have to present a conversion plan or a communication for ceasing its activity.

The requirement of 2g Hg/t chlorine is well met by the Spanish sector.

#### Sweden

Sweden reports that in the early 2000's two mercury-based plants were in operation. **One of them is now closed**; the other one will be phased out by 2010-11 and replaced by a new plant based on membrane technology.

#### Switzerland

There are no specific plans for the phasing out or conversion for the last mercury-based plant, **one plant less than the previous report**, operating in the OSPAR catchment area in Switzerland.

However, the company fulfills the voluntary commitments (WOCAL 99/7/1, Annex 5 or POINT 99/10/Info.4 presented to POINT 1999 (POINT99/10/7) by Euro Chlor) and is willing to adhere to the fixed proposals, inter alia, to the timetable for emission reductions and plant closures.



## United Kingdom

The UK is taking up the implementation of paragraph 3 of Decision 90/3 within the framework of the requirements of the EC IPPC Directive for this sector. This, *inter alia*, involves referring to the IPPC BREF on the chlor-alkali industry to determine what represents BAT for existing mercury cell chlor-alkali plants and the associated economic, social and environmental factors at individual installations.

Under the arrangements which the UK has put in place to implement the IPPC Directive, the UK mercury cell plants have to fulfil the requirements of the Directive to apply for a permit. The conditions of the permit also take into account any domestic or international obligations that may be relevant, such as Decision 90/3.

There has been considerable progress since the last implementation report in 2003. Two of the 3 UK mercury cell plants have now ceased operation, and in the remaining plant, one of the mercury cell rooms has been converted to membrane technology.

Mercury emissions to air are currently regulated under the UK system of Integrated Pollution Control (IPC) for individual installations and the requirement for plants to meet 2g Hg/ton CL2 is met by the UK mercury-cell plant.

The implementation of this measure is governed to a large extent by the profitability of the individual mercury cell plants and their ability to borrow money at favourable terms to finance the conversion of plants to membrane technology.

## 3. Assessment

The specific information submitted by the Contracting Parties, together with the additional information contained in the annual report on mercury losses from the Chlor-alkali industry, allows a good and clear picture about the situation of this industrial sector in the OSPAR area.

It could be deduced that no special problems have been found in addressing the measures contained in Decision 90/3 by mercury-cell chlor-alkali industry and the requirement of 2g Hg/t chlorine for emissions to air is well met. Some countries have established emission limit values for mercury progressively lower, but some other countries do not provide information on their pollution reduction measures.

There is a clear trend to reduce the mercury-based production capacity. Some countries have precise conversion or phase out plans. Some other countries have not informed on their conversion plans, pointing out that socio-economic factors or health and environmental impacts will have to be considered for this conversion process.

## Annex 1: Individual implementation reports on PARCOM Decision 90/3

### Appendix 1: Belgium

Country:

Reservation applies

Is measure applicable in your country?

If not applicable, then state why not (e.g. no relevant plant, installation or activity)

.....

.....

Means of Implementation:	by legislation	by administrative action	by negotiated agreement
	yes	no	no

Please provide more specific information on:

- a. specific measures taken to give effect to this measure, in particular with regard to:
  - (i) the national policy regarding the implementation of §3 of Decision 90/3, which recommends that existing mercury-cell chlor-alkali plants be phased out as soon as practicable. The objective is that they should be phased out completely by 2010;
  - (ii) any legal measure/voluntary agreement to ensure that this policy is implemented including any specific legislation on mercury emissions to air from chlor alkali plants;

*The plants located in the Flemish region are subject to the Flemish environmental legislation that states that the mercury-cell technique may not be used anymore after the year 2010 (Ref: VLAREM II, section 5.7.5.1 paragraph 3). The Flemish environmental legislation also defines an emission limit value of 2g Hg/t Cl<sub>2</sub> capacity for emissions to the atmosphere for existing mercury based chlor-alkali plants (Ref: VLAREM II, section 5.7.5.1 paragraph 2)*

- b. any special difficulties encountered, such as practical or legal problems, in the implementation of this measure;
- c. the reasons for not having fully implemented this measure should be spelt out clearly and plans for full implementation should be reported in particular where the requirement in §1 of Decision 90/3 is not met (2gHg/tonne Cl<sub>2</sub> capacity for emissions to the atmosphere);
- d. if appropriate, progress towards being able to lift the reservation.

.....

.....

## Appendix 2: Finland

Country:

Reservation applies

Is measure applicable in your country?

If not applicable, then state why not (e.g. no relevant plant, installation or activity)

.....  
.....

Means of Implementation:	by legislation	by administrative action	by negotiated agreement
	yes	yes/no*	yes/no*

Please provide more specific information on:

- a. specific measures taken to give effect to this measure, in particular with regard to:
  - (i) the national policy regarding the implementation of §3 of Decision 90/3, which recommends that existing mercury-cell chlor-alkali plants be phased out as soon as practicable.  
*The mercury cell processes will be phased out completely by the end of 2015;*
  - (ii) any legal measure/voluntary agreement to ensure that this policy is implemented including any specific legislation on mercury emissions to air from chlor alkali plants;
- b. any special difficulties encountered, such as practical or legal problems, in the implementation of this measure;
- c. the reasons for not having fully implemented this measure should be spelt out clearly and plans for full implementation should be reported in particular where the requirement in §1 of Decision 90/3 is not met (2g Hg/tonne Cl<sub>2</sub> capacity for emissions to the atmosphere);  
*The mercury cell process is still in use because of economical reasons. Changing the process type in this time table to more environment friendly ones would have been fatal for the economy of the whole plant.*
- d. if appropriate, progress towards being able to lift the reservation.

### Appendix 3: France

#### - Décision PARCOM 90/3 :

Il reste en France six installations de production de chlore à électrolyse à cathode de mercure (l'installation ARKEMA de Saint-Auban ayant cessé son activité en mars 2006) : ARKEMA (sites de Jarrie et Lavéra), Solvay (Tavaux), Produits Chimiques de Loos, Société des Produits Chimiques d'Harbonnières, PPC (ex-Albemarle, Vieux-Thann).

Suite à la circulaire du 7 mars 2000, chaque exploitant avait remis une évaluation des conséquences des rejets de mercure en provenance des ateliers de fabrication de chlore, au plan de la santé des populations et de la protection de l'environnement : pour chacun des sept sites alors concernés, l'évaluation des impacts demandée par la circulaire susmentionnée avait conclu globalement à l'absence d'impact significatif du fait des rejets de mercure des unités en fonctionnement en France (résultats présentés en 2003 lors d'une journée d'information « Industrie du chlore - Procédé mercure : bilan de l'impact sanitaire et environnemental » organisée par le Ministère de l'Ecologie en partenariat avec le Syndicat professionnel concerné, le SHD).

Ces installations ont toujours fait l'objet d'un suivi très attentif de la part des différents services de l'Etat, notamment au regard des rejets totaux en mercure (dans l'eau, l'air et les produits). L'évaluation des impacts sanitaires et environnementaux des unités en fonctionnement va être réactualisée prochainement. De plus, un protocole de démantèlement des unités lors des arrêts ou conversions est en cours d'expertise par les services de l'Etat.

En conséquence, l'arrêté du 2 février 1998, relatif aux prélèvements et à la consommation d'eau ainsi qu'aux émissions de toute nature des installations classées pour la protection de l'environnement soumises à autorisation a été modifié (arrêté du 6 août 2007, paru au Journal Officiel du 16/10/2007):

- La mise en service de nouveaux ateliers d'électrolyse de chlorures alcalins utilisant le procédé à cathode de mercure est interdite.
- L'activité est davantage encadrée et les valeurs limites de rejets de mercure ont été diminuées:
  - => Pour les rejets dans l'air: 1.5 g Hg/tonne de capacité et à partir de 2010 1,2g Hg/tonne de capacité.
  - => Pour les rejets dans l'eau: 0,3 g/t de capacité de production de chlore, à la sortie de l'atelier et 0,6 g/t de capacité de production de chlore, à la sortie du site industriel.
- L'exploitation des ateliers existants d'électrolyse à cathode de mercure est interdite à compter du 31 décembre 2019.

## Appendix 4: Germany

Country:

Reservation applies

Is measure applicable in your country?

If not applicable, then state why not (e.g. no relevant plant, installation or activity)

.....  
.....

Means of Implementation:	by legislation	by administrative action	by negotiated agreement
	yes		

Please provide more specific information on:

a. specific measures taken to give effect to this measure, in particular with regard to:

- (i) the national policy regarding the implementation of §3 of Decision 90/3, which recommends that existing mercury-cell chlor-alkali plants be phased out as soon as practicable. The objective is that they should be phased out completely by 2010;

*According to the national legislation all new chlor-alkali-plants will operate based on mercury- and asbestos-free technology. During the remaining lifetime of mercury cell plants BAT have to be applied for the further reduction of Hg emissions from electrolysis.*

*This includes:*

*Minimising mercury losses to air, water and with products by*

- *employing equipment, materials and plant designs to minimise losses of Hg due to evaporation and/or spillages*
- *good housekeeping practice*
- *good maintenance routines including planning of periodical maintenance and repair works*
- *collecting and treating Hg-containing gas streams from all possible sources, including hydrogen-gas*
- *minimising handling, storage, treatment and disposal of Hg-contaminated waste*
- *decommissioning plants in a way, that environmental impacts during and after shutdown processes are prevented and human health is safeguarded.*

*The industry is in the process of converting existing mercury based plants to mercury-free techniques. At the end of 2006, six out of originally 15 (1991) chlor-alkali plants had been completely converted to mercury-free electrolysis. Another two plants had closed down some mercury-cells and substituted that capacity by membrane cells.*

*It is anticipated, that by the end of 2007 one additional plant will have completely substituted its mercury-based capacity by membrane technology and that by the end of 2009 another two plants will have completed conversion to mercury-free electrolysis.*

*The following Table shows the phase-out by end of 2005 and the anticipated phase-out scenario by the end of 2009:*

<b>Year</b>	<b>Chlorine capacity (kt/a)</b>	<b>[%] Base year: 1991</b>
1991	2478	100
2001	1595	64
2005	1291	52
2007	1104	45
<b>2009</b>	<b>862</b>	<b>35</b>

*Socio-economic factors have to be considered in defining the time scale for phasing out the remaining mercury-based cells.*

*The requirement for plants to meet 2g Hg/t Cl<sub>2</sub> capacity is met by all mercury-cell plants in Germany.*

(ii) any legal measure/voluntary agreement to ensure that this policy is implemented including any specific legislation on mercury emissions to air from chlor alkali plants;

- b. any special difficulties encountered, such as practical or legal problems, in the implementation of this measure;

*Socio-economic factors have to be considered in defining the time scale for phasing out the remaining mercury-based cells.*

- c. the reasons for not having fully implemented this measure should be spelt out clearly and plans for full implementation should be reported in particular where the requirement in §1 of Decision 90/3 is not met (2gHg/tonne Cl<sub>2</sub> capacity for emissions to the atmosphere);

*The requirement for plants to meet 2g Hg/t Cl<sub>2</sub> capacity is met by all mercury-cell plants in Germany.*

- d. if appropriate, progress towards being able to lift the reservation.

## Appendix 5: The Netherlands

Country:

Reservation applies

Is measure applicable in your country?

If not applicable, then state why not (e.g. no relevant plant, installation or activity)

*Plants using mercury cell technology have been converted or ceased production*

Means of Implementation:	by legislation	by administrative action	by negotiated agreement
	yes/no	yes/no	yes/no

Please provide more specific information on:

- a. specific measures taken to give effect to this measure, in particular with regard to:
  - (i) the national policy regarding the implementation of §3 of Decision 90/3, which recommends that existing mercury-cell chlor-alkali plants be phased out as soon as practicable. The objective is that they should be phased out completely by 2010;
  - (ii) any legal measure/voluntary agreement to ensure that this policy is implemented including any specific legislation on mercury emissions to air from chlor alkali plants;
- b. any special difficulties encountered, such as practical or legal problems, in the implementation of this measure;
- c. the reasons for not having fully implemented this measure should be spelt out clearly and plans for full implementation should be reported in particular where the requirement in §1 of Decision 90/3 is not met (2gHg/tonne Cl<sub>2</sub> capacity for emissions to the atmosphere);
- d. if appropriate, progress towards being able to lift the reservation.

.....

.....

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\* Delete whichever is not appropriate

## Appendix 6: Sweden

Country:

Reservation applies

Is measure applicable in your country?

If not applicable, then state why not (e.g. no relevant plant, installation or activity)

.....  
.....

Means of Implementation:	by legislation	by administrative action	by negotiated agreement
	yes	yes	no

Please provide more specific information on:

- a. specific measures taken to give effect to this measure, in particular with regard to:
  - (i) the national policy regarding the implementation of §3 of Decision 90/3, which recommends that existing mercury-cell chlor-alkali plants be phased out as soon as practicable. The objective is that they should be phased out completely by 2010;
  - (ii) any legal measure/voluntary agreement to ensure that this policy is implemented including any specific legislation on mercury emissions to air from chlor alkali plants;
- b. any special difficulties encountered, such as practical or legal problems, in the implementation of this measure;
- c. the reasons for not having fully implemented this measure should be spelt out clearly and plans for full implementation should be reported in particular where the requirement in §1 of Decision 90/3 is not met (2gHg/tonne Cl<sub>2</sub> capacity for emissions to the atmosphere);
- d. if appropriate, progress towards being able to lift the reservation.
  - (i) *In the early 2000's two mercury-based plants were in operation. One of these is now closed, the other one is will be phased out by 2010-11 and replaced by a new plant based on membrane technology.*



## Appendix 7: Switzerland

Country: Switzerland (Report 2007)

Reservation applies yes/no\*

Is measure applicable in your country? yes/æ\*

If not applicable, then state why not (e.g. no relevant plant, installation or activity)

.....

Means of Implementation:	by legislation	by administrative action	by negotiated agreement
	yes/no*	yes/æ*	yes/æ <sup>1)</sup>

Please provide more specific information on:

- a. specific measures taken to give effect to this measure, in particular with regard to:
  - (i) the national policy regarding the implementation of §3 of Decision 90/3, which recommends that existing mercury-cell chlor-alkali plants be phased out as soon as practicable. The objective is that they should be phased out completely by 2010;
  - (ii) any legal measure/voluntary agreement to ensure that this policy is implemented including any specific legislation on mercury emissions to air from chlor alkali plants;
- b. any special difficulties encountered, such as practical or legal problems, in the implementation of this measure;
- c. the reasons for not having fully implemented this measure should be spelt out clearly and plans for full implementation should be reported in particular where the requirement in §1 of Decision 90/3 is not met (2gHg/tonne Cl<sub>2</sub> capacity for emissions to the atmosphere);
- d. if appropriate, progress towards being able to lift the reservation.
  - a.(i) *There are no specific plans for the phasing out or conversion for the last mercury-based plant operating in the OSPAR catchment area in Switzerland.*
  - <sup>1)</sup>a.(ii) *However, the company is signature to the voluntary commitments (WOCAL 99/7/1, Annex 5 or POINT 99/10/Info-4) presented to POINT 1999 (POINT99/10/7) by Euro Chlor and are willing to adhere to the fixed proposals, inter alia, to the timetable for emission reductions and plant closures.*

\* Delete whichever is not appropriate

## Appendix 8: United Kingdom

Country:

Reservation applies

Is measure applicable in your country?

If not applicable, then state why not (e.g. no relevant plant, installation or activity)

.....

Means of Implementation:	by legislation	by administrative action	by negotiated agreement
	Yes	Yes	

Please provide more specific information on:

a. specific measures taken to give effect to this measure, in particular with regard to:

- (i) *the national policy regarding the implementation of §3 of Decision 90/3, which recommends that existing mercury-cell chlor-alkali plants be phased out as soon as practicable. The objective is that they should be phased out completely by 2010;*

*The UK is taking up the implementation of paragraph 3 of Decision 90/3 within the framework of the requirements of the EC IPPC Directive for this sector. This, inter alia, involves referring to the IPPC BREF on the chlor-alkali industry to determine what represents BAT for existing mercury cell chlor-alkali plants and the associated economic, social and environmental factors at individual installations.*

*Under the arrangements which the UK has put in place to implement the IPPC Directive, the UK mercury cell plants have to apply for a permit to fulfil the requirements of the Directive. The conditions of the permit also take into account, any domestic or international obligations that may be relevant, such as Decision 90/3.*

*There has been considerable progress since the last implementation report in 2003. Two of the 3 UK mercury cell plants have now ceased operation, and in the remaining plant, one of the mercury cell rooms has been converted to membrane technology.*

- (ii) any legal measure/voluntary agreement to ensure that this policy is implemented including any specific legislation on mercury emissions to air from chlor alkali plants;

*As mentioned above, the EC IPPC Directive is the main policy driver. Mercury emissions to air are currently regulated under the UK system of Integrated Pollution Control (IPC) for individual installations*

b. any special difficulties encountered, such as practical or legal problems, in the implementation of this measure;

*The implementation of this measure is governed to a large extent by the profitability of the individual mercury cell plants, and their ability to borrow money at favourable terms to finance the conversion of plants to membrane technology.*

c. the reasons for not having fully implemented this measure should be spelt out clearly and plans for full implementation should be reported in particular where the requirement in §1 of Decision 90/3 is not met (2gHg/tonne Cl<sub>2</sub> capacity for emissions to the atmosphere);

*The requirement for plants to meet 2gm Hg/ton CL2 is met by all UK mercury-cell plants.*

d. if appropriate, progress towards being able to lift the reservation.

*Not appropriate*