UNDER THE COUNTER

China's Booming Illegal Trade in Ozone Depleting Substances

ENVIRONMENTAL INVESTIGATION AGENCY

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The Environmental Investigation Agency is a non-profit NGO based in London and Washington DC committed to investigating and exposing environmental crime. EIA has been actively tracking the global illegal trade in ozone depleting substances since the mid 1990s to provide information to the Montreal Protocol and other relevant bodies.

Executive Summary

- The crisis of ozone depletion is still very real. The ozone hole that formed in 2005 reached a maximum size of 25 million km^2, slightly smaller than the all time record holes of 2003 and 2000.
- The success and integrity of the Montreal Protocol continues to be undermined by a global illegal trade in ozone depleting substances (ODS).
- Illicit production of CFCs is a recent and growing threat.
- Despite the laudable efforts of the Chinese authorities to control ODS smuggling and illegal production, the country remains the world's major source of illegal ODS.
- EIA's investigations have revealed that chemical dealers and brokers in China routinely circumvent government controls, mislabel and mis-declare CFCs in order to smuggle these chemicals around the world.
- Some non-Article 5 (developed) countries are still receiving shipments of CFCs from China almost 10 years after consumption was phased out in these countries.
- The Montreal Protocol has not addressed the problem of illegal trade in any coherent manner, and the current licensing system for controlling the ODS trade is ineffective and urgently needs to be overhauled and improved.

Introduction

When undercover investigators from the Environmental Investigation Agency (EIA) stepped out of the car, they were met by murky smog and an acrid stench filled the air. Even the Chinese chemicals trader who had arranged the visit to the largest CFC (chlorofluorocarbon) production facility in China was keen to leave quickly. The trip to the CFC factory in Zhejiang province was the culmination of many months of hard work by EIA to expose the activities of unscrupulous brokers and traders in China who are fuelling the global illegal trade in CFCs and other ozone depleting substances (ODS).

This illegal trade is of particular concern in light of the perilous state of the ozone layer, which continues to give cause for concern and has dire implications for human health and ecosystems. The ozone layer has yet to show any signs of recovery, and the ozone hole that formed in 2005, reaching an area equivalent to the size of North America, was only slightly smaller than the largest ever ozone holes. Equally alarming is the news that in the spring of 2005 the greatest ozone losses were recorded over the northern hemisphere, with scientists fearing an Arctic ozone hole could soon develop. As damaging ultraviolet radiation levels reached an all-time high, authorities in central Europe were forced to issue health warnings.

The threat to the ozone layer from man-made ozone depleting substances was discovered in 1974, but it took a further 13 years for governments to address this. The response was the creation of the Montreal Protocol on Substances that Deplete the Ozone Layer, justifiably hailed as a landmark environmental agreement which has greatly curbed ODS usage. Yet this success continues to be undermined by the illegal ODS trade because Parties to the Protocol have shown a worrying reluctance to address this in any coherent manner.

EIA has been actively tracking the global illegal trade in ozone depleting chemical since the mid-1990s and has built up a unique dossier on the methods and routes used by the ODS smugglers, as well as some of the key companies and individuals involved. In 1998 EIA revealed that China had overtaken Russia as the main source of illegal CFCs to the world. EIA's recent investigations, detailed in this report, show that the country has maintained this position ever since. EIA's work reveals how Chinese chemical dealers and brokers evade controls on shipments of CFCs through underhand methods such as mislabelling and mis-declaring CFCs. These shipments are sent around the world, with the Chinese authorities seemingly unable to stem the flow.

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Since 1997 EIA has provided evidence of certain Chinese traders involved in ODS smuggling

In 2004, China signed an agreement tied in with a multi-million dollar funding package from the Montreal Protocol's Multilateral Fund to bring forward the date for ending its CFC production from 2010 to 2007. The aim of this ambitious project in accelerating CFC phase-out was to achieve coordination between the production and consumption sector phase-out plans in China and to reduce the chance of illegal production, consumption and trade in CFCs.

While the efforts of the Chinese authorities in working to control illegal production and trade in ODS are to be commended, it is clear that considerably more needs to be done. EIA has provided evidence as far back as 1997 of certain Chinese traders involved in ODS smuggling, and our recent investigations show that a number of individuals continue to pursue these illegal activities.

The international community is providing substantial funds to China for an early halt to CFC production. With this funding comes a responsibility to ensure that CFCs made in China do not end up in the wrong hands. It is not acceptable to turn a blind eye and pass the problem to customs officers in importing countries. Control must begin at the factory gates.

EIA's research show the bulk of illegal trade in CFCs is being carried out by a coterie of traders in Zhejiang, using just two ports – Shanghai and Ningbo. An effective clampdown in this region would go a long way towards reducing the amount of CFCs being traded illegally around the world. The time has come for China and the international community to clamp down on the smuggling of these ozone destroying chemicals once and for all.

Dr Ezra Clark
Senior Campaigner, EIA
December 2005

Above left: **CFCs in Koman Ningbo Refrigeration warehouse facility, Zhejiang, China**

The State of the Ozone Layer

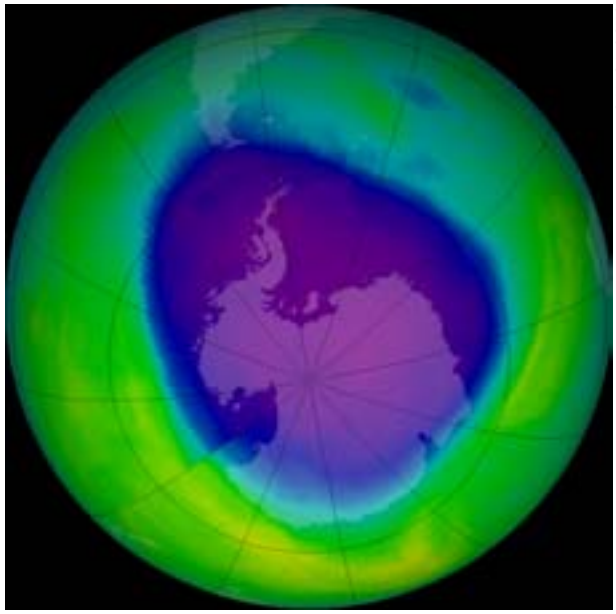
The 2005 ozone hole was the third largest ever recorded

Life on Earth depends on the protection provided by ozone which acts to screen harmful ultraviolet solar radiation (UV) from the sun. This stratospheric ozone forms a layer – the so called 'ozone layer' – extending from 20 to 50km above the earth's surface[1] and removes around 99% of the UV.[2] About 90% of atmospheric ozone is contained in this layer.

Severe depletion of the ozone layer has occurred due to human activities, which have introduced artificially high quantities of chlorine, bromine and other ozone depleting substances (ODS) into the stratosphere. Emissions of these chemicals cause higher quantities of harmful UV radiation to reach the earth's surface by destroying the protective ozone layer. Of the ozone-depleting chemicals, chlorine is the most abundant, and results from chlorofluorocarbons (CFCs) and other ODS. Halons containing bromine are more effective at destroying ozone than CFCs and were widely used as fire suppressants. A variety of other ODS exist in addition to CFCs and halons, and their uses are wide-ranging and include pesticides (such as methyl bromide) and solvents.

Following the discovery of significant thinning of the stratospheric ozone layer over Antarctica in 1985, satellite measurements have confirmed that the ozone loss has reappeared in the austral spring for all successive years, and, albeit with some year to year variation, the Antarctic ozone hole has grown bigger and lasted longer each year.

The ozone hole that formed in the southern hemisphere in 2005 was the third largest ozone hole ever recorded, peaking at a maximum area of 25 million square kilometres.[3] The biggest ozone hole ever occurred in 2003 reaching a peak size of around 28 million km^2 in mid-September, equalling the previous all time record ozone hole recorded in 2000.



© NASA/GSFC

***Above right*: The ozone hole that formed over Antarctica in 2005 reached 25 million km^2**

The problems of ozone depletion are not limited to the southern hemisphere. Recently there have been some concerning observations of severe ozone loss over the Northern Hemisphere leading some scientists to warn of the possible development of an Arctic ozone hole. The journal *Nature* reported the biggest ozone losses ever recorded over the Arctic in the winter of 2004-2005.[4] Researchers observed a 30% reduction in the ozone layer during the winter/early spring and measured a 50% reduction in ozone at an altitude of 18km. In June 2005 the level of ultraviolet radiation measured in the Czech Republic reached an all time high. The chief of the Czech Solar and Ozone Observatory blamed the stationary hole of thinned ozone in the atmosphere for high levels of skin-damaging ultraviolet radiation recorded across the region.[5] Parts of Germany, Austria and Slovakia were also affected by the low level of protective ozone.

It is clear that the problem of ozone depletion is still very much with us and corresponding increased exposure to ultraviolet radiation can directly impact human health. Effects include suppression of the immune system, photo-aging of the skin, cataracts and skin cancer. Children are at particular risk and medical evidence has recently indicated significant increases in childhood skin cancer rates.

Original projections for full recovery of the ozone layer by 2050 now appear to be increasingly optimistic. Such predictions are clouded by uncertainty, especially over the potential exacerbating effects of the interaction of climate change with ozone depletion processes, non compliance with the Protocol regulations and the illegal production and trade in ODS, all of which could significantly delay recovery of the ozone layer.

***Below*: Children are at particularly high risk of skin cancer**

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The Montreal Protocol

The Montreal Protocol on Substances that Deplete the Ozone Layer, a landmark environmental agreement, has been ratified by 189 nations since its inception in 1987. The Protocol establishes legally binding controls on the national production and consumption of ozone-depleting substances, with complete phase-out as the final goal.

The Montreal Protocol has taken great strides in reducing the production and use of ODS by some 80% compared to base year (1987) levels. The recognition of the Protocol as an outstanding example of international cooperation to tackle an environmental threat is well deserved. Despite this, the response of the Parties to the serious threat of illegal trade in ODS, which threatens to undermine the success and integrity of the Protocol, has been wholly inadequate.

When the illegal trade in ODS first came to light in the mid-1990s it was not anticipated by the enforcement agencies, nor by the legislators who framed the Protocol. The response by Parties to emerging ODS smuggling was initially one of denial and the problem was essentially overlooked. By 1997 the Parties had agreed to establish a licensing system to monitor the flow of ODS and to prevent illegally traded CFCs from ending up on the black market. The creation of this licensing system has been the main accomplishment of the Montreal Protocol in the fight against illegal trade. Yet this licensing system as currently implemented is manifestly failing to tackle illegal trade in ODS. A major opportunity to curb the smuggling menace is being missed.

Parties have conspicuously avoided further actions such as the establishment of a unit to assist with enforcement. Despite frequent interventions by Parties, particularly Article 5 Parties, concerned about illegal trade, there is a stubborn refusal to consider the substantive changes to the Protocol needed to address these problems. Any such initiatives are blocked at the preliminary stage.

It is apparent that there is virtually no coherent sharing of licence information between Parties, as exporting countries frequently fail to check whether the importing company has a licence, and the list of national focal points is often outdated. EIA's analysis of customs data[6] has highlighted alarming discrepancies between exporters and importers. Discrepancies in reported data of up to 2000 tonnes a year between importing and exporting countries for CFCs have been identified by EIA investigations.[7] These would not exist if the licensing system was functioning properly.

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There is a stubborn refusal to consider substantive changes to the Protocol

In spite of the inertia within the Protocol, it is encouraging that some countries are engaging in initiatives to address illegal trade from a regional perspective. As a result of the efforts of the Compliance Assistance Programme carried out under the United Nations Environment Programme's Division of Technology, Industry and Economics (UNEP DTIE), cooperation between some trading countries has enabled the bilateral sharing of information which can greatly assist the enforcement community in recognising illegal activity and clamping down on ODS smuggling.

These isolated successes are not enough. To curb illegal trade in ODS it is essential that communication between Customs and National Ozone Units is enhanced at both the national and international level. Improvements to the current licensing system and development of a tracking system which formalises communication prior to export would greatly help in preventing ODS smuggling. In the absence of better control measures directed by the Montreal Protocol, improved bilateral sharing of information on ODS trade between consuming and producing countries is recommended, particularly with China – currently the worlds largest producer of CFCs.

***Above left*: CFCs packed in tea chests, smuggled into India from Bangladesh, seized on route to Delhi**

CFC Phase-out Schedule

Production and Consumption (Annex 1 Substances)

Industrialised Countries (non-Article 5)	
Baseline	1986
Freeze	July 1989
-75%	1994
-100%	1996

Developing countries (Article 5)	
Baseline	Average 1995-97
Freeze	July 1999
-50%	2005
-85%	2007
-100%	2010

China and the Montreal Protocol

China negotiated a landmark project to halt production of CFCs by 2007

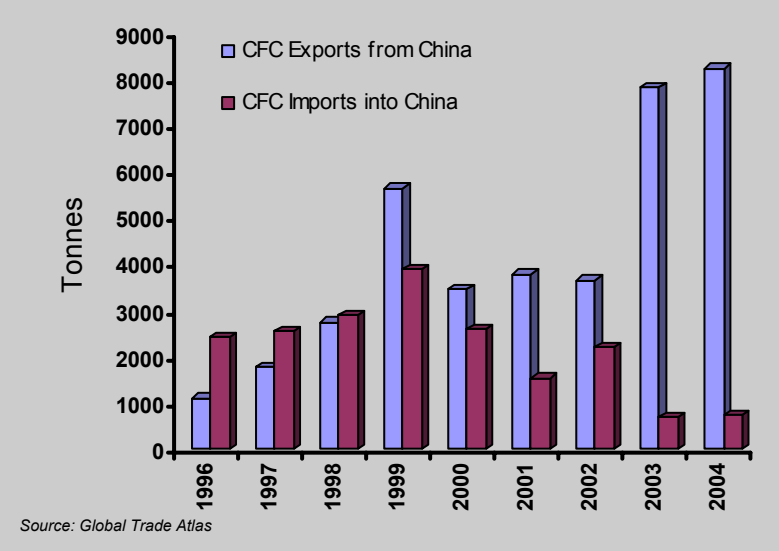
China ratified the Montreal Protocol in June 1991, and has since ratified the London and Copenhagen Amendments. The country is classified as an Article 5 (developing) country and as such committed to a freeze of CFC production and consumption in 1999, China was originally bound to a complete phase-out by 2010.

Since the Multilateral Fund for the implementation of the Montreal Protocol (MLF) approved the 'Country Programme for Phase-out of Ozone Depleting Substances' in 1991, there has been a significant reduction in the production and consumption of CFCs and halons in China. In 1998 CFC production was around 55 400 ODP (ozone depleting potential) tonnes, and by 2003 this was down to 29 960 ODP tonnes. Consumption fell significantly over this period by more than 32 600 ODP tonnes. The number of CFC producers in China has been reduced from 37 to just six.

During the 1998-2003 period there was also a change in the balance of China's imports and exports of CFCs. Up until 1998 China reported imports of CFCs in excess of the quantity of CFCs declared for export. In 1996, for example, China imported 2416 tonnes of CFCs and exported only 1098 tonnes. By 2003, exports of CFCs were more than 7164 tonnes greater than imports.[6]

In 1999, the Chinese government announced that the country would start to implement an updated management system for the import and export of ODS. This was overseen by the National Leading Group (NLG) which provides strategic guidance and inter-sectoral coordination. The lead agency of the NLG is the State Environmental Protection Administration (SEPA) and it includes: the Ministries of Foreign Affairs, Finance, Science and Technology, Public Security, Information Industry, as well as the State Development and Reform Commission. In accordance with the requirements of the Country Programme, China successfully met the 1999 freeze and is reportedly to be fully on track to meet the targets for CFC and halon production and consumption in 2005.

***Below*: CFC import-export data for China, 1996 to 2004**



To achieve national compliance and to control what are termed the '*three illegals*' (illegal production, illegal consumption and illegal trade) a four-certificate/licence framework was set up, consisting of controls of production quota, consumption quota and import-export management. This scheme came into force in 2004. All enterprises producing, consuming and trading (including domestic trade) CFCs and halons are covered by this scheme. Licences are valid for a year and are non-transferable. Any activities carried out without a licence are considered illegal.[8]

In 1997, the Executive Committee of the MLF approved US $62 million in total funding for implementation of the China Halon Sector strategy. This project committed China to accelerate the phase-out of production of the two halons the country manufactured: halon 1211 and halon 1301. The dates for cessation of production dictated by the project were 2006 and 2010 respectively.[9]

Two years later, the Executive Committee approved a total of US $150 million for the phased reduction and closure of the entire CFC production capacity in China. The funds were disbursed annually and contingent upon satisfactory verification that the country had sustained the previous year's reduction.[10]

China negotiated a further landmark project in 2004 – termed the Accelerated Phase-out Plan – to halt production of CFCs by 2007.[11] This project is under the bilateral co-operation programme of the United States. The objective of this acceleration in CFC phase-out is to achieve coordination between the production and consumption sectors' phase-out plans and to reduce the chance of illegal production, consumption and trade in CFCs. Although the complete phase-out of CFCs and halons has been advanced from 2010 to July 2007, China will continue to produce 550 ODP tonnes of CFCs for metered dose inhalers (MDIs) in 2008 and 2009. It is also estimated that there will be a demand for about 8000 ODP tonnes of CFCs for servicing requirements between 2008 and 2018.This is to be met by stockpiling from 2006 and 2007 production quotas. There is also the possibility to produce CFCs for essential uses, if

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Illicit production

The possibility of illicit or unregulated production of ODS was initially bought to the attention of EIA in a meeting with a halon dealer in 1998, when he suggested that there were plants in China which did not have permission to produce halons but produced unofficially, which he termed: "*on the roof*".

Now as legal production of CFCs is scaled down, there are growing concerns that illegitimate production could increase to supply residual demand. Indeed controlling illegal production in China is one of the three components of the current certificate/ licensing framework. There have been reports of at least seven cases of illicit production plants producing CFCs in China.

Two recent illegal production facilities set-up to produce CFC-11 have been identified and dismantled by the Chinese authorities. One of these illegal plants was in Jiangsu province, the other in Inner Mongolia. In both these cases the plants were identified before the chemical manufacture had begun production.

approved by the Parties. This project will require MLF funding of US $39 million, paid in tranches until 2008.

In 2006, CFC production should be 13 500 tonnes and consumption is expected to be around 12 500 tonnes. This leaves only about 1000 tonnes of CFCs for stockpiling, so China should no longer be in a position to export CFCs in any quantity.

History of ODS Smuggling in China

As the world's largest producer and consumer of ODS, China offers a special challenge to the Protocol. It is to the credit of the Chinese government and the international community that significant progress has been made in cutting both the manufacture and use of CFCs and halons in the country. The closure of 31 CFC production facilities demonstrates the advances made. The tightening of import and export control systems for these chemicals is a step forward in attempts to contain the trade in ODS. The efforts of the agencies responsible for controlling the production and trade of CFCs and other ODS, particularly SEPA, are to be applauded.

Yet these efforts continue to be threatened by the activities of unscrupulous businesses and traders in China, who continue to supply the black market with ODS. Some of these companies and individuals are known to have been involved in the smuggling of CFCs and halons for almost a decade, and continue their nefarious activities unabated.

When EIA began to investigate the illegal trade in ODS in the mid-1990s, the Russian Federation was the biggest source of CFCs on the black market. Soon afterwards China surpassed Russia as the major source of illegal ODS. Since then a host of evidence - from seizures around the world and Chinese-produced counterfeit material on the market - reveals that China is still the major player in the global illegal CFC trade.

EIA first became alerted to illegal activities in China relating to the ODS trade when in 1996 and 1997 a Chinese company, TT International, supplied over 800 tonnes of CFCs and halons to a Europe-based smuggling network, headed by the German firm Taifun GmbH.[12] The chemicals were falsely labelled as R-227, a legal HFC, to avoid detection. The smuggled chemicals were shipped to Belgium, France, Germany, Greece, Italy, the UK and the US.

In 1998, EIA investigations uncovered a network of active Chinese brokers supplying both CFCs and halons to North America and Europe.[13] Large quantities of halon 1301 and CFCs were smuggled onto the US market, avoiding customs controls by declaring the chemicals as "used". At the time China's recycling capacity for halons was insufficient to supply more than a fraction of the quantities being exported as 'used' material. The lack of CFC recycling capacity in China at the time highlighted the extent to which the authorities were being hoodwinked. One dealer from the Zhejiang Chemical Industry Research Institute referring to reclaimed halon, informed EIA investigators that: "*Although there are some restrictions we can find some special ways to solve this problem. For example, we can sell them in the name of other fire extinguishing agents*".

***Above left*: A seizure of smuggled Chinese-manufactured CFC-12 in generic packaging in Indonesia**

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***Right*: Philippine authorities identifying counterfeit R-134a from China**

As the 1990's drew to a close, Europe and the US witnessed a decline in smuggling, due primarily to improved enforcement and tighter regulations controlling the trade and use of ODS. Yet the unscrupulous Chinese traders soon switched attention to the growing black markets of Article 5 countries, where the 1999 freeze was taking hold.

Many smuggling cases soon came to light, particularly in the Asia-Pacific region where in 2000, for example, Malaysian authorities seized four containers totalling 4600 cylinders of CFC-12. These products were found to be counterfeits manufactured in China. Allied Signal's (now Honeywell) label and the *Genetron* name were used on these cylinders without the knowledge or consent of the company.

Counterfeit cylinders of well known brands are now increasingly appearing on the market and in seizures made by authorities in many developing countries. Frequently CFCs are smuggled in counterfeit cylinders labelled as R-134a – a non ozone depleting HFC alternative chemical not controlled by the Montreal Protocol.

The Philippine authorities have recently made a series of successful seizures of smuggled CFCs. The first of these occurred in May 2003. In this case, CFC-12 was smuggled into the country disguised as R-134a. The suspicion of the authorities was raised as careful checking of the paperwork revealed apparent discrepancies, and the use of a refrigerant identifier revealed the true contents of the shipment. The illegal consignments had been shipped by Chinese companies, one of which had been exposed by EIA more than eight years previously as being involved in trafficking illegal ODS. Similar seizures of counterfeit R-134a cylinders containing R-12 have been made in Georgia, Sudan and Kuwait.

Indonesia has also been successful in seizing mis-declared CFCs from China. In early 2004, Indonesian customs intercepted two separate shipments of illegal CFCs from China, two containers at Semarang port in Central Java, and one container at Tanjung Priok port, Jakarta. One of the Chinese suppliers was serial CFC-smuggler TT International.

For some years India has suffered with ODS being smuggled across its long land borders.[14] CFCs are frequently imported into neighbouring countries in excess of requirements and are then smuggled into India. More that 300 tonnes of CFCs and HCFCs have been seized in recent years and much of this material originated in China. In one recent example in 2004, a seizure of 160 cylinders of Chinese-produced CFC-12 was made. In this case it was discovered hidden beneath plywood on a truck destined for a northern Indian state.

The growing evidence and examples of smuggling and seized Chinese produced-CFCs and halons from all around the world hint at a much greater problem. This paints a worrying picture of the current situation of the global illegal trade with China at its heart. The failure by the Chinese authorities to curb illegal exports is also placing a burden on customs officers across Asia, who are left to deal with the problem.

A Note about Chemical Names

CFCs (chlorofluorocarbons)
A family of organic chemicals which deplete the ozone layer, controlled by the Montreal Protocol.
e.g. CFC-12 (also known as R-12 or F-12)

HCFCs (hydrochlorofluorocarbons)
These chemicals have a much lower ozone depleting potential than CFCs. They are alternative chemicals controlled by the Montreal Protocol, although the phase-out dates are significantly later.
e.g. HCFC-22 (also known as R-22 or F-22)

HFCs (hydrofluorocarbons)
These alternative chemicals are not ozone depleting although they have high global warming potentials. Not controlled by the Montreal Protocol. e.g. HFC-134a (also known as R-134a)

Halons (Bromochlorofluorocarbons)
A family of organic chemicals which are more effective at depleting the ozone layer than CFCs. Controlled by the Montreal Protocol. e.g. Halon 1301

Exporting a Problem:

Some example cases of illegally traded CFCs and halons originating in China, from 1996 to 2005

© Ard/Südwest Funk

The German firm Taifun illegally imported over 800 tonnes of CFCs and halons from China over a two year period. The director George Gudemann was arrested in 1997 for his part in this scam.

Shipments of counterfeit R-134a containing CFC-12 or mixtures containing this chemical have recently been seized in many countries including Georgia, Sudan and Kuwait. Honeywell's *Genetron* brand name (often misspelled) is frequently used by counterfeiters without the knowledge or consent of the company.

© Julian Newman/EIA

In 2003, a container of CFC-12 was smuggled into the Philippines disguised and mis-declared as R-134a. This was the first of a number of similar cases uncovered by the Philippine authorities.

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In November 2005, the Chinese trading company T-Chemi and partner company Yonghe New Type Refrigerant Co, showed EIA investigators a consignment of CFC-12 packed in unmarked boxes, mis-declared as R-22 and destined for Israel.

© Ard/Südwest Funk

In 1997, FRC International in the USA received several shipments totalling over 200 tonnes of Chinese halons labelled as recycled. These subsequently ended up in the US Department of Defence's halon bank.

© EIA

Singapore based trader Michael Ong of Leempeng Enterprise, revealed to EIA investigators how he shipped CFCs from China into Japan in small cans declared as 'air-conditioner oil'. He also revealed an elaborate scheme whereby CFCs were smuggled into South Africa through neighbouring countries.[15]

© Ezra Clark/EIA

Many seizures of CFC-12 smuggled into India have been made by authorities, including cases in 2004 in Calcutta and Varanasi, India. In both these instances the material seized was produced in China.

© Julian Newman/EIA

Two separate shipments of illegally imported CFC-12 from China declared as R-22 were seized by Indonesian Authorities in 2004.

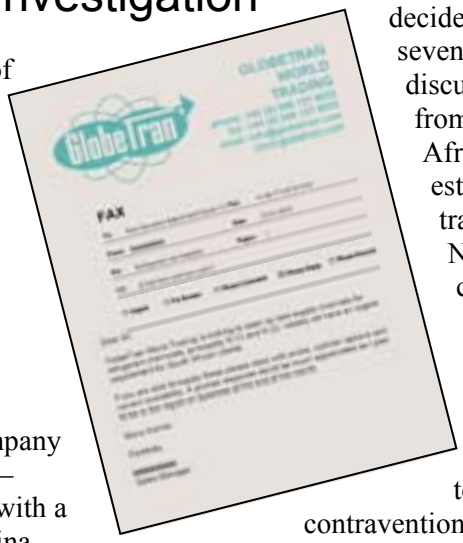
© Netherlands Police

Chinese produced CFC-12 and R-502, labelled as being manufactured in the UK: the shipment travelled from China through Singapore, Rotterdam and Antwerp with a final destination in the Caribbean. Marking on the packaging indicated the US was the intended final target country for this shipment.

The Globetran Investigation

Most companies were willing to break the rules and export CFCs

Based on detailed analysis of ODS smuggling patterns over the last decade and evidence from successful seizures around the world, EIA decided to probe the operations of the Chinese businesses and traders involved in global CFC smuggling. To get close to the smugglers in their home base, EIA set up a front company – Globetran World Trading – enabling trade negotiations with a number of companies in China suspected of involvement in illegal CFC trading.



Globetran World Trading was positioned as an international trade broker seeking CFCs for clients in South Africa. This country was chosen due to its classification as an Article 5 Party, but one which has enacted an import ban on CFCs.

A list of companies in China was compiled using information obtained during EIA's previous investigations, information garnered from seizures around the world and from confidential sources. Searches of business directories and trade sites on the internet were also carried out for potential leads. Initially a simple fax or email enquiry was sent to 50 target companies, outlining Globetran's requirements and requesting information on price and availability for both CFC-12 (R-12) and HCFC-22 (R-22).

Of the 19 initial replies received some stated that their companies no longer dealt in refrigerant gases, and some indicated that they had already used up their export quota for CFCs and so were not able to trade. A small number of companies suggested urging Globetran's clients to consider alternative chemicals, yet others indicated that they would have new export quotas early in 2006 and would welcome business then. Not a single company at this stage questioned the request that was made to them to ship CFCs from China to South Africa - a clear violation of the Montreal Protocol regulations.

***Above centre*: A fax from EIA's dummy company was sent to Chinese chemical dealers requesting supplies of CFCs and HCFCs**

From a short list of target companies more interesting responses then began to arrive. The dummy company was provided with offers of CFCs with prices ranging from US $2.6 to US $4.6 per kg of R-12. It was surprising to hear again from some companies that initially revealed that their quota was already used up, this time responding with an offer to supply CFCs in line with the original request.

Based on these responses, EIA investigators decided to journey to China to meet with seven companies purportedly to further discuss the possibility of obtaining CFCs from the country for shipment to South Africa. Based in Zhejiang province, the established heart of the CFC trade, EIA travelled to the cities of Hangzhou and Ningbo to meet with the target companies. During a series of face-to-face meetings and factory visits EIA investigators encountered a range of responses, but shockingly it soon became apparent that most of these companies were willing to break the rules and export CFCs in contravention of both China's and the Montreal Protocol's regulations.

EIA investigators were told of the importance of having contacts in customs to facilitate export of restricted chemicals. Exporters of CFCs, it was revealed, favour the port of Shanghai over Ningbo as the checking of commodities such as refrigerants are much less likely to be scrutinised at the former. One company also boasted of having well-placed informants who would reveal when an inspection visit from the local authorities was due to take place.

A frequently offered scam to get around the export quota limitations for R-12 was to mis-declare the chemical as an alternative which is not restricted. The dummy company was offered CFC-12 variously mis-declared as R-134a, R-404 and as 'mixed refrigerant'. Offers were made to have the CFC cylinders packaged in blank cartons, or cartons marked as R-134a with accompanying false documentation, and there was even an offer from one company for R-134a cylinders filled with R-12 to further avoid detection. One supplier explained how the container would be packed with CFC-12 and a layer of R-22 (an HCFC) placed at the front of the container, a technique known as double layering, to hide the chemical from customs inspections.

EIA investigators heard from traders of their experience in shipping CFCs around the world using these methods, and were assured it was a very widespread and successful fraud. It was revealed that these chemicals are exported to countries in Asia, Africa, Europe, Latin America and the Middle East, with large quantities sent to two important transit and distribution hubs – Singapore and Dubai. By way of example traders showed EIA investigators a consignment of CFC-12 packed in unmarked boxes for shipping to Israel and small 340g cans of CFC-12 which had been mislabelled and mis-declared as R-134a for export to Italy.

Hangzhou Sporlan: The Importance of Connections

A meeting was arranged with Hangzhou Sporlan, based in Hangzhou, some 200 km south-west of Shanghai. EIA investigators met with Qiu Jian Ming, the general manager, and Ying Hua from the overseas sales department. The company buys a range of refrigerants in 20 tonne tanks and then decants these into smaller cylinders for export. It does not sell to the domestic market. Sporlan named three factories from which they source their refrigerants: Juhua (Quhua) Chemicals, Jiangsu Sanfu and Shandong Dongyue.

Minutes into the meeting, Qiu began to explain how the company gets around the controls on exports of CFCs imposed by the government. The controls require the company to apply to SEPA for a licence to export CFCs. As these applications are frequently rejected, the general manger said that to get round this they rely on their close contacts in customs to facilitate their exports of these controlled chemicals: "*There isn't a problem on our side. We have very close relationships with the Customs and the people who declare the goods*". He added: *"We will definitely have no problems taking it out"*.

In common with most of the other companies that were visited, all the consignments of refrigerant chemicals shipped by Hangzhou Sporlan are sent from Shanghai rather than Ningbo port as the checking is considerably less rigorous. The company revealed that it exports considerable quantities of material to the Middle East because of the lax import regulations, as well as shipping CFCs to Turkey and Singapore.

Another astonishing revelation was how the company avoided being caught by SEPA for this illegal activity. Checks from the environmental agency, it was understood, tend to fall within a

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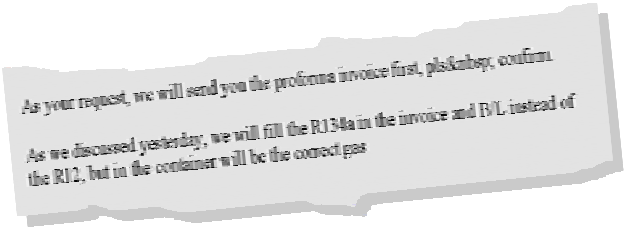
"Someone will tell us when the [SEPA] inspections will be"

particular time period. Qui revealed how Hangzhou Sporlan has informants which let the company know when to expect a check: "*Someone will tell us when the inspections will be ... we know someone there and they'll tell us*". He revealed how the company then cease export of CFC-12 during this period.

Hangzhou Sporlan offered Globetran CFC-12 at a price of US $35 per 13.6kg cylinder from existing stock, which was currently at over 60 tonnes. To enable this to be exported without a problem, the company offered to mis-declare this as R-134a on the invoice and bill of lading. Following the meeting, Hangzhou Sporlan sent a pro-forma invoice with all the details of the proposed order. Accompanying this was a note making it clear that the invoice and bill of lading would be filled out to indicate the shipment was of R-134a refrigerant.


As your request, we will send you the proforma invoice first, pls confirm

As we discussed yesterday, we will fill the R134a in the invoice and B/L instead of the R12, but in the container will be the correct gas

The cheap price initially offered to the dummy company for R-12 suggested that this refrigerant was not high quality or pure CFC-12. This was indeed the case, as was later explained by Qui. This low grade CFC-12 was termed "blended CFC-12" by the general manager, although the cylinders declared the contents to be dichlorodifluoromethane (CFC-12) and did not distinguish between this and pure CFC-12. Qui suggested that about 80% of traders in China sell reduced quality CFC-12. The company was confident this reduced quality R-12 would be available next year on a regular basis as long as it was mislabelled.

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***Top left*: Hangzhou Sporlan's general manager offered to supply CFC-12 disguised as an alternative chemical**

***Left:* CFCs stored in Hangzhou Sporlan's warehouse facility**

Ningbo Sino Resource: Serial CFC Smuggler

"Because now the quota for R-12 is finished, we can only use R-134a packaging"

EIA first became aware of the illegal operations of Joe Koman of the Ningbo Free Zone Sino Resource Import Export Co in 1997. At this time he was approached by a dummy company set up by EIA looking to obtain supplies of CFC-11, CFC-12 and halon 1301. He replied with a fax to the ghost office in London boasting of sending CFCs to Italy a few weeks earlier and offering the following advice: *"Frankly speaking we are supplying F-12 overseas. However some clients ask us to reduce purity and make F-12 like to be [sic] recycled for the sake of import licence. The above is our secret between you and me do not leak it out."*

The following year, Ningbo Sino Resource was again contacted by a different dummy company set up by EIA. A meeting was arranged in Paris and Koman revealed how he was able to successfully smuggle CFCs around the world; he talked of exporting R-12 to Europe for the previous two years, adding that many customers required the refrigerants to be declared as R-22.

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Top right: Vice-general manager Nigel Lee

Above right: Ningbo Sino Resource's new refrigeration facility

Right: Managing director Joe Koman

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By 2003, R-134 appeared to be the favoured chemical used as cover to smuggle, as was discovered by Philippine authorities when a shipment of CFC-12 from Ningbo Free Zone Sino Resource was discovered disguised as this alternative chemical.

More than eight years after the initial exposure of his activities, and despite the Chinese authorities being informed of this company's illegal trading, Koman is still up to his old tricks: still smuggling CFCs out of China, still mislabelling and mis-declaring shipments and still sending CFCs to non-Article 5 countries such as Italy.

EIA investigators travelled to the port city of Ningbo in Zhejiang province, for a meeting with Ningbo Sino Resource. It was clear from the outset that nothing had changed and Joe Koman's company remained very much at the forefront of CFC smuggling.

The company's vice-general manager Nigel Lee informed EIA investigators that although the export of R-22 was not problematic, R-12 was rather more difficult because of a restriction by the government. He also revealed that the export quota had already been used up for the year. Lee went on to explain how the export could be facilitated by changing the packing cartons and using R-134a packaging and declaring the R-12 as R-134a on the documentation. It was explained that if this method of concealing cylinders in R-134a boxes was used there would be no restriction on the quantity of CFCs that could be exported.

A phone call after the meeting to the managing director, Joe Koman, at a refrigeration conference in Germany, confirmed that the export licence for CFC-12 had indeed been exhausted earlier in the year and mislabelling the carton as R-134a was the

PROFORMA INVOICE

recommended way to proceed with the proposed order. An assurance was given by Koman that supplies of CFC-12 would be available in 2006 if the same method of mis-declaration was used.

A visit to the company's warehouse and filling plant was arranged to see operations first-hand. During a tour of the substantial facility, it was explained that this new premises had only opened six months previously and was part of Ningbo Sino Resource's expansion. It was clear that this was a growing company and this new plant bore the name of the managing director: *Ningbo Koman's Refrigeration Industry*. EIA investigators were shown the plant machinery and storage facilities. In response to an enquiry about a large consignment of R-12 at one end of the warehouse, the company representative explained that: "*Because now the quota for R-12 is finished, so we can only use R-134a packaging*". She continued:

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"We have used this method many times, using R-134a packaging but in actuality it is R-12 inside"

"*We have used this method many times, using R-134a packaging, but in actuality it is R-12 inside*".

Examples were given of how Ningbo Sino Resource recently used this method to send R-12 to Nigeria, Mauritius and Israel. With the latter the additional precaution of shipping the refrigerants by a Dutch company was employed, as it was revealed that this enables the refrigerants to be imported into Israel without checks. The Mauritian customer to whom they smuggled CFCs was also intriguing, as this customer now holds a 10% investment in Ningbo Sino Resource Co.

Following up from the meeting, Joe Koman's assistant sent EIA's dummy company a pro-forma invoice for one container of R-22 and one container of 'R-134a'. The accompanying email made it clear that the latter chemical was actually R-12. A declaration was also received clarifying this: "*We… instruct Ningbo Free Zone Sino Resource International Trade Co. Ltd to sell us the one 20' container of R-12 in R-134a packing*". The additional option of having the R-12 filled in R-134a cylinders to further disguise its contents was also suggested.

***Above left*: Pro-forma invoice; the accompanying email revealed the 'R-134a' was in fact R-12**

***Above:* CFCs stored by Ningbo Sino Resource**

Left: Inside the Ningbo Koman facility

Freon to Italy

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As a member of the European Union, Italy has not been permitted to import CFCs since 1996 and has been under an EU sales and use ban for these chemicals since October 2000. However, Ningbo Sino Resource revealed in 1997 that they successfully sent CFCs to Italy. While visiting the company's offices and showroom, EIA investigators were shown small 340g cans of R-12 which are popular for servicing car air conditioners. It was explained that Ningbo Sino Resource sends these to Italy – once again using their well practiced technique of packing in R-134a cartons to avoid detection.

Quzhou: The Town That CFCs Built

"If we export this R-12 we must use another name, and its name is *mixed refrigerant*"

T-Chemi Trading Co was identified in a 1998 investigation by EIA after the Hangzhou-based company had successfully exported halon 1301 to a company in Spain, despite the EU's zero quota for halon imports. The company even provided a shipping bill to EIA investigators to prove past exports were successful. This document gave details of a shipment of 20 tonnes of halon 1301 from Shanghai to Barcelona.

When T-Chemi Trading were contacted again almost eight years later by the dummy company Globetran set up by EIA, it was explained by fax that the firm could only supply R-22 and did not have supplies of R-12, suggesting perhaps the company had discontinued its illegal activities of the past. Yet this communication was soon followed up by another fax revealing that it was in fact possible to supply R-12, if the name of the chemical could be changed on the documentation. This proposal to mislabel a shipment of R-12 provided a strong enough reason to arrange a meeting with the company to find more details.

Re: Refrigerant
To be frankly we also can supply R-12, but as you know it is difficult to export. Can we change the name. If you can accept, please inform us the exactly destination port, so we can give the correct price to you.

Upon meeting with Si Hui Qing of T-Chemi Trading in Hangzhou, the company immediately clarified that it did not have a quota for export, and that if R-12 was to be exported, it had to be done so by false labelling: *"About R-12 this product are not allowed to export… if we export this R-12 we must use another name, and its name is mixed refrigerant"*. It was explained that this method was frequently used by the company to export CFCs to Africa, for example. There was an assurance that supplies of CFCs in the future would not be a problem. It was explained that the director of T-Chemi had a good personal relationship with the manager of a factory producing CFCs, so obtaining supplies would not pose any difficulties.

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Above right: **The Juhua Group CFC production plant - the largest CFC producer in China**

Right: **Yu Yonghe (left), manager of Yonghe New Type Refrigerant Co and Si Hui Qing (right) of T-Chemi**

As negotiations progressed, an invitation was given to visit the filling plant and warehouse facility located in the southern suburb of Quzhou City in the Juhua region of Zhejiang province. On arrival at the Juhua Yonghe New Type Refrigerant Co, EIA investigators were met by Yu Yonghe, the manager of the plant. He explained how the company had a production quota of 1500-1600 tonnes of CFC-12 in 2005 and estimated that they would have a quota for around 1200-1300 tonnes of the chemical in 2006.

On the tour of the warehouse, EIA investigators picked their way through stacks of refrigerants in various size cylinders and drums. Quantities of R-11, R-12, R-113, as well as HCFCs and other alternative chemicals were stored in this facility.

It was made clear by Yonghe that if an order for CFC-12 was placed, 'mixed refrigerants' would be declared on the documentation but the cylinders themselves would contain R-12, and would be labelled as such. The boxes they were packed in would be blank. It was explained that this method was successfully employed to get R-12 into a number of countries including Oman, Indonesia,

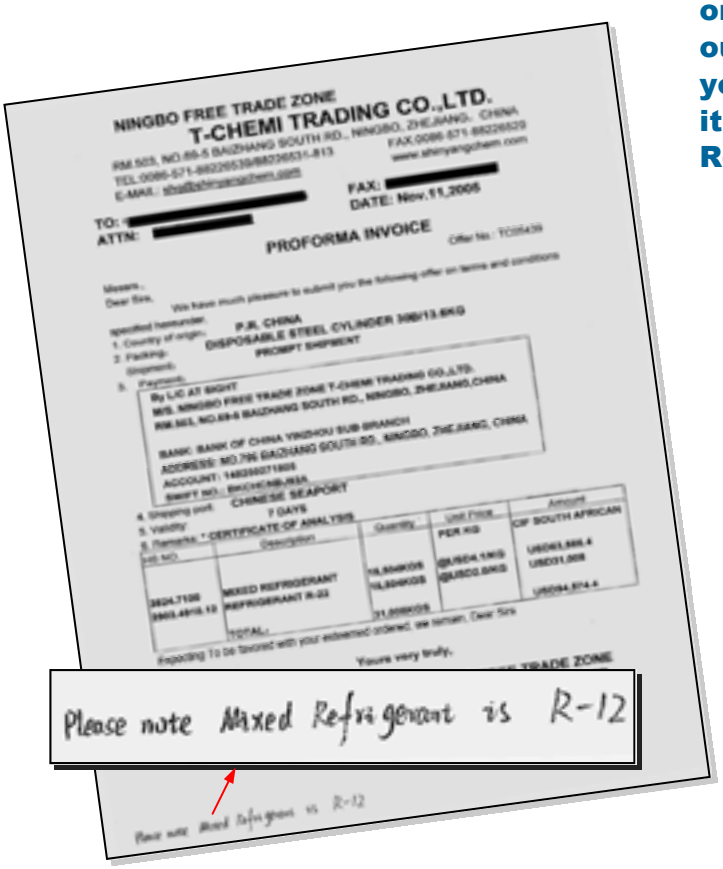
Singapore, Thailand, Malaysia, South Africa, Israel, Dubai and Russia, as well as into some countries in South America. This, he explained, successfully avoided the attention of customs. To further hide the smuggled CFCs, it was suggested that they would conceal the R-12 further by 'double layering' and packing cylinders of R-22 at the front of the container so this chemical would be what customs would see if the container was inspected: "*When filling up the containers, you put in, say, 200 cylinders of R-22... you put the R-12 on the very inside and on the outside you layer it with the R-22"*. Yonghe gave another assurance that this method works successfully.

The close partnership between Yonghe New Type Refrigerant Co and the nearby Juhua (or Quhua) Group was described, and it was further explained that Yonge's company sold Juhua manufactured refrigerants. After viewing the filling plant and warehouse, a trip to the Juhua factory that produced the CFCs was arranged. The Juhua Group facility is the largest CFC producer in China, based in Quzhou City. In 2002, it produced over 4400 tonnes of CFC-11 and over 7000 tonnes of CFC-12, up from 3300 tonnes and 6300 tonnes respectively in 1999. EIA investigators were given a brief tour of this huge facility, during which it was explained that the surrounding town was essentially founded to serve the factory, making the head of the factory as important as the city's mayor.

To facilitate negotiations, following the meetings and site visits a pro-forma invoice was sent by fax with all the details required for the dummy company to make an order. The offer was to supply one container of R-22 and one container of 'mixed refrigerant'. A hand-written note on the fax helpfully pointed out that the 'mixed refrigerant' shown on the documentation was in fact R-12.

The price for the chemical was US $4.1 per kg. It was interesting to note that this price included shipping to South Africa – a country not permitted to receive CFCs.

"You put the R-12 on the very inside and on the outside, you layer it with the R-22 "


NINGBO FREE TRADE ZONE
T-CHEMI TRADING CO.,LTD.
PROFORMA INVOICE
Please note Mixed Refrigerant is R-12

Smuggling to Israel

During a tour of the Yonghe New Type Refrigerant facility EIA investigators were shown a consignment of cylinders of R-12, packed in blank, unmarked white boxes . It was explained that the order was destined for Israel and that the consignment was to be declared as R-22, with a layer of genuine R-22 placed at the front of the container to conceal the R12. Qing of T-Chemi Trading added that: *"if customs want to check they take… R-22 to test, no problem".*

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***Above left*: Pro-forma invoice sent to EIA's dummy company offering to mis-declare CFCs**

***Left:* Tanks of CFC-12 stored in the Yonghe New Type Refrigerant Co facility**

Sino Newchem Import and Export: No Export Licence, No Problem

"We export R-12 to their market not marked R-12"

While in Ningbo, EIA investigators met with Karen Ying, the sales manager of Sino Newchem Import and Export. The company has links to a factory in Jiangsu province which produces approximately 5000 tonnes of CFC-12 per year. Ying explained how their export licence had been significantly cut in 2005 and they expected to be able to export only a small quantity of CFC-12 in 2006.

Sino Newchem's sales manager soon revealed her willingness to flout the regulations: *"Now I tell you truth, I have no export licence for R-12, if I export to you R-12 we declare the customs not R-12"*. She continued by explaining how the export would be facilitated by mislabelling the shipment as another chemical, suggesting declaring the shipment as R-404 or R-134a.

An offer was made for the falsely labelled CFC-12 at a price of US $52 per 13.6kg cylinder. Sino Newchem was able to make a shipment of CFC-12 within 10 days of placing an order as it was explained that the Jiangsu facility production line was continuous.

When asked if the company had experience of exporting CFC-12 to other countries, Ying replied that she had successfully shipped these chemicals to Dubai, which she said was a huge market, and that it was easy to clear customs. She also described how the company shipped CFCs in this manner to east Asia, giving the Philippines as an example: *"In Philippines we export R-12 to their market just like other refrigerant, not marked R-12"*.

Soon after the meeting EIA's dummy company was supplied with a pro-forma invoice providing details of the proposed order. The email accompanying the invoice reiterated that the R-12 being offered would be declared as R-404a or R-134a.

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Re: the clearence for R-12

This year our export licene for R-12 has been used out. If you want to buy R-12, we have to declare the customs as refrigerant R-404a or R-134a instead of R-12 and mark refrigerant R-404a or R-134a in the Bill of Lading. Can your client clear the goods from the customs ? Please advice. As soon as we get your confirmation, we will issue the Proforma Invoice. Please understand.

PROFORMA INVOICE

Above right: Karen Ying of Sino Newchem

Below right: Sino Newchem offered to mis-declare CFCs as alternative chemicals

Below: A wide range of refrigerant gases was available from Sino Newchem

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Hangzhou Chixinchem

The meeting between EIA investigators and Chen Xinqiang of Hangzhou Chixinchem was held in the front room of his 14th floor flat in the heart of Hangzhou, which doubled as his company office. The balcony was filled with sample cylinders of the various refrigerant gases the company traded.

Chen was well informed about the Montreal Protocol phase-out schedule and China's export quotas, but admitted that the company's quota for exports of R-12 was already exhausted. However, he provided an assurance that he could supply Globetran with 40 tonnes of *genuine* CFC-12 in November and December. The price offered was US $54.5 per cylinder.

Chuang Mao Import and Export

The Chuang Mao Import and Export company was identified from an advertisement placed on an internet trade site. Despite an initial response that supply was not possible as the quota for CFC-12 was exhausted, sales manager Foxxion Chen later contacted EIA's dummy company offering 11 tonnes of CFC-12 at US$ 65 per cylinder – the highest quote received. Chen stated that the source of the material was Linhai Limin Chemicals. He also urged a quick order, as his Internet advert for the CFC-12 had prompted many replies.

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CFCs from a closed production line

A clarification was made that the CFCs offered were genuine as Chen went on to reveal a widespread scam he was undertaking of mislabelling R-406 as R-12 and selling this to the Middle East as well as to Turkey, South America, Indonesia, Singapore and the Philippines.

Linhai Limin Chemicals Co

Linhai Limin Chemicals was once a major producer of CFCs in China. As part of China's commitments to phase out CFCs, the factory's two CFC-12 production lines were reportedly dismantled in 2003.

As this factory had been paid to cease CFC-12 production, and the closure of the production lines had been verified, it came as a surprise when the company offered to supply CFCs. Ifan He from Linhai Limin Chemicals reported that the company could provide the CFCs and HCFCs as requested. It was explained that the company produced refrigerants and intermediates: *"we are a manufacturer, the material of R-12 are bought from our domestic company"*.

The price initially offered for R-12 was US $56.7 per 13.6 kg cylinder. This price rose to US $ 62 within a matter of days. It was made clear in the communications with He that the cylinders being offered were not to DOT specifications which would generally be expected for export material. This, in addition to the explanation given by Mr He of their domestic company as the source of the refrigerants, suggests the firm was offering to export CFCs diverted from the domestic market.

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***Top left*:** **Chen Xinqiang of Hangzhou Chixinchem**

Above: **Linhai Limin offered to supply CFCs despite production closing in 2003**

***Left*:** **Refrigerant gas samples on the balcony of Chen Xinqiang's flat and office in Hangzhou**

China's CFC Exports to Indonesia

Chinese authorities do not check if the importers are licensed or if imports are permitted

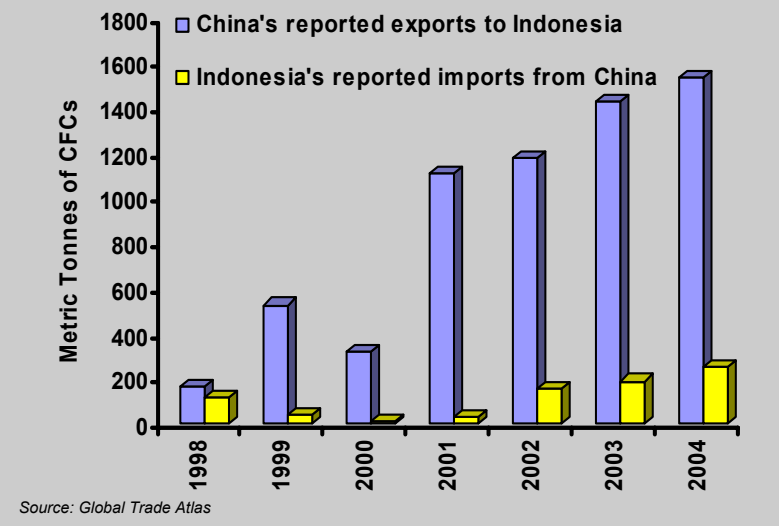
Detailed analysis of official customs import and export data for CFCs highlights huge discrepancies in declared trade between countries. EIA has identified many cases where CFC export data to a particular country do not match the import data of the recipient country.[7] For example, reported exports from China to Indonesia of CFCs from 2001 to 2004 were more than 1000 tonnes higher each year than Indonesia's reported imports of CFCs from China. In 2002 for instance, China reported the export of 1178 tonnes of CFCs to Indonesia, yet Indonesia only recorded the import of 150 tonnes of CFCs from China.[6]

Both countries have import and export licensing systems in place, but clearly the systems are inadequate. The Chinese authorities do not check if the importers are licensed or if imports are permitted prior to issuing an export licence. This shortcoming is further illustrated by the fact that China exports CFCs to a large number of companies in Indonesia despite the country having only has one licensed importer for CFCs.[16]

The scale of this problem was described by an unlicensed Indonesian trader who met with EIA and claimed to import up to 800 tonnes of R-11 and around 1000 tonnes of R-12 a year from China. The total imports by this single trader are more than the quantity of China's entire recorded CFC exports to Indonesia, and go undocumented. The trader explained how he gets his supply from two factories in China, which ship the CFCs as refrigerant gas and arrange all the paperwork. He relied on contacts in Indonesian customs to ensure the consignments are not intercepted. This well informed source also claimed that the big Chinese producers which had been paid to stop producing CFCs were using their client network to supply CFCs made by smaller, illicit plants.[17]

***Above right*: Transit points such as Dubai and Singapore function as major centres for illegal trade in ODS**

***Below*: CFC import-export data discrepancies for China - Indonesia**



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Transit Trade's Black Hole

During meetings with chemical traders and brokers in China it was remarkable to learn of the range of countries the traders were able to successfully export CFCs to, including some non-Article 5 countries. Frequently it was revealed that these shipments were in excess of CFC export quotas and were facilitated by having good contacts in customs, by the careful selection of the point of export, and by the widespread practice of mislabelling CFCs as alternative chemicals which are not regulated or subject to an export quota.

Two locations that frequently arose as key destinations for illegal CFCs from China were Dubai and Singapore. One Chinese trader described that it was: *"easy to import into the Middle East due to lax import regulations"*, and he estimated that 70% of his exports went to the region adding: *"especially Dubai*". When the same trader began to experience problems exporting CFCs to Iraq, he had to ship via Dubai to ensure the contraband chemicals successfully reached their destination.

Transit points such as Dubai and Singapore are frequently used by CFC smugglers as they confuse the distribution route of the material between producer and consumer, often disguising the origin of the material and making the paper trail all the more difficult to follow. EIA's previous investigations in Singapore[15] and collation of material concerning Dubai have revealed an inexcusable lack of control over the movement of ODS through these major ports. Unscrupulous traders thrive on weak enforcement and loopholes presented by transit trade in Dubai and Singapore which have built strong economies on their role as trade hubs.

These weak controls undermine the efforts of a great number of countries in establishing licensing systems to monitor the ODS trade. Transit trade continues to be a huge obstacle in clamping down on CFC smuggling, undermining the efforts of the enforcement community around the world.

Conclusions

Evidence has been growing over the years of more and more frequent seizures of smuggled and mis-declared CFCs. ODS smuggling has emerged as a problem for many Article 5 countries. EIA has provided a great deal of information and intelligence detailing cases of unscrupulous traders and smuggling operations since 1997. Recent EIA investigations have reinforced the understanding that the current situation of global illegal trade is serious, and the role of China in this trade is a major one.

The Montreal Protocol has not responded to the threat of the illegal ODS trade in any concrete way. A degree of complacency has emerged and Parties have prevented any significant actions from being taken, despite Parties frequently expressing their concern about ODS smuggling.

The Government of China is undertaking an ambitious task to accelerate the phase-out of CFCs for which it will be in receipt of around US $39 million. With this should come the responsibility to halt the actions of unscrupulous brokers and traders in China supplying the world market with contraband CFCs and fuelling the global illegal trade in ODS.

China's updated management system for the import and export of ODS is certainly a move in the right direction. Yet it is clear from the growing evidence of Chinese-produced CFCs appearing on the black market, seizures of smuggled ODS around the world and the results from EIA's investigations that significantly more effort is required to curb the menace of this illegal trade.

It is encouraging to note that there are some initiatives to address ODS smuggling from a regional perspective. This has enabled the bilateral sharing of information which can greatly assist the enforcement community in recognising illegal activity and clamping down on ODS smuggling. However these localised successes are not enough and an international approach is essential.

The global illegal trade in ODS continues almost unimpeded and the Montreal Protocol's current licensing system is an ineffective tool to combat this. Controlling ODS smuggling should now be an urgent priority for the Montreal Protocol and China must step up its efforts to assist in achieving this.

Recommendations

EIA urges the Government of China to:

- Immediately investigate the illegal activities of the companies identified
- Verify with the importing country that the shipment is legal and within quota prior to issuance of an export licence
- Ensure the Chinese manufacturer's name is marked on all CFCs, HCFCs and HFCs
- Routinely check exports declared as R-134a, R-22, R-404 and descriptions such as 'mixed refrigerants'
- Limit the companies that can export CFCs to those that produce the chemicals (as is the case in India)
- Limit exports of CFCs to Dubai and Singapore to only those that the final destination of the CFCs is confirmed
- Provide intensive training to customs officers in Shanghai and Ningbo
- Ban all Chinese firms proven to have illegally shipped ODS from further exports, and revoke licenses where appropriate

EIA urges Parties to the Montreal Protocol to:

- Request the Executive Committee to instigate a review of the effectiveness of China's ODS control system in cooperation with the government of China and overseen by the Monitoring and Evaluation Officer of the Multilateral Fund Secretariat
- Ensure that customs officers routinely inspect imports of all ODS and HFCs and cease trade with those companies implicated in illegal activities
- Expand the current licensing system to include cross-checking of licence systems and quotas of the recipient country prior to export of CFCs
- Consider implementing a tracking system for international trade in ODS, with a focus on monitoring transit trade

environmental investigation agency

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