

INEOS ChlorVinyls INEOS Compounds

Public Environment Statement 2008

Reporting on 2007 performance

INEOS Newton Aycliffe Ltd.
School Aycliffe Lane,
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**EC ECO MANAGEMENT
AND AUDIT SCHEME**

This site has an environmental management
System and its environmental performance is
reported on to the public in accordance with the
Community Eco-Management and Audit Scheme

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Introduction

This is a public statement prepared as part of INEOS Newton Aycliffe Ltd. continuing participation in the Eco-Management and Audit Scheme (EMAS).

The aim of this statement is to provide concise information regarding the details of the environmental aspects associated with the activities of INEOS Newton Aycliffe Ltd. in a manner that is understandable to the public and in accordance with the European Community Eco-Management and Audit Scheme. This requires that the statement has been validated by an independent and accredited verifier, as detailed on page 31.

We trust that you find this Environmental Statement informative and welcome hearing all views you may have of our operations or indeed this statement. If you would like to visit the site, INEOS Newton Aycliffe Ltd. does welcome visitors and arrangements can be made by contacting our Sustainability Manager at the address shown on the back of this publication.

It is our intention to continue to publish statements of INEOS Newton Aycliffe Ltd.'s environmental performance on an annual basis, with the next statement being published by the end of April 2009.

INEOS Newton Aycliffe Ltd. Environmental Policy

INEOS Newton Aycliffe Ltd. is committed to the prevention of pollution, to the continual improvement in environmental management and performance and to maintaining acceptance of all our operations and activities by our trading partners, employees and the local community.

We shall achieve this by the implementation of an environmental management system, which will include:

- *Applying sound environmental practices in all our operations and activities.
- *Employing best available and economic techniques for the measurement and control of emissions and wastes and for the optimal use of resources.
- *Maintaining all necessary authorisations and approvals from the authorities.
- *Setting and reviewing environmental objectives and targets.
- *Training employees to ensure that they are fully competent to control the activities for which they are responsible.
- *Promoting this Environment Policy to trading partners, and seeking their active participation in achieving its objectives.
- *Initiating and supporting educational programmes which will enhance environmental understanding of the chemical industry and its products.
- *Making information on our environmental performance publicly available, anticipating and responding to concerns regarding our activities, and encouraging dialogue with all interested parties.

Hiong Leong Tan
Site Manager
INEOS Newton Aycliffe Ltd.

Environmental Programme

The important programmes in 2007 were:

1. Complete IPPC 2007 improvement plans. **Achieved**
2. Reduce Primary Specific Energy to 4.09 GJ/Tonne of PVC (based on 395KT output). **Achieved**
3. Reduce fugitive VCM emissions. **Achieved**
4. The installation of 2*225KW wind turbines. **Project Cancelled**
5. The installation of a gas engine CHP unit. **Achieved (registered under the CHP QA Scheme)**
6. Continue to reduce site-specific waste by 5% per year. **Not Achieved**
7. Reduce compounds scrap levels due to manufacturing to 0.56%. **Achieved**
8. Eliminate all lead additives within compounds manufacture. **Achieved in part**
9. Reduce specific water use and hence minimize effluent volume. **Not Achieved**
10. Hold the gains for the remaining significant aspects. **Achieved in part**

The important programmes in 2008 are:

1. Maintain primary specific energy at 4.09 GJ/tonne
2. Prepare for REACH Regulations Compliance as a downstream user.
3. Reduce site specific waste.
4. Evaluate a project for continuous fenceline VCM monitoring.
5. Prepare plans for reducing specific water consumption.
6. Eliminate the use of lead additives in all formulations manufactured at Aycliffe.
7. Hold the gains for the remaining significant aspects.

Who are we...?

Company History

INEOS Newton Aycliffe Ltd. is now part of the INEOS Group. The acquisition of the former Hydro Polymers business including its Newton Aycliffe site was completed on 1st February 2008. INEOS is the world's third largest chemical company and a leading manufacturer of petrochemicals, speciality chemicals and oil products. The company comprises 18 businesses, with a production network spanning 68 manufacturing facilities in 17 countries. Our site at Aycliffe is part of both INEOS ChlorVinyls as well as INEOS Films and Compounds businesses. Our site is located at Newton Aycliffe, near Darlington, Co. Durham, and has been in operation since the establishment of Newton Aycliffe Industrial Park in the 1940s. Our previous owners, Norsk Hydro acquired the Aycliffe site in 1982 and have progressively restructured and developed its operations. Our new owners are the largest PVC manufacturer in Europe and a major player in vinyl chloride monomer. The site employs approximately 400 full-time employees, many of who are residents of the Newton Aycliffe and nearby Darlington areas. The site generated operating revenue of approximately £ 218 million in 2007.

What is on Our Site...?

The site occupies c.160 acres of land. Approximately one third of this land comprises industrial activities, one third is devoted to leisure activities (including a fishing lake and nine hole golf course and the remaining third comprises woodland and scrub areas. The woodland area contains a nature trail which is maintained by INEOS Newton Aycliffe Ltd. through services provided by a local contractor. INEOS Newton Aycliffe Ltd. is a member of both Durham and Tees Valley Wildlife Trusts.

The main activities at the Newton Aycliffe site include:

Manufacture of a range of PVC resins for both extrusion and injection moulding processes.

Manufacture of a large range of PVC compounds.

Engineering including chemical, process electrical and mechanical.

Skilled Maintenance including a comprehensive, documented planned and preventative system covering all aspects of plant operations.

Storage of raw materials and finished products.

Logistics including sourcing of raw materials, planning of manufacture and customer supply.

Energy through the generation of steam and electricity from oil and gas.

Total Quality Management throughout the company.

Commercial, financial and administrative support

Information Technology

Development & Technical Support

Schools Initiatives

During 2007 INEOS Newton Aycliffe Ltd. continued its programme of visits from local schools developed in conjunction with the Chemicals Industry Education Initiative, with a visit structure designed to fit in with National Curriculum key stage science work. Children from Pity Me Primary School, North Road Primary School, Darlington, Bluecoat CE School, Durham and Framwellgate Primary all enjoyed the highly interactive visit format that has been developed over the last three years. .

During the whole of 2007 INEOS Newton Aycliffe Ltd. continued to support the Thackray Medical museum in Leeds and has successfully helped develop a whole new gallery and supporting educational resource dedicated to the explanation of the unique contribution of plastics in modern medicine. INEOS Newton Aycliffe Ltd. has provided the start up funding required for the development of the project concept work as well as part sponsored the funding required for this major project which will be launched in May 2008.

PVC Products

What do we make...?

INEOS Newton Aycliffe Ltd. carries out two main operations on site; one producing polyvinyl chloride (PVC) resin which falls within the INEOS Newton Aycliffe Ltd. ChlorVinyls business, the other producing PVC compounds which falls within the INEOS Newton Aycliffe Ltd. Films and Compounds business. The INEOS Group is the only producer of suspension PVC resin in the UK the other sites being at Runcorn and Barry. The company's operations in the PVC supply chain are detailed below.

PVC Resin

PVC resin (or polymer) is a white, fairly inert powder produced by a process known as suspension polymerisation. The main starting ingredient is vinyl chloride monomer (VCM) which is a liquefied gas produced from 43% ethylene (derived from oil/gas) and 57% chlorine (derived from salt). The VCM used at the Aycliffe site is manufactured in Norway and transported to the site by ship to Teesport, and then, by road tanker to Newton Aycliffe. VCM is polymerised into PVC in a pressurised autoclave containing water. During this process, VCM molecules are joined together in long chains and the liquefied gas is transformed into solid material (PVC resin). The resin is then dried, sieved and packaged. About one third of this resin is used on site to make PVC compounds and the remainder is sold to customers for conversion into PVC products.

PVC Compounds

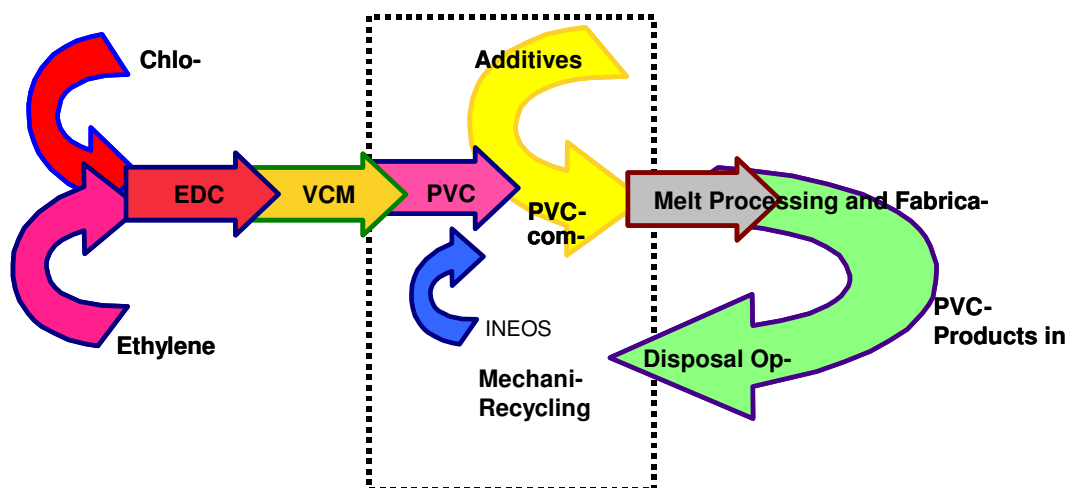
PVC resin is mixed with other ingredients and processed under temperature and pressure by a compounding operation to make powder or with further processing, into small granules or dice, to produce an intermediate product known as PVC Compound. There are no chemical reactions involved in compounding. By using a diverse range of additives, PVC can be made tough and rigid, or soft and flexible. It can be transparent or opaque, white, black or coloured.

INEOS Newton Aycliffe Ltd.'s finished products are sold as either powders or pellets to industrial customers. These granules or powder blends are then processed by our customers into numerous useful applications that can be found in many household, medical, commercial and industrial products. These are as diverse as pipes, ducting, window frames, wire and cable insulation, blood tubing and blood bags, containers, automotive components and domestic and business equipment parts.

Recycled PVC

INEOS Newton Aycliffe Ltd.'s recycled PVC technology has continued under the trade-name Ecovin©. This compound has been manufactured from industrial PVC waste provided by our customer's scrap that would otherwise have gone to landfill. During 2007 INEOS Newton Aycliffe Ltd. processed 589 tonnes of Ecovin©. The volume was down on previous years largely due to the availability of suitable feedstock. Further work is ongoing to secure reliable and consistent feedstock.

INEOS Newton Aycliffe Ltd. Operations in the PVC Supply Chain



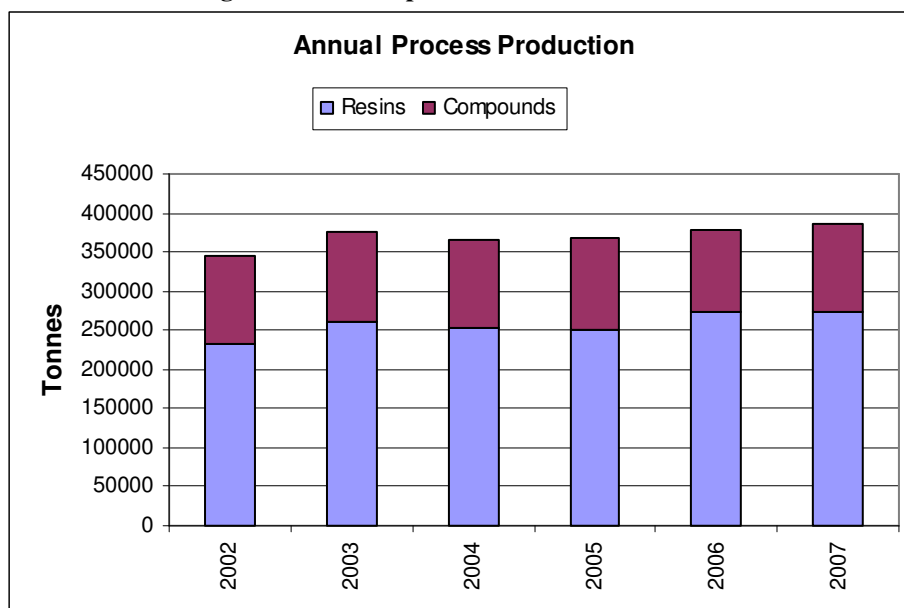
 - INEOS Newton Aycliffe Ltd. Operations in the supply chain

Operating Standards

Performance

Since 2001 the overall level of production (resins and compounds) has increased by around 8%. There have been some variations between the ratio of resin and compound volumes – see Figure 1 for details.

Figure 1 - Annual production/conversion rates



Training of Employees

The training and development of INEOS Newton Aycliffe Ltd. staff is a major factor in the control of environmental affairs. INEOS Newton Aycliffe Ltd. employs full time training personnel to ensure that all employees have the skills to perform their functions. The company has been accredited to the Investors in People (IIP) Standard since 1992, recognition of the excellence of our training systems. During 2004 INEOS Newton Aycliffe Ltd. was re-accredited to the new IIP Standard. The accreditation was due in November 2007 but because of the acquisition by INEOS Newton Aycliffe Ltd. this is under review for 2008.

Specific environmental awareness training is given to new employees, or in the case of the introduction of new processes, to existing employees in order to conform to the requirements of the internationally recognised Environmental Management Standard, ISO 14001 and our Pollution Prevention Control (PPC, England and Wales) Regulations 2000.

Legislation

The two main manufacturing processes, PVC resin manufacture and PVC compound manufacture, are both authorised by the Environment Agency (EA). During 2007 our compounds operations were operated in accordance with the PPC permit CP3033BW whilst our resin operations are under PPC permit NP3134SB.

Because of storage of the liquid gas vinyl chloride monomer (VCM) which is used as the main ingredient in the polymer manufacture, the site is also brought within the Control of Major Accident Hazards (COMAH) Regulations (see **Emergency Procedures** - below). INEOS Newton Aycliffe Ltd. is subject to this legislation primarily because of the storage and handling of VCM. From a flammability perspective VCM is similar in hazard to butane gas used in camping stoves or blowtorches. Like butane it is transported and used as a liquefied gas under pressure. Supplies of VCM travel from Norway in a liquefied gas sea tanker to be unloaded in bulk-storage at Seal Sands, Teesside. After a careful examination of the risk involved in various forms of transport, INEOS Newton Aycliffe Ltd. has chosen to employ a company specialising in liquid gas transport, to bring the VCM from Seal Sands to Aycliffe in road tankers.

The major hazard associated with our compounds operation concerns the handling of lead and antimony salts which are minor components of some PVC compounds, and which improve the heat stability and fire performance of those compounds. These materials are handled in a powder or granular form. Significant exposure to lead can cause severe health problems, including nerve and kidney damage, and medical surveillance checks are routinely performed on our workforce. There are no chemical reactions involved in PVC compounding, and no liquid effluent produced, but control measures must be taken to minimise any emissions of dust. Under our Sector's sustainability strategy we are reducing our dependency on lead with the introduction of alternatives that have a lower environmental footprint. During 2007 we had included a target for the elimination of lead additives by the end of the year. Whilst we have not fully reached this target the amount of lead orders have steadily reduced since 2003 as described in the Table below.

Table 1 Lead Phase out Reduction since 2003

YEAR	Percentage of Production Orders Made Containing Lead based Chemicals
2003	52%
2004	36%
2005	30%
2006	27%
2007	19%

With regard to carbon dioxide INEOS Newton Aycliffe Ltd.'s application under the emission-trading scheme was approved until December 2007. From 1st January 2008, we rejoined the European Emissions Trading Scheme.

With regard to the new European Chemicals Legislation known as REACH, (Registration, Evaluation, Authorisation and Restriction of Chemicals), INEOS Newton Aycliffe Ltd. set up a Sector-wide REACH task force to ensure our compliance with this legislation over the coming years. These regulations (1907/06/EC) entered into force on 1st June 2007. The INEOS Newton Aycliffe Ltd. site does not manufacture any substances as defined in REACH so there are no responsibilities to directly register any substances. Instead the site is a major downstream user (as defined under REACH).

Emergency Procedures

Legal requirements are strict for all chemical companies. The COMAH regulations impose particularly stringent requirements. These regulations were introduced to:

- (i) Prevent major accidents arising from industrial activities
- (ii) Limit the effects of such accidents on people and on the environment
- (iii) Demonstrate control measures to prevent and limit major accidents.

During 2007 INEOS Newton Aycliffe Ltd. continued to work closely with the Health and Safety Executive (HSE) and Environment Agency (EA) providing additional information to demonstrate that controls are in place to further reduce risk of a major accident. This included a major exercise involving the fire service and including a simulated media conference. The aim of this emergency exercise is to test the validity and performance aspects of our On-Site Emergency Plan. The Off-Site and On-Site Emergency Plans were implemented and shown to be effective in July when a person off site thought that there had been an explosion on the premises. The event was actually the activation of a pressure release valve that was as a result of power failure to the site.

Local Community

If, despite all these preventative measures, a major emergency was to occur, people and the environment would be safeguarded by the implementation of on and off-site emergency plans. Our local community has been provided with a fact sheet that details what should be done in the unlikely event of an emergency. If you would like to receive a copy of this leaflet then please write to the Safety Health and Environment (SHE) Manager at the address shown on the last page of this publication.

Significant Environmental Aspects

INEOS Newton Aycliffe Ltd. assessed its activities in terms of its impact on the environment through the implementation of its ISO14001 Environmental Management System. This was achieved by rating the hazards on the site against the likelihood of such a hazard becoming out of control, and then comparing that scenario against the consequences of the effects under emergency conditions. This methodology is available on request to the SHE Manager at the address featured on the last page. The most significant aspects are listed below.

Emissions to air

- Water vapour
- HCFCs
- Fuel gases
- Lead and Antimony salts to air
- Dust to air

Emissions to water

- Organochlorines (VCM, EDC)
- dissolved matter in water (COD)

- solids in water

Waste

- special
- non-special

Land protection

Water usage

Energy usage

Noise

Transport

Emissions to Air

The following describes how INEOS Newton Aycliffe Ltd. is managing the main environmental aspects and those that have been identified for further continuous improvement. Our most important improvement programmes are summarised under the Environmental Programme

Water Vapour

The most visual environmental aspect in relation to the INEOS Newton Aycliffe Ltd. site is water vapour. Water is an essential medium for PVC resin manufacture. The conversion process of changing VCM to PVC is known as polymerisation and is carried out in hot water. Consequently, large volumes of water are driven off in the form of steam from the driers. On cold days, this steam rapidly condenses and can be seen as plumes of water vapour cloud rising from the drier stacks.

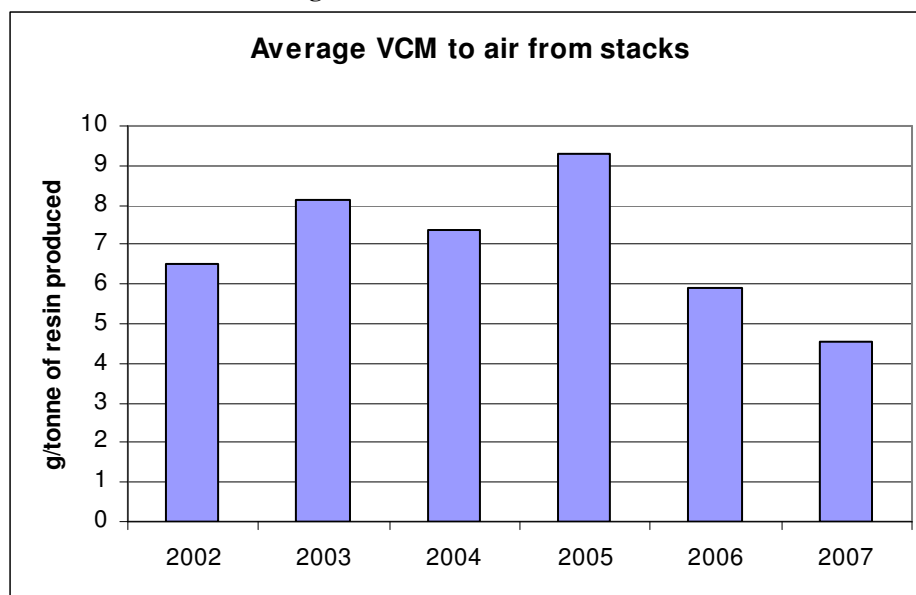
Water is also used for process cooling. This water is recycled and is itself cooled by evaporation. Water vapour can be seen rising from our cooling towers.

VOCs - VCM

All potential emissions of vinyl chloride monomer (VCM) are controlled and monitored. Prolonged exposure to high concentrations of VCM has been shown to cause serious health problems, including liver damage. Regular air monitoring and medical surveillance checks confirm that our workforce is well protected from any risk. VCM is not persistent in the environment and is rapidly broken down in the atmosphere.

INEOS Newton Aycliffe Ltd. employs industry standard "stripping" and absorption technology to control VCM emissions. Gas chromatography and mass spectrometry are used to continually measure VCM concentrations around the site and in exhaust stacks, and our emission figures not only meet legislative requirements but have generally remained at a consistently low level as shown in Figure 2.

Figure 2 VCM - emissions to air



In addition to exhaust stack emissions, INEOS Newton Aycliffe Ltd. also monitors fugitive and fenceline emissions.

Fugitive emissions have to be estimated and are those emissions that arise from pipes joined by flanges etc. To measure these emissions there is a European procedure that has been agreed across the industry by the European Council of Vinyl Manufacturers (ECVM). During 2007 INEOS Newton Aycliffe Ltd.'s fugitive emissions from our plants were estimated to be 7.4 tonnes which is marginally lower than for 2006.

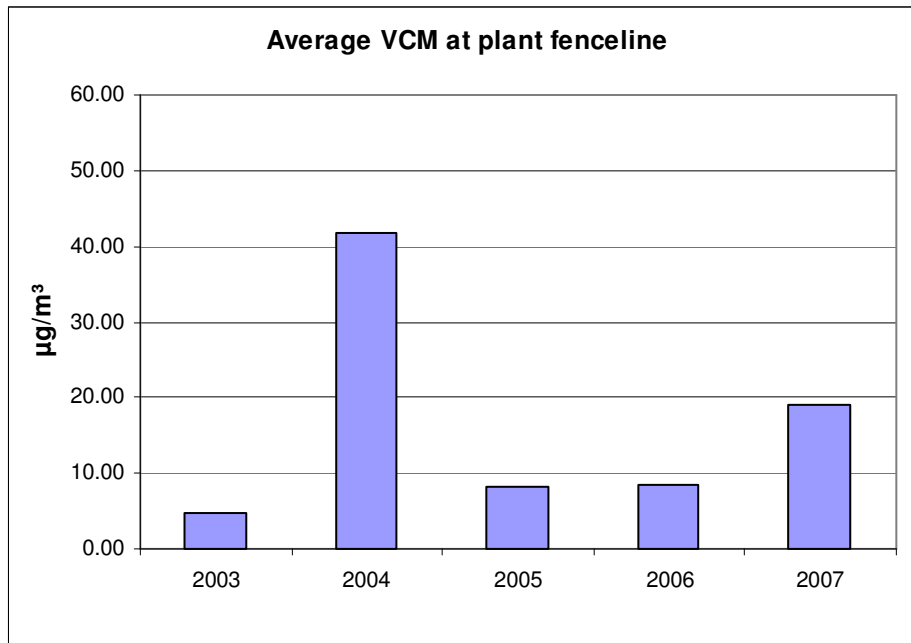
On the 3rd July there was a short duration accidental emission of Vinyl Chloride Monomer (VCM) that totalled around 7 tonnes. The emission was from an emergency engineered relief vent from one of the process vessels and as such was discharged at a safe elevation without danger to any personnel or member of the public. This was a planned and deliberate safety procedure triggered automatically as part of a standard emergency response to primary safety system failure to relieve pressure from the reactor vessel. No plant personnel were harmed and there was no danger to local residents. The decision to take precautionary measures, including the establishment of an exclusion zone with road blocks around the site, was made in full consultation with the police and fire and rescue services while the situation was being assessed and rectified by company personnel. – see also Local Community Activities. The incident was reported to the Environment Agency and the Health and Safety Executive.

Fenceline VCM measurements are reported in Figure 3. During 2004 higher levels of VCM measurements were recorded at the plant fenceline compared to previous years' reporting. Extensive laboratory work was undertaken in 2005 to develop the methodologies for sampling and measurement. In addition, an external laboratory was engaged to perform comparative tests and continue the routine plant fenceline monitoring measurements. During 2007 the average VCM measurement at the fenceline was marginally higher than those values in 2005 and 6 and this has been put down to one higher reading. Whilst the easy conclusion could be that

our estimates for 2004 were exaggerated, our belief is that the measurements in 2004 were correct and the likely reason for the higher reading could be due to differences in the testing methodologies used.

In order to maintain consistency INEOS Newton Aycliffe Ltd. continues to undertake measurements by the external environmental consultant who has expertise in environmental monitoring. However, a project has been proposed for 2008 to evaluate the potential for continuous fenceline monitoring that should remove inaccuracies caused by spot measurements that has been the basis for historic reporting.

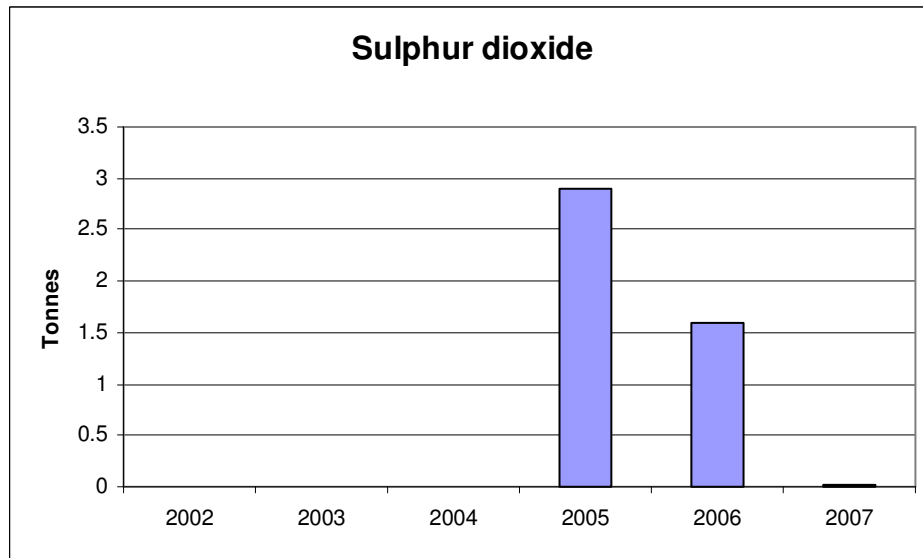
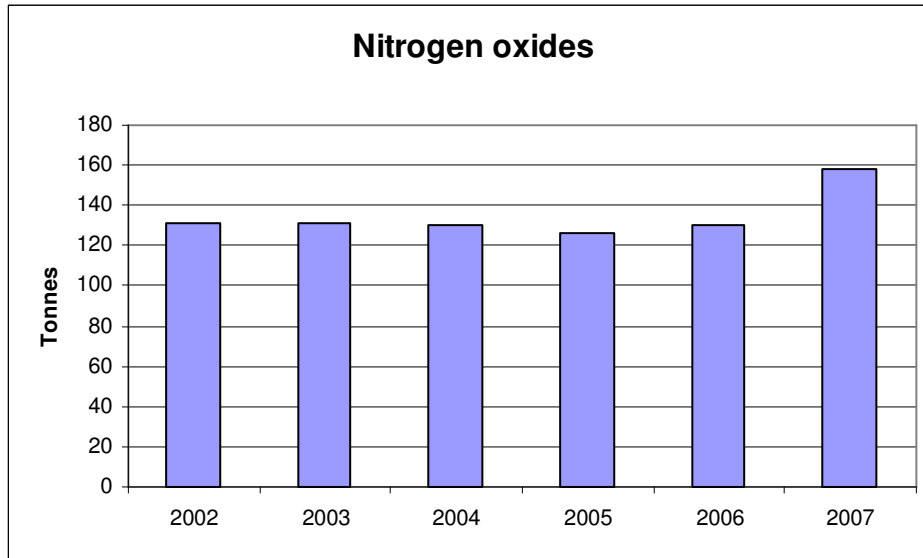
Figure 3 - Average VCM at plant fenceline

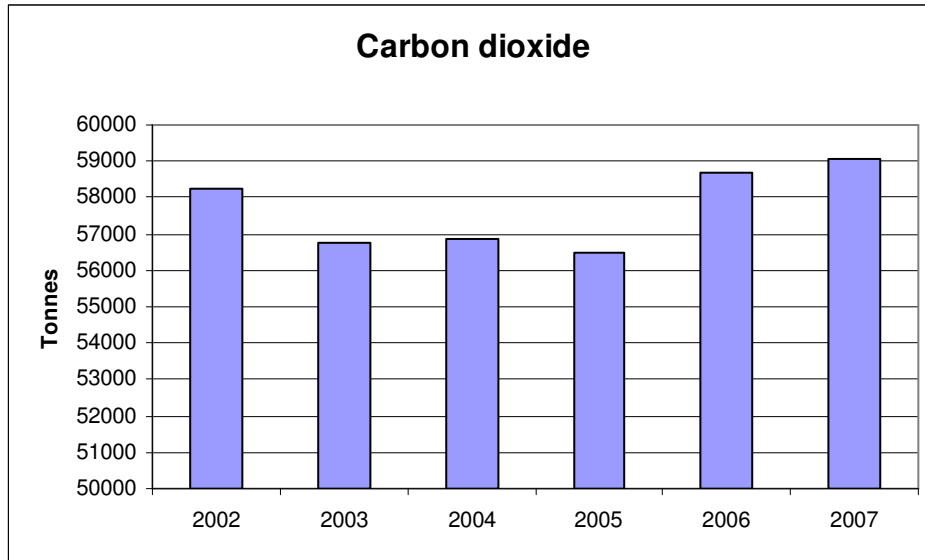


Fuel Gas Emissions (CO₂, NO_x, SO₂)

During 2007 INEOS Newton Aycliffe Ltd. consumed only a tiny quantity of fuel oil hence the resulting SO₂ emission was extremely low. Both NO_x and CO₂ emissions were slightly higher compared to 2006 reporting, largely due to higher consumption of fuel.

Figure 4 - Boiler House Emissions





CO₂ Reporting

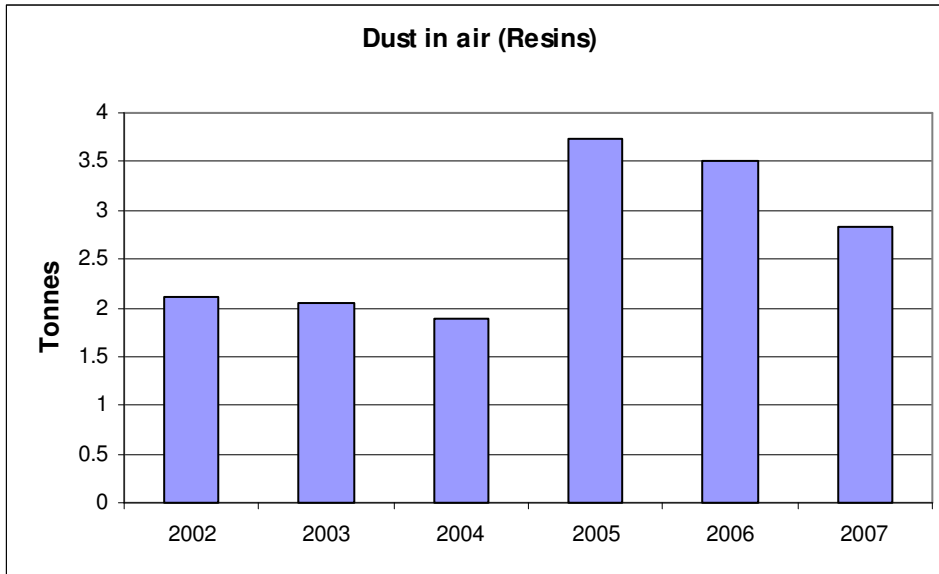
Carbon Dioxide (CO₂) is the predominant greenhouse gas and the main emissions from our site are associated with the generation of steam and electricity especially for the manufacture of PVC resins. Taking estimates of carbon dioxide emissions from all sources (including power stations) specific values, associated with production were calculated to be: Resin = 264kg/tonne and Compounds = 87kg/tonne

Dust Emissions

All potential dust emissions from the plants are controlled and monitored. Filtration and wet scrubbing systems are used to ensure that emissions are within legislative limits.

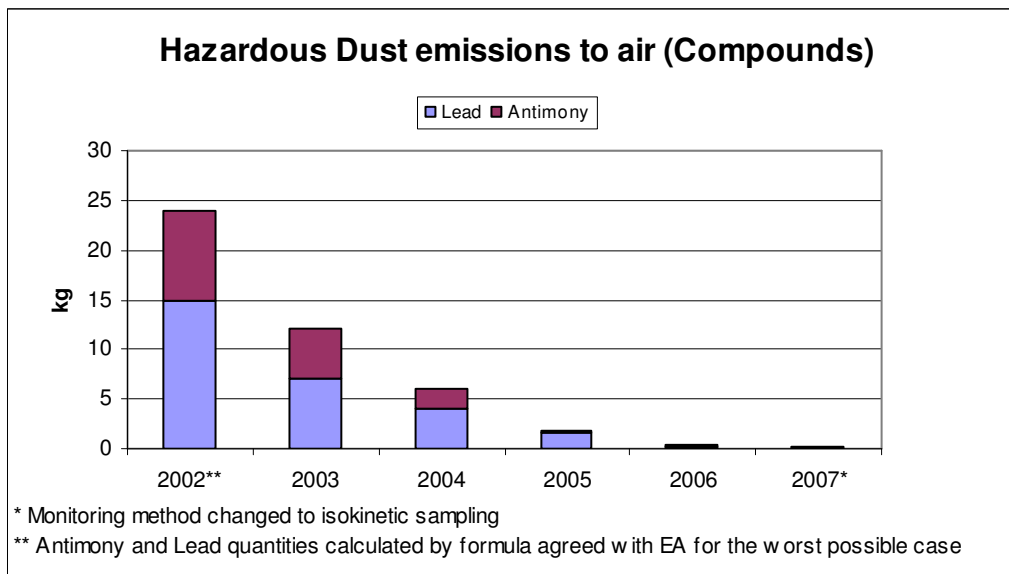
Emissions of non-toxic PVC resin dust from our drier stacks has reduced in 2007 compared to the last two years – see Figure 5. This has been due to the improved operation of the cyclone drier.

Figure 5 - Resins particulate emissions to air



The handling of lead and antimony additives as minor components in the compounding process means that additional monitoring is required in this area. Since 2004 INEOS Newton Aycliffe Ltd. has been holding the gains made from an earlier improvement target by continuing to reverse the higher emissions observed during 2002. During 2005 the Environment Agency agreed to a proposed change of calculation to take into account the proportion of formulations containing lead and antimony. Since we continue to reduce the number of formulations based on these metals (due to our overall lead phase out sustainability strategy), so too have the estimates of emissions to air. Hence the extremely low levels released since 2005 onwards - see Figure 6 for details. In 2007 an isokinetic sampling process was introduced that provides a more accurate measurement of emission levels.

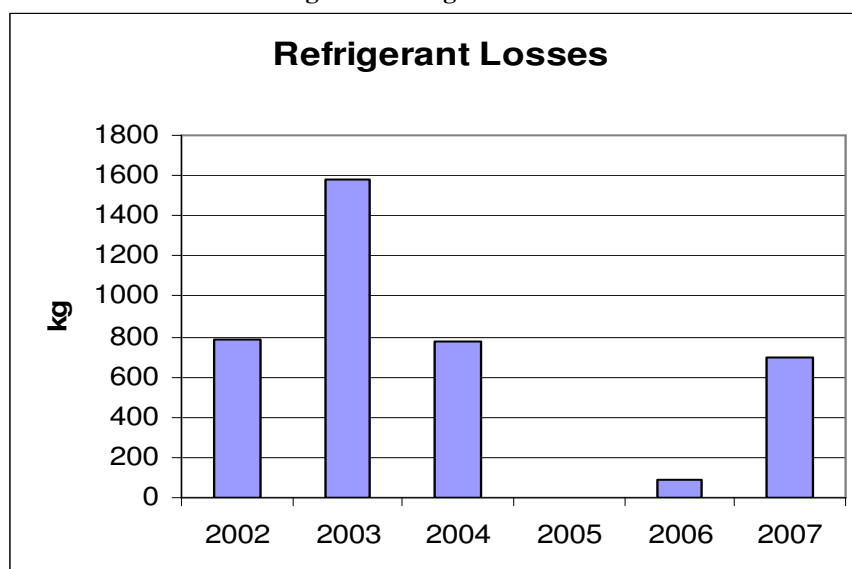
Figure 6 - Compounds hazardous particulate emissions to air



HCFCs

Hydrochlorofluorocarbons are used as refrigerants in several chilling units around the site. The number of these units has steadily grown. The refrigerants used are R22 and R134a, these are standard products used in most domestic refrigerators. These refrigerants are contained in closed systems. INEOS Newton Aycliffe Ltd. has had an ongoing target of eliminating the negative trend in emissions of HCFCs. Following completion of remedial action there were no emissions during 2005 and minor additions during 2006. However, during 2007 there was one refrigeration machine tube failure. With such type of failure all refrigerant is lost to atmosphere in a relatively short timescale – see Figure 7. INEOS Newton Aycliffe Ltd. has been provided with a quotation to detect such leaks although it is difficult to determine where such leaks would occur and whether such investment would be worthwhile given the speed with which the refrigerant is lost. The machines continue to be annually serviced which remains the best policy for prevention of future emissions.

Figure 7 Refrigerant Losses



Emissions to Water

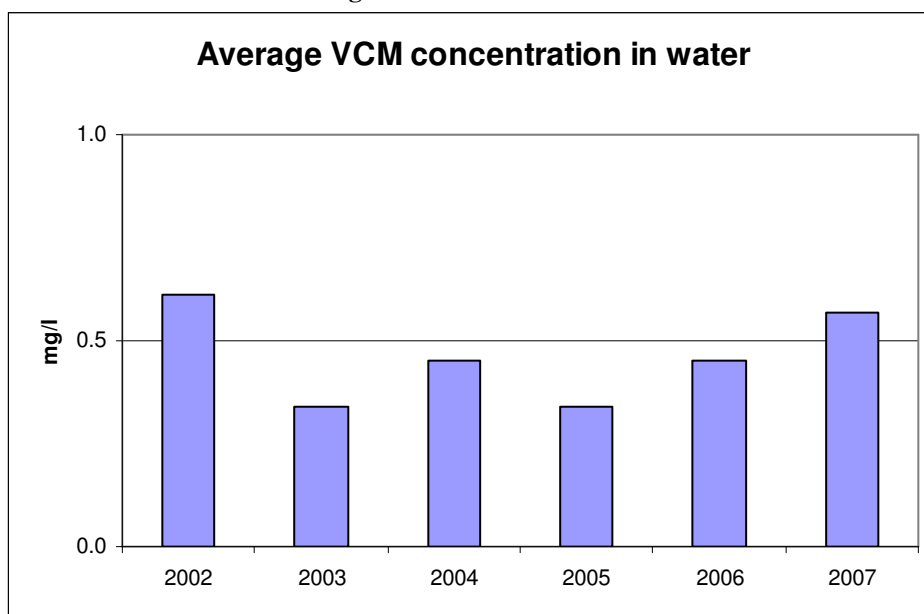
The water effluent, which is recovered from the centrifuging stage of the resin manufacturing process, contains traces of by-products. This effluent has to be treated before it can be released into the environment. Consequently the effluent is piped directly to Newton Aycliffe Sewerage Works for treatment. Before leaving the site the water is routinely monitored for the following contaminants:

VCM in Water

VCM is recovered from the process water through waste-water stripping columns. Trace amounts of VCM are still contained in the water and Figure 8a shows that INEOS Newton Aycliffe Ltd. is maintaining levels at an annual level well below 1 mg/litre based on a flow weighted monthly average. This is also well below adopted authorised limits originally suggested by INEOS Newton Aycliffe Ltd. to the EA. When released into water

VCM does not react, it does not accumulate in aquatic organisms and it is not absorbed into sediments. In the presence of sunlight and photosensitizers VCM decomposes rapidly.

Figure 8a - VCM to water



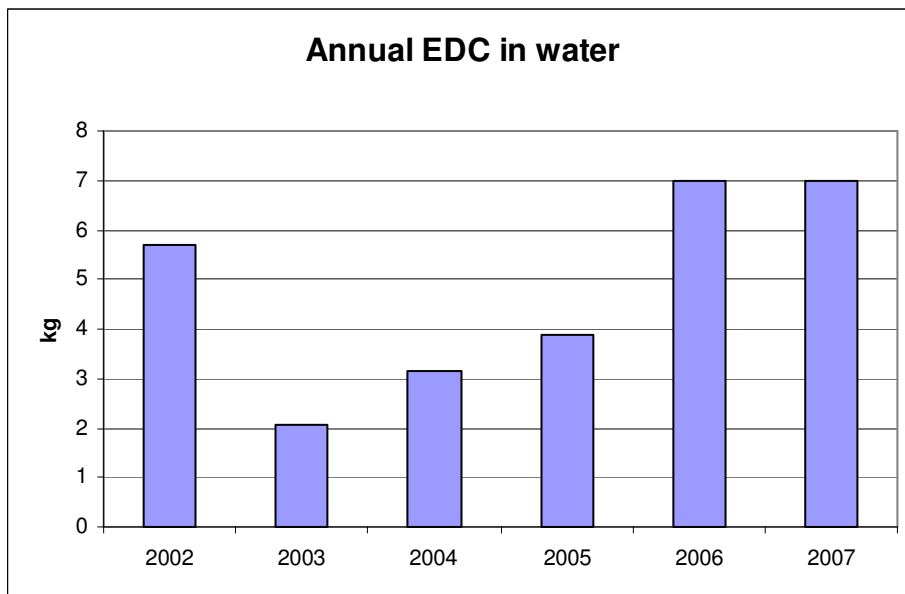
During 2007 emissions increased slightly due to build up of mineral deposits on A/B wastewater stripping column. As a result, A/B wastewater was sent over to C/D plant resulting in less efficient stripping. The column trays were subsequently cleaned.

EDC (1,2-dichloroethane) to Water

Ethylene dichloride (EDC) is a contaminant in the VCM feedstock and is routinely monitored in the effluent stream, since it tends to remain in water after polymerisation. It is relatively stable when dispersed in water, but evaporates rapidly to air where it is destroyed by reaction with air in sunlight. It is unlikely to accumulate in the environment and there is no evidence of its accumulation in plant or animal life. It has low toxicity to aquatic animals but is toxic to microorganisms. In addition EDC is a list 1 substance (under the Dangerous Substances Directive 1976/464/EEC) and is considered a priority list substance under a developing European Water Framework Directive.

The total yearly emission of EDC to water is shown in Figure 8b. INEOS Newton Aycliffe Ltd. continues to work with our VCM supplier to minimise this contamination. Levels in 2007 were equivalent to similar levels found in 2006, which is unsurprising given the fact that the contaminant level remains the same and an equivalent amount of PVC resin was produced in 2007 compared to 2006.

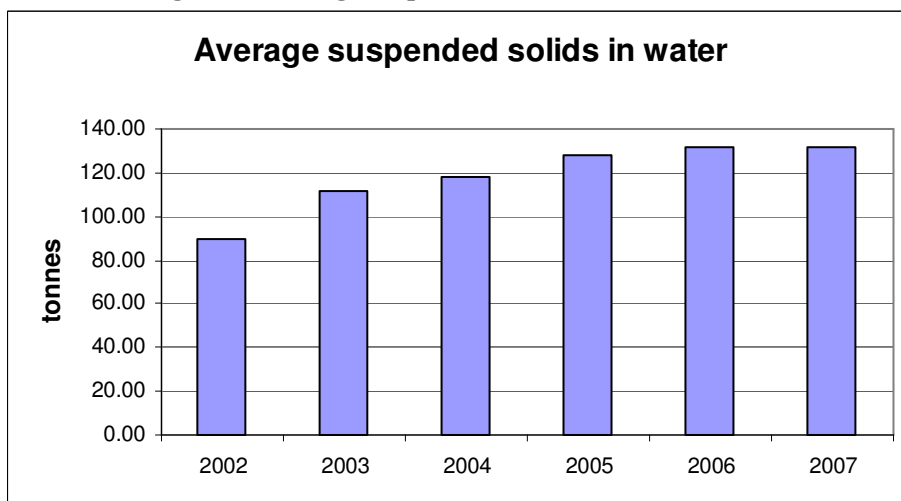
Figure 8b - Total EDC emissions to water



Solids to Water

Before being sent for biological treatment at the sewerage works, liquid effluent from the PVC resin manufacturing process is fed through settling pits. This allows most of any PVC resin in the water to separate out. However, some fine solid particles are not removed by this process and remain in the effluent. The levels have remained constant for the past three years despite increased production output - see Figure 9.

Figure 9 - Average Suspended solids in Water to Sewer

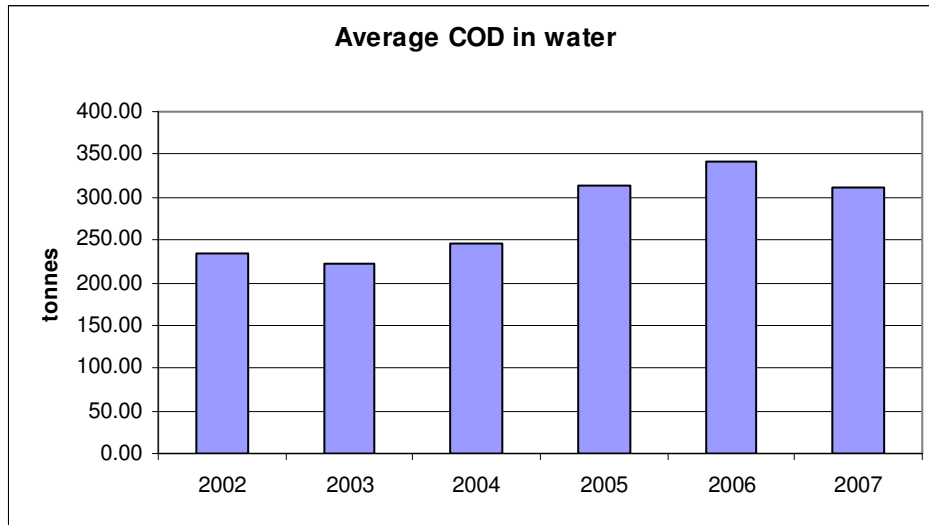


Dissolved Matter in Water (COD)

The term Chemical Oxygen Demand (COD) is a measure of the amount of substances in the water that are susceptible to oxidation by a chemical oxidising agent. COD is largely determined by the amount of dissolved carbon compounds. It provides some indication of the chemical contamination of water insofar as releases with high levels can result in depletion of oxygen in the water. The average weighted COD value from 2003 to 2004 shows an increase as shown in Figure 10. The levels reported since 2005 are higher than the result in 2004 due to a changed method of analysis to meet the requirements of the sewerage works trade effluent consents. "Total"

COD is now measured rather than "settled COD" that was historically used to calculate effluent treatment charges.

Figure 10 Average COD in Water



Waste (excluding releases)

Waste from our processes is disposed of by registered contractors. Most of our waste is classified as “non-hazardous”, and consists mainly of discarded raw materials packaging - see Figures 11a and 11b for details of total and specific quantities. INEOS Newton Aycliffe Ltd. is committed to reducing this waste through improvements in packaging and delivery systems and through recycling. Effort to reduce this waste continued in 2007 largely through the increased use of returnable, bulk and reusable and recycled packaging of raw materials.

Figures 12a and 12b highlight "hazardous waste" which includes contaminated packaging and oily rags. Waste lubricating oils continue to be recovered via an oil recovery firm.

The quantity and cost of waste generated increased in 2007. This was probably due to considerable work on improving housekeeping and disposal of redundant materials. A project was launched to set up systems that will monitor and report on the waste produced from all identified waste streams.

Figure 11a – Non-hazardous waste

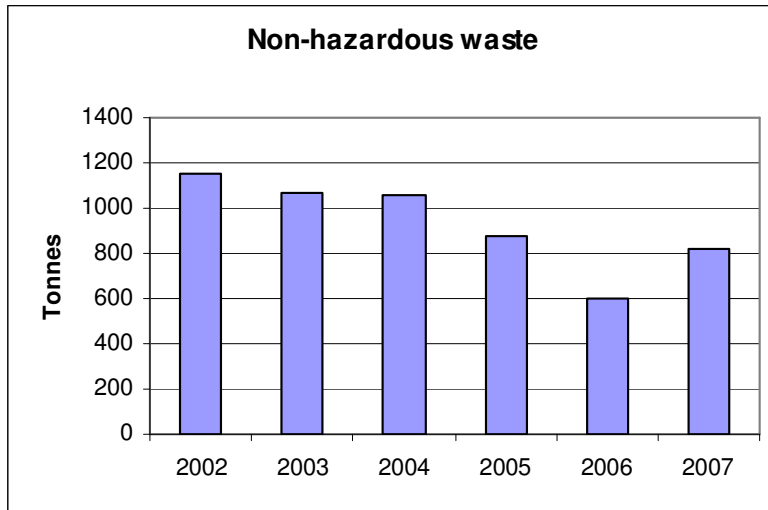


Figure 11b – Specific Non-Hazardous waste

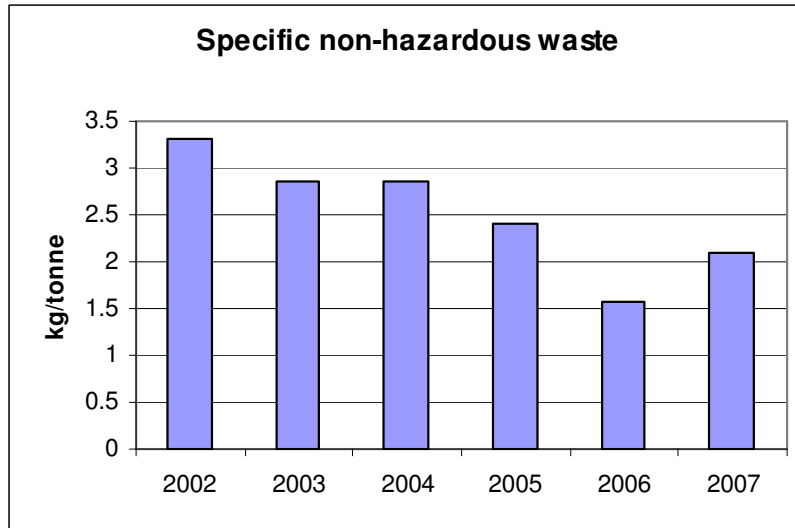


Figure 12 a – Hazardous Waste

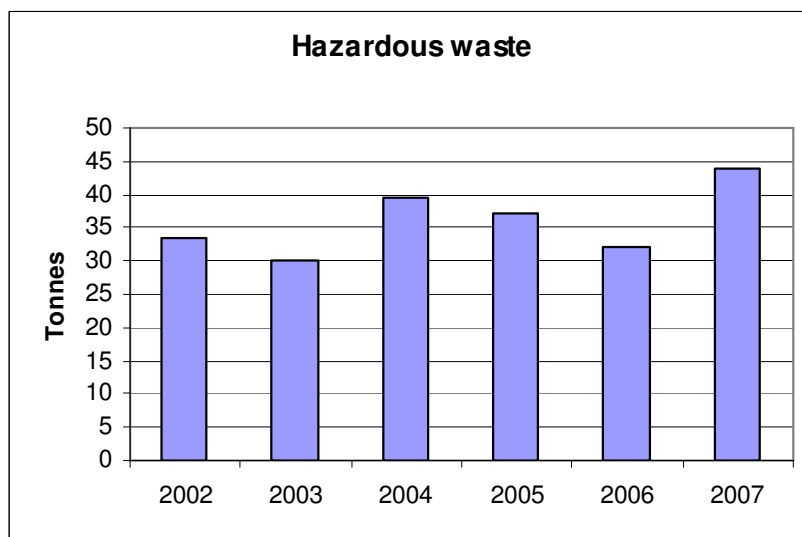


Figure 12b – Specific Hazardous Waste

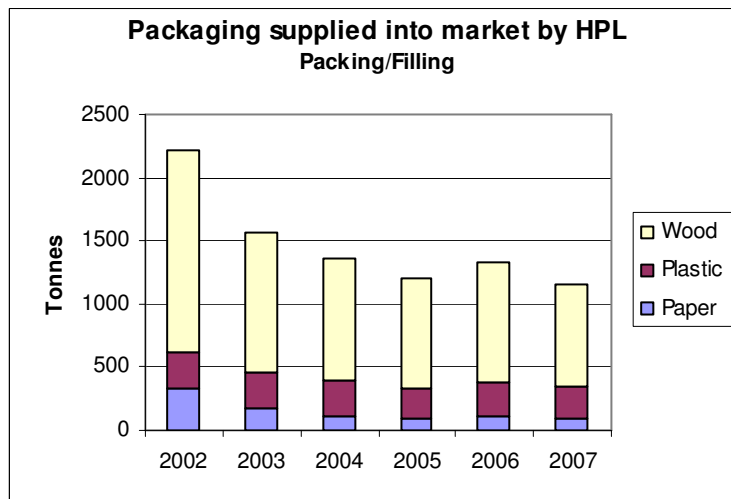


Packaging Waste

To meet our recycling obligations under the Packaging Waste Regulations, INEOS Newton Aycliffe Ltd. is registered under Toddpak Packaging Compliance who is our new provider of the compliance scheme.

The amount of packaging supplied into the market by INEOS Newton Aycliffe Ltd. reduced in 2007 by the continued use of Flexible Intermediate Bulk Containers (FIBC) combined with bulk deliveries and the re-use of wooden pallets.

Figure 13 - Packaging supplied into market by INEOS Newton Aycliffe Ltd.



Land Protection

Land protection is demonstrated primarily from circumstantial evidence through containment standards through our ISO 14001 Environmental Management System including our Environmental Assessment Reporting System. Elements of the PPC and COMAH regulations have also helped to demonstrate adequate control in the event of a major spillage.

With regard to the protection of the ground from ongoing activities then in addition to handling vinyl chloride, INEOS Newton Aycliffe Ltd. handles smaller quantities of other materials. These are stored on the Newton Aycliffe site and transported around it. These materials vary greatly in amount and nature. The largest liquid additives are stored in tanks that are located on concrete pads and protected by walls (bunds), so that even if a tank ruptured, the spilled liquid would be contained in the bund. During 2005 a formalised system of inspection of bunds was introduced as an additional measure to protect against land pollution. In normal use liquids are transferred from the tanks through sealed pipework systems. For buildings where smaller quantities of liquids are stored in containers, such as drums, we have containment pits at the entrances so that liquids cannot run into surface drains. Emptied containers and waste skips are stored on hard, impervious ground, usually concrete.

Our raw materials and finished product are held in bulk systems, or in soundly contained packages. Trained people handle them. The largest stores of solids are silos containing inert materials (PVC resin and chalk). Small quantities of solids and powders are stored in sound containers under cover, so that they do not blow onto unmade ground, or permit rain to fall on them and leach any potentially harmful materials into groundwater. For any mishap while moving small quantities, spill kits are strategically placed around the site. Specific staff at INEOS Newton Aycliffe Ltd. are trained in cleaning up minor spills and making the appropriate disposal of the collected material. Further improvements were made during 2006 to improve the containment measures around storage tanks.

Ground status (stains etc.) is reviewed as part of the ongoing Environmental Management System.

Water Usage

As stated previously, water is essential to our operations at Aycliffe and is used throughout the manufacture of PVC, whether as a medium for polymerisation, or in cooling or heating as steam. The resin production process is the major user of water. The amount of water purchased for the total site is shown in Figure 14a. During 2004 and 2005 there was a reduction in water consumption compared to previous years. This has been attributed to various improvement programmes as well as a slight decrease in the overall production volume of PVC resin. Because of a water supplier meter failure, precise figures on water consumption for 2006 were based on an estimated figure provided by the water supplier. In 2007 the amount of water consumed was higher than for the last three years. This is most probably due to the highest resin volume produced compared to previous years since the specific water consumption shown in Figure 14b demonstrates that water consumption per tonne of PVC remains relatively constant.

Figure 14a Water purchased

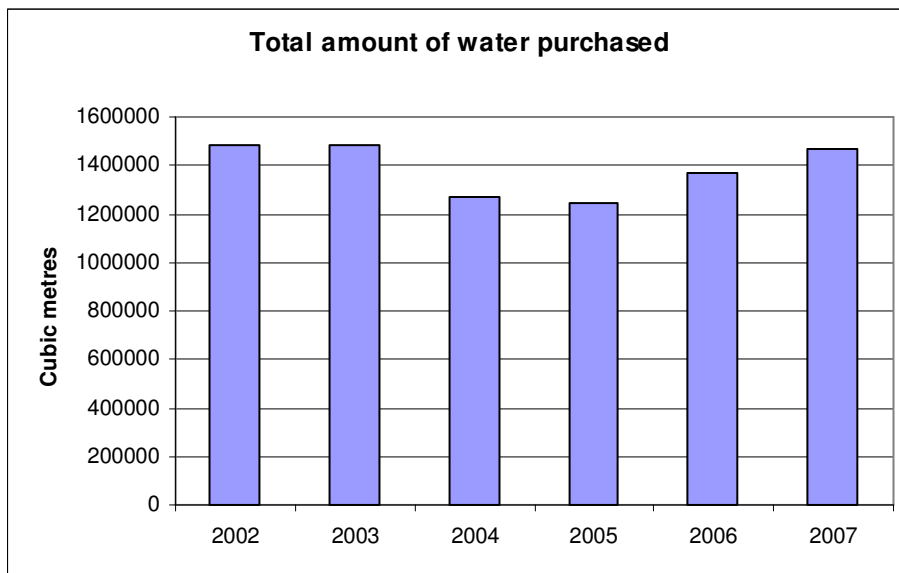
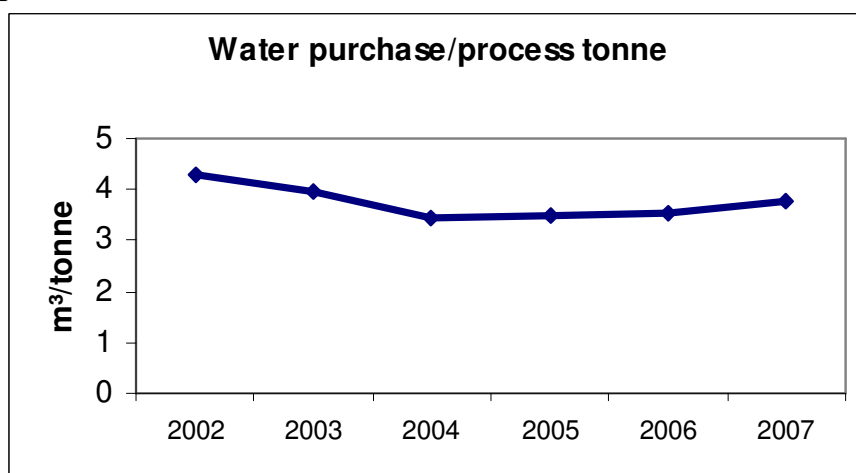


Figure 14b Specific water consumed



Energy Usage

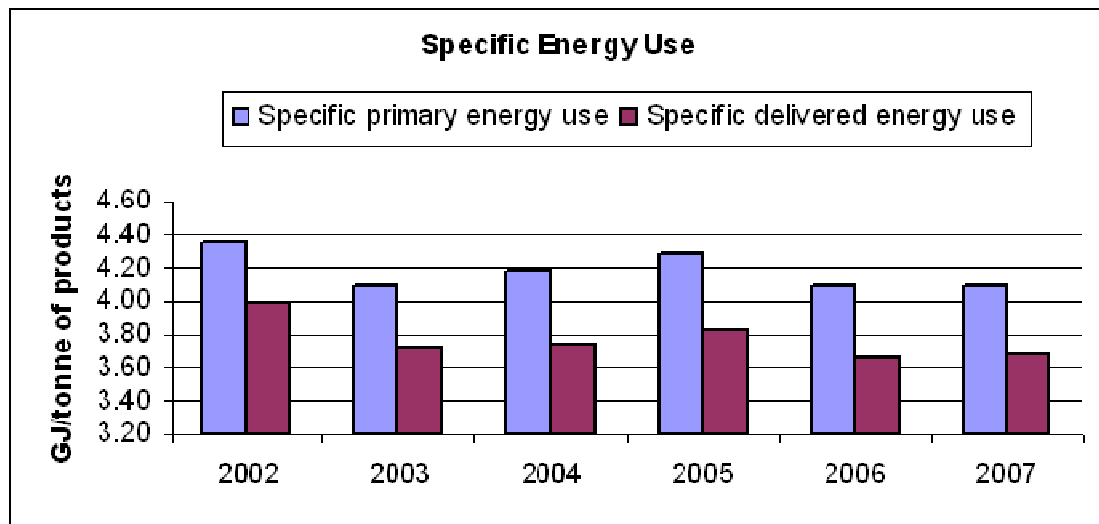
INEOS Newton Aycliffe Ltd. is a signatory to the UK Chemical Industries Association (CIA) Climate Change Agreement. Formulae have been agreed that reflect true energy usage to calculate Specific Energy based on actual production volumes. Using these formulae INEOS Newton Aycliffe Ltd. has achieved our Specific Energy target for 2007.

Under the EU Emissions Trading Scheme, INEOS Newton Aycliffe Ltd. is granted an allocation of CO₂ emission that the site is deemed to need to operate. As part of the CIA Climate Change Agreement (CCA) INEOS Newton Aycliffe Ltd. elected to opt out of the EU scheme. This means that our energy target is calculated using CIA rather than EU formulae. The agreement ended on 31/12/07. The CIA's formal 2007 milestone submission to DEFRA shows that the opted-out sector to be in compliance and recertification is expected to be granted.

Figure 15 describes the specific primary energy for the site including purchased gas and electricity. This is based on INEOS Newton Aycliffe Ltd.'s meter readings. During 2007 we maintained the improved efficiency achieved in 2006.

INEOS Newton Aycliffe Ltd. is committed to achieving primary specific energy usage of 4.09 GJ/tonne by the end of 2008.

Figure 15 Specific energy use



Noise

External noise surveys were conducted up to 2000 as shown in Table 1 below. There have been no new surveys conducted since then primarily because there has been no significant change in plant configurations or operating practices. Throughout 2007 internal routine weekly noise surveys undertaken by INEOS Newton Aycliffe Ltd. staff have continued to show no significant change. During 2007 the installation was completed of a new gas engine CHP unit on C/D plant. This was designed and installed so as to not increase the ambient noise level. Checks carried out on completion of the project confirmed that there was no noise increase. The project to install two wind turbines INEOS Newton Aycliffe Ltd. was cancelled so it was not necessary to undertake a noise survey by an outside consultant as planned previously.

Table 2. The results recorded in the nearest residential area of School Aycliffe are shown below:

Date	Nov 1996	Feb 1998	Oct 1999	Oct 2000
Background noise level, dB(A), Leq	34	30	<37*	30
Rating Level, dB(A) Leq	35*	39	37	39

* factory inaudible against background noise.

External Complaints

There were no complaints of any sort in 2007.

Transport

In previous years INEOS Newton Aycliffe Ltd. has reported on improvements to the increased payloads for the transportation of our bulk and packaged goods as a means of indirectly measuring improvements in CO₂ emissions. A significant amount of work was completed in 2007 to quantify these improvements in terms of direct CO₂ estimates from our transport operations of both VCM and PVC resin by road tanker. Figures 17 and 18 describe the improvement in the reduction in such emissions from 2001 to 2006. Accurate transport figures for reporting in 2007 have not been undertaken since no significant changes in transportation took place during that year. It is recommended that a full analysis will be done on a 3-yearly basis.

Figure 17

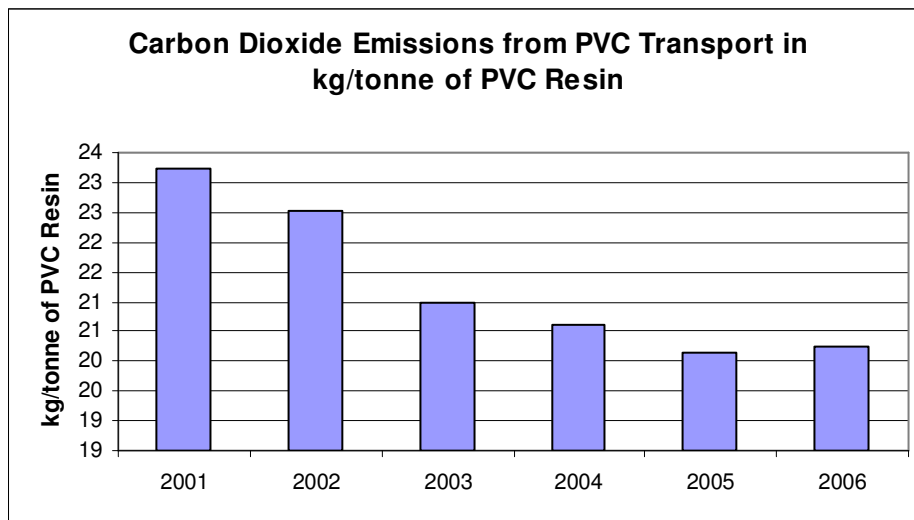
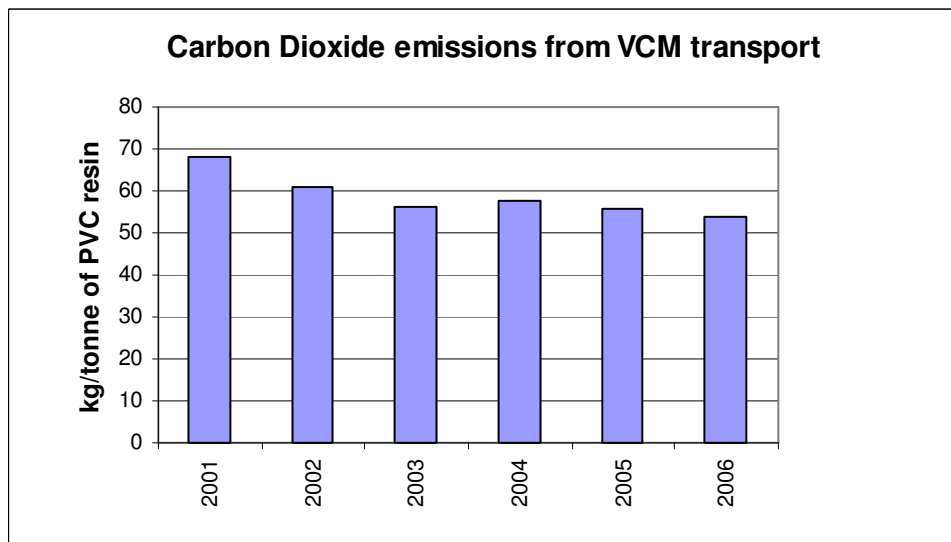


Figure 18



INEOS Newton Aycliffe Ltd.'s VCM tanker fleet has successively been upgraded over a four-year period with new and stretched 44 tonne tankers. The average load size for all deliveries has increased from 23.9 tonnes in 1999 to 26.49 tonnes average payload in 2007. This has been achieved by the delivery of a new tanker with higher capacity.

Environmental Management System

This has been introduced to meet the requirements of the international standard ISO 14001. INEOS Newton Aycliffe Ltd.'s environmental policy was established, taking legislative requirements and assessment of our activities into account.

A system for rating environmental aspects has been adopted; this enables INEOS Newton Aycliffe Ltd. to prioritise improvement activities, thus providing an environmental programme that encompasses projects, developments and technical innovation. The management system includes communications, training, accident and incident prevention, and emergency plans. Both the management system and the results it produces are subject to internal checking by managers independent of the areas involved. These audits and reviews have been set on a yearly cycle.

The system and its performance are regularly checked by BSI as a condition of the company's ISO 14001 certification.

Aycliffe Community Activities

Due to the consistent set of responses to our previous community reputation surveys no new surveys were undertaken in 2007.

As a result of the incident on the 3rd July that involved the emergency services, INEOS Newton Aycliffe Ltd. undertook an open evening in October organised in conjunction with a local councillor. The purpose of the evening was to explain how the incident arose and what corrective actions had been taken. It was also an opportunity to describe our operations and what we do and make on our site. Copies of our EMAS statement were made available. A number of local residents attended. The format of the evening included a presentation of the events leading up to the incident as well as an open question and answer session. A number of suggestions made by the residents have been followed up.

Awards

INEOS Newton Aycliffe Ltd. won one major award in 2007:

INEOS Newton Aycliffe Ltd. Newton Aycliffe Ltd was the UK winner for the Chemical Industry Association (CIA) Product Stewardship Award (based on 2006 performance).

The CIA Product Stewardship Award is given to the company which has best adopted life-cycle thinking and customer focus across the value chain, promoting product stewardship and chemical management solutions to enhance its business and reputation.

"The judges were looking for successful and consistent chemical management processes across the value chain, achieved via partnerships with customers and suppliers, and a recognised contribution to improved safety and environmental performance at-

tributable to these processes. They were also looking at commitment to best practice learning and sharing, aiming at continuous performance improvement”.

Prosecutions

INEOS Newton Aycliffe Ltd. has not had any prosecutions or prohibitions nor are there any pending prosecutions.

Environmental Certification

For 2007, INEOS Newton Aycliffe Ltd. was certified to ISO14001 and held EMAS registration.

Independent Verification

This statement has been validated by David Robinson of BSI, who are accredited for EMAS verification with the registration reference UK-V-0002. The validation was completed on the 14th April 2008.



David Robinson
Lead Verifier
08/04/2008

Next Statement: On or before 30th April 2009

Glossary of Terms

Biodiversity	The variety of plant and animal life.
CHP	Combined Heat and Power Unit - this is a cleaner technique of producing steam and electricity from natural gas rather than from oil or coal.
CO₂	Carbon dioxide. This gas has a greenhouse effect, leading to global warming.
COD	Chemical oxygen demand - this is a laboratory test that mimics the way substances react with oxygen in water. Excessive removal of oxygen from rivers and streams harms water-born life.
COMAH	Control of Major Accident Hazard Regulations
dB(A) Leq	Decibels - a measure of noise
Delivered energy	Energy taken across the site boundary.
DEFRA	Department of the Environment, Food and Rural Affairs
EA	Environment Agency
EDC	Ethylene dichloride (also known as 1,2 dichloroethane)
EAL	Environmental Assessment Limit
FIBC	Flexible Intermediate Bulk Container
GJ	Gigajoule - a measure of energy.
GVW	Gross Vehicle Weight
HCFC	Hydrochlorofluorocarbons - are refrigerant gases and are used in domestic refrigerator systems. They are ozone depleters.
HSE	Health & Safety Executive
IPC	Integrated Pollution Control
PPC	Pollution Prevention and Control (England & Wales) Regulations
MEL	Maximum exposure limit. These limits are set by Health & Safety regulations.
mg/l	Milligrammes per litre. For water one mg/l is one part per million.
NO_x	Oxides of nitrogen. This group of chemical species contains one that acts as a greenhouse gas, one that will contribute to acid rain and another which, in very sunny countries, causes smog.
OSPARCOM	Oslo and Paris Convention for the Prevention of Marine Pollution
Primary energy Specific	This is an amount of energy corrected for the inefficiency of the UK Electrical Generation Industry using a factor defined by DEFRA per tonne.
Specific	Data expressed as a proportion of annual production tonnage.
SPVC	Suspension Poly(vinyl chloride)
SO₂	Sulphur dioxide. This gas can cause direct harm to plants and animals. It can develop into species that contribute to acid rain.
TEQ	Toxic Equivalent Quotient
TQM	Total Quality Management
VCM	Vinyl chloride monomer
VOC	Volatile organic compounds. Common general examples would be petrol, solvents and perfumes.

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