Other Company submissions for the General and SME award are summarized below (see page 2) in alphabetical order, and are followed by the entries from National and Partner Associations.

CEFIC 2012 RESPONSIBLE CARE AWARDS

For the seventh successive year the European Chemical Industry Council held its Responsible Care Awards scheme in 2012, highlighting innovation and best practices both at the company and at national association (NA) level. The new NA category builds on the special outreach award for associations launched as part of activities held under the 2011 International Year of Chemistry banner. Companies were eligible to enter the General and SME (for small- and medium-size companies) award categories.

Winners were chosen by an independent jury composed of experts from the European Commission, trade unions, industry and a member of the press. In total, judges looked at around 50 entries from companies and federations from around Europe.

The three winning organizations received their trophies at the Global Chemical Industry European Convention in London in September, and are featured in a Cefic-produced video.

For more information www.cefic.org/RCawards2012

Three Winners

Akzo Nobel Industrial Chemicals BV (General Award) - together with its Spanish partner GRIT, has developed a new technology that offers major advances in addressing the pollution issues that surround the treatment and preservation methods used by the leather industry. Winning praise from the judges for 'going beyond traditional borders' the entry was also singled out for its future potential to make a global impact by bringing improvements to leather processing.

Rembrandtin GmbH (SME Category) - austrian industrial coatings firm Rembrandtin Lack was selected as winner of the small- and mid-sized enterprises (SME) category for its comprehensive Responsible Care programme which it describes as evolving through the years into an ongoing corporate social responsibility project.

essenscia (National Association Category) - the chemicals, plastics and life science federation of Belgium, was the jury's pick for the Cefic award that recognizes best practice sharing by its national association members. The organization offered the example of sectoral sustainability reporting as a tool to demonstrate the value of Responsible Care to stakeholders. The judges described the essenscia entry as 'professional and very comprehensive', and one that 'stood out from the rest'.

Special commendation

Lamberti - since the early 1980s, Italy's Lamberti Group has focused on formulating safer and more sustainable PVC stabilizers with reduced effects on human health and the environment. The company has eliminated various additives from its production lines of both liquid and powder PVC stabilizers such as bisphenol A, lead, cadmium, tin and phenol among others, and replacing them with products that have a more environment-friendly and benign toxicological profile. Read more

Pfizer - the entry from Pfizer in Ireland focused on its Little Island facility and provides innovative examples of Responsible Care in action in the area of leading edge approaches to achieving health and safety excellence. The project "Your Safety Counts" embodies the company's commitment to creating a safer site, a more engaged workforce and to creating a positive culture with respect to health and safety in the workplace.

Other Company submissions for the General and SME award are summarized below in alphabetical order, and are followed by the entries from National and Partner Associations.

AKZONOBEL & DSM

AkzoNobel Functional Chemicals XTP and DSM Composite Resins submitted a joint entry covering the March 2012 launch of a new brand of cobalt-free resin curing technologies and products. Trading under the BluCure™ brand, these are novel resin curing systems offering more sustainable alternatives to conventional, cobalt-based systems and were developed in anticipation of increasing environmental pressure on cobalt. The partners note the systems and products – developed over 10 years of intensive R&D work by several companies – are 100% cobalt-free, easy-to-use in composite manufacturing processes, not labeled as mutagenic, carcinogenic or toxic to human beings, and do not contain chemical components listed in the SVHC List.

ALKERMES PHARMA IRELAND

Biopharmaceutical company Alkermes submitted details of the risk assessment approach it adopts to the life cycle of new product introduction. The company notes that environmental health safety and security (EHSS) risk assessment stems from legal, moral and business requirements and is thus core to the EHSS function and activities. It describes how EHSS risk assessment tools are being deployed at Alkermes to help influence strategic business decisions, ensure standardisation, continuous improvement and maximise risk control, and how it meets the challenges involved.

ALLERGAN PHARMACEUTICALS IRELAND

Allergan's entry was based on its successful and innovative approach to health, safety and environmental excellence. Judges noted that both considerable effort and a large number of people were involved. The company submitted one particular project: the "Maintenance Safety Excellence through Lean 6 Sigma", noting it has gone beyond compliance with examples such as the development

and implementation of the simple and user-friendly Safe Work Card, improved and more visible signage, improved housekeeping standards, new highly visible Permit Boards and increased use of Safe Start Cards. Other sites within Allergan Corp are currently looking at adopting a similar approach; it can also be easily replicated by other companies.

ARMOR SA

The French company's strategy is based on sustainable development principles under a programme called DECAPLAN (DEC for Développement Eco-Citoyen). Armor, with downstream operations in printing and renewable energy, has developed ten key challenges covering economic, social and environmental objectives. These range from employee health and safety through to community actions, monitoring energy consumption and alternative energy production, environmental footprint, and waste management. The active engagement of the teams charged with implementation of this approach together with the involvement of a large number of collaborators has been an important driver in its success.

BASF

Two BASF sites in Germany submitted entries for the Cefic award. A combination of process improvement, online monitoring and continuous optimization has enabled the workforce at the BASF Lampertheim site to implement an energy saving programme over the past several years. Awareness-raising and staff training helps them identify energy waste and losses, and to implement action programmes to remedy the situation. All important energy counters have an online registration and are equipped with a central evaluation tool, so production workers can monitor energy consumption from their workplace PCs. This facility has resulted in strong employee involvement and awareness of energy efficiency. Many small steps have resulted in some impressive results: over the past five years, absolute primary energy consumption has been reduced by an average 3%/year, giving total savings of 280 TJ and a 21,000 tonnes reduction in CO2 emissions.

The entry from Ludwigshafen headquarters also focuses on energy saving in an awareness campaign launched in early 2012 targeting employees and their families, and making it a tangible issue. One scheme gives 1,000 employees the chance to win an energy consultation for their home, with a main prize of complete thermal insulation of the property valued at €25,000; a 'do-it-yourself' brochure compiled via social media, online discussions and votes offers energy efficiency tips; a 'CO2 Bonus' suggestion scheme pays employees for successful energy saving ideas; a 136-page handbook shares production process best practices; and a comprehensive information campaign is conducted through various employee media. The 'Energy Efficiency: Get Involved!' campaign runs until the year end; BASF notes excellent awareness, and says early indications are very encouraging.

BK GIULINI

With sites in Ludwigshafen and Ladenburg in Germany, this Israel Chemicals subsidiary processes phosphates for food and technical use. Accident at work figures had plateaued in recent years so the company turned to a new prevention programme involving every employee, in particular management and safety administrators. Combinations of special events and long-term training have proved successful in achieving an accident rate far below the industry average, and received positive feedback from employees. The incident rate has fallen from 2.5 to 0 and the severity rate from 72 to 0 since the programme's launch, with the additional benefit of saving the company an estimated €200,000 in 2012 – results described by the judges as 'impressive'.

CHT R. BEITLICH (SME)

Family-owned CHT R. Beitlich GmbH at Oyten had already started to systematically record and evaluate its energy consumption, and taken steps to reduce it. Against this backdrop, the company welcomed an enquiry in early 2010 from two neighbouring farmers seeking to identify potential users for waste heat from two planned combined heat and power units (CHPUs) operated by a biogas plant. CHT R. Beitlich is now using this in a waste heat recovery boiler for steam generation, and the cooling water heat for a hot water circuit. At present, the company is developing an IT system to enable staff members to steer the site's various energy consuming production- and side-units in such a way that the waste heat is largely utilized and additional energy is not required. From 2015 expansion of the CHPUs will provide additional waste heat for a hot-oil circuit, saving more than 600,000 litres/year fuel oil in total, reducing the use of fossil fuels for heat generation at the plant by some 95%, and avoiding 2,000 tonnes of CO2 emissions/year.

DHL INDUSTRIAL UK

This application by transport company DHL Industrial is based on a comprehensive safety programme aimed at minimising environmental impact and achieving a zero incident frequency rate. Chemical Business Association (CBA) membership accounts for over 11% of the business operating sites and 6% of its 3,500 employees. In 2010 DHL successfully restructured its safety management approach by decentralizing health and safety manager structures, setting up a safety cabinet, and fostering a team-oriented focus for safety leadership. The business's 2011 figures showed a clear improvement over the year-earlier period including, for example, a best-ever LTIFR of 0.25 per 100,000 hours; 33 fewer Lost Time Injuries (65% reduction, 61% reduction in LTIFR); 1013 fewer days lost through injury (71% reduction); and a 36% reduction in collision rate, 54% reduction in contributory vehicle accidents. DHL notes the strategy will continue to deliver further improvement to its business, and is entirely scalable and applicable to the wider organization.

DOW AGROSCIENCES

Winner of the French Responsible Care environment award for 2011/12, this entry came from the Dow site at Lauterbourg which produces additives for plastics, paints and coatings. It has implemented a concerted and well thought-through remediation and demolition operation. The company used the demolition concrete from a workshop which has alkaline properties to stabilise the waste stored in an on-site landfill. The activity enabled the company to avoid the transfer of some 5,500 tonnes waste off-site and make an overall saving of around €400,000.

DOW CHEMICAL

Dow Chemical submitted two entries from its activities in Tarragona, Spain – one related to its low density polyethylene (ldPE) production and the other to its partnership with a local university. The ldPE entry – aligned to the business goal of reducing costs and its 2015 Sustainability Goals – focused on waste minimization and solvent recovery at its Tarragona production plant. Previously, waste generated was stored before being sent off-site for treatment. Costs of treatment were increasing yearly together with the price of new solvent supplies. Dow identified an external recovery plant that offers a unique service for handling, cleaning and purifying the waste solvent generated in its high pressure process that enables reuse of the solvent. Implementation of a recovery system reduces costs and the consumption of fresh solvent. It calculates a reduction of 1.7 million ton/year of CO2 emissions generated from the external waste disposal process, with cost savings put at about $222 million.

The second submission is related to its commitment to disseminate knowledge as the basis for the growth of the young, encouraging and sponsoring education and innovation projects worldwide. As a member of the scientific community Dow collaborates with various organizations through donations and sponsorships to help fund education, research and collaborative activities. One of its major projects is the creation of the “DOW/URV Chair of Sustainable Development” in partnership with the University Rovira I Virgili (URV) of Tarragona. Over the seven years that the SD Chair has been active, an average of 10 to 15 activities each year have been organized or sponsored around the fields of social, economic, ecologic, territorial and cultural sustainability. URV notes the collaboration was the first joint venture chair with a private company, and was ‘a pioneering partnership model’ for the creation of another seven chairs.

DOW EUROPE

This entry focused on the protection of contractors working at Dow sites. Health and safety goals are measured against total Personal Safety rates and Personal Safety Severity rates at all Dow sites, and include both employees and contractors. However, after several years of significant and continuous improvement, from 2009 the Contractor Personal Safety rate in Europe showed worrying trends, with increases in not only the number of reportable incidents, but also their severity. In an approach described as ‘good support from the top down,’ by the judges, Six Sigma projects were launched to achieve improvements in key areas: Contractor Hazard Awareness, Contractor Near Miss reporting,

Dow/Contractor Communication, Accountability of Dow Leaders, Safety Culture (Recognition / Expectations), and Contractor Training Process. The main objective was to screen available tools and processes and identify best practices to be leveraged across all European Dow sites. Over a period of 12-18 months, efforts resulted in both less people hurt and considerably less severe injuries in 2011 and 2012 (May YTD).

DSM

In line with Cefic's new Responsible Care Security Code, DSM has developed a completely new set of security requirements, aligned with its corporate safety, health and environment (SHE) requirements. The company is in the process of rolling these out on a global basis. Security is part of DSM's global risk management framework, and the company notes the importance of having a solid program in place that is well aligned with its other risk management models. The aim was to build a model which focused on DSM main risks and improve any weaknesses in the existing security framework.

DU PONT ASTURIAS

'Safety beyond the workplace' was the theme of the entry from DuPont's Asturias complex in the Tamón Valley, Spain. Its promotion of 'Safety 24 hours a day' involved an off-the-job safety network which developed activities to increase employee awareness. These can include, for example, raising awareness of the potential of off-site risks via multilingual emails prior to vacation periods with information on weather and road conditions together with advice on driving, preventing sunburn, safety at home, tips on footwear, etc. Other measures include regular communications on risks and recommendations on outdoor activities and sports, competitions, and meetings with external experts such as ski instructors, biking experts and emergency services. Safe driving awareness and training is also provided to all employees, and the company has even been asked to present its policies to the Spanish Parliament. Records show improved off-the-job (OTJ) performance metrics in spite of an increase in the number of employees and the rotation of DuPont employees in some functions: with 11 OTJ in 2002 from 620 employees against a 2012 figure of 1 OTJ from 847 employees.

DUPONT

This collaborative effort at DuPont's Dordrecht site in the Netherlands with GE Water & Process Technology revealed that the Delrin® cooling water towers consumed far more fresh water than best in class benchmarks. They initiated a small capital project with less than a year pay-back time during the 2009 downturn. By switching to a new additive package and substituting hydrochloric acid for sulphuric acid, the cooling tower water pH control requires far less water refreshing cycles and fewer acid additions. The resulting benefits include: water consumption reduced by 100,000 m3/year (around 5% of the total site consumption and equivalent to 650 households' annual consumption); fewer truckloads of acid means reduced CO2 emissions; safety is improved because 130 truckloads of acid per year being driven through a densely populated area is reduced to just 15 truckloads; and the business achieves cost savings of more than €100,000.

DUPONT PERFORMANCE COATINGS

Under REACH, downstream users are obliged to assess the conditions for safe use of substances and to communicate the results of this assessment to their final customers. The award entry from DuPont Performance Coatings (DPC) focused on its position as the only chemical company at formulator level (to its knowledge) generating consolidated exposure assessments for substances in mixtures since April 2011. This is thanks to a project started in January 2010, based on an in-house IT solution. Judges commended DPC for a project that helps REACH implementation, a particularly important issue for the EU's DG Environment. DPC describes its efforts as a starting point for information exchange and further development, and has had positive feedback from both industry and the authorities.

EKOL LOGISTICS

The judges praised Turkish firm Ekol Logistics for an entry involving considerable planning and coordination, and management effort. In 2008, the company developed and began implementing a major intermodal project that reduced the distance in a round trip for European export-import goods from 7,000 km to 2,000 km, saving some 1600 litres of diesel fuel for every trailer. A fleet renewal project and driver training enabled more environment-friendly journeys, while software developed in-house supports optimum loading and better route planning. In 2007 the company signed up to the United Nations Global Compact, and more recently with the growth of its chemicals business Ekol became a Responsible Care signatory at the beginning of 2012.

EXXONMOBIL CHEMICALS

Two submissions came from ExxonMobil in the Netherlands, with the results of both efforts being shared industry-wide to achieve the greatest possible benefit.

A team at the company's oxo-alcohol plant in Rotterdam is involved in an ongoing search to improve waste cobalt catalyst recycling methods. The ExxonMobil team successfully developed a direct cobalt metal catalyst recycling programme resulting in environmental benefits and improvements to waste handling and disposal. The second entry outlined the work of a dedicated team which has been rolled out to multiple sites manufacturing high pressure polyethylene (HPPE). The team was involved in development of a new version of di-tert-butyl peroxide that greatly reduces the risk of combustion by increased conductivity and thus reduced risk of static accumulation and potential spark generation. Its implementation across ExxonMobil HPPE sites results in an inherently safer working environment.

GENZYME

Genzyme developed a Health and Wellbeing programme in 2011 to encourage its workforce to become more active, and succeeded in engaging over 20% of the workforce. The objective of the programme is to enhance the physical and emotional wellbeing of employees by providing subsidised activities such as exercise classes onsite that are easily accessible and available to all. Information sessions and a Street Carnival day are scheduled throughout the year to enable the workforce to engage with external

professionals to enhance their health and wellbeing. The company also introduced a healthier approach to eating in the cafeteria and implemented a stress management and prevention programme. Events aim to raise awareness of health, safety and environmental issues both at work and in the home. Some key outcomes include a healthier workforce proven by before-and-after results of BMI, blood pressure and cholesterol checks; reduced absenteeism rates; and more effective accident management and return to work through the presence of the occupational health nurse.

GLAXOSMITHKLINE

Two entries were submitted by the GlaxoSmithKline (GSK) production site in Cork, Ireland. The site is in the fourth year of an accelerated energy reduction programme which has seen strong results in lowering the amount of energy used at the site and the associated CO2 footprint. In the first year of the programme, a 25% reduction in CO2 from energy was achieved. A 6% reduction is forecast this year and the site is targeting a 50% reduction over a six year period (2008-2014). The company details various initiatives undertaken, and notes that a step change reduction is predicted in 2014 due to the start up of a 3 MW wind turbine which would provide a third of the site's current electricity requirements and result in annual CO2 savings of 4,000 tonnes.

The second GSK submission focused on one of its products, Lapatinib, a cancer treatment drug made in four stages. Stage 3 of the process produces a large amount of aqueous waste which is incinerated on site. Based on its composition, the waste stream was identified as a good candidate for biological treatment in the site wastewater treatment plant and the change was made in May 2011. Benefits include up to €100K/year in cost avoidance through biotreatment instead of incineration and a reduction in carbon footprint of some 1100 tonnes CO2/year. Three other waste streams have been studied in the same way, resulting in the successful diversion of two streams; another is under study with promising indications. Similar additional financial and carbon footprint savings have been delivered. Biotreatment is considered best environmental practice for disposal of aqueous wastes, with the associated carbon footprint and energy costs being almost 100% lower than for incineration.

LANXESS DEUTSCHLAND

Lanxess submitted a new technology for elastomer production under the Cefic award scheme, an approach that was commended by judges for sounding very promising. It notes that the method, successfully tested on the manufacture of butyl rubber, has high energy saving potential and can be used for other elastomers. The dry finishing method the company has developed considerably improves the carbon footprint of large-scale manufacture of synthetic rubbers. The conventional steam stripping process was successfully changed to a direct evaporation process which can reduce steam consumption by more than 70%, according to calculations. The interdisciplinary research project was carried out with partners from universities, technology providers and equipment manufacturers, resulting in an innovative process that has been demonstrated in continuous operation.

PERSTORP SPECIALTY CHEMICALS

Perstorp Specialty Chemicals submitted a project, launched in 2008, that sought to replace fossil-based raw materials in the production of pentaerythritol and its derivatives with renewables. Pentaerythritol is a key raw material in applications such as paints and coatings, synthetic lubricants, cosmetic emollients and rosin esters. In 2011, the company introduced Voxtar™ M100 enabling customers to develop products with significantly lower carbon footprint, an innovative customer-oriented step, according to the judges. Produced with the same equipment and process as the conventional pentaerythritol, the new product is based on certified renewable acetaldehyde and methanol as well as bio energy. The carbon footprint is reduced by up to 75% compared to conventional pentaerythritol production. Third party certification of Voxtar™ M100 covers the upstream lifecycle, from extraction of natural resources and raw material production, through to the energy production and transportation required for product as it leaves the Perstorp site.

PFIZER PHARMACEUTICALS

Pfizer's Little Island site submitted an additional two entries for the Cefic 2012 awards. The site's manufacture of the successful drug Lipitor API has contributed $12bn/year in revenue to the global group. Since patent expiry in 2011 the company has developed a strategy to help it compete with the generic market, and is aligned to the site's commitment to improving its sustainability through energy management measures and reducing its impact on the environment. Management installed an electric vehicle (EV) charge point onsite and offered a 1 month test drive of an EV, boosting discussion of cleaner technologies both at home and the workplace. Pfizer notes the charge point is another aspect to the site's continuous drive for innovation, energy efficiency and sustainability, and complements other onsite green energy installations. A further entry focused on energy savings achieved through installation of a new variable speed drive air compressor, equating to a 2% reduction in site power and saving over 150 tonnes/year of CO_2 emissions.

POLIPORT KIMYA

Private port operator and storage terminal Poliport Kimya handles a range of chemicals, most of them flammable, combustible, corrosive and harmful to the environment. The site handles around 120 tanker trucks every day and the company set out to improve safety of the loading and unloading process. Before entering, a series of 26 checks are carried out by the health, safety and environment team on both truck and driver; failure to comply means the vehicle is not allowed on site and a technician immediately contacts the transporter and owner of the cargo. An annual safety meeting involves transport companies and customers with recognition for those achieving zero refusals. Poliport Kimya says it has seen a 60% reduction of refusals in the past four years, meaning risks and costs have fallen, and millions of dollars saved. The judges noted that new initiatives of this type are important for Turkey, and praised the company for its initiative.

RADICI CHIMICA

In 2010 Radici Group launched its “Operation Twenty4” sustainability project setting the following objectives: 20% reduction in greenhouse gas emissions, 20% reduction in energy consumption, 20% increase in use of renewable energy and 20% increase in use of recycled materials. As part of the project, a life cycle assessment was carried out to determine the environmental impact of the group’s business activities along its entire production chain, from the synthesis of chemical intermediates to the production of yarn and engineering plastics. Data provided a snapshot of the resources and energy used and the emissions released for every link in the polyamide 66 production chain. Judges praised the project for its life cycle approach which helped Radici develop an action plan for improvement, and for its longterm commitment. Projects implemented have improved the performance of the N2O abatement unit at the Novara adipic acid production plant, which in turn had a significant effect on lowering the global warming potential of polyamide 66. In 2013, another project will reduce nitrous oxide and NOx emissions from nitric acid production down to almost zero. Downstream activities use hydroelectric power to meet the entire needs for plants in Villa d’Ogna and Chignolo d’Isola.

RHEIN CHEMIE RHEINAU GMBH

Phenol is a non-renewable resource, obtained from fossil and finite raw materials in energy-intensive processing and conversion processes. The entry submitted by Rhein Chemie involves phenol recovery from chemically-contaminated wastewater in the production of a specialty additive for the plastics industry. The goal of the project was to find process engineering solutions for recovering surplus phenol for subsequent reaction batches. As well as preserving resources, phenol recovery results in reduced environmental impacts from its procurement and transport. Based on 2011 production volumes, the new recovery technique reduces annual consumption of phenol by 150 tonnes, or around six large tank trucks, and means 3 tonnes/annum less of CO2 emissions from truck transport as a result of reduced fuel consumption.

ROCHE DIAGNOSTICS

Roche Diagnostics GmbH has been operating a biological sewage purification plant (SPP) at the Penzberg, Germany site since 1978. All sewage streams from the site are treated centrally. In the past two years, the plant was extended by an anaerobic pre-stage for sewage purification and for the production of biogas. With this, the industrial sewage plant of Roche Penzberg produces more energy than it needs for the purification of sewage, making it energy self-sufficient and highly efficient. The project includes the channeling of aqueous, organic spent solvents into waste water treatment thus no longer incurring costs for their disposal. In addition, the company benefits from production of electricity and heat by burning methane gas in a combined heat and power unit (CHPU) with highly efficient waste heat utilization; it feeds the electricity into the site-internal grid. Roche has also created a local heat grid of production buildings which substitutes steam of high energy value. The purification plant now produces around 1 million m3/year biogas to feed the CHPU.

SABIC INNOVATIVE PLASTICS

Through close collaboration with freight forwarders and a river transport company, Sabic has rationalized the number of carriers it uses and is achieving a high re-use rate of 75% for containers. This cooperation has resulted in the saving of many vehicle kilometers and achieved an annual reduction in CO2 emissions of nearly 700 tons compared to transporting the containers by road. The judges praised the effort for demonstrating what can be achieved when companies pool their efforts to improve logistics efficiency.

SODA SANAYII A.S.

Turkish firm Soda Sanayii manufactures sodium dichromate at its Kromsan premises. Sodium sulphate, containing about 0.2% sodium dichromate which gives it a yellow colour, is formed as a by-product known as yellow cake. The company was praised by judges for its development of a purifying process to make the sodium sulphate environmentally friendly and value added with installation of a 55,000 ton/year plant for purifying, crystallization and packaging of product. Yellow cake is dissolved, reduced and neutralized, and the chromium hydroxide formed by the reduction step is filtered; purified sodium sulphate from the chromium is crystallized and packed. Waste water from another unit is used in the reduction phase and the chromium hydroxide produced after reduction of sodium dichromate in the yellow cake is used in basic chromium sulphate production unit, so there is no solid or liquid waste produced in the plant. The sodium sulphate produced is mainly consumed internally for glass manufacturing giving Soda Sanayii a competitive advantage, and the project has created new jobs.

SOLVAY SPECIALTY POLYMERS

Solvay Specialty Polymers submitted its “Small Impact Smoke Test”, a new approach developed to reduce the environmental impact of the existing ASTM method for wire and cable used to assure the insulating, mechanical and high processing performances of special fluoropolymer materials. The synthesis of new polymers with reduced smoke emission requires repeated testing involving the burning of huge amounts of wood and building materials, generating air pollutants, ash, solid waste and energy dissipation. In the search for a way to simplify, speed up and reduce the environmental impact of the ASTM method, Solvay set up a laboratory-scale test using specimens weighing a few grams. The lab scale method has been used to compare commercial and experimental materials on over 100 samples since 2007 resulting in a combusted weight of about 1000 grams as against at least 22,000 kilos based on ASTM. The potential impact is considerable, given official data from the International Cablemakers Federation noting monthly wire and cable production of more than 550,000 tons. The method has been communicated to current and potential customers and shared with the European Patent Office in 2007, with positive feedback.

TEIJIN ARAMID

The company's entry focused on the sustainable benefits of its Twaron pulp, noting that over the decade to 2014 its investment in two recycling facilities in the Netherlands will reach some €10 million, and will have saved an estimated 50,000 tons of CO2 emissions. In 2011, Teijin Aramid received certification for its first product manufactured entirely from recycled aramid fibers, and says sustainability greatly influences decision-making not only in terms of production, marketing and sales but also investments, product development, supplier preferences, and health and safety policy. The company seeks to reduce the footprint of its own processes and that of the entire value chain by implementing eco-efficiency analyses; and to reinforce its sustainable reputation among key stakeholders such as customers, suppliers, NGOs, society, and other partners. This includes activities such as actively supporting customers to reduce their production waste, a buy-back programme for the waste, and a buy-back programme for aramid end-products.

WOELLNER GMBH

This German glass manufacturer was seeking to improve its environmental impact and remain competitive at the global level. The project brought together employees from various departments with the aim of developing an intelligent burner system for glass furnaces thus reducing NOx emissions without the need for exhaust cleaning systems. Employing a combination of component modifications and a precise set-up for combustion parameters, Woellner has halved NOx emissions to 350mg/m3 while avoiding the need to install an expensive DeNOx facility.

WORLÉE-CHEMIE GMBH (SME)

In a submission described by judges as well presented, simple and easy to replicate for other SMEs, Worlée-Chemie notes that even small changes can bring about improvements, save resources and reduce costs. The company encourages input from employees, particularly on existing processes and plants, and says the approach motivates others to actively think about what can be done better. Its "save drinking water project" originated from a staff idea. Worlée-Chemie uses cooling water for processes and storage tanks, supplied from two cooling tower systems with partly desalinated water. In the past, the evaporating water was replenished with potable water; now the company uses rainwater collected from roof surfaces and existing collecting vats. An added advantage is the rainwater is soft and does not require additional desalination or further pretreatment; a small sedimentation tank provides sufficient protection from coarse impurities, with collection in the existing cooling/firefighting water basin. Not only has potable water consumption been reduced by some 1,776 m3/year, but wastewater volumes are down by more than 750 m3/year and consumption of chemicals, in particular for desalination, is reduced considerably.

ASSOCIATION ENTRIES

FCIO, AUSTRIA

In Austria, Responsible Care certification was adopted in 1992 by the national chemicals association Fachverband der Chemischen Industrie (FCIO). The judges described the Austrian association entry as interesting, and complimented it on its auditing focus and recent progress when, in 2012, Responsible Care achieved legal recognition at national level. FCIO requirements for Responsible Care certification go far beyond the legal requirements and provisions in Austria. Companies are audited by two external independent auditors in a process involving around 300 questions covering energy, disposal, storage, workers' protection, industrial accident prevention, environmental measures and so on. Now, companies certified under Responsible Care can benefit under the Environment Management Law by being eligible for substantial relief from administrative issues. During 2011, the International Year of Chemistry, FCIO began promoting Responsible Care certification in regional television and print media.

UIC, FRANCE

French association Union des Industries Chimiques (UIC) submitted its 2011 efforts to revitalize its Responsible Care initiative and make it more visible through development of an awards scheme for its members. The scheme was implemented in two phases: at regional and at national level. Six regional UIC branches organized local awards for members on condition that they were Responsible Care signatories. Dossiers that were awarded or commended at regional level were submitted to UIC, together with others submitted directly for the national awards. The scheme attracted 33 entries covering three categories: health, safety and environment, with a good split between major companies and SMEs. The entries were evaluated by an independent jury of stakeholders, mainly from outside the chemicals sector, and the awards were presented during the UIC General Assembly in April 2012.

VCI, GERMANY (LANDESVERBAND NORD)

A record 310,000 visitors attended the IdeenExpo (Ideas Expo), Germany's largest natural science and technology event, over nine days in 2011. More than 26,000 people took part in workshops and lectures. Under the motto Chemistry with all your Senses, VCI Nord and the employers' federation ChemieNord jointly organized chemistry's presence, and worked with schools, academia and 13 member companies to engage with visitors. For example, young visitors had the chance to produce their own perfume, to 'refuel' at the N2 ICE bar, or to experiment with the structure of abrasive paper using crackers and cheese! A young rapper duo "Raze&Chino" promoted vocational training as Chemikant – a career in chemical manufacturing – while trainees themselves produced an information CD on the careers they are training for. Educators were given new ideas for their own teaching work and advanced professional training. After the success of the event, VCI Nord will organize chemistry's presence at the 2013 expo, showcasing chemistry as a career in many innovative fields and the chemical industry as an attractive employer. The judges noted the submission as being a good example of industry's interaction with stakeholders.

POLISH CHAMBER OF CHEMICAL INDUSTRY

Poland's PIPC says one of the objectives of its Responsible Care programme is to implement the principles of sustainable development, and to do so requires effective communication. PIPC's entry was praised for its fun ideas for children, and for efforts being made by one of Europe's smaller national associations. It described three initiatives which bring together chemical sector employees with the local community. One well-established activity is its annual "Tree for a Bottle" campaign to improve recycling rates for waste PET plastic bottles. PIPC says data shows 2010 recycling levels at under 30%. Nearly 22,000 young children from nine cities took part in the 10th edition in 2012 when more than 2,800,000 used PET bottles were collected and 3,000 trees planted. In total, participants have collected nearly 15.68 million PET bottles and planted over 21,500 trees. A second activity involves a nature photography contest, "Catch the Hare", now in its sixth year, which seeks to capture the beauty of flora and fauna around chemical sites, and to involve chemical plant employees. Finally, the Ecological Academy of Skills, launched in 2010, is the most recent initiative of the Polish Responsible Care programme and is aimed at educators and students from institutions local to Responsible Care member companies and who want to learn more about current environmental issues.

CHEMICAL BUSINESS ASSOCIATION, UK

The submission from the Chemical Business Association (CBA), a partner of the UK's national Chemical Industries Association, outlined a series of innovative operational guidelines it has developed that are designed to promote health, safety, and environmental excellence, higher levels of performance, product stewardship and to enhance confidence in the integrity of the chemical supply chain. The guidelines proactively address changing levels of risks within the industry, focus on newly emerging risks, or make good a gap in existing guidance.

Devised and launched initially within the UK, these guidelines have received the formal endorsement of the industry's main regulatory body, the Health & Safety Executive (HSE), and have been shared with CBA's sister associations in the UK and across Europe, including Cefic under the Prisme2 outreach project directed at SMEs. CBA's membership consists mainly of SMEs in the business of chemical distribution and provision of logistic services to the chemical supply chain.

EUROPEAN CHLORINATED SOLVENT ASSOCIATION

ECSA's submission highlighted an online toolbox based on REACH dossiers for users of chlorinated solvents. The toolbox takes users to the proper information on safe use, environmental protection and legislative requirements. It is an example of industry going beyond REACH in developing tutorial materials for users (www.eurochlor.org/ecsa/toolbox).

EUROPEAN FLAME RETARDANTS INDUSTRY ASSOCIATION

An entry commended by judges for a number of strong elements, the Voluntary Emissions Control Action Programme (VECAP) is an innovative environmental management tool for handling flame retardant chemicals through the supply chain. It is operated under the European Flame Retardants Association (EFRA), a Cefic sector group, and demonstrates the proactive involvement of companies to adopt practices based on environmental best practice and economic efficiency. VECAP aims to reduce emissions of flame retardants through the promotion of environmental management and manufacturing process best practices throughout the value chain, from producers to downstream users.

As a result of the programme, potential emissions have reduced significantly since its start in 2008. It is now also applied to other polymer additives by EFRA members, as the principle can be applied to any kind of chemical and sets benchmarks for other industries. VECAP has also expanded geographically into North America and Asia Pacific. The programme has been educating stakeholders by organizing workshops to introduce VECAP to regulators, trade groups and others interested in chemicals management. A certification scheme has been developed with Bureau Veritas and all the main manufacturing sites worldwide as well as several users of brominated flame retardants in Europe are now certified, which represents the ultimate goal of this voluntary programme.

BRITISH ASSOCIATION FOR CHEMICAL SPECIALTIES, UK

Following the European Commission's 2004 publication of public sector guidance on procuring "green" products and services, the British Association for Chemical Specialties (BACS) and the UK Cleaning Products Industry Association (UKCPI) established a joint Public Procurement task force to develop guidance for public sector procurement of cleaning products and services. In 2006 the task force issued guidance on ingredient selection for industrial and institutional cleaning products. Encouraged by the UK Chemicals Stakeholder Forum and the Department for Environment, Food and Rural Affairs (Defra), the task force carried out further work relating to the overall sustainability of cleaning. In 2008 it published "Sustainable Cleaning - A guide for users of professional cleaning products". As part of its commitment to support sustainable public procurement Defra has referenced the guidance under 'government buying standards', and it has been shared at European level. Following submission by the task force to Defra of a paper assessing EC proposals, the EC amended its criteria for Green Public Procurement (GPP) of industrial and institutional cleaning products and services. The guidance is viewed as an excellent example of co operation within the supply chain to promote the responsible and sustainable use of its products.