



PACOPAR ESTARREJA 2008 MAGAZIN

pacopar

Multi Company Advisory Panel





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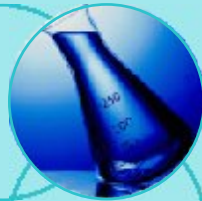
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03 Opening Note



04 APEQ
Responsible Care®
PACOPAR 2008



08 Panel Activities
PACOPAR 2008

15 Performance indicators



AIR LIQUIDE	12
AQP	14
ESTARREJA FIRE BRIGADE	16
CIRES	18
ESTARREJA MUNICIPALITY	20
ESTARREJA HEALTH CENTRE	22
CUF - QUÍMICOS INDUSTRIAIS	24
DOW PORTUGAL	26
AVANCA GROUP OF SCHOOLS	28
ESTARREJA GROUP OF SCHOOLS	30
PARDILHÓ GROUP OF SCHOOLS	32
ESTARREJA SECONDARY SCHOOL	34
SEMA	36
TRANSPORTES J. AMARAL	38
AVEIRO UNIVERSITY	40



43 Glossary

44 Contacts



Opening Note

When I was invited to write this opening note, a feeling of pride ran through me, emotion even, which is not easy to put down in words. However, looking back at a more or less distant past, I associated this invitation to the one proposed to me eight years ago, when I was invited to integrate this fantastic PACOPAR team, as well to the moment when I took up the leadership of the Estarreja Fire Brigade, forty years ago.

Although we are talking about different periods of time, the responsibility to accept the challenge and not to let down the confidence and hope placed upon me, have always been my daily partners.

Thus, at a time of my life where the cycle of having served the Estarreja Fire Brigade closes, I feel an overwhelming satisfaction, tranquility, honor and pride for having only merely and voluntarily served an institution which dedicates itself to serving others, to guarantee the safety of the Population and which is therefore the most loved and cherished Civil Protection agent. And I feel proud of our past and of our history of serving humanity and of serving Portugal.

I feel a sensation of pride and fulfillment for having been part of PACOPAR – the Community Advisory Panel – which surged determined to clarify and demonstrate that the Chemical Industry, known to be of high risk and closed to the exterior, should be a needed ill and an important structure for the industrial and social development of a district. It should act independently and professionally as the connection between the business world and the community in order to prepare a sustainable future with responsible care.

But the determination of PACOPAR was not only ruled by this clarification. It created a relationship of solidarity, by supporting the institutions in the district, a relationship of openness, based upon the knowledge of how to communicate, and a sharing of its successes, supported by a simple and sincere process of dissemination.

As an active member and upon the closing of this cycle of my relationship with PACOPAR, I want to leave everyone my friendship, consideration and respect, and I do so with pride, recalling the good and bad moments which we have lived together, and the success we achieved with both humanitarian as well as social and technical actions and projects.

Friendship was born and rooted itself.

I shall save it in my heart!

António Castro Valente
Estarreja Fire Brigade Commandant

2008 the “REACH YEAR”

Although the Regulation took effect on 1st June 2007, the companies did not quite notice it since the tasks under their responsibility would only begin on 1st June 2008, with the Pre-Registration phase.

During the last months of 2007, the relevant official entities had to prepare themselves, prepare their premises, working tools and their specialists. The more aware or nervous companies made the most of those seven months in 2007 to do twice as much and enrol in some of the few “training for REACH” courses available, namely those offered by the REACHCentrum, a CEFIC company especially created for that purpose. But the IT tools had not been concluded, there were many doubts on the interpretation of many points in the Regulation, the guidebooks had not been elaborated or were done in a very primary way. In other words, little was done.

In the beginning of 2008, there was more information available and in a more consistent manner, which APEQ was able to disseminate through:

- Monthly newsletters
- General and specific training courses
- Courses on access to IT tools, namely IUCLID 5.

Besides these informative and training aspects, APEQ made itself available to clarify directly those companies who wished so, both personally and at the office or either electronically or over the phone. APEQ accepted about one hundred appointments, some of which took several hours and involved various technicians.

Still in the Pre-Registration phase, training for the constitution of the SIEFs and associations began, in other words, the rest of the phases of which the nearest is the Registration were launched.

In the meantime, technical difficulties within the competent authority, which surged during the previous final phase, along with the “settling down” of some interpretations and the publication of some Guides of utmost importance, led to a kind of slowdown which everyone wished would be rapid in order to comply with the deadlines.

1. REACH – REGISTRATION, EVALUATION AND AUTHORIZATION OF CHEMICAL PRODUCTS

2008 promised to be, and was, the year in which REACH would reach the companies through the obligation to Pre-register or Register. The situation was clear: companies which did not register or pre-register their substances between 1st June and 1st December would have to interrupt their production as of 1st June, or be subject to fines or even the possible closure of their premises.

The goal traced by APEQ was to reach the highest number of chemical companies, associated or not, with the alert and the needed information so that they could comply with their obligations.

Consequently, APEQ equipped itself with the needed knowledge by participating in several *workshops* organized by CEFIC and becoming an active member of *REN – Reach Experts Network*. Three basic means of communication were used:

- The organization or participation in REACH seminars
- Dissemination, through its *Newsletter*, of news and advice coming from CEFIC, from the Agency or from APEQ itself
- Direct reply to questions posed by companies from its association or who participated in its seminars. This last activity was of great importance due to the delay in the startup of the national *Helpdesk* and to the initial delay in obtaining replies from it

1.1 CEFIC and ECHA Activities and Seminars

APEQ participated in activities provided by CEFIC, ECHA and by the National Authorities:

- ECHA’s First Stakeholders’ Day – 10th October in Helsinki
- Pre-registration and Registration. Digital Communication with ECHA: IUCLID 5 and REACH-IT” – 30th May at the DGAE – Direcção Geral das Actividades Económicas (General Economic Activity Department)



- *CEFIC REACH Implementation Workshop III* - 15-16th January in Brussels
- *CEFIC REACH Implementation Workshop IV* - 10-11th December in Brussels
- Participation in REN – Participation by asking and evaluating questions and answers in 7 meetings, 4 of which in person and 3 by teleconference and *Internet*

APEQ organized in cooperation with REACHCentrum:

- A training session on the IUCLID 5 tool, in Lisbon on 1st and 2nd July.

And with national distributors of chemical products:

- Technical Seminar – “On the Way to REACH”, in Lisbon on 11th March
- Technical Seminar - “Pre-Registration and Registration – last minute recommendations and first actions”, in Lisbon on 19th November.

Intervened with the following actions in cooperation with other entities:

- A Seminar on REACH on 16th July with Pacopar and the Aveiro University
- Two clarification sessions on “REACH IN THE PAINT INDUSTRY” in Lisbon on 16th April and in Porto on 22nd April with APTETI
- Participated by presenting a communication on REACH at a session called “The Industries’ New Challenges” organized by AEP in Maia and with another communication at a seminar about REACH, which was organized by CTCV – Centro Tecnológico da Cerâmica e do Vidro, (the Ceramic and Glass Technology Center) in Coimbra.

1.2 Newsletters

APEQ published a *newsletter* monthly which reached about 600 entities. Besides the information on the authorities and the industries’ activities, the following CEFIC guides were translated and published:

- A Guide to partner work at SIEF and to share costs and data
- Guide to train SIEFs and associations
- Pre-Registration Guide

Many documents and manuals from ECHA and other authorities were also translated and published due to the late edition and lack of translation of those documents by the EC entities.

APEQ managed to keep the periodicity and update of that regular publication, which included 3 supplements in November.

1.3 Appointments

APEQ replied to a great number of questions posed by its members (and others, too) sent over the *Internet*, in seminars or in meetings with the companies.

This task was of great importance considering the Portuguese *Helpdesk* was only available in October and the ECHA *Helpdesk* was very slow until almost the last weeks of the Pre-registration period.

Results: 403 Portuguese companies pre-registered 13 985 substances during the Pre-registration period.

1.4 DGAE – Direcção Geral das Actividades Económicas (General Economic Activity Department)

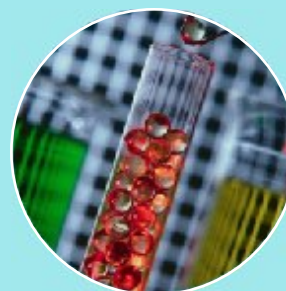
APEQ collaborated closely with DGAE in the creation of the institution’s REACH *website*, which deserved a note of appreciation by its General Manager upon its launch during a public ceremony at the Economy and Innovation Ministry.

1.5 REACH Technical Comments

Two Technical Notes on REACH were issued and published: one regarding the List of Candidate Substances (NT 08 002) and another containing a Comment regarding the proposal of the amendment to Annex XI (NT 08 003).

1.6 REACH Advocacy

APEQ continued informing all official entities of the need to complete the national legislation with sanctions to be applied to the non-complying of REACH Regulations as well as the need to define and train the national entities in charge of enforcing such applications.



APEQ insisted that such legislation and the measures advocated should be tough and balanced taking into consideration what has also been done in other EU countries since we are talking about a Regulation which is being applied to a single space which should not benefit nor harm any region. Not doing so could create serious distortions in this very same market as well as violations of the European legislation in relation to competition.

1.7 PC BT - Programme Council Build Trust

In the January and February meetings, it was decided to present a proposal to the Cefic Board to create the “Pan-European Communication Initiative” based on communication concepts that would be as “understandable” as possible to the public, and which should be developed in phases and include such key-words as:

- Long term strategy
- Full adhesion and commitment of the whole *network* under Cefic close coordination to use all the internal and external channels to forward messages
- Progress and change to a more affirmative attitude

During the year, the PC BT addressed issues as those related to the commitment to and with its partners, climatic changes and corresponding dialogue, nanotechnology, consumers’ trust in chemical products, *Responsible Care®* and *Responsible Care®* interaction and Sustainable Growth or *Responsible Care®* and Sustainability in the Small and Medium Companies environment.

In June, there was an exhibition at the European Parliament in Strasbourg on “Building blocks for climate change solutions” where many chemical companies demonstrated that their products, material and equipment made them indispensable partners in the solution of climate issues and energy savings. They proved that without them the political objectives of Europe on these matters will never become true.

These matters were further discussed during the September meeting and the possibility of the exhibition becoming an itinerant stand to be used in other areas and to other public besides the Members of the European Parliament was analyzed. Due to REACH having come into force, the topic “Build confidence through the value chain” was added, and a workshop on “Retail & Supply Chain Sustainability” was organized.

Finally, the PCBT came to the conclusion of the need to attach the Responsible Care® values to sustainability as a sort of mark of honesty given by the chemical sector.

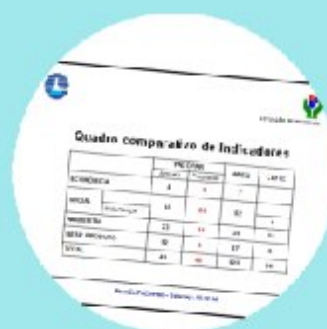
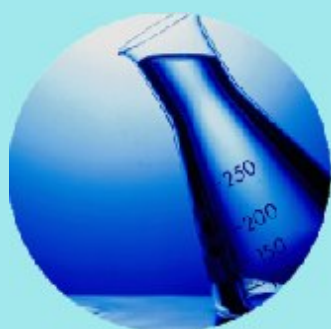
2. RESPONSIBLE CARE®

2.1. Performance Indicators and Reports

During the second semester of 2008, AR 2007 Performance Indicators referring to 26 *Responsible Care®* companies were collected and analyzed. These were integrated in the documental and electronic versions of the “2007 Performance Indicators and AR Report” and were also reported to CEFIC to be added in its “*Responsible Care® Annual Report*”.

A final revision of the 2006 AR indicators and “*Responsible Care® 2000-2006 Indicators*” was made. A revision of the “APEQ *Responsible Care® Performance Indicators*” was begun accommodating it both to the legislation in vigour as well as to the harmonisation of some of the criteria and definitions within the CEFIC “*Responsible Care Reporting Guidelines 2006*”.

Still in the *Responsible Care®* area, the “*Responsible Care® – Partnership Agreement*”, celebrated in September 2000 between APEQ - Associação Portuguesa das Empresas Químicas (the Portuguese Chemical Companies Association), and GROQUIFAR – Associação de Grossistas de Produtos Químicos e Farmacêuticos (the Pharmaceutical and Chemical Products Wholesalers Association), FECC and CEFIC was launched again.



APEQ ACTIVITY



2.2 Responsible Care®- CEFIC

APEQ participated in the conference promoted by CEFIC "Responsible Care Conference 2008", which took place from the 22nd to 24th October in Manchester – UK under the theme "Responsible Care for all: Maximising Potential & Enhancing Efficiencies in Large and Small companies". Some of the main subjects addressed were: "Safety Performance and Measurement, Occupational Health Provision and Societal Concerns, Resource Efficiencies and Bottom Line Opportunities".

Special reference to the programme - *Process and Plant Safety Performance (PPS)*, which aims at continuing the "AR commitment" and the Directing Principles, so that the companies engage themselves in the demonstration of the "performance" and continuous improvement of the chemical industry both to authorities and the community. CEFIC recommends that during 2009, the companies should report their *Loss of Primary Containment* as well as Process Safety Incidents (PSI). APEQ will disseminate this programme to the AR companies.

An agreement was signed between CEFIC and ECTA - the *European Chemical Transport Association* during the conference held in Manchester regarding the launching of a common initiative on Responsible Care in the Transportation of Chemical Substances in Europe. This fact was transmitted to CNTMP.

2.3 PACOPAR

The secretariat of the Community Advisory Panel was taken over by Dow Portugal in January 2008.

During 2008, the four usual meeting (one per quarter) were held, and they all had the cooperation and participation of APEQ. In the meeting held on March 13th, a Strategic Plan for the period between 2008 and 2010 was approved.

The meetings had a large participation of the members of the panel, who debated on the situation of the actions foreseen in the Activity Plan supported by the following Work Groups:

- Communication
- Risk Prevention
- Answers to Public Complaints
- Environmental and Landscape Framework

In the meeting held at the BVE – Estarreja Fire Brigade – on December 4th, besides being present, APEQ also presented comparative studies between the AR indicators of the chemical companies in the Estarreja Chemical Complex and the other National Responsible® Care Companies, and elaborated a proposal for the revision of the AR Indicators in the Pacopar magazine, which awaits future discussion.

Still within the scope of the cooperation between APEQ and PACOPAR, in mid 2008, APEQ collaborated in the distribution of the 2006 and 2007 Pacopar magazines, having sent about 230 copies of each to Official Entities, diverse Entities, APEQ Members, Public Safety Organisations and Fire Brigade Corps.

LP, Lisbon, 09.05.08

ACRONYMS

AEP	Associação Empresarial de Portugal
APEQ	Associação Portuguesa das Empresas Químicas
APTETI	Associação Portuguesa dos Técnicos de Tintas
AR®	Actuação Responsável®
BVE	Bombeiros Voluntários de Estarreja
CE	Comissão Europeia
CEFIC	Conselho Europeu da Indústria Química
DGAE	Direcção Geral das Actividades Económicas (ex DGE – Direcção Geral da Empresa)
ECHA	European Chemicals Agency
FECC	European Association of Chemical Distributors
IT	Information Technologies
PACOPAR	Painel Consultivo Comunitário do Programa de Actuação Responsável®
PPORD	Product and Process Orientated Research and Development
PPS	Performance Process Safety
REACH	Registration, Evaluation and Assessment of Chemicals
REN	REACH Expert Network
SIEF	Substance information Exchange Forum





PACOPAR PARTICIPATES IN THE I JUNIOR ECOLOGY AND ENVIRONMENT SEMINAR

Continuing its cycle of seminars on the theme “Ecology and Environment”, the Estarreja Rotary Club carried out the I Junior Ecology and Environment Seminar on April 19th, an activity supported by PACOPAR. This initiative began with a competition for 4th Grade school children which included composition and drawing on this theme. 200 children from the Estarreja schools participated in this event, and four winners were chosen from each school.

The seminar included speeches around such themes as “Water: truth and consequence”; “Solid Waste: the recycling adventure”; “Health and the Air we breathe”; “How to save energy in our daily lives” and “The Industry and Responsible Care”. This delivery was made by Belmiro Vigário from the PACOPAR “Risk Prevention” team. The Department of Environment and Planning from the University of Aveiro, a member of the PACOPAR, also participated in this initiative and organized the “Planetary Emergency” exposition.

The public was not only made up of young people but also of parents who took the opportunity to clarify some doubts, more specifically about the separation of waste and recyclable materials. As the weather was bad during the afternoon and did not allow for the BioRia tour, a video of the Baixo-Vouga Wetlands, a protected area, was shown. This initiative ended with the edition of a DVD on the seminar.



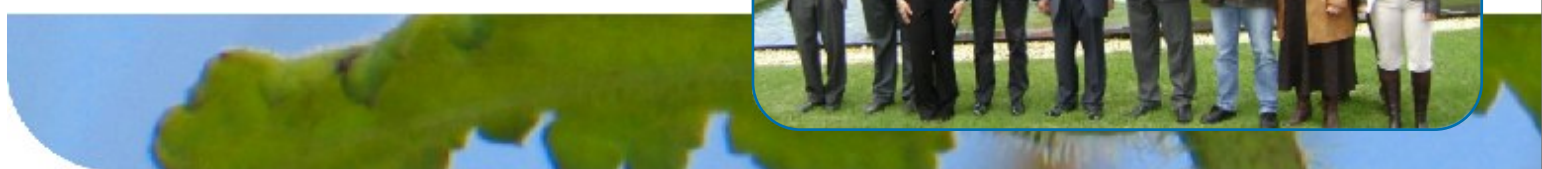
SUPPORT THE SECOND PHASE OF THE STUDY ON THE DEGREE OF CONTAMINATION OF THE AREA SURROUNDING THE ESTARREJA CHEMICAL COMPLEX

In 2008, PACOPAR completed its support to the Study on the Degree of Contamination of the Area Surrounding the Estarreja Chemical Complex. The study, developed by the University of Aveiro, is divided in two phases and was fully supported by PACOPAR. The first phase went along 2007, and the second phase begun in 2008.

PACOPAR DELIVERS COMMUNITY DONATIONS

Following the implementation of the annual donations policy to the community, PACOPAR distributed financial support to the projects contemplated among the applications received in 2007. BioRia, a project from the Estarreja Municipality, ASE – Estarreja Solidarity Association, Cerciستا, the Pardilhó EBI School and the Senhora do Monte School were the contemplated entities, with a total amount of 50 thousand euros.

The subsidies were to be used to publish a book about biodiversity of the BioRia and finance a Volunteers Programme for that protected area; to support the recovering of a house for a poor family, a project led by ASE; help develop a foreign language and communication programme at the Pardilhó EBI School, help to equip the Cerciستا activity centre with material specific to stimulate and develop the sensorial capacity of deeply handicapped, blind, deaf and autistic people; and purchase books to fulfil the “A Leitura com(vida)” (Reading is [an Invitation to] Life) project from the EB1 Senhora do Monte School.





PACOPAR ACTIVITIES



SESSION ABOUT REACH

REACH will demand a thorough job involving the classification, evaluation of risks and registering the chemical substances produced and/or sold by the companies, which may change the economical spectrum of the European Chemical Industry. This was one of the conclusions derived from the seminar on REACH, promoted by PACOPAR and APEQ – The Portuguese Association of Chemical Companies on July 16th at the University of Aveiro (UA).

With an audience of around 75 participants, Lubélia Penedo, chemical engineer, President of APEQ, and Joaquim Gândara Marques, chemical engineer and Technical Director of Groquifar, were the speakers during this session which aimed at explaining the demands of REACH (Register, Evaluation and Authorization of Chemicals) to companies, teachers, researchers and students. REACH is an European regulation which establishes that companies producing and/or importing chemical substances need to register these, keeping the information about its properties, applications, risks and safety standards available to the public.

Lubélia Penedo explained that REACH reflects “an increasing tendency of openness of the chemical industry to the public” and was created with “the objective to establish a high level of human and environmental protection” through an improvement on the information about the safe use of products along the supply chain.



CHEMICAL COMPANIES AND THE ESTARREJA MUNICIPALITY REPLY TO ITS INHABITANTS

Following the protocol which established the cooperation between the Estarreja Municipality (CME) and the PACOPAR chemical companies to answer quickly and efficiently to claims made by the inhabitants of Estarreja, contacts were made with the claimants about the quality of underground water captivated in the surroundings of the Estarreja Chemical Complex. The CME proceeded with analysis of the said water and concluded that it qualified for watering purposes, but not for drink. Consequently, CUF-QI met with the owners of the properties with boreholes and clarified that the contamination of the water in question had been due to a process issue at the company that happened in the past and which no longer exists, and a mutual understanding was reached. It was decided that analysis should be performed annually to the underground water in order to monitor its quality, which is being done.

PACOPAR INTEGRATES ALL ESTARREJA SCHOOLS



The Group of Prof. Doutor Egas Moniz Schools in Avanca and the Group of Pardilhó Schools are now official members of PACOPAR. After having accepted the invitation made by the Panel, both Groups of Schools participated in a meeting for the first time in December.

With the integration of these elements, all the Estarreja schools are now present in the Panel. This has been yet another mark in the growth of the PACOPAR trajectory which, in this way, strives towards the continuous improvement in communication with the Estarreja community through a more effective dialogue with the educating community, being thus able to listen and contribute better to providing an answer to the worries and anxieties of students, teachers and parents.

SEMINAR ON DIOXINS AND FURANS MYTHS AND REALITIES

The industries, often with a pointed finger from the public opinion, may not be the culprits after all. Studies have shown that there are certain areas in the country subject to open air fires and domestic combustions, which are responsible for the greatest emissions of dioxins and furans.

This was one of the revelations made during the Seminar on Dioxins and Furans held on December 12th at the University of Aveiro (UA) and organized by PACOPAR and by the Order of Engineers with the cooperation of the Department of Environment and Planning of the University of Aveiro.

The intention of this seminar was to explain to the public the nature of dioxins and furans within a legislative setting, while revealing results of the studies performed in Portugal as well as values of the monitoring done by the industry. The conferences counted on such people as Heidelore Fiedler, from UNEP Chemicals (United Nations Environment Programme), Paula Mata and Miguel Coutinho, from IDAD – Environment and Development Institute, and Washington Dantas, Dow Portugal General Manager, and to date, secretary president of PACOPAR, who spoke to an audience with people from the Panel, researchers, professors and students from the University of Aveiro.



THE ESTARREJA HOSPITAL CONTINUES TO EFFECT EMERGENCIES FOR THE CQE – ESTARREJA CHEMICAL COMPLEX

2008 was the year in which PACOPAR found an answer to its requests to continue this service at the Visconde de Salreu Hospital (HVS) to potential cases of emergency from the Estarreja Chemical Complex (CQE), despite the foreseen closure of emergency services at this hospital. PACOPAR, which stated the advantage of the proximity and specific preparation of the HVS to reply to chemical emergencies, as a result of continuous training dialogue with the companies, asked for an exceptional treatment of CQE cases, which was finally recognised in a protocol signed between the Estarreja Municipality and the Regional Health Administration Department from the Centre (ARS). In a meeting before the emergency service closure, the ARS from the Centre of Portugal guaranteed the fulfilment of the terms of the protocol.



PACOPAR ACTIVITIES



THE PACOPAR PROGRAMME ON THE RADIO "RÁDIO VOZ DA RIA"

Complying with its informative action plan to the community and dialogue with the population, PACOPAR continued its radio programmes discussing matters of interest to the public, in a partnership with Rádio Voz da Ria. In 2008, three programmes covering themes such as "PACOPAR, its Mission, Vision and Goals"; "Emergencies – A Realistic Analysis of the Situation" and "The Quality of the Air in Estarreja" were broadcasted. Something new was introduced this year; live broadcasts have given the possibility to the public to phone and intervene in the debate as well as the possibility to ask questions to the participants in the studio. This was meant to open bilateral communication channels between PACOPAR and the local community.



PACOPAR IN THE GENERAL SCHOOL TRANSITORY COUNCILS

PACOPAR was invited to the General School Transitory Councils of the Avanca Group of Schools, the Estarreja Group of Schools and Estarreja Secondary School and now has a representative in these Councils.

ELABORATION OF SCHOOLS EMERGENCY PLANS IS ON-GOING

The PACOPAR "Risk Prevention Team" continued its work in several schools in order to help with the elaboration of their internal emergency plans and articulate them with the External Estarreja Emergency Plan. In the work performed together with the Estarreja Secondary School, it was decided to begin by looking over the possibility of correcting internal issues raised by the school in order to then apply an emergency plan. The Padre Donaciano D'Abreu Freire School also began by revising their internal emergency plan. PACOPAR is helping them most specifically by revising the chemical accident issue.

STRENGTHEN THE ESTARREJA MUTUAL AID PROTOCOL

The PACOPAR Risk Prevention Team (GPR) began working on strengthening the Estarreja Mutual Aid Protocol (PAME) in order to make this protocol, which had been established between the industries in the Estarreja Chemical Complex and Transportes J. Amaral in 2006, more efficient by coordinating means and mutual aid in cases of emergency. In this way, it is expected to quicken the forms of cooperation by making the companies go through an internal review of their own means of fighting accidents and sharing learning experiences.

Three potential emergency scenarios, in which the cooperation between companies is crucial, were identified: accidents with tank trucks, pipeline leaks and forest fires or fires inside company grounds. Each company is identifying their resources to respond to such emergency scenarios in order to coordinate the training later on. The objective is to share learning experiences through the means and brigades each company has already assigned, sharing knowledge in order to perform the necessary training which will allow the companies to prepare themselves to quickly coordinate their actions.





HyCO3 Project

When in late 2006 the companies in the Estarreja chemical complex: Dow Portugal, CUF and Air Liquide signed the contracts which extended their commercial partnership for another 15 years, they determined the expansion of their production units in Estarreja and contributed decidedly to the consolidation, renewal and modernization of this important industrial pole.

Of the 250M€ invested in this chemical complex, 60M€ correspond to the investment made by Air Liquide on a modern hydrogen and carbon monoxide production unit, which benefits from the technological evolution of the group in the conversion of natural gas, which substitutes the traditional naphtha, along with its contribution towards the protection of the environment.

Air Liquide managed to increase its capacity in 60% and consequently created the conditions to increase the capacity of the production of MDI from 90 Mton to 160 Mton.

HISTORY OF THE PRESENCE OF AIR LIQUIDE IN ESTARREJA

1989: Air Liquide comes to Estarreja, building the group's first carbon monoxide and hydrogen unit. It was the impulse necessary to bring about modernization of the production factors in the Estarreja chemical complex.



1997: Answering the expansion needs of our customers at the petrochemical complex, Air Liquide builds a second unit for the production of carbon monoxide and hydrogen guaranteeing an increase of 40% in its production capacity.



2009: At a moment where it is vital that the chemical complex modernizes and re-dimensions itself due to the market needs, Air Liquide has invested about 60M€ on a modern production unit which allows an increase of 60% capacity in its production of carbon monoxide and hydrogen, and consequently duplicating the production capacity of the Estarreja Chemical Complex.

AIR LIQUIDE



AIR LIQUIDE

INDICATOR	UNITS	2004	2005	2006	2007	2008
THE COMPANY						
Share capital	k€	13250	13250	13250	13250	13250
Nr. of employees	-	28	28	28	27	26
Annual sales volume	k€	77661	74641	78309	78587	78776
Total production	tons	116113	116131	112541	115072	108897
SAFETY AND ENVIRONMENT						
Accident rate	-	0	0	0	0	0
Severity rate	-	0	0	0	0	0
Accident frequency rate	-	0	0	0	0	0
N° of fatalities	-	0	0	0	0	0
HEALTH						
Noise 85-90 decibels	%	0	7,1	7,1	7,1	0
Noise > 90 decibels	%	0	0	0	0	0
Occupational illness frequency rate	-	0	0	0	0	0
Health related expenses	k€/employee	0,50	0,24	0,25	0,28	3,16
GAS EMISSIONS						
Particles	tons	1,820	1,844	0,259	0,259	0,259
Sulphur dioxide	tons	0,940	4,210	0,000	0,000	0,000
(in NO2) Nitric Oxide	tons	89,340	21,120	13,176	13,176	13,176
Carbon Monoxide	tons	0,000	0,000	1,859	1,859	1,859
Heavy Metals (total)	tons	0,010	0,006	0,105	0,105	0,105
VOC	tons	0,160	0,046	0,000	0,000	0,000
LIQUID EMISSIONS						
Chemical Oxygen Demand	tons	0,29	0,21	0,588	0,231	0,137
SST	tons	0,08	0,02	0,04	0,026	0,127
Phosphorous Compounds	tons	0,00	0,01	0,04	0,024	0,015
Nitro Compounds	tons	0,09	0,07	ND	ND	ND
As	tons	0,00	0,00	0,00	0,000	0,080
Cu	tons	0,00	0,00	0,00	0,002	0,001
Cr	tons	ND	ND	ND	ND	ND
Cd	tons	0,00	0,00	0,00	0,001	0,001
Pb	tons	0,00	0,00	0,00	0,001	0,001
Hg	tons	0,00	0,00	0,00	0,000	0,000
Ni	tons	0,00	0,00	0,00	0,000	0,001
Zn	tons	0,00	0,00	0,00	0,000	0,001
WASTE						
For recycling	tons	19,2	8,2	8,6	2,84	13,00
Hazardous waste for final disposal	tons	3,1	2,8	0,7	1,95	1,00
Common waste for final disposal	tons	35,8	32,1	30,4	27,69	132,00
CONSUMPTIONS						
Energy	kJ/tons	2.233.636	2.218.127	2.331.103	2.327.455	2.447.352
Water	m ³ /tons	1,94	2,01	1,98	1,97	2,07
DISTRIBUTION INCIDENTS						
TONS DISTRIBUTED (total)	tons	116113	116131	112541	115072	108897
- Rail	tons	NA	NA	NA	NA	NA
- Road	tons	73302	75494	73790	75055	75397
- Sea	tons	NA	NA	NA	NA	NA
- Waterways	tons	NA	NA	NA	NA	NA
- Pipeline	tons	42810	40637	38751	40017	33500
N° OF INCIDENTS (total)	nr.	0	0	0	0	0
- Rail	nr.	NA	NA	NA	NA	NA
- Road	nr.	0	0	0	0	0
- Sea	nr.	NA	NA	NA	NA	NA
- Waterways	nr.	NA	NA	NA	NA	NA
- Pipeline	nr.	0	0	0	0	0



AQP is a company owned by CUF-QUÍMICOS INDUSTRIAIS, S.A. and KEMIRA IBÉRICA S.A., the latter being a Spanish branch of KEMIRA OYJ, an important Finnish Chemical group which dedicates its activity to the production and sale of chemical additives for water treatment (drinking and waste water) and for the paper industry being the world leader in the know-how process. Water treatment requires deep investigation and technological development (I+DT), and that is why Kemira has its own centres of I+DT both in Europe as well as in North America. It is the number one world supplier of coagulants for water treatment.

AQP reveals a close connection to these two companies which are in its genesis, receiving financial and administrative support from CUF and importing technology and know-how from Kemira along with all the orientation and support in such areas as Quality, Safety and Environment. Therefore, AQP is considered as just another Kemira site sharing the following common policy:

Corporate Priority: Environment, Health, Safety and Quality (EHSQ) are among the top priorities of all the Kemira operations and a fundamental pre-requisite in running our business.

Corporate Commitment

We are committed to:

- Developing and supplying high quality products as well as services safely, which satisfy our customer needs.
- Prevent all accidents and minimize negative impacts of our activities on the environment, people and property.
- Continuously improve our EHSQ norms as well as our performance.
- Promote sustainable development by using energy and natural resources efficiently.

Legal Conformity: All the Kemira companies and sites must comply with the applicable legislation, regulations and licenses in that which concerns the Environment, Health and Safety.

Leadership: The Group expects that all Kemira management shows, in an active way, a visible commitment and responsibility toward EHSQ, especially in safety.

Management System: All of the Kemira sites are expected to implement and maintain management system certified in EHSQ according to ISO 9001, ISO 14001 and OHSAS 18001 norms.


People and Behaviour: The Group expects that each employee shows a high degree of professionalism and responsibility in that which concerns EHSQ, especially in safety. We offer adequate training in order to guarantee that all our employees are conscious of their responsibility and follow EHSQ instructions.

Production and Sites: We operate and maintain our production sites in a professional way in order to reach a high standard of EHSQ, especially in safety. We evaluate continuously the dangers and risks of our sites, as well as the vulnerability of our operations. We apply the best technology available when building our factories or units. All of the products and services supplied by Kemira must satisfy the legal requirements. We work proactively to guarantee that our products may be handled and used in a safe way both in relation to human health and to the environment. All products and services supplied by Kemira satisfy the legal requirements guaranteeing safe use and manipulation, both in regards to safety to people and to the environment. We supply information openly and in a trustworthy way as well as instructions on handling, transportation, usage and disposal of our products.

Contractors and Suppliers: We expect that our contractors, suppliers, transportation companies and other third parties, who perform work on our behalf, abide by the applicable EHSQ regulations and policy.

Communication and relationship between the interested parties (Stakeholders): Our communication in EHSQ matters is open and fair. We answer questions posed by interested parties and promote an open dialogue in the communities where we operate.

2008 was an extremely positive year for the company in the most varied areas, namely economic, safety and environmental. The positive economic results were accompanied by a good performance in Safety, confirmed by no accidents during 2008. Safety has always been present, beginning with the selection and use of individual protective equipment up to safe operation of our units and handling of products. 2008 was also marked by several Safety awareness campaigns putting up boards on Unsafe Behaviours versus Safe Behaviours. Through the best environmental practices and technology, the company maintained a positive environmental performance with low values on emissions and wastes, although having registered a slight increase on energy consumption, due to a change in the method of calculation (new conversion factor) recommended by APEQ. The renewal of the certifications of the Quality Management System and Environmental Management System according to the ISO 9001:2001 and ISO 14001:2004 norms, respectively, was a goal established and accomplished in 2008.



AQP

INDICATOR	UNITS	2004	2005	2006	2007	2008
THE COMPANY						
Share capital	k€	910	910	910	910	910
Nr. of employees	-	6	6	6	8	8
Annual sales volume	k€	2408	2458	2911	3109	3331
Total production	tons	25323	25159	28477	28654	25426
SAFETY AND ENVIRONMENT						
Accident frequency rate	-	0	0	0	0	0
Severity rate	-	0	0	0	0	0
Accident incidence rate	-	0	0	0	0	0
Nr. of fatalities	-	0	0	0	0	0
Safety and environment expenses	%	0,83	0,96	0,71	0,89	0,61
Investments	k€	0	0	11	32	0
HEALTH						
Noise between 85-90 decibels	%	0	0	0	0	0
Noise > 90 decibels	%	0	0	0	0	0
Occupational illness frequency rate	-	0	0	0	0	0
Health related expenses	€ / employee	982	875	1363	611	898
GAS EMISSIONS						
Particles	tons	0,07	<0,05	<0,06	<0,07	<0,08
Sulphur Dioxide	tons	NA	NA	NA	NA	NA
Nitric Oxide (in NO ₂)	tons	NA	NA	NA	NA	NA
Carbon Monoxide	tons	NA	NA	NA	NA	NA
Heavy metals (total)	tons	NA	NA	NA	NA	NA
VOC	tons	NA	NA	NA	NA	NA
LIQUID EMISSIONS						
CQO	tons	NA	NA	NA	NA	NA
SST	tons	NA	NA	NA	NA	NA
Phosphorous Compounds	tons	NA	NA	NA	NA	NA
Nitro Compounds	tons	NA	NA	NA	NA	NA
As	tons	NA	NA	NA	NA	NA
Cu	tons	NA	NA	NA	NA	NA
Cr	tons	NA	NA	NA	NA	NA
Cd	tons	NA	NA	NA	NA	NA
Pb	tons	NA	NA	NA	NA	NA
Hg	tons	NA	NA	NA	NA	NA
Ni	tons	NA	NA	NA	NA	NA
Zn	tons	NA	NA	NA	NA	NA
WASTE						
For Recycling	tons	2	3	3	5	5
Hazardous waste for final disposal	tons	0,0	0,1	0,0	0,1	0,6
Common waste for final disposal	tons	12	14	20	23	19
CONSUMPTION						
Energy	mj/tons	67	92	94	97	165
Water	m ³ /tons	0,5	0,5	0,5	0,6	0,5
DISTRIBUTION INCIDENTS						
TONS DISTRIBUTED (total)	tons	9267	9614	11081	11674	12649
- Rail	tons	0	0	0	0	0
- Road	tons	4414	4265	4861	4983	4914
- Sea	tons	0	0	0	0	0
- Waterways	tons	0	0	0	0	0
- Pipeline	tons	4853	5349	6220	6691	7735
NR. INCIDENTS (total)	nr.	0	0	0	0	0
- Rail	nr.	0	0	0	0	0
- Road	nr.	0	0	0	0	0
- Sea	nr.	0	0	0	0	0
- Waterways	nr.	0	0	0	0	0
- Pipeline	nr.	0	0	0	0	0



Estarreja Fire Brigade



2008

	Number Calls	Nr. Firemen	Nr. Vehicles	Kms Driven	Duration (H:M)	Sick People Transp.
Fires	159	878	251	4,578	234:02	6
Accidents with Transports	163	651	248	7,163	197:53	145
Commun. Infra-Struct.	10	21	10	101	13:25	0
Pre-Hospital	2,961	6,209	2,968	61,370	2,628:33	2,195
Legal Conflicts	84	190	88	2,693	95:46	61
Industrial and Technological	4	17	7	102	3:48	14
Services	7,478	11,717	7,514	778,985	26,086:20	3,399
Activities	743	1,450	920	28,516	1,808:04	3
9999 - Internal Codes	40	55	41	786	32:21	0
Civil Protection Events	5	7	6	179	6:41	0
TOTAL	11,647	21,195	12,053	884,473	31,106:53	5,823

2007

Fires	201	1,156	381	10,039	512:07	6
Accidents with Transports	201	627	258	5,950	204:55	180
Commun. Infra-Struct.	18	31	18	199	27:11	0
Pre-Hospital	3,264	6,800	3,274	50,177	3,003:16	2,381
Legal Conflicts	96	193	97	2,791	106:16	79
Industrial and Technological	2	20	8	40	2:07	3
Services	7,995	12,793	8,042	886,514	28,221:02	3,812
Activities	461	1,013	573	24,464	1,590:16	1
9999 - Internal Codes	78	104	81	2,240	197:03	0
Civil Protection Events	27	38	30	1,389	47:34	0
TOTAL	12,343	22,775	12,762	983,803	33,911:47	6,462





The deep and unexpected recession which broke out at the end of the 3rd quarter last year affected the building industry severely, especially in Spain which is the main destination of the company sales. In 2008, the development of CIRES, whose production is mainly meant for the building industry, namely pipes and fittings, window and door framework, blinds, pavements and covering and other types of application – was, therefore, much conditioned, resulting in a reduction in production comparing to the previous year.

Although there was quite an increase in exports to alternative markets in developing countries, this was insufficient for the company to compensate the low sales within the European Union. CIRES was forced to reduce its production rates and lost its logistics efficiency in the nearby markets with the consequent impact on the profitability of its operations.

It was within this conditioning environment that CIRES paid special attention to improving its internal qualifications and consequently **obtaining**

Certification in OHSAS: 18001-2007 Management of Safety and Health at Work in 2008. This important step in the development of the company fits in the principles of Responsible Care and Social Responsibility, which guide our activity and aim at continuously improving environmental behaviour and risk prevention.

The successful implementation of this strategic goal demanded a significant investment along several years, having successfully completed in 2008 the adaptation of the site and the procedures to the rigorous requirements of these norms.

The usual improvement plans were undergone for the renewal of the environmental certification ISO 14001. The positive environmental performance allowed this goal to have been fully met.

On an external plan, CIRES dedicated special attention to the PACOPAR activities, a forum especially dedicated to communicating and interacting with the local community, especially in that which concerns emergency, safety, health, environment and education activities, aiming at an improved reciprocal knowledge and spirit of cooperation.

Besides the cooperation within the scope of the Community Panel, the company also promoted other actions related to Social Responsibility especially dedicated to young people, namely traineeships within the company. 21 traineeships, lasting over 4 weeks, were promoted in 2008 in several areas and different levels of education. Some of these were the first experience these young people had had at a company. 339 students from 21 schools also became acquainted with the industrial reality by visiting the Company in 2008.

In other social initiatives and despite the economic downturn, CIRES also tried to keep its financial support to sports, cultural and benefactor associations which have relevant performance in the local community.



INDICATOR	UNITS	2004	2005	2006	2007	2008
THE COMPANY						
Share capital	k€	15000	15000	15000	15000	15000
Nr. workers	-	127	122	123	121	119
Annual sales volume	k€	146307	137628	143812	157434	142933
Total production	tons	195050	186948	181878	194672	176145
SAFETY AND ENVIRONMENT						
Accident frequency rate	-	4,2	3,8	0	12,3	4,1
Severity rate	-	0,01	0,02	0	0,29	0,05
Accident incidence rate	-	7,46	7,7	0	24	8,3
Fatalities	-	0	0	0	0	0
Safety and environment expenses	%	0,7	0,7	0,7	0,6	0,2
Investments	k€	2781	1318	682	365	350
HEALTH						
Noise between 85-90 decibels	%	11	11	11	31	2
Noise > 90 decibels	%	6	6	6	2	0
Occupational illness frequency rate	-	0	0	0	0	0
Health related expenses	€ / employee	975	902	1019	877	1371
GAS EMISSIONS						
Particles	tons	31	25	45	17	15
Sulphur Dioxide	tons	108	165	161	178	104
Nitric Oxide (em NO ₂)	tons	245	168	164	216	216
Carbon Monoxide	tons	10	2	7	11	37
Heavy metals (total)	tons	0,15	0,3	0,36	0,24	0,27
VOC	tons	19	22	17	11	10
LIQUID EMISSIONS						
COC(*)	tons	428	301	408	318	326
SST(*)	tons	160	67	336	226	162
Phosphorous Compounds	tons	NA	NA	NA	NA	NA
Nitro Compounds	tons	NA	NA	NA	NA	NA
As	tons	NA	NA	NA	NA	NA
Cu	tons	NA	NA	NA	NA	NA
Cr	tons	NA	NA	NA	NA	NA
Cd	tons	NA	NA	NA	NA	NA
Pb	tons	NA	NA	NA	NA	NA
Hg	tons	NA	NA	NA	NA	NA
Ni	tons	NA	NA	NA	NA	NA
Zn	tons	NA	NA	NA	NA	NA
WASTE						
For recycling	tons	714	807	570	391	50
Hazardous waste for final disposal	tons	4	8	7	2	1
Common waste for final disposal	tons	16	5	5	2	6
CONSUMPTION						
Energy	mj/tons	3600	3490	3430	3480	3600
Water	m ³ /tons	7,1	6,9	7,1	6,9	7,1
DISTRIBUTION INCIDENTS						
TONS DISTRIBUTED (total)	tons	194324	188949	183190	194428	179602
- Rail	tons	NA	NA	NA	NA	NA
- Road	tons	NA	NA	NA	NA	NA
- Sea	tons	194324	188949	183190	194367	179602
- Waterways	tons	NA	NA	NA	NA	NA
- Pipeline	tons	194324	188949	183190	194367	179602
NR. INCIDENTS (total)	nr.	0	0	0	0	0
- Rail	nr.	NA	NA	NA	NA	NA
- Road	nr.	NA	NA	NA	NA	NA
- Sea	nr.	0	0	0	0	0
- Waterways	nr.	NA	NA	NA	NA	NA
- Pipeline	nr.	0	0	0	0	0

(*) The COC and SST values referring to liquid emissions as of 2004 relate to the CIRES effluent which is subject to SIMRIA treatment.



- RIBEIRAS DE PARDILHÓ
- RIO GONDE
- RIBEIRAS DE VEIROS
- RIO ANTUÁ
- SALFEU
- CANELAS / SALFEU
- CANELAS

a network of nature trails

Over 100 km of nature trails from north to south of the district link the neighbouring villages. Aiming at an articulated network of nature trails, the Town Hall presented two municipal applications and one inter-municipal application for Community funds. The Mayor, José Eduardo de Matos, believes this project reveals *“a different vision of the district with strength on the natural dimension of Estarreja”*. The Mayor is confident these candidacies shall be approved.

BIORIA WITH 7 TRAILS

The 7 BioRia trails will have an extension of around 40 km and will be connected to each other with direct access to the railway (Avanca, Estarreja, Salreu and Canelas). On the very same day, the visitor can ride along all the natural trails by bicycle. If, for example, the visitor comes from outside the district, he/she can arrive by train in Canelas and depart from Avanca.

Adolfo Vidal from the Town Hall New Project Cabinet explains the CCDRC approved the BioRia II application worth 173 million Eur. The BIORIA Environmental Interpretation Centre will be built in Salreu until 30th November, acting as a supporting structure to the visit and divulging to the visitors. Three new trails will come up: Rio Jardim (Garden River) – Canelas (1,97 km); Ciclável do Bocage (Bocage Cycling) – Salreu and Canelas (3,975 km); Rio Antuã (Antuã River) – Beduido and Salreu (6,3 km) which will be subject to rework and re-qualification.

BioRia will be extended from North to West of the district with the implementation of a third phase. BioRia III has a total value of 216.012,28 Eur, and the application to Community funds includes the re-qualification of 3 pedestrian and cycling trails: Ribeiras de Veiros (Veiros Streams) (9,1 km); Ribeiras de Pardilhó (Pardilhó Streams) (7,9 km), and Rio Gonde (the Gonde River) (2,9 km). It is during this phase that the commissioning to recover the interior of the Antiga Azenha (the Old Watermill) in the Antuã Park will be handed over, along with the Environmental Monitoring Plan of the District and the Plan to Recover the Margins of the Antuã River between the Turbina and the old Estarreja ETAR.

NATURE TRAILS

Considering the natural patrimony of the district is quite vast, the Town Hall wishes to increase the trail network to the inner zone of the district, taking advantage of the interest and natural beauty of the Jardim, Antuã and Gonde rivers. Contacts have already been established for the connection to Albergaria-a-Velha.

CICLORIA (CYCLERIA) CONNECTS 3 TOWNS

An application was developed and presented by the Estarreja, Ovar and Murtosa townhalls, and by the University of Aveiro. The CicloRia project aims at developing a culture towards the use of smooth means of mobility within the Ria de Aveiro region. Besides other actions, it also contemplates a system of trails which can be cycled, both urban and near streams, the availability of bicycles for collective use and the organization of thematic circuits for cyclists, based upon research made to identify the predominant elements of this natural, cultural and scientific patrimony susceptible of being valued as attractive factors.

Worth 1 million Eur, CicloRia will have a deadline to be finished within 48 months after the expected approval of the European Community funds.

▶ On a different field, the Institute for the Preservation of Nature issued an approval for the Salreu BioRia Trail at the Portugal Mountaineering and Camping Federation (FCMP).

▶ PACOPAR – Community Advisory Panel included BioRia in its donations package to support local projects. The amount was 13.800 Eur and will support the creation of a Volunteers Programme and the publication of a book.

4

BAIXO VOUGA HEALTH CENTRES GROUP

GEOGRAPHIC AREA	HEALTH CENTRES	POPULATION	HUMAN RESOURCES	
ESTARREJA, MURTOSA and OVAR TOWNHALL	ESTARREJA	31695	Executive manager	1
			Doctors	69
			Nurses	69
	MURTOSA	11964	Therapeutic diagnosis Technicians	7
			High-level Technicians	9
			Assistent Techs	72
	OVAR	59216	Operacional Assisntents	49
			IS	1
			Total	277

5



Estarreja Health Centre



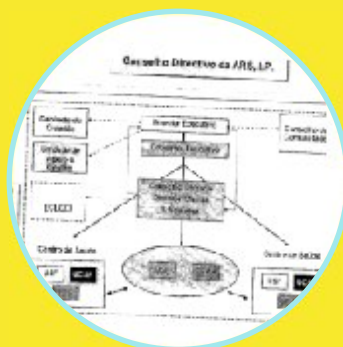
Since the last edition of the Pacopar Magazine in 2008, and in that which concerns Health in the Estarreja Municipality, medical appointments have been opened in this Health Centre since 24th November 2008. These appointments are undergone daily at the Visconde de Salreu Hospital from 8 a.m. to midnight and substitute the old SAP / SU.

There were 16506 medical appointments until 12th May 2009, and 878 users were transferred, which represents a daily average of 97 medical appointments and of 5 users transferred.

With the publication of Decree Law 54 dated 18/03/2009, the Estarreja Health Centre integrated the “Baixo Vouga III” Group of Health Centres along with the Ovar and Murtosa Health Centres.

Attached is a map of the people in the Group, the resources belonging to it as well as an organization chart.

Dr. Manuel Sebe is the Executive Manager, former Manager of the Ovar Health Centre; The Clinical Council is constituted by Dr. José Manuel Félix, former Manager of the Estarreja Health Centre, who presides, and by the assistants: Dr. Maria Ofélia Almeida, Council Delegate of the Estarreja Health Centre represents Public Health, Nurse Ana Isabel Sá, Head Nurse of the Ovar Health Centre represents the Nurse Department and Dr. Eva Gomes, Clinical Psychologist of the Ovar Health Centre represents the health technicians belonging to the Group.





With supply contracts coming to an end, the three companies from the Estarreja chemical complex - Dow Portugal, CUF-Químicos Industriais and Air Liquide – placed a challenge on themselves not only to renew them but also to duplicate the quantity of products they were to exchange. The companies, willing to keep up with the growth of the international market, worked on a common goal since the beginning of 2008, which was to expand the production capacity of MDI (a polymer precursor of polyurethanes), the production chain of aniline and chlorine and the carbon monoxide and hydrogen factory.

Due to the importance it represents to CUF-QI as well as to the community in which the company resides as citizen, the Capacity Expansion Project (CEP) is the main theme in 2008.

The construction of new industrial units occurred along the whole exercise, with the intensive involvement of an important part of the company employees in this activity, accumulating it to their normal activities.

A great effort was made in terms of safety at the site, with important investments in both active and passive safety in order to reduce any possible industrial risks.

The year was characterised by a significant increase in training and raising awareness towards the various safety aspects, among which the Safety Day stands out. Specific steps were taken in order to increase the participation of the employees around Safety issues. To culminate and close a cycle, an enquiry was made at the end of the year (the ISCTE Project called SFRH/BDE) with the aim to understand how the CUF-QI employees perceived Safety.

The Environmental License was also conceded to the company as a result of a licensing process which began with a Study of the Environmental Impact encompassing the present activities and those resulting from the expansion. This license covers the whole industrial site with its new capacity.

In 2008, there was a continuous effort in developing training sessions and raising awareness activities related to environmental issues and an increase in the control and continuous improvement of the Environmental Management System, by resorting to internal audits and environmental checks. Here we highlight the reinforcement of the audits and checks made with the purpose of reducing the environmental impact of the PEC on-going works.

The Quality Management system was also thoroughly checked, aiming at the implementation of Total Quality and concluding the certification process of a significant number of Green Belts under the Six Sigma methodology. During the previous year, several Black Belts were certified and improvement actions related to the application of “Committed to Excellence” by EFQM (European Foundation for Quality Management) were implemented.

Having finalized this first phase, an even greater challenge lay ahead: achieving improvement in the areas of process/organization and cost reduction, aligned with the strategic guidelines coming from top management.

In the Development area, besides actively participating in all the implementation phases of the CEP, we continued with several Technological Development projects and initiated the PILLS Project. This project has a particular relevance considering it involves several European partners, focusing on innovative technology in the Nitration process. The project was presented and approved by the European Committee and considered the second best in over 300 projects presented in this category.

Following the challenge set forth by the Minister of Economy when handing the Engineering Academy Prize to CUF-Químicos Industriais, the company involved itself actively in studies with its industrial partners to study the possibility of creating a highly competitive Petrochemical Cluster in Portugal. This challenge culminated in the creation of AIPQR – Associação das Indústrias da Petroquímica, Química e Refinação, (Association of the Petrochemical Industries, Chemicals and Refinery), whose main mission is to activate the creation of a highly competitive and innovative technology national Platform in the Matosinhos-Estarreja-Sines axis.

CUF - QUÍMICOS INDUSTRIAIS



INDICATOR	UNITS	2004	2005	2006	2007	2008
THE COMPANY						
Share capital	k€	30500	30500	30500	30500	30500
Nr. workers	-	266	232	186	156	161
Annual sales volume	k€	147620	150075	168542	172854	171038
Total production	tons	674495	624510	664016	637071	642534
SAFETY AND ENVIRONMENT						
Accident frequency rate	-	16,0	16,30	2,6	8,6	11,7
Severity rate	-	0,4	0,2	0,1	0,1	0,1
Accident incidence rate	-	38,0	38,8	5,6	19,1	24,8
Fatalities	-	0	0	0	0	0
Investments	k€	156	437	730	354	790
Safety and environment expenses	%	0,4	0,2	0,20	0,22	0,40
HEALTH						
Noise between 85-90 decibels	%	2	6	0	0	16
Noise > 90 decibels	%	9	6	6	6	7
Occupational illness frequency rate	-	0	0	0	0	0
Health related expenses	€ / employee	1194	552	1677	1675	1556
GAS EMISSIONS						
Particles	tons	7	7	44	24	37
Sulphur Dioxide	tons	31	143	188	379	313
Nitric Oxide (em NO2)	tons	271	212	527	679	487
Carbon Monoxide	tons	47	64	146	263	159
Heavy metals (total)	tons	0,1	0,0	0,2	0,3	1,0
VOC	tons	7,0	9,0	2,5	6,3	3,0
LIQUID EMISSIONS						
COO	tons	42	249	201	162	186 (b)
SST	tons	11	18	20	30	25 (b)
Phosphorous Compounds	tons	NA	NA	NA	NA	NA
Nitro Compounds	tons	2	21	27	29	21
As	tons	NA	NA	NA	NA	NA
Cu	tons	NA	NA	NA	NA	NA
Cr	tons	NA	NA	NA	NA	NA
Cd	tons	NA	NA	NA	NA	NA
Pb	tons	NA	NA	NA	NA	NA
Hg	tons	0,007	0,002	0,002	0,002	0,002
Ni	tons	NA	NA	NA	NA	0
Zn	tons	NA	NA	NA	NA	NA
WASTE						
For recycling	tons	11346	10197	13630	12838	12479
Hazardous waste for final disposal	tons	966	1143	604	532,0	712,0
Common waste for final disposal	tons	1583	3591	2448	210	292
CONSUMPTIONS						
Energy	mj/tons	2186	2241	2059	1915	4027(c)
Water	m ³ /tons	2,5	2,6	2,4	2,3	2,3
DISTRIBUTION INCIDENTS						
TONS DISTRIBUTED (total)	tons	455362	574140	589047	640925	574332
- Rail	tons	21897	10600	10546	14081	16246
- Road	tons	256996	376940	411016	444363	388982
- Sea	tons	26158	30900	29956	31969	24634
- Waterways	tons	0	0	0	0	0
- Pipeline	tons	150311	155700	137529	150511	144470
NR. INCIDENTS (total)	nr.	0	1	0	1	1
- Rail	nr.	0	0	0	0	0
- Road	nr.	0	1	0	1	0
- Sea	nr.	0	0	0	0	0
- Waterways	nr.	0	0	0	0	0
- Pipeline	nr.	0	0	0	0	0

(b) The COO and SST values referring to liquid emissions as of 2004 refer to the CUF-QI effluent which will be subject to SIMRIA treatment;
 (c) very high value due to new conversion factor.

2008 was a year to test Dow Portugal. Even with the uncertainties arising in the world markets as well as the lurking economic shadows, we persisted with our vision of the future and did not allow ourselves to be overcome by the pessimism which began spreading around the world.

Therefore, despite the unfavourable economic forecasts, we dared to follow through with our capacity expansion projects, which had already been approved by the company the year before for our both units. There may be those who classify this as an audacious or risk taking decision, we prefer to think of it as a reflex of our vision on the long run: to make Dow Portugal more competitive globally in the PMDI market, assert our Iberian leadership in the supply of STYROFOAM™ and continue being part of the Estarreja strategic development plan.

As this is not an isolated project, our boldness to invest during an economic downturn also has the purpose to make the Estarreja Chemical Complex (CQE) one of the most modern clusters of the European chemical industry, since CUF and Air Liquide took on the same adventure to expand their production capacity and so supply Dow with the raw material needed for it increased production of PMDI. The integrated project of the CQE expansion totals an investment of 250 million euros.

Dow Portugal will almost double its production of PMDI, producing at a new capacity of 160.000 tons per year giving answer to the increasing demand of this product on the market which in 2008 was estimated to be 4.5 million tons per year. The Styro-foam plant built a second production line, more modern and with a greater production capacity.

Being our long term vision, it would not make any sense if it were not supported by the basic concern of sustainability, which goes through the primary care of protecting the environment, health and safety of the people as well as the social responsibility of the company.

As a chemical company, Dow added to its periodical table something new and essential: the Human Element. It is the basis of our whole strategy. Since the very first moment the expansion project was laid on the table, the company had an indispensable condition to make it move on: to isolate completely the areas producing phosgene in the Estarreja PMDI plant so as to eliminate any possibility of leakage of this gas into the atmosphere.

And it was so that two containments were projected and built isolating the areas of phosgene production completely, therefore avoiding any slip of air and in case of a leak, avoiding the chemical product coming from inside.

This is the most visible part of our concerns towards health and towards the environment. However, there are others which hide behind our work procedures and processes, and which may be evidenced in the following numbers: in 2008 we reached 18 consecutive years without accidents with sick leave and 6 years without reportable leaks.

These numbers reflect our work, done at a more conscious level, so that a safe and responsible behaviour reflects more of a culture and own thinking than complying merely with the rules. It is equally with this intent that we have our heart and soul in PACOPAR, so that together, with all our partners and with the people of Estarreja, we built that culture of social responsibility and spread it over our community. It is in this way that we have contributed both financially as well as with the participation in discussions, debates and ideas towards the fulfilment of community projects. Because we believe that privileging a common interest is the best way to cross our environmental, health and economical paths into one and only way: that of a sustainable development.



DOW PORTUGAL



INDICATOR	UNITS	2004	2005	2006	2007	2008
THE COMPANY						
Share capital	k€	4762	4762	4762	4762	4762
Nr. workers	-	101	96	102	104	106
Annual sales volume	k€	68848	77192	104925	110890	107773
Total production	tons	97001	98041	104578	98226	91921
SAFETY AND ENVIRONMENT						
Accident frequency rate	-	0,0	0,0	0,0	0,0	0,0
Severity rate	-	0,0	0,0	0,0	0,0	0,0
Accident incidence rate	-	0,0	0,0	0,0	0,0	0,0
Fatalities	-	0	0	0	0	0
Safety and environment expenses	%	0,90	0,63	0,81	9,77	10,28
Investments	k€	203	320	704	10835	11075
HEALTH						
Noise between 85-90 decibels	%	12,0	34,0	34,0	28,0	29
Noise > 90 decibels	%	12,0	12,0	12,0	12,0	12
Occupational illness frequency rate	-	0	0	0	0	0
Health related expenses	€ / employee	838	855	890	1051	2412
GAS EMISSIONS						
Particles	tons	4,67	1,70	3,70	5,45	6,55
Sulphur Dioxide	tons	0,84	0,90	2,00	5,97	0,78
Nitric Oxide (em NO2)	tons	49,4	61,4	74,1	45,8	60,7
Carbon Monoxide	tons	0,8	4,9	1,5	2,1	3,3
Heavy metals (total)	tons	0	0	0	0	0
VOC	tons	9,0	8,8	9,5	8,1	8,1
LIQUID EMISSIONS						
COO	tons	26,8	13,7	0,0	0,0	0,0
SST	tons	24,2	10,6	0,0	0,0	0,0
Phosphorous Compounds	tons	0,00	0,16	0	2	0
Nitro Compounds	tons	3,00	2,19	0	8	0
As	tons	NA	NA	NA	NA	NA
Cu	tons	NA	NA	NA	NA	NA
Cr	tons	NA	NA	NA	NA	NA
Cd	tons	NA	NA	NA	NA	NA
Pb	tons	NA	NA	NA	NA	NA
Hg	tons	NA	NA	NA	NA	NA
Ni	tons	NA	NA	NA	NA	NA
Zn	tons	NA	NA	NA	NA	NA
WASTE						
For recycling	tons	91,5	79,0	131,0	126,4	128
Hazardous waste for final disposal	tons	251	222	242	77	61
Common waste for final disposal	tons	30	32,0	34,0	30,1	22,3
CONSUMPTIONS						
Energy	mj/tons	10342	9449	9460	9467	9904
Water	m ³ /tons	9,81	8,60	8,40	8,79	9,18
DISTRIBUTION INCIDENTS						
TONS DISTRIBUTED (total)	tons	256999	195778	183351	167059	187611
- Rail	tons	NA	NA	NA	NA	NA
- Road	tons	144318	93921	103872	97341	91538
- Sea	tons	78666	69080	79479	69718	63732
- Waterways	tons	NA	NA	NA	NA	NA
- Pipeline	tons	34015	32777	32777	32300	32341
NR. INCIDENTS (total)	nr.	0	0	0	0	0
- Rail	nr.	0	0	0	0	0
- Road	nr.	0	0	0	0	0
- Sea	nr.	0	0	0	0	0
- Waterways	nr.	NA	NA	NA	NA	NA
- Pipeline	nr.	NA	NA	NA	NA	NA



SUSTAINABILITY A LIFE PROJECT

In close cooperation with the Avanca Group of Schools, PACOPAR joined in for another moment of reflection about the imperative change of behaviour which needs to be fostered in citizens in order to avoid the foreseen environmental degradation.



AVANCA GROUP OF SCHOOLS



Sustainability is the watchword and it is important to alert and inform the citizen of his/her role at a time where we are already facing the consequences of uncontrolled and careless abuse of our planet's resources.

It was with this mission that an informative panel spoke to the School Community with the exception of the students. The speech was held at the library of the Dr. Egas Moniz 2nd and 3rd Basic School Avanca and was directed by the Culture Town Councillor, Dr. João Alegria, who acted as moderator; Drs. Myriam Lopes and Alexandra Monteiro from the Environmental Department of the University of Aveiro, Eng. Washington Dantas, Dow General Manager and Dr. José Félix from the Baixo Vouga III ACES were responsible for delivering the speech. The theme "The Citizens' role towards a Sustainable Future" was notably addressed by the speakers namely in that which concerns consumer dampening and ordaining of the territory, responsible action promoted by PACOPAR and Public Health.

The students participated in several activities along the day, taking the opportunity to recall concepts and transmit messages related to "Sustainability".

The Eco-School Flag was also hoisted. It had been offered by Fee-Portugal to the Group of Schools in recognition of the good practices performed towards the Environment.

Ana Luísa Sousa, Anabela Justiça and Alice Fragateiro, responsible for the organization of these activities, would like to thank PACOPAR for its cooperation as well as the sponsorship provided by Nestlé and the Flor do Tâmega Pastry





“READING IS LIFE”

The results from studies on school failure reveal that for many students, this issue is due to insufficient mastery of the Portuguese language. Any future learning is, therefore, put in question. In an attempt to overcome this issue and to promote students' own interest in reading, the Senhora do Monte Primary School and Kindergarten in Salreu gave birth to the Project “**A Leitura com(vida)**” (Reading is [an Invitation to] Life). Putting this project into practice was only feasible thanks to PACOPAR's sponsorship. The amount involved made it possible to acquire a multiple variety of quality literature works under the National Reading Plan as well as to purchase appropriate furniture to keep and manage these books easily.

It was in this way that the teachers of this School were able to provide students with readings related to their interests, leaving them with the option of taking those books home and thus promoting activities with different purposes: reading for fun and pleasure, reading as a source of information, reading for learning and for enriching their knowledge about Language.

Since the pleasure of reading starts with and is consolidated through daily practice, we believe that each of our students will leave their mark in each of the books they read, in the reading process they experience, and ever more, books will become part of their flesh, and blood...



ESTARREJA GROUP OF SCHOOLS



INAUGURATION OF THE Pe. DONACIANO SCHOOL LIBRARY 23rd MARCH 2009

On March 23rd, at 10:15 a.m. the new space for our long awaited School library was inaugurated.

This symbolic moment counted with the presence of all the Kindergarten classes and of the 1st, 2nd and 3rd Grades of the Head School as well as with school teachers, employees and people related to the School Library Network - Dr. Isabel Nina; Autarchy – the Culture Town Councillor, Dr. João Alegria; and Estarreja Municipal Library - Dr. José Beato, Senior Library Technician of the Municipal Library and activity coordinator of this library, Carla Ferreira.

The activities related to the inauguration of this new space started off with a musical performance by the 6th C class from our school and CERCIESTA, followed by a welcome text read by the BE (School Library) Team to all those present, which also elevated the Library namely due to the role it plays as a place where, through different means, knowledge is transmitted and where we are transported to a world of dreams, fantasy, fun... a place where we learn to love books.

The Culture Town Councillor said some brief words of praise to the Team Responsible for the BE (School Library), recognizing all the work which had been done in order to make this project a success, a project which will greatly benefit all those who resort to it.

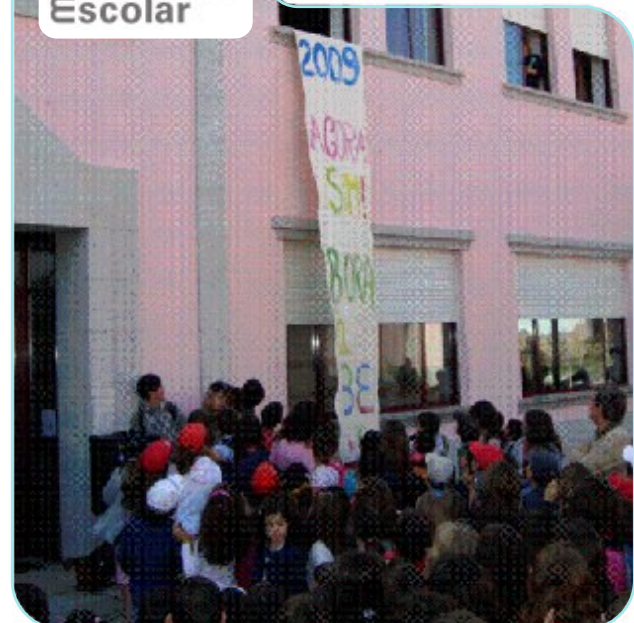
Students, teachers and guests then walked through this new space bringing it life and joy, a place which for months had been lifeless and whose transformation had begun sparking curiosity and a wish for having it opened as soon as possible.

Afterwards, students from Kindergarten and from the Paço Primary School along with the 5th G, 6th B, 6th C, and 6th H classes from the Estarreja Group of Schools participated in short reading and story telling led by the Kindergarten teacher, Elsa Ferreira.

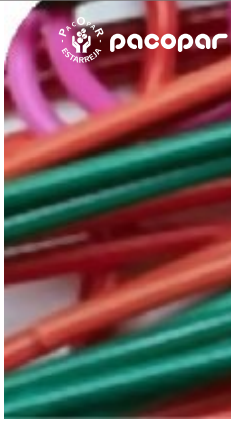
The BE (School Library) Team is grateful for the receptiveness shown on the day of the inauguration of this space and for all the cooperation they received both from the town council as well as from Dr. Isabel Nina (Representing the RBE) since the beginning of the project.



The BE team:
Anabela Lopes
Elsa Ferreira
Eugénia Cardoso
Graça Paiva
Paula Costa
Sueli Oliveira



"A good Library is a space, a palace where the nation's noblest spirits and different generations meet each other."
(Samuel Níger)



“REUSING, REDUCING AND RECYCLING”

The students from the “Eco-students” club are involved in the *Reusing, Reducing and Recycling* project, eTwinning Action, which is integrated in the European Union Lifelong Learning Programme.

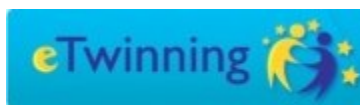
The main objective of this programme is to create cooperative work networks between the European schools through the development of common projects by using the Internet and Communication and Information Technology from the Internet.

Students and teachers from the different countries in Europe can thus work together, exchange information and share pedagogic materials.

The Chennestone Primary School in the United Kingdom is the promoter of the *Reusing, Reducing and Recycling* project which is presently being developed in articulation with the school Language Shop and consists of an exchange of ideas and environmental experiences with other European Schools.

Ideas and experiences have already been exchanged with Green Teams from several countries throughout the second term: England, Italy, Poland and Romania. Students which have already been involved in the project along with the teachers responsible for activating it, namely: Paula Sampaio and Luisa de Miranda from the Language Shop and Susana Bessa from the Eco-Club, recognize this to be a very enriching experience.

This school is also participating in another eTwinning project, E-mail-exchange: for real this time, where-upon the students involved in it share information, life experiences and cultural aspects of their countries using English to communicate. This project is being developed in partnership with two other schools, a German and an Italian school. We hope many schools from this area will become involved in eTwinning – considering we have much to learn and a lot to share, too!



PARDILHÓ GROUP OF SCHOOLS



PRESENTING THE GREEN FLAG AT THE PARDILHÓ GROUP OF SCHOOLS

On December 18, at the closing of the 1st Term Activities, the Green Flag was presented to the school community. The flag had been attributed to this Group of Schools for the activities developed along 2007/2008 to improve the environment both at school and in the community.

At the same time, students of the Eco-Student Club shared the "Eco-Code" which had been elaborated to undergo during the present school year. The "Eco-Code" is a set of commandments which describe concrete actions to be abided by everyone at school: students, teachers and school employees.

After the presentation "ceremony" undergone by the elements of the Eco-Student Club, the Green flag was hoisted to affirm publicly the adhesion of the Pardilhó Group of Schools to this international project.

This Flag certifies the existence of a Coherent and Quality Environmental Education at this group of schools.



ECO-CODE

- 1- Separate waste to become a friend of the environment.
- 2- Save electricity to help the environment.
- 3- Place used batteries in the battery trash box in order not to be a "polluting agent".
- 4- Clean up your rubbish when you go on a picnic.
- 5- Ride a bicycle if you do not want to pollute the environment.
- 6- To be environment-friendly, use public transportation.
- 7- Turn off the tap while you brush your teeth.
- 8- If you want to have enough oxygen, do not cut down trees.
- 9- Use both sides of your paper sheets in order to save trees.
- 10- In order to avoid fires, do not light a fire.
- 11- Be an animal friend and protect their habit.
- 12- Let us be "ECO-FRIENDS" in order to preserve a blue environment.

BEYOND THE OBVIOUS

At a time where the word crisis has become vulgarized (whose legitimacy we, however, do not put into question), and where proposals to solve it sum up one after the other, the funds provided by PACOPAR to the Health Education project which is being developed at the Estarreja Secondary School are of most importance. Although it is usually considered that companies are responsible for producing and distributing wealth whilst schools assure education in general and the development of thinking in our children and young people, it is not less true that the problems we face today need everyone to understand their role and responsibility in a vaster manner.

When we think of the costs associated to a surgery or a simple doctor's appointment at the National Health System (Eur 80 for an appointment, Eur 12000 for heart surgery), we clearly understand the true meaning of the word sustainability.

The issue is obvious. Is the production sector capable of creating enough wealth to guarantee everyone a model similar to the present one?

The answer does not seem complex either, considering that the answer to part of the financial, social and economic problems which our societies face lies at school. It is up to the companies, within their social responsibilities, to overcome the premise of financing the social guarantee systems.

By contributing to activating programmes such as the one presented above, they are certainly way beyond the obvious.



HEALTH EDUCATION AND PROMOTION AT THE ESTARREJA SECONDARY SCHOOL REDUCING THE RISKS THROUGH THE PROMOTION OF A HEALTHY LIFE

Health Education and Promotion is a process of enabling, participating and taking responsibility, which includes as main goals making the individual feel competent and valued when adopting and maintaining healthy lifestyles and respecting the environment.

School is a place of election to establish healthy lifestyle habits and to promote Health, Safety and Sustainability.



ESTARREJA SECONDARY SCHOOL

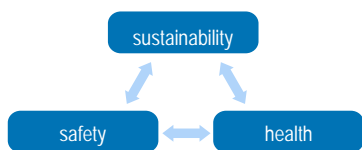


Lack of information is disabling and/or makes it difficult for people to make a decision. That is why it is so important to talk about Health Education within the school environment.

The present legislation stipulates it is mandatory to include Health Education and Promotion as a global training area for the individual in the School and Class Curricular Projects, leading thus towards the experience of an open curriculum which is worked on within the whole school.

It was in this way that the Health Education Group at the Estarreja Secondary School defined as main themes for the project "Reduce risks by promoting a Healthy Life" the **Three S's – Safety (Segurança), Health (Saúde) and Sustainability (Sustentabilidade)**. This project was submitted to Pacopar subsidies program and was funded.

Figure 1 - Project "Three S's: Safety, Health and Sustainability" - Interaction between themes considered a priority



For the development of the Health Education Projects, the Secondary School has counted on the support of technicians from the Estarreja Health Centre, namely Carlos Lima and Guilhermina Pereira (nurses) and trainee nurses, as well as the Dental Health Hygiene Dr. Rita Queirós and the Nutritionist Dr. Patrícia Martins. It is also in cooperation with this Health Centre that the school created a School Health Support Office which is available to support the whole community.

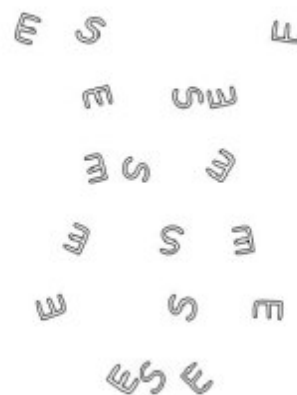
The project has also counted on the support of the Estarreja Town Hall, which amongst other aspects has provided spaces for the performance of speeches and dissemination activities, the Estarreja Fire Brigade, the Integrated Answer Centre and other instructors.

Along the 2008/2009 school year, several activities were developed, namely: training / Speeches to teachers, students, school staff, parents and tutors, sports activities, screenings, thematic days commemoration, projects divulgation, literary and song competitions, campaigns, promotion of the Health space, periodic pamphlet for Parents and Tutors, exploration of themes in such subjects as Civic Training and Project Area, promotion and help in the development of non-subject curricular projects in Project Area, and the dynamization of the "ese.wordpress" Blog.

It is within the school environment that the Educating to Health group intends to foster general knowledge, attitude and values which will help the community in general to make choices and take proper decisions in relation to their health and physical, social and mental well-being.



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FIT TO ORGANIZATION / COMPANY

CODE	COURSE	NR. HOURS	LEVEL
0717	Methodologies for implementation of quality management system	25	3
0731	Analysis of Customer Satisfaction	25	3
00737	Quality Management - Nutrition	25	3

BUSINESS

CODE	COURSE	NR. HOURS	LEVEL
0349	Environment, safety, health and hygiene at work – basic concepts	25	2 + 3
0350	Interpersonal communication – assertive communication	50	2 + 3
0352	Service	50	2 + 3
0382	Time management and organisation at work	25	3
0449	Company – building its image	50	3
0468	Project – Nutrition, service and fashion	50	3

ACCOUNTING AND TAXATION

CODE	COURSE	NR. HOURS	LEVEL
0563	Commercial legislation	25	3
0567	Notions of taxation	25	3
0569	Accounting Principles	50	3
0574	Closing Annual Account	50	3

ACCOUNTING AND ADMINISTRATION

CODE	COURSE	NR. HOURS	LEVEL
0592	Labour legislation	25	3
0594	Administration of organizations	25	3

SECRETARIAL AND ADMINISTRATIVE WORK

CODE	COURSE	NR. HOURS	LEVEL
0659	English Language – Commercial Documentation	50	3
0697	Portuguese Language – Communication	50	3

INFORMATION TECHNOLOGY

CODE	COURSE	NR. HOURS	LEVEL
0756	Calculation sheet	50	2
0767	Surfing the Internet	25	2
0777	Word Processing – processing and correcting	50	3
0778	Calculation Sheet – operation and programming	50	3
0792	Creating WEB pages in hypertext	25	3
0803	Office Applications	50	3

CATERING SERVICES

CODE	COURSE	NR. HOURS	LEVEL
3297	HACCP System (Hazard Analysis and Critical Control Points)	25	2 + 3
3306	Making Dessert	25	2
3308	Basic Health Care (First Aid)	25	2 + 3
3335	English Language – cafeteria, counter, and table service	25	2
4214	English language – table/bar	25	3
4217	Implementing management of human resources	25	3
4423	Basic cooking practices	25	2 + 3
4679	Baking Bread	25	3
4681	Making Dessert for Pastry Shops	25	3

Level 2 – Without minimum academic qualifications
 Level 3 – Minimum academic qualifications 9th Grade;
 Academic Qualifications up to the 12th Grade

- **Intended for:** Active/Unemployed (with academic qualifications Up to the 12th Grade)
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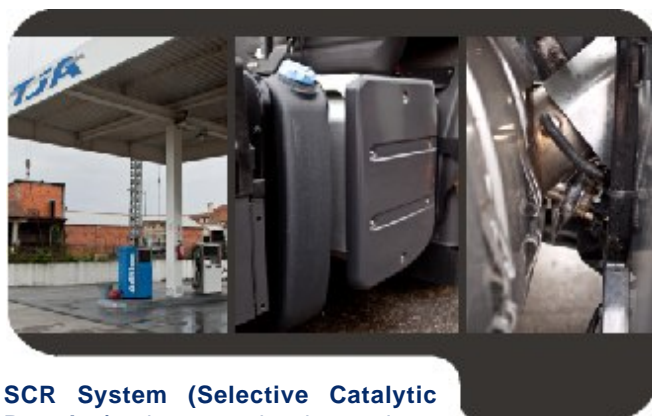
> **Tachographs and Social Legislation**



In October 2009 all new vehicles will need to abide by the Euro 5 standards. This means that the level of pollution emissions will have to obey the European standards in that which concerns: Noise, CO₂ (carbon dioxide), NO_x (nitro oxide), Hydrocarbons and Particles (non-combustibles).

The existing systems to reach both the present standard Euro 4 as well as the future Euro 5 will need to undergo two phases: the first has to do with the great development of the fuel injection systems which are more precise and efficient through the command of the engine by embarked electronic and electro-mechanical injectors.

The second has to do with the post-combustion treatment, considering that if the present combustions waste less and improve consumption and performance, it is also possible to “attack” post-combustion emissions (fumes) via 2 different means: the SCR or the EGR.



SCR System (Selective Catalytic Reaction): a hotter combustion produces less particles and increases the power and binary of the engine. There is an increased emission of NO_x, which is treated catalytically through the injection of AdBlue in the exhaust pipe. A tank is needed for it, along with the inconvenience of having to fill it up as well as the cost.

EGR System (Recirculation of Exhaust Pipe Gases): A part of the gases which are produced return to the combustion chamber to be burnt again. There is less emission of NO_x but more particles. They are retained inside a DPF (Filter for Diesel Particles). This system does not have the complication of cost and filling up with AdBlue but it is conditioned to a higher consumption of fuel and the potential maintenance of filters.



For the Euro 5, the technologies are kept (SCR or EGR), but in the future they may undergo more or less exotic concepts. One should understand though that in high tonnage and long distance transportations, diesel will keep on being the most powerful and rentable fuel.

TRANSPORTES J. AMARAL



INDICATOR	UNITS	2004	2005	2006	2007	2008
EMPLOYEES						
Annual Average	-	330	376	411	437	468
VEHICLES						
WITH MOTOR						
Tractor	-	215	237	266	297	300
Truck	-	45	45	49	49	52
WITHOUT MOTOR						
Trailers	-	248	286	327	354	377
LOAD CAPACITY						
Tons	-	5 801	6 333	7062	7796	7902
TONS TRANSPORTED						
Iberian	-	2 015 500	2 176 500	2 393 500	2 711 250	2 768 250
Tir	-	67 600	76 960	91 000	88 400	86 840
Total	-	2 083 100	2 253 460	2 484 500	2 799 650	2 855 090
KM TRAVELLED						
Extra-Iberian	-	7 010 535	7 496 899	7 927 726	8 669 045	8 886 901
Iberian	-	22 876 789	26 843 890	28 659 760	30 616 853	31 194 139
Total	-	29 887 324	34 340 789	36 587 486	39 285 898	40 081 040
BUSINESS DEVELOPMENT						
Extra-Iberian	€	5 222 974	5 709 754	6 138 953	6 293 967	6 527 682
Iberian	€	19 096 122	25 179 029	29 751 763	31 567 164	33 421 814
Total	€	24 666 067	31 177 214	36 379 864	38 562 612	40 742 874
GROSS FIXED ASSETS						
	€	22 749 316	24 992 185	26 002 620	28 194 635	29 641 143
SHAREHOLDERS EQUITY						
	€	3 067 143	3 412 014	4 214 398	5 119 102	5 331 055
GROSS ADDED VALUE						
	€	9 400 231,05	10 792 481,87	12 294 571,54	13 966 182,68	14 804 153,64
ACCIDENT RATE						
Average staff	-	330	394	411	440	468
Nr. of working hour	-	673 114,4	763 590,4	833 319,6	819 034	954 343
Accidents without disability	-	13	19	16	30	13
Accidents with disability	-	18	9	17	6	24
Working days lost due to sick leave	-	353	464	397	180	789
Severity rate	-	0,52	0,61	0,48	0,22	0,83
Frequency rate	-	26,74	11,79	20,4	7,33	25,15
CONSUMPTIONS						
Energy	kmh (total)	256 518	268 466	266 566	253 256	265 960
Gas oil (average)	litres/100km	36,63	36,67	36,15	35,86	35,73
Water	m ³	1 094,10	1 103,00	1 222,20	1 158,00	239
WASTE						
COMMON WASTE						
- Vehicle plastic (non recyclable)	Kg	73302	75494	73790	75055	75397
- Glass (Windscreen)	Kg	42810	40637	38751	40017	33500
- Card / paper	Kg	NA	NA	NA	NA	NA
- Iron scrap	Kg	NA	NA	NA	NA	NA
SPECIAL OR HAZARDOUS WASTE						
- Oil filters	Kg	-	4 400	3 800	5 000	2 984
- Contaminated absorbing material (waste)	Kg	-	-	400	800	400
- Batteries	Kg	-	2 040	8 380	3 880	4 142
- Used oil	litres	-	16 200	10 450	13 300	15 700
- Degreasant solution	litres	-	560	590	540	562
- Printer and photocopier toners	Kg	-	8,4	5,4	0	2
- Print cartridges	Kg	-	4,5	1,2	0	1
- Batteries	Kg	-	40	0	40	0
- Oily sludge	Kg	-	7 280	0	5 980	5 920
- Fluorescent lamps	Kg	-	0	0	9	0
NEW OILS						
Cosumption	litres	-	64 950,5	49 316,5	53 808,2	51 815,4

The Department of Chemistry of the University of Aveiro (DQUA) is made up of 55 Professors, of whom 51 hold a PhD, 20 doctorate Researchers, 27 assistant technicians and administrative workers and about 900 students (Table I). The Department is nowadays considered a reference both at a national and European level for the quality of its teaching and post-graduate education, for the excellence of its research as well as for its connection to the civil society and especially to the industrial world.

Table 1
DQUA students distributed across the different courses and study cycles.

COURSES	ENROLLMENTS 2008/2009
1st CICLE (Academic degree)	
Chemistry	79
Biochemistry	188
Biotechnology	111
Marine Sciences*	51
Chemical Engineering (MI, 1st -3rd year)	134
TOTAL	563
2st CICLE (Master's degree)	
Organic Chemistry and Natural Products	10
Biochemistry and Nutrition Chemistry	16
Biomolecular Methods*	20
Analytical Chemistry and Quality Control	30
Materials Derived from Renewable Resources	19
Chemical Engineering (MI, 4th and 5th year)	120
European Master on Materials Science / FAME*	20
TOTAL	235
3st CICLE / DOCTORATE	83
POST-DOCTORATE	37

* inter-department courses

The Department of Chemistry of the University of Aveiro

Investing in quality in teaching and research, internationalization and in the cooperation with society

The Academic degree in Chemistry presents itself with an extremely flexible structure allowing different complementary graduation profiles (Environmental Sciences, Material Sciences, Engineering Chemistry, Physics and Management), allowing in this way access to an ample choice of graduations in the 2nd cycle. Academic degrees in Biochemistry, Biotechnology and Marine Sciences, designed according to the modern concepts of transversal and multi-subject curricular design, have registered the preference of a high number of university candidates since their startup. It is worth mentioning that the DQUA Biochemistry and Biotechnology courses have registered the highest enrolment marks among courses of the same kind in other Portuguese universities. The Chemical Engineering Course, accredited by the Order of Engineers, now under an Integrated Masters Degree, is already highly acknowledged course in its scientific area.

Graduation in the 2nd cycle is assured by 6 masters: Biochemistry and Nutrition Chemistry, Materials Derived from Renewable Resources, Biomolecular Methods, Analytical Chemistry and Quality Control, Organic Chemistry and Natural Products and European Master on Materials Science / FAME. The offer of second cycles has recently been revised and widened, and new Master degrees in Chemistry, Biochemistry and Biotechnology with different areas of specialization are expected to start up in the school year of 2009/2010.

Internationalisation and acknowledgment of the quality teaching ministered at the DQUA are well shown in the recognition of the Academic Degree in Chemistry with the Chemistry Eurobachelor Label as well as in the offer of the European Master in Material Sciences (Erasmus Mundus) in partnership with the Technical University of Hamburg and the Aalborg University, and the European Master on Functionalized Advanced Materials and Engineering of Hybrids and Ceramics – FAME (Erasmus Mundus) in cooperation with the Institut National Polytechnique de Grenoble, the Catholic University of Louvain, the Liege University, the Technische Universität Darmstadt, the Augsburg University and the Bordeaux I University. More than 60 foreign students are enrolled in the different DQUA courses

The DQUA has registered a significant annual increase of its scientific production (Figure 1). It is presently the Chemistry Department with greatest scientific production per teacher in Portugal, presenting an average of scientific publishing similar to the European values (over 3 articles in international journals/teacher/year).

This investigation activity is inserted in two Associated Laboratories (CICECO Centre for the Investigation of Ceramic Materials and Composites, CESAM Centre for the Study of the Environment and Sea) and an Investigation Unit (QOPNA Organic Chemistry, Natural and Agro-Nutrition Products) all classified as “Excellent” by the Technology and Science Foundation and supported by a great number of national and European projects financed with public and private (industry) money, along with a modern park of scientific infrastructures. Just as an example, we can refer that the DQUA has the biggest instrumental National park of Nuclear Magnetic Resonance (NMR) and Mass Spectrometry (Figure 2). Both these as well as other scientific infrastructures are used for investigation and also to supply services outside namely to the industry as well as to research and development centres.

Research focused on application and supported by fundamental research has originated several trademarks in the past few years, along with the development of several business initiatives and the transfer of technology including the spin-off of a company focused on the food industry. An example of the cooperation with the business world is the recently formed Platform for the Investigation and Development of Polymers in Renewable Energy – IDPoR (idpor.ciceco.ua.pt), an initiative which involves DQUA and CICECO along with six big national enterprises which are linked to the polymeric activity and material derived from renewable resources.

The divulgation and promotion of Chemistry within society and the cooperation with secondary school is equally part of the DQUA activities. This includes the preparation of practical activities in Chemistry, cooperation in the Project Area field, training teachers in terms of safety in lab classes and managing lab waste. The Department of Chemistry of the University of Aveiro is aware of the need to promote a positive attitude and culture in the scientific area among young people and has, therefore, participated in the Summer Academy promoted annually by the UA, cooperated with FÁBRICA – Centro de Ciência Viva (Live Science Centre). It has also participated actively in radio and TV programmes, hold speeches and dynamized “Science Cafés” on current Chemistry issues, and organized National and Iberian-American Olympics on Chemistry.

Figure 1 - Evolution of the DQUA annual scientific production

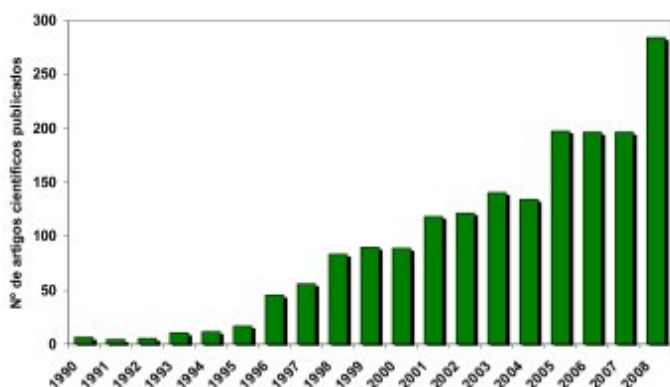


Figure 2 - Nuclear Magnetic Resonance (NMR) and Mass Spectrometry Infrastructures





Glossary

WATER

COD – Chemical Oxygen Demand

This parameter measures the amount of organic compounds in water.

N – Nitrogen

Nutrient contributing to the accelerated growth of algae and other micro organisms, triggering phenomena of eutrophication in the receiving environment.

TSS – Total Suspended Solids

Non filterable organic particles transported by residual waters up to the receiving environment. Particles are responsible for the turbidity of many superficial waters and the deposition of sludge that result in the depletion of oxygen and the production of bad odours.

AIR

CO – Carbon Monoxide

Gas resulting from partial combustions.

NOx – Nitric Oxide

Gases produced by combustion processes, amongst others, contributing to the formation of photochemical fog and acid rain.

Particles

Solid particles in suspension in a gas environment with irrelevant falling speed.

SO2 – Sulphur Dioxide

Gas resulting from the combustion of fossil fuels containing sulphur. This gas contributes to the formation of photochemical fog and acid rain.

WASTE

Landfill

Waste facility used for controlled above or under ground disposal of waste (source: Decree-law nr. 239/97, of 9 September).

Recycling

Processing, including compounding processes and regeneration of used materials into new products (source: Ministerial Order nr. 15/96, of 23 January).

Waste residues

Any disposable substances or objects complying with the European Waste Catalogue approved by the European Commission and transformed into national law by Ministerial Order nr. 818/97 of 5 September (source: Decree-law nr. 239/97 of 9 September).

Industrial waste

Waste generated by industrial activities as well as those resulting from the production and distribution of electricity, gas and water (source: Decree-law 239/97 of 9 September).

Hazardous waste

Waste that is dangerous to people, animals or the environment in accordance with the Hazardous Waste List approved by the European Commission and transformed into national law by Ministerial Order nr. 818/97 of 5 September (source: Decree-law 239/97 of 9 September).

Urban waste

Domestic waste or similar, including waste disposed by the services sector or industrial or commercial establishments or health care provides not exceeding 1,100 lt per day (source: Decree-law 239/97 of 9 September).

Recovery

Changes that view the re-using of waste namely recycling and energy recovery (source: Decree-law 239/97 of 9 September and Ministerial Order nr. 15/96, of 23 January).

SAFETY

Fi – Frequency

Number of working accidents with sick leave per million of hours/man worked.

Si – Severities Index

Number of working days lost per thousand hours/man worked.

li – Incident Index

Number of accidents with sick leave per thousand workers (in average).

INDUSTRIAL HYGIENE

Worker exposed to noise

Worker exposed to daily personal noise exposure level (LEP,d) equal or above 85 dB (A) or a maximum peak sound pressure equal or above 140 dB.

OTHER

VCM – Vinyl Chloride Monomer

Volatile organic compound (COV) ($p_v=13,9\text{ }^\circ\text{C}$ and $p_v=2548\text{ mmHg}$ at $25\text{ }^\circ\text{C}$) soluble in water at approximately 1,1g/l (at $20\text{ }^\circ\text{C}$).

Air Liquide

Sociedade Portuguesa do Ar Líquido

Apartado 91 | 3861-208 Estarreja

Tlf: 234 840 500

Plant manager: Luís Ferreira

E-mail: luis.ferreira@airliquide.com

AQP

Aliada Química de Portugal, Lda

Quinta da Indústria, Beduído

3860-680 Estarreja

Tlf: 234 810 300

General director: Alvarim Padilha

E-mail: alvarim.padilha@cuf-qi.pt

Cires S.A.

Apartado 20, Samouqueiro – Avanca

3864-752 Estarreja

Tlf: 234 811 200

Industrial general director: Hélder Paula

E-mail: helder.paula@cires.pt

Community affairs: Paulo Jorge

E-mail: paulo.jorge@cires.pt

CUF - Químicos Industriais

Quinta da Indústria – Beduído

3860-680 Estarreja

Tlf: 234 811300

Delegate administrator - João Fugas

E-mail: joao.fugas@cuf-sgps.pt

Communication – Paulo Caetano

E-mail: paulocaetano@cuf.pt

Director for innovation and new projects:

Almeida Santos

E-mail: diogo.santos@cuf-qi.pt

Dow Portugal

Quinta da Indústria Poente

3860-529 Beduído - Estarreja

Tlf: 234811000

General director: Washington Dantas

E-mail: wddantas@dow.com

EH&S Delivery leader: Renata Santos

E-mail: nsantos@dow.com

Estarreja Group of Schools

Rua da Arrotinha – Apartado 25

3830-207 Estarreja

Tlf: 234 840 640

Teacher - João Tavares

E-mail: adjunto1ceb@gmail.com

Avanca Group of Schools

Rua do Morgado, 120

3860-127 Avanca

Tlf: 351 234 850 120

Teacher - Alice Fragateiro

E-mail: fragateiro@megamail.pt

Teacher – Ana Monteiro

E-mail:

ana.pereiramonteiro@gmail.com

Pardilhó Group of Schools

Rua Padre Garrido, apartado 8

3869-464 Pardilhó

Tlf: 234 850 150

Teacher - Leontina Pinto

E-mail: lapp.530@gmail.com

Associação de Moradores da Urbanização da Póvoa de Baixo

Apartado 43 | 3860 Estarreja

Tlf: 234845385

Representante: João Vinha

E-mail: joaovinha1@gmail.com

Estarreja Fire Brigade

Rua Desembargador Correia Pinto

Apartado 76 | 3864-909 Estarreja

Tlf: 234 842 303

Fire Brigade Commander - Altino Silva

E-mail:

bvestarreja.comando@mail.telepac.pt



Contacts

Estarreja Municipality

Praça Francisco Barbosa
3864-001 Estarreja
Tlf: 234 840 600
President - José Eduardo de Matos
E-mail: jose.eduardo.matos@cm-estarreja.pt
Safety, environment and quality technician
Luísa Barrosa
E-mail: saq@cm-estarreja.pt

Cegonha – Associação de Defesa do Ambiente de Estarreja

Apartado 100 | 3860 Estarreja
Tlf: 966551372
Engineer - Miguel Oliveira e Silva
E-mail: mos@det.ua.pt

Estarreja Health Centre

Rua Almeida Eça - Teixugueira
3860-335 Estarreja
Tlf: 234 810 600
Director – J. M. Vera Cruz Félix
E-mail: csestarreja_sam@csestarreja.min-saude.pt
Delegate for municipal health – M^a Ofélia Almeida
E-mail: asestarreja@csestarreja.min-saude.pt

Estarreja Secondary School

Rua Dr. Jaime Ferreira da Silva
3860 Estarreja
Tlf: 234 841 704/5
Teacher - Rosa Domingues
E-mail: esc.se@mail.telepac.pt

GNR de Estarreja

Rua Dr. Pereira de Melo, nº 188
3860-375 Estarreja
Tlf: 234 810 690
Corporation Commander - Davide Baptista
E-mail: baptista.dsr@gnr.pt

Visconde de Salreu Hospital

Av. da Agra
Apartado 46
3860-201 Estarreja
Tlf: 234 810 000
Director – Pedro Almeida
E-mail: pca@hvsalreu.min-saude.pt

SEMA – Associação Empresarial

Rua Desembargador Correia Teles,
216-H
3860-362 Estarreja
Tlf: 234 843 689
Presidente: José Teixeira Valente
E-mail: josevalente@sema.pt

Transportes J. Amaral

Rua Dr. José Justiniano, 195 –
Apartado 11
3860-371 Estarreja
Tlf: 234 840 800
Quality, environment and safety leader
– Maria Manuel Gamelas
E-mail: maria.gamelas@tja.pt

Aveiro University

Campus Universitário de Santiago
3810-193 Aveiro
Telf: 234 370 200
Teacher - Myriam Lopes
E-mail: myr@dao.ua.pt

APEQ – Associação Portuguesa das Empresas Químicas

Avenida D. Carlos I, 45 – 3^o
1200 – 646 Lisboa
Tlf: 213 932 060
Fax: 213 932 069
General Director – Lubélia Penedo
E-mail: lpenedo@apequimica.pt

www.pacopar.org



secretariat:
DOW PORTUGAL, S.U.L.
Tel. 234 811 002
Fax 234 811 090
E-mail info@pacopar.org