



**MINUTES
GENERAL ASSEMBLY OF MEMBERS
INTERNATIONAL CADMIUM ASSOCIATION
Thursday, October 16, 2008 – 1:00 PM**

**The Royal Aeronautical Society
4 Hamilton Place, London W1J 7BQ United Kingdom**

CALL TO ORDER

The General Assembly of Members of the International Cadmium Association was called to order at 1:00 PM by its Chairman, Graham White of Considar Metal Marketing, Inc., representing the International Zinc Association (IZA). The following persons were in attendance or were represented by their Proxy:

REPRESENTATIVE

Graham White, Chairman	Considar Metal Marketing, Inc. for IZA
Michael Ball (Proxy to Patrick de Metz)	Acme Electric Corporation
Colin Thirlaway (Proxy for Tim Pugh)	Black & Decker Corporation
Emil Josendal	Boliden AB for IZA
Claudine Lecomte	Floridienne Chimie SA
Laurent Smits	Floridienne Chimie SA
Simon Vljacic	Floridienne Chimie SA
Albert Hardies (Proxy to Patrick de Metz)	INMETCO
Michael Hughes	James M. Brown Ltd.
Christopher Dean	James M. Brown Ltd.
Anne Dekker	Nyrstar for IZA
Colin Graham	Rockwood Pigments (UK) Ltd.
Patrick de Metz	SAFT
Ralf zur Steege (proxy for Takao Mitsunori)	Sanyo Component Europe GmbH
Eric Nottez (Proxy to Simon Vljacic)	SNAM
Mark Edwards	Teck Resources for IZA
Stephen Wilkinson	International Zinc Association
Andre van der Heyden	Padaeng Industries Ltd. for IZA

MEMBER COMPANY

GUESTS AND STAFF

Christian Canoo
Hugh Morrow
Noomi Lombaert

ORGANIZATION

International Cadmium Association
International Cadmium Association
International Cadmium Association

An attendance roster was circulated for each attendee to sign. The Chairman asked Hugh Morrow to serve as the Secretary Pro-Tempore to record the Minutes of the General Assembly. Each attendee introduced himself/ herself and his/her affiliation. The General Manager, Christian Canoo, noted that representatives of 10 of the association's 12 members were either present in person or were represented by Proxies, and that therefore a quorum was established for the transaction of business. The entire slide presentation of materials presented by ICdA staff at the meeting is attached to these Minutes as Annex I. Statements of Compliance (see Slide 3 of Annex I) with Anti-Trust regulations were also circulated for each attendee to sign. These statements are kept with the records of the meeting at the ICdA offices in Brussels, Belgium. Since there are many acronyms and abbreviations utilized throughout these Minutes, a complete list and their meanings is also attached at the end of these Minutes for reference as Annex VII.

APPROVAL OF THE MINUTES OF OCTOBER 11, 2007 GENERAL ASSEMBLY

Christian Canoo noted that the Minutes of the previous ICdA General Assembly of Members, held in London on October 11, 2007, had previously been distributed to the membership for review and comment and were posted on the ICdA Members Only website. A brief outline of these Minutes is shown in Slide 4 of Annex I. Chairman Graham White asked if there were any additions or corrections to these Minutes or whether the Secretary, Hugh Morrow, had received any comments to the Minutes as previously distributed. None being forthcoming, the Chairman asked for a Motion to approve the Minutes of the October 11, 2007 General Assembly of Members. **Upon motion made by Laurent Smits, seconded by Ralf zur Steege, and carried unanimously, the Minutes of the October 11, 2007 ICdA General Assembly of Members were approved as submitted.**

REVIEW OF DRAFT AGENDA FOR GENERAL ASSEMBLY OF MEMBERS

General Manager Christian Canoo then reviewed the proposed agenda for the General Assembly of Members (see Slide 2 of Annex I). Ralf zur Steege noted that the proposed agenda called only for the election of the Board of Directors and did not specify the election of the Chairman of the Board of Directors. Mr. Canoo responded that the present Chairman, Graham White, had agreed to serve through the end of 2008, and that the General Assembly of Members had responsibility only to elect the Board of Directors, and that the Board of Directors then subsequently would elect the Chairman of the Board according to the ICdA's Articles of Association. Mr. zur Steege suggested that a Board of Directors meeting be held following completion of the General Assembly of Members, but Chairman Graham White noted that proper notice would have to be given for such a meeting, and suggested that it be held at a later date, either by teleconference or through email or fax balloting. Therefore, it was agreed to proceed with the proposed agenda as outlined in Slide 2 of Annex I.

ELECTION OF DIRECTORS AND PRESENTATION OF ICdA STAFF

Dr. Christian Canoo presented the Proposed Slate of Directors of the International Cadmium Association, which is shown as Slide 6 of Annex I and attached to these Minutes as Annex II. It was noted that Anne Dekker of Nyrstar, Mark Edwards of Teck Cominco Limited, and Emil Josendal of Boliden AB are proposed as the three Directors from IZA to represent the primary cadmium producers; that Patrick de Metz of SAFT and Mitsunori Takao of Sanyo would be the two Directors to represent respectively the industrial and consumer nickel-cadmium battery industries; that Colin Graham of Rockwood Pigments (UK) Ltd. would represent the cadmium pigments industry; that Al Hardies of INMETCO and Eric Nottez of SNAM would represent the cadmium recycling industry; and that Timothy G. Pugh of Black & Decker would continue to represent the cadmium product end-users. Laurent Smits of Floridienne Chimie SA was also proposed as an additional Director to represent the interests of the cadmium oxide producers. The ICdA Articles of Association specify that the Board of Directors shall be not less than 4 nor more than 10 members, and thus the proposed Slate of Directors is consistent with the ICdA Articles of Association.

Chairman Graham White asked if there were any additional discussion or further proposals for the ICdA Board of Directors. Ralf zur Steege inquired after the mechanism by which Directors were proposed for election. Mr. Canoo responded that the Directors were proposed by the members themselves. Hugh Morrow added that ICdA did not have a formal nominating committee or other body whose function was the nominations of Directors or Officers. No other comments being forthcoming, the Chairman asked for a motion to approve the Proposed Slate of Directors. **Upon motion made by Patrick de Metz, seconded by Ralf zur Steege, and approved by the meeting, the Proposed Slate of Directors, as formally presented in Annex II, were elected as Directors of the International Cadmium Association for 2009.**

Dr. Canoo also presented the details of the makeup of the ICdA staff for 2009 (see Slide 5 of Annex I). Dr. Canoo will remain in his capacity as General Manager in the Brussels office, devoting 30% of his time to ICdA. Hugh Morrow will continue to act as a Senior Consultant on North American and International regulatory issues and monitoring of the cadmium market. Dr. Canoo also introduced Mrs. Noomi Lombaert who has recently joined the IZA and ICdA staffs and who will be working for ICdA as a Human Health Assistant on EU and International Regulatory Affairs. She will be based in the Brussels office and report to the General Manager. Dr. Lombaert presented her Ph.D. thesis in August

2008 at the Free University of Brussels (VUB) on the “Molecular and Genetic Mechanisms of (Geno)Toxicity Induced by Cobalt-Containing Dusts.”

OPERATIONAL MATTERS

Report of the Ad-Hoc Subcommittee of the Board of Directors – On behalf of the Ad-Hoc Subcommittee of the Board of Directors, Patrick de Metz made a short presentation summarizing discussions over the past year to move the International Cadmium Association in adopting a more “pro-active” program to position the European Cadmium Industry more favorably with respect to expected legislation and regulation. His presentation is summarized in Slides 7 and 8 of Annex I and is presented in its entirety in Annex III attached. Further to a web conference call held on September 11, 2008 with Board Members and staff during which the subcommittee presented its findings and recommendations, a Board Resolution was passed by electronic voting on November 8th and 9th in support of the six point recommendation (support: Josendal, Dekker, Nottez, Graham and de Metz) and asking that they be incorporated into the 2009 Plan for approval by the General Assembly. The main points of the presentation were that ICdA should adopt a policy of implementing the Guidance Document; that it should form a Health & Safety Committee to assist members in implementing the Guidance Document; that a more user-friendly Guidance Document should be developed; that the establishment of a “Data Trustee” should be implemented to present information to authorities; that ICdA representatives should meet with the Scientific Committee on Occupational Exposure Levels (SCOEL) to demonstrate the industry’s commitment to reducing occupational exposure risks; and that a representative(s) from the association should meet with key Member States to ensure that cadmium and its compounds are not included in the punitive sections of REACH legislation. In this regard, it was suggested that ICdA acquire from Eurometaux a list of Member State representatives so that we could establish who might act as contacts with certain EU Member States. Mr. de Metz included in his presentation estimates of man-hours and costs required to carry out these proposals.

After discussion of the proposals, the goals of the proposals, and why they were important to the future of the cadmium industry, it was moved by Colin Graham and seconded by Laurent Smits that the proposals outlined by Patrick de Metz be adopted as part of the ICdA’s operational plans for 2009. The motion was unanimously approved by the General Assembly of Members.

Membership Report – Mr. Canoo presented the Membership Report for the association as of October 16, 2008, which is shown in Slide 9 of Annex I attached to these Minutes. He announced that the French cadmium pigment manufacturer, SLMC, had resigned from ICdA in June 2008 as it was no longer active in the cadmium pigments business. Therefore, the number of organizations remaining in the association is now 12 with 10 of those organizations being represented on the Board of Directors.

FINANCIAL REPORT

Christian Canoo presented the ICdA Financial Report for 2007, as audited by Deloitte Touche Tohmatsu, and which is summarized in Slides 10 and 11 of Annex I and shown in its entirety in Annex IV which is attached separately to these Minutes. The audited total costs for 2007 were 273,828 Euros against total projected income of 284,688 Euros for a 2007 year-end surplus of 10,860 Euros. Combined with the surplus brought forward from previous years, the total surplus carried forward into 2008 was 112,313 Euros. The un-audited forecast expenses for 2008 are projected to be 132,299 Euros against projected income of 186,158 Euros for an expected year-end 2008 surplus of 53,860 Euros. Mr. Canoo explained that the reason for these higher than expected surpluses were that the Scientific Support positions in Health and Environment had not been filled as promptly as expected.

Upon motion duly made by Michael Hughes, seconded by Colin Graham, and unanimously approved by the meeting, the audited accounts of the International Cadmium Association for 2007 were accepted as presented in Annex IV.

PROPOSED OPERATING PLAN AND BUDGETS FOR 2009, 2010 AND 2011

Christian Canoo presented the Proposed 2009/2011 Business Plan for approval by the Members of the International Cadmium Association which is summarized in Slide 12 of Annex I and presented in its entirety in Annex V. While the basic objectives of the association will remain the same as they did in 2008, there have been some slight changes in the staff and structure of the association. The 2009

proposed Business Plan calls for 0.30 man-years effort from Christian Canoo as General Manager, 0.35 man-years work from Hugh Morrow as Senior Consultant to cover North American and International Regulatory Affairs, and 0.35 man-years time from Mrs. Noomi Lombaert as a Human Health Assistant dealing with EU and International Regulatory Affairs. It is envisioned that additional scientific support will be drawn, as needed, from outside organizations. Provision has been made in the proposed 2009 budget for 20,000 Euros for scientific support on health issues (essentially for the purpose of operating the Health & Safety Committee as described in Section 4.1.1 of the 2009 Business Plan attached as Annex V), and 10,000 Euros for scientific support on environmental issues. Total staffing and operational costs for 2009 are proposed at levels higher than those planned or realized for 2008 because staffing will be at its fully planned levels for the first time in the past two years.

Dr. Canoo also summarized the specific proposed regulatory activities of the association for the European Union, North America and international organizations:

- internal communications and association meetings activities;
- communications activities;
- statistics and market information.

Further details for each of these activity areas are shown in Section 4 (pages 3-6) of the attached 2009/2011 Business Plan as Annex V

Chairman Graham White then called for a motion to approve the 2009/2011 Business Plan. Upon motion duly made by Laurent Smits, seconded by Colin Thirlaway, and unanimously approved by the General Assembly of Members, the 2009 Business Plan for the International Cadmium Association was adopted as presented.

UPDATE ON REGULATORY ISSUES

Christian Canoo presented an overview of the present status of cadmium regulatory affairs in Europe including the European Union's Risk Assessment on Cadmium, the EU Risk Reduction Strategy for Cadmium and the status of the Cadmium REACH Consortium. Hugh Morrow described North American cadmium regulatory issues and international cadmium regulatory initiatives such as the UNECE LRTAP Heavy Metals Protocol, the UNEP Heavy Metals Program, the IFCS program calling for global action on trade in products containing heavy metals, and the Strategic Assessment for International Chemicals Management (SAICM).

European Union – Christian Canoo presented an overview of the European Union's Risk Assessment on cadmium and cadmium oxide, the proposed EU Risk Reduction Strategy for cadmium, and the newly formed Cadmium REACH Consortium. His regulatory affairs presentation is attached to these Minutes as Slides 14-25 of Annex I attached to these Minutes.

EU Cadmium / Cadmium Oxide Risk Assessment: The EU Cadmium/Cadmium Oxide Risk Assessment was officially completed in 2007 with the inclusion of the study on the ecotoxicity of cadmium ions in very soft waters which was accepted by the Technical Committee. The conclusion of the study which was incorporated into the final Risk Assessment was that the current PNEC of 0.08 µg/l for low hardness waters is sufficiently protective, even in the case of very soft waters. The final version of the Risk Assessment was approved and was published in the Official Journal of the European Commission on May 30, 2008.

EU Cadmium / Cadmium Oxide Risk Reduction Strategy: On May 10, 2007, the EU Risk Reduction Strategy (RRS) Committee of Member States discussed the Cadmium/Cadmium Oxide File on the basis of the Belgian Rapporteur's proposals. At that meeting, the ICdA industry delegation presented its program to protect occupationally exposed workers. The updated Eurometaux/ICdA Guidance Document was presented along with a written statement declaring the utilization of these guiding principles at 20 sites with cadmium occupational exposure. A three year plan was also presented to develop a collective European bio-monitoring program to ensure worker safety. It was also proposed that the industry would sponsor an independent specific study on *The Effect of Cadmium on Bone Mineralization of Occupationally Exposed Worker* which has now been incorporated into the Cadmium REACH Consortium work plan. The exact language of the final Risk Reduction Strategy proposals was a matter of negotiation between the European Commission's DG Enterprise and DG Environment because of sensitive political issues in the case of phosphate fertilizers containing

cadmium impurities. The official Cadmium Risk Reduction Strategy has now formally been approved and was published in the Official Journal of the European Commission on May 30, 2008.

Cadmium REACH Consortium: Christian Canoo presented in detail the recent developments in the formation of the Cadmium REACH Consortium designed to assist producers, users and importers of cadmium metal, alloys and compounds to comply with the recently enacted EU REACH (Registration, Evaluation, and Authorization of Chemicals) legislation. Twenty-two companies have now joined the Cadmium Consortium and others are likely to join as well as pre-registration deadlines are approached. A website has been established (www.REACH-Cadmium.eu) with links to the ICdA website (www.cadmium.org) and Eurometaux gateway (www.reach-metals.eu). Basic information is available to the general public, but meeting files, financial statements, quarterly reports and similar such information is restricted to Consortium Members only. The Consortium work plan calls for activities on pre-registration and registration requirements to identify the chemicals of interest and the information needed, especially the identification of data gaps in existing information and plans for further testing to fill those data gaps. Those identified so far include a study of the effect of cadmium on bone density of occupationally-exposed workers, a scientific review of cadmium exposure on kidney effects to establish a practical no-observable-effect-level (NOEL), and a marine ecotoxicity data base to establish a marine PNEC value for cadmium.

North America and International Issues – Hugh Morrow reviewed some of the major regulatory developments for cadmium in North America and in several international organizations. His presentation is attached to these Minutes as Slides 26-42 of Annex I. In North America, these included recent reports by the U.S. Geological Survey (USGS) and Environment Canada regarding cadmium in municipal solid waste from waste nickel-cadmium batteries; the U.S. EPA's National Emission Standards for Hazardous Air Pollutants (NESHAPs) program; EPA's Chemicals Assessment and Management Program (ChAMP); and EPA's Chemical Inventory Reset under the Toxic Substances Control Act (TSCA). All of these programs have potential implications for cadmium, cadmium compounds and/or cadmium-containing products. Mr. Morrow also reviewed the status of a number of national and international toxicological reviews and standards on cadmium. He described in more detail the most important international programs involving cadmium (UNECE, UNEP, IFCS and SAICM) and which of these program pose increasing threats for cadmium products and which are diminishing in importance.

USGS Report on Flow of Cadmium from Rechargeable Batteries in US, 1996-2005: This report was recently issued by the US Geological Survey and concluded that enormous amounts of cadmium were present in municipal solid waste due to waste NiCd batteries. ICdA, in cooperation with the Portable Rechargeable Battery Association (PRBA) and the Rechargeable Battery Recycling Corporation (RBRC) filed extensive comments on the report, which was clearly based on many factual errors and unwarranted assumptions, and the report was withdrawn.

Environment Canada Report on Battery Recycling in Canada - 2008: This report was issued in the Spring of 2008, and received a large number of critical comments from the battery industry. Like the USGS Report, it concluded that NiCd battery recycling rates were very low, and that large amounts of cadmium were winding up in municipal solid waste (MSW) due to the disposal of NiCd batteries. The comments on the USGS report described above were furnished to Natural Resources Canada which had criticized the Environment Canada. At present the Environment Canada battery recycling report is being review in light of previous comments and those submitted on the USGS report. A new revision of this report is expected in November 2008.

National Emission Standards for Hazardous Air Pollutants (NESHAPs): The U.S. EPA has recently issued new guidelines for nine area sources including pigment production and inorganic chemicals production. Cadmium compounds are considered hazardous air pollutants and guidelines for their emissions control using Generally Available Control Technology (GACT) and best practices have been proposed by EPA. These guidelines specify GACTs and best practices but not specific emission limit values as is the case in Europe and some international agreements.

U.S. EPA Chemical Assessment and Management Program (ChAMP): This new EPA program is designed to be a much less punitive version of the EU REACH program. The assessment of chemicals will be carried out by EPA and will not be the responsibility of the manufacturers or users. It emphasizes the management of the risks associated with the chemicals rather than requiring

authorization before use. Thus, the onus is not placed on the manufacturers or users to prove that their chemical is safe before use, but is a program designed to assist industry in managing any risks which are associated with the chemicals.

U.S. EPA TSCA Chemical Inventory Reset: Cadmium and its compounds are regulated chemicals in the United States under the Toxic Substances Control Act (TSCA). However, there are many chemicals still included under TSCA which are commercially obsolete and no longer used. EPA is examining the chemicals inventory of TSCA chemicals to eliminate those compounds which are no longer used in commerce in the hope of simplifying its provisions and making it easier to administer. Some cadmium compounds which are no longer commonly used are therefore expected to fall out of the TSCA chemicals inventory.

Status of Cadmium Toxicological Evaluations: Hugh Morrow reviewed the status of a number of toxicological reviews on cadmium and cadmium compounds including an indication of when these reviews were last updated. The status of these evaluations is shown in Slide 28 of Annex I in detail. Mr. Morrow noted that many evaluations had not been updated since the late 1990s or early 2000s, and that for example, classifications of carcinogenicity and provisional tolerable weekly intake levels had remained unchanged in spite of numerous attempts to make them more stringent.

UNECE Long Range Trans-Boundary Air Pollution Heavy Metals Protocol: Hugh Morrow described the activities in this program which concentrates on long-range air pollution in the European region and which is therefore heavily dominated by the European Union. Recent efforts in this area have concentrated on increasing the number of countries ratifying the Protocol which covers lead, cadmium and mercury, and on updating best available technologies to reduce heavy metal air emissions. Workshops were held in May 2008 in Armenia and in June 2008 in London to accomplish some of these goals, and the detailed outcomes are shown in Slides 30 through 34 of Annex I. Mr. Morrow noted that the United States and Canada were fundamentally opposed to many of the EU proposals in this program, and that the only the concept of increasing ratifications of the Heavy Metals Protocol amongst Eastern European, Caucasus, and Central Asia (EECCA), and Southeast European (SEE) countries was receiving support from the US and Canada. He foresaw a diminished importance for the UNECE LRTAP Heavy Metals Protocol in future international programs on cadmium.

UNEP Heavy Metals Program: On the other hand, Mr. Morrow noted an increasing importance for the UNEP Heavy Metals Program (see Slides 35 through 37 of Annex I). This program originated in the early 2000s with international mandates and agreements on phase-out of lead in gasoline, elimination of lead in paints, reduction of lead exposure for children, and improved lead monitoring in the environment. In 2005, they called for Scientific Information to be gathered on long-range environmental transport of lead and cadmium, but the report which was prepared by a Danish consultant was so poor and biased towards European and Nordic data that the UNEP Governing Council was forced in 2007 to acknowledge the data gaps in the report. At the same time, some environmentally active countries in the EU began to take the approach that international trade in cadmium products was the cause of global cadmium contamination since it had been well established that air pollution did not lead to global cadmium contamination. Of particular concern is a recent request by the Chemicals Branch of the Division of Trade, Industry and Economics (DTIE) of UNEP for information on trade data to Africa in cadmium containing products. The program is “generously” supported by the Government of Sweden, and requests detailed trade data on various cadmium products. What is most problematic, however, is the request to include “E-Waste and Mobile Phones Which **Might** Contain Cadmium.” Clearly, this is a fishing trip which is attempting to prove that global trade in cadmium products is contaminating Third World nations who do not have the technology to handle cadmium-containing wastes. It is equally as obviously tied to the efforts by some EU nations, such as Norway, Switzerland and Germany, to eliminate global trade in cadmium products through the IFCS program. Hugh Morrow noted that this program probably posed the greatest danger for the cadmium industry on the international level and must be followed closely.

IFCS Program on Lead, Cadmium and Mercury: Hugh Morrow reviewed the program by the Intergovernmental Forum on Chemical Safety (IFCS) on lead and cadmium (see Slides 38 through 40 of Annex I). During the recent IFCS Forum VI held in Dakar, Senegal on September 15-19, 2008, a session was presented entitled “International Transport of Pb and Cd via Trade: An International Concern?” The organizers (mainly Norway, Switzerland and Germany) were attempting to establish that international trade in cadmium products to developing nations was leading to global cadmium

contamination because these developing nations were not able to properly treat cadmium-containing wastes by conventional landfill, incineration or recycling measures. Patrick de Metz of SAFT made a presentation on behalf of the International Cadmium Association which is attached to these Minutes as Annex VI. Mr. de Metz's presentation concentrated on the sources of cadmium exposure and utilized the conclusions of the European Union's Risk Assessment on Cadmium to prove his points. His conclusion was that trade in products to which cadmium has deliberately been added does not lead to unacceptable risks to human health or the environment, and this conclusion was not challenged at the meeting. However, some of the aforementioned organizing countries attempted to establish a political conclusion centered around the expansion of the scope of the Rotterdam Convention, also known as the Prior-Informed-Consent (PIC) concept through IFCS and UNEP. China, amongst others, would not agree to any binding measures. Steve Wilkinson noted the growing importance of the China delegations at these meetings and suggested that ICdA should establish contact with these delegations to try to gain their support for our position. An IFCS President's statement will be issued which will probably only note that a few nations objected to the workshop's conclusions, but the US, Canada, Australia and probably China and Japan will probably oppose these proposals at the UNEP Governing Council (GC) meeting to be held in Nairobi in February 2009. Several nations, in fact, now favor the elimination of any policy role for IFCS in the future, and wish it to be relegated to a scientific advisory role alone.

Strategic Approach to International Chemicals Management (SAICM): Hugh Morrow noted that the international forum which does now appear to enjoy the support of the United States, Canada and many other nations is SAICM (see Slides 41 through 42 of Annex I). This approach was initiated in 2002 after the World Summit on Sustainable Development (WSSD) in Johannesburg, and attempts to fulfill three parts of the WSSD 2020 Goal: (1) Minimization of Significant Adverse Human Health and Environmental Effects, (2) Transparent Science-Based Risk Assessment, and (3) Science-Based Risk Management. Mr. Morrow noted the importance of the terms "minimization" rather than "elimination" which is the principle of the EU, and the use of the words "transparent" and "science-based" which have long been criteria which industry and the United States and Canada have supported. He reviewed a series of international and regional meetings which have been held to develop the SAICM process, and in particular noted that SAICM aims to achieve "practical solutions" and not to conduct "contentious negotiations" such as those which have raged between the EU approach and the North American approach to chemicals risk management over the past twenty years. Hugh Morrow pointed out that SAICM is supported by industry, the USA and Canada, is global in scope and not EU-dominated as some international organizations (OECD and UNECE) are, and includes many more stakeholders than some of the other international bodies. Labor groups and human rights groups are two such examples. Finally, Mr. Morrow noted that SAICM is very likely to replace any function which IFCS might currently hold, and that the metals industry in general is represented at SAICM by the International Council on Mining and Metals (ICMM) and Dr. John Atherton, the former Director of the International Cadmium Association in Europe.

UPDATE ON MARKET AND MARKET DEVELOPMENT ISSUES

Hugh Morrow presented a review of the current worldwide cadmium market which is attached to these Minutes as Slides 43 through 62 of Annex I. He noted that primary cadmium supply has decreased slightly in the past ten years while secondary cadmium supply continued to increase. Most primary cadmium produced as a by-product from zinc production comes from Asia (Korea, China and Japan) where cadmium supply is increasing. Primary cadmium supply from Europe continues to decrease while North American and Australian primary cadmium production are relatively constant. Secondary cadmium production, which arises from the recycling of nickel-cadmium (NiCd) batteries, on the other hand, is rising steadily, and now constitutes approximately 22% of total cadmium production. The NiCd battery collection programs in the United States by the Rechargeable Battery Recycling Corporation (RBRC), in Europe by RECHARGE, and in Japan by the Battery Association of Japan (BAJ) have led to these steady increases over the past ten years. Mr. Morrow also noted that NiCd battery recycling consisted of the processing of three types of materials – the small consumer NiCd batteries, the large industrial NiCd batteries, and the manufacturing scraps from NiCd battery manufacturers, and that all three sectors were significant.

Consumption is dedicated almost entirely to NiCd batteries and almost all of that occurs today in China and Japan. The large amount of cadmium consumption shown by the World Bureau of Metal Statistics (WBMS) figures for Belgium reflect the conversion of cadmium metal into cadmium salts such as

cadmium oxide, but not actual end product usage. Most of the cadmium oxide produced in Belgium in fact goes to China for the production of NiCd batteries. At present, 84% of total cadmium consumption is estimated to be utilized for NiCd batteries with 10% used for cadmium pigments and 5% for cadmium coatings. Stabilizers and alloys are disappearing as end-use markets for cadmium. Mr. Morrow also presented more detailed figures on the small consumer NiCd battery market which accounts for roughly 80% of the cadmium consumed in batteries. In this sector, it is mainly the cordless power tools, cordless telephones, and cordless household appliances which are maintaining NiCd market share. He added that Li-ion batteries are growing substantially, but that NiMH batteries with their high nickel and cobalt contents have been priced out of many applications. Applications for NiCd batteries, particularly in the consumer side, have been decreasing, and are expected to fall further in future years. The largest factors affecting this trend will be the growth of the use of lithium-ion batteries in many rechargeable battery consumer applications and the eventual replacement of NiCd batteries in power tools with the lithium-iron-phosphate batteries. Mr. Morrow also showed the *Metal Bulletin's* published prices for 99.99% purity cadmium from 1993 through August 2008 which clearly demonstrate its volatility over the years.

NEW BUSINESS

Stephen Wilkinson also brought up the concept of holding an International Cadmium Conference in the future in China because of that country's importance to the cadmium industry. China is the world's second largest producer of primary cadmium metal, and is the world's largest consumer of cadmium, both primary and secondary.

NEXT MEETING DATES

Chairman Graham White again noted that he would be resigning as Chairman effective December 31, 2008. The General Assembly of Members then unanimously extended a Vote of Thanks and a round of applause to Graham White for all of his work for the association, and General Manager Christian Canoo presented a gift to Mr. White on behalf of the International Cadmium Association.

Mr. White noted that a Board of Directors meeting would have to be held, with proper notice, between October 16th and the end of the year to elect a new Chairman of the Board who would be elected by the newly elected Board of Directors (Ms. Dekker, Messrs. Edwards, Josendal, Graham, de Metz, Takao, Pugh, Nottez, Hardies, and Smits). Mr. Canoo will issue the proper Notice of Meeting and ballots for this election.

Christian Canoo also noted that the next Environmental Health & Safety (EHS) Committee meeting would be tentatively held on November 24-25, 2008, the date and location to be confirmed. The next Informational Meeting would tentatively be held in North America during April 2009. Suggested dates at present are April 14, 15 or 16 or April 27, 28, or 29, 2009. ICdA Members are invited to submit their preferred meeting dates to Mr. Canoo.

The next meeting date for The General Assembly of Members of the International Cadmium Association will occur on October 15, 2009 in London, UK during London Metal Exchange Week.

ADJOURNMENT

There being no further business before the General Assembly of Members and upon motion duly made Anne Dekker, seconded by Patrick de Metz, and approved by the meeting, the General Assembly of Members of the International Cadmium Association was adjourned by its Chairman, Graham White, at 3:57 PM.

Respectfully Submitted,

Hugh Morrow
Secretary, Pro-Tempore

Approved,

Graham White
Chairman



ICdA - 2008

General Assembly of Members

London – 16 October, 2008

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Proposed Agenda

- Introduction Remarks of the Chairman
- Approval of the Minutes of the General Assembly of 11/10/2007.
- Election of Directors and Presentation of the ICdA Staff
- Operational Matters : ICdA Priorities as outlined by the Ad-Hoc Subcommittee of the Board of Directors
- Membership Report
- Financial Report
- Proposed Operating Plans and Budgets for 2009/2010/2011
- Update on Regulatory Issues:
 - European Union
 - North America
 - International
- Update on Market and Market Development Issues
- Any Other Business
- Next Meeting Dates

London – 16 October, 2008

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Statement of Compliance

- The purpose of the meeting is to address, under the applicable confidentiality rules, issues concerning cadmium and cadmium compounds producers and users and, more particularly, the ICdA program results of 2007 and those proposed for 2008.
- The minutes kept at the meeting will have to reflect all significant matters discussed during the meeting.
- No discussions will be held, formally or informally, during specified meeting times or otherwise, involving, directly or indirectly, express or implicit agreements or understandings related to: (a) any company's price; (b) any company's terms or conditions of sale; (c) any company's production or sales levels; (d) any company's wages or salaries; (e) the division or allocation of customers or geographic markets; or (f) customer or suppliers boycotts; or (g) any disclosure of information which may affect applicable rules on Competition Law.
- The International Cadmium Association, as a group will make no recommendations of any kind and will not try to reach any agreements or understandings with respect to an individual company's prices, terms or conditions of sale, production or sales levels, wages, salaries, customers or suppliers.

London – 16 October, 2008

3



Approval of the Minutes of the 2007 General Assembly of Members

- Introduction word of the Chairman
- Approval of the Minutes of the GA of 12/10/2006.
- Election of Directors and presentation of the ICdA staff
- Operational Matters: old Association to be wound up and new VAT
- Membership Report: resignation of Umicore
- Approval of the Financial Report 2006
- Approval of the proposed Operating Plan and Budget for 2008
- Update on Regulatory Issues:
 - European Union
 - North America
 - International
- Update on Market and Market Development Issues
- Next Meeting Date was fixed on October 16, 2008

London – 16 October, 2008

4



ICdA staff

- Noomi Lombaert : 35% ft > Brussels, EU Regulatory Affairs, REACH-interface
- Hugh Morrow: 35% ft > Washington, NA Regulatory Affairs, International Programmes, Market Monitoring
- Christian Canoo : 30% ft > Brussels, General Management of the Association

London – 16 October, 2008

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Election of ICdA Board of Directors

- | <u>2008</u> | <u>2009</u> |
|----------------------------|--|
| 1. Graham White , chairman | 1. Mark Edwards (Teck Cominco Ltd) |
| 2. Anne Dekker | 2. Anne Dekker |
| 3. Emil Josendal | 3. Emil Josendal |
| 4. Colin Graham | 4. Colin Graham |
| 5. Patrick de Metz | 5. Patrick de Metz |
| 6. Mitsunori Takao | 6. Mitsunori Takao |
| 7. Timothy G. Pugh | 7. Timothy G. Pugh |
| 8. Corinne Faure-Rochu | 8. Eric Nottez (SNAM) |
| 9. Al Hardies | 9. Al Hardies |
| | 10. Laurent Smits (Floridienne Chimie) |

London – 16 October, 2008

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Priorities for coming years as outlined by an Ad-hoc Board subcommittee (11/09/08)

- **ICdA needs to be more proactive than today** in ensuring that regulations on Cd are being generated on the basis of good science.
- **ICdA should be the facilitator and play a coordinating role** in implementing the Guidance document, since long a cornerstone of ICdA policy:
 - Start an effective H&S Ctee (first meeting in Q4 2008) to cover why, how, do's and don'ts
 - Generate a more user-friendly Guidance
- **ICdA should be active in evaluating monitoring/communication tool:** i.e. bio-monitoring and Data Trustee
 - Assess what and how we could establish a Data Trustee
 - Exact goal, content, by whom (part of H&S Ctee 1 and 2)
- **ICdA should start communicating actively with SCOEL and national authorities** on industry actions to protect workers:
 - Define content and generate message
 - MS delivery through adequate ICdA member (+ ICdA coordinator?)
 - EU (Scoel + COM) delivery through ICdA with board assistance
- **ICdA should coordinate communication** to REACH National Competent Authorities and ECHA about "no need to list Cd + compounds on Annex XIV":
 - Define content and generate message (need to stress worker protection AND point source releases)
 - Evaluate current situation relative to such point source releases (default values still applicable?)
 - MS delivery through adequate ICdA member (+ ICdA coordinator?)
 - EU delivery (ECHA + COM) through ICdA with board assistance

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Endorsement by the General Assembly of Prioritized Activities

- **The General Assembly of ICdA Members, meeting on October 16, 2008:**
 - **Agreed to support the implementation of the prioritized activities summarized in the presentation made by the Ad-Hoc Board Sub-Committee to the ICdA General Assembly of Members**
 - **Agreed to Approve the inclusion of these elements in the ICdA 2009 Work Programme and Business Plan for 2009-2010-2011**

London – 16 October, 2008

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Membership Report

- SLMC notified ICdA of the cessation of its activities in June 2008 and accordingly of its resignation from the Association
- Current membership:
 1. Acme Electric Corporation
 2. Black & Decker Corporation
 3. Floridienne Chimie SA
 4. Hoppecke Battiern
 5. INMETCO
 6. International Zinc Association
 7. Japan Mining Industries Association
 8. James M Brown
 9. Rockwood pigments
 10. Saft Batteries
 11. Sanyo
 12. SNAM

London – 16 October, 2008

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Financial report - « P&L 2007 » for Approval

**Table 1: International Cadmium Association
Audited Accounts 2007 - to be approved
(EU€)**

	2007 - Approved	2007 - Audited	2008 - Forecast
STAFFING			
Headquarters	48,991	20,625	40,000
Sr Cons (North America)	70,848	41,824	34,434
Scientific Support - Health	7,737	0	0
Scientific Support -	7,098	4,486	0
Legal support			0
Secretarial	2,579	2,579	2,500
Administration/Accounting	5,504	12,391	6,000
Total Staff Costs	139,665	81,905	82,934
OPERATIONS			
Rent/Rates/Office serv.	10,131	12,611	12,000
Office Reloc./Refurb.			0
Tel/communications	4,223	2,205	3,000
Print. & Eng. Serv.	705	702	600
IT support	3,235	1,685	3,000
Stat. and office supplies	5,640	887	2,000
Banking Costs	824	1,153	700
Meetings		629	3,000
Travel & Subsistence	19,900	12,718	15,000
Membership	2,150	2,063	2,420
Publication	0	0	1,500
Taxes/Contingency	264	212	1,000
Total Operation Costs	47,872	35,046	46,265
Depreciation & non-deductible	4,095	1,535	2,500
TOTAL Staff & Operational COSTS	190,832	118,486	132,299
SPECIAL STUDIES	#REF!	#REF!	0
--XYZ	0	150,343	0
TOTAL EXPENSES	#REF!	#REF!	0
INCOME			132,299

London – 16 October, 2008

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Financial Report « BS 2007 » for Approval

**Table 2: International Cadmium Association
Audited BALANCE SHEET - 2007 - to be approved
(EU€)**

	2006 Approved	2007 Audited	2008 Forecast		2006 Approved	2007 Audited	2008 Forecast
ASSETS				LIABILITIES			
CURRENT ASSETS				CREDITORS			
Cash in banks	142.829	117.387	166.173	Accounts payable, accrued liabilities	110.792	24.936	10.000
Total Cash	142.829	117.387	166.173	Total Creditors	110.792	24.936	10.000
Receivables	43.172	17.833	10.000				
Other receivables							
Accrued income	26.245	2.029					
Total Receivables	69.417	19.862	10.000				
FIXED ASSETS				FUND BALANCE			
Acquisition value	30.000	2.225		Surplus (deficit) of	106.782	101.454	112.313
Accumulated	-30.000	-2.225		Surplus (deficit) of	-5.328	10.859	53.860
Net Book Value	0	0	0	TOTAL	101.454	112.313	166.173
				TOTAL ASSETS	212.246	137.249	176.173

London – 16 October, 2008

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Business Plan 2009-2010-2011 – Proposal for Approval

**Table 3: International Cadmium Association
3y '09-11' Financial Plan
(EU€)**

	2009 P&L Forecast	2009 Plan	2010 Plan	2011 Plan
STAFFING				
Headquarters (A)	0	0	75.000	75.000
Sr.Cons.(North America)(B)	40.000	61.170	0	0
Scientific Support – Health	0	36.571	36.571	36.571
Scientific Support – Environment	0	20.000	20.000	20.000
Legal support				
Secretarial	0	10.000	0	0
Administration/Accounting	2.500	2.575	0	0
Total Staff Costs	42.500	130.246	131.571	131.571
OPERATIONS				
Rent/Rates/Office services (incl electricity)	0	0	0	0
Office Relocation/Refurbishment	12.000	12.000	0	0
Telecommunications	0	0	0	0
Postage & Express Services	3.000	4.000	0	0
IT support	650	650	0	0
Stationery and office supplies	3.000	4.500	0	0
Banking Costs	2.000	4.000	0	0
Meetings	700	1.000	0	0
Travel & Subsistence	5.000	5.000	0	0
Membership	15.000	15.714	0	0
Publication	2.400	2.400	0	0
Travel / Conference	1.500	1.500	0	0
Total Operation Costs	45.350	60.784	1	1
Depreciation & non-deductible	2.500	0	0	0
TOTAL Staff & Operational COSTS	90.355	191.100	131.572	131.572
SPECIAL STUDIES				
EXYZ	0	0	0	0
EXYZ	0	0	0	0
TOTAL EXPENSES	90.355	191.100	131.572	131.572

London – 16 October, 2008

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Update on Regulatory Affairs

- Europe
- North America
- International

London – 16 October, 2008

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Update on EU Regulatory Issues

- Cd & Cd-compounds Risk Assessment
- Cd & Cd-compounds Risk Reduction Strategy
- REACH Implementation

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The Cd / CdO Risk Assessment

- The results of the additional study on “ecotoxicity of Cd⁺⁺ in very soft waters” (concl. i), conducted and completed in 2007, were incorporated in the final version of the Risk Assessment on Cadmium and cadmium compounds:
 - the current PNEC (0,08 µg/l) for low hardness waters is enough protective, even in very soft waters.
- The final version has been reviewed by a last Technical Committee (TCNES) in December 2007
- The final Risk Assessment has been approved for publication in the Official Journal on May 30, 2008



The Cd / CdO Risk Reduction strategy –RRS (1)

- On May 10, 2007 the European RRS-committee of the member states discussed the Cd/CdO file on the basis of the Belgian Rapporteur proposals
- The ICdA-delegation had the opportunity to present the Industry programme, i.e. to protect workers:
 - Updated Eurometaux / ICdA Guidance document (04 2006)
 - Formal written declaration by ~20 sites confirming applying these guidance principles (05 2007)
 - 3y-plan to develop:
 - ✓ A collective European bio-monitoring programme
 - ✓ (A specific study on the effect of Cd on Bone mineralisation of workers)>>>included now in the Cd-consortium workplan



The Cd / CdO Risk Reduction strategy –RRS (2)

- The final phrasing of the RRS-proposals was expected to be issued by the Commission, but apparently the “fertilizers”-case was a difficult one to resolve between DG-Enterprise and DG-Environment and it took some months.
- This has been formally approved for publication in the Official Journal on May 30, 2008

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Consortium



Status of the Project – October 2008-

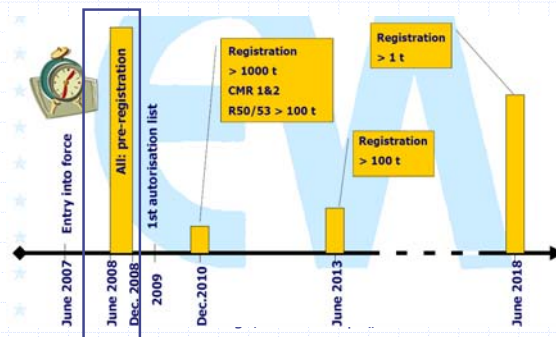
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Registration, Evaluation and Authorization of Chemicals (REACH)

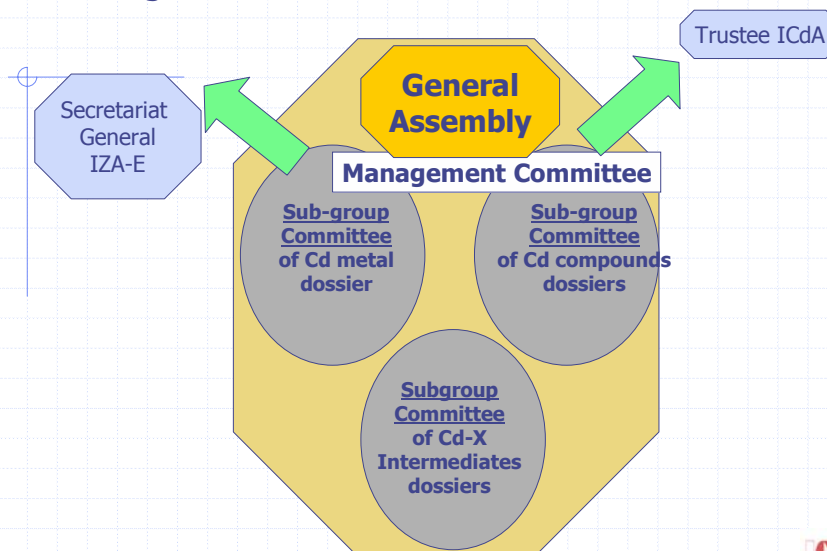
- Cd Consortium was created in July 2007
- 22 Members so far
- Following step -> pre-registration requirements



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Organisation of Cadmium Consortium



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Cadmium-Consortium Members so far

22 Members	Cd I	Cd II	Cd III
SN PV GmbH	x	x	x
AMI DODUCO GmbH		x	
BOCHEMIE a.s.		x	
BOLIDEN AB	x		
CERAC Inc.		x	
FLORIDIENNE CHIMIE	x	x	
H. C. MASTECZKO SLAKIE	x		
JAMES M. BROWN Ltd		x	x
JSC Chelyabinsk Zinc Plant	x		
KCM2000 S.A.	x		
NYRSTAR S.A.-N.V.	x		
PORTOVESME s.r.l.	x		
RECYLEX S.A.		x	
ROCKWOOD PIGMENTS		x	x
RUHRZINK	x		
SAFT S.A.	x	x	
TECK COMINCO Limited	x		
TODINI & Co, SPA	x	x	
UMICORE	x	x	x
VOTORANTIM METAIS ZINCO sa.	x		
XSTRATAZINC GmbH	x		
ZM SILESIA SA		x	

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Current scope of the Consortium "Cadmium / Cadmium compounds / Intermediate"

	EINECS
<input type="checkbox"/> Cadmium metal	231-152-8
<input type="checkbox"/> Cadmium Oxide / Hydroxide	<i>244-168-5</i> 215-146-2
<input type="checkbox"/> Cadmium nitrate	233-710-6
<input type="checkbox"/> Cadmium carbonate	<i>208-168-9</i> 298-586-8
<input type="checkbox"/> Cadmium sulphide	215-147-8
<input type="checkbox"/> Cd sulphoselenide	<i>235-758-3</i> 261-218-1
<input type="checkbox"/> Cd Zn sulphide	232-466-8
<input type="checkbox"/> Cd telluride	215-149-9
<input type="checkbox"/> Cadmium Sulphate	233-331-6

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Identifying and addressing data gaps for chemical safety report (CSR)

- Tasks in QI-2008:
 - Check REACH requirements related to the CSA/IUCLID V with available information in risk assessment and beyond
 - Identification of data gaps, planning for further testing, if needed
 - Filling in of data gaps
- Data gaps identified and to be addressed :
 - **Human health: workers:**
 - Bone effects: the protocol of the study (2008-2009) is in elaboration with the UCL – Ind. Toxicology laboratory (Prof. Lison & Hoet)
 - NOEL for workers – kidney effects: it would be advisable to have a scientific review of existing occupational records and to derive a more practical NOEL than the conservative one in the RA (Prof. Bernard)
 - Review Kidney as most sensitive endpoint: to be outsourced at UK academi
 - **Environment:**
 - A Marine ecotoxicity data base for deriving the marine PNEC needs to be established (D. Haesaerts / A. Voigt)

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Short Term workplan Priorities: October '08 – April '09

- 1): Pre-registration requirements:
 - ✓ Follow-up of Member's demands
 - ✓ Finalisation of Substances ID's
 - ✓ Check / contact non-Consortium members listed in pre-SIEFs
- 2): Registration requirements:
 - ✓ Entry of data in IUCLID V:
 - Marine data and references
 - RA's data
 - ✓ Further elaboration of exposure scenarios for DUs, e.g. pigments, photovoltaic,
 - ✓ Initiate general cross-reading cases
 - ✓ Organize the required testings / studies re. Identified data-gaps
- 3) Follow-up of guidance documents and RIPS
 - ✓ Participation in WGs Eurometaux

London – 16 October, 2008

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Cd-reach website: www.reach-cadmium.eu

Cd REACH
Cadmium REACH Consortium
109 Avenue de Tervuren - Box 4 - B-1150 Brussels - Belgium
Tel. +32 (0) 2 770 00 73 Fax +32 (0) 2 770 00 92 email: frpetit@ec.europa.com

Home Cd Consortium Info REACH Documents & Links Contact Us

Introduction
The EU REACH Regulation entered into force on June 1, 2007. REACH stands for Registration Evaluation and Authorization of Chemicals.
REACH will replace the current European legislation on existing substances (93/79/EEC).
The EU Chemicals Agency (ECHA) based in Helsinki, Finland, will oversee and administer the whole program.
All substances, such as cadmium metal, alloys and compounds (cadmium oxide, nitrates, pigments, etc.) manufactured in Europe and/or imported into Europe will be required to be registered. Presently, zinc-cadmium concentrates when not chemically modified seem to be exempted from the obligation to be registered.
[Read more...](#)

Register for Newsletter
The Cadmium REACH Consortium publishes a free newsletter covering various aspects of the REACH legislation. If you would like to receive copies of the newsletter, please send an email to [Mrs. Francoise Petit](mailto:Mrs.Francoise.Petit)

Recent News
[Read more...](#)

Events
Next General Assembly April 8, 2008 Brussels, Belgium
[View Events...](#)

Member Log-In
If you are a member of the Cadmium REACH Consortium [please log in here](#). If you have forgotten your username and password, please contact Mrs. Francoise Petit.

London - 16 October, 2008

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Regulatory Affairs Report International and North America

International Cadmium Association
General Assembly of Members

London - 16 October, 2008

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North American Cadmium Issues

- ❑ **USGS Report: Flow of Cadmium from Rechargeable Batteries in US, 1996-2005**
- ❑ **Environment Canada Report: Battery Recycling in Canada – 2008 Update**
- ❑ **NESHAPs for Nine Area Sources Including Pigment Production and Inorganic Chemicals**
- ❑ **U.S. EPA Chemical Assessment and Management Program (ChAMP)**
- ❑ **U.S. EPA TSCA Chemical Inventory Reset**

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Status of Cadmium Toxicological Evaluations

- ❑ **ACGIH – Last Updated in 2001:**
 - TLVs = 10 $\mu\text{g}/\text{m}^3$ (total); 2 $\mu\text{g}/\text{m}^3$ (respirable)
- ❑ **ATSDR – Toxicological Profile in 1999**
 - Case Studies in Environmental Medicine in 2008
- ❑ **CDC National Report on Human Exposure to Environmental Chemicals – Issued Late 2008**
- ❑ **IARC – Last Updated in 1997 (Carcinogenic)**
- ❑ **IRIS – Last Updated in 1998**
- ❑ **NTP – Last Updated in 2005 (Carcinogenic)**
- ❑ **WHO/FAO JECFA PTWI for Cadmium**
 - Updated in 2005, Remains at 7 $\mu\text{g}/\text{kg}$ bw per week

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International Cadmium Programs

- **UNECE Long Range Trans-Boundary Heavy Metals Protocol**
- **UNEP Heavy Metals Program**
- **IFCS Program on Lead, Cadmium, and Mercury**
- **Strategic Approach to Integrated Chemicals Management (SAICM)**

London – 16 October, 2008

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UNECE LRTAP Heavy Metals Protocol

- **Work Plan for 2008**
 - **Continue Technical Work by TFHM on Sufficiency and Effectiveness of Protocol**
 - **Assist the EB and WGSR in Possible Revisions of the Protocol or Its Annexes**
 - **Plan a Workshop in an EECCA or SEE Country to Promote Ratification of Protocol**
 - **Hold TFHM Meeting in London 4-6 June 2008**

London – 16 October, 2008

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UNECE LRTAP Heavy Metals Protocol

- **TFHM Meeting in London 4-6 June 2008**
 - **Consider Technical Options for Updating BATs to Reduce HM Emissions, Include Flexibility, and Increase Ratifications to HM Protocol**
 - **Identify Technical Barriers in Annex IV (Timescales for Implementation of ELVs and BATs) to Increasing Protocol Ratifications**
 - **Discuss Results of Yerevan, Armenia (May 2008) Workshop Held to Promote Ratifications**

London – 16 October, 2008

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UNECE LRTAP TFHM Conclusions of June 2008 Meeting

- **Options to Increase HM Protocol Flexibility**
 - **Different Base Years to Measure Reductions**
 - **No ELVs in Legislation If No Industry Exists**
 - **Transition Periods for BATs and ELVs**
- **Technical Options for Updating BATs**
 - **Updated BAT Feasible for All Sources**
 - **New Sources Identified (Manganese Production and Secondary Aluminum Production)**
 - **If BATs Updated, Then ELVs Lowered**

London – 16 October, 2008

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UNECE LRTAP EECCA Conclusions of May 2008 Workshop

- ❑ **Workshop Organized and Run by Germany, Netherlands and UNECE. No Others Invited.**
- ❑ **Held in Yerevan, Armenia: 14-16 May 2008**
- ❑ **EECCA and SEE Countries Have Major Problems to Implement Heavy Metals Protocol**
 - **Need for Technical Assistance**
 - **Different Data, Approaches, Time Frames**
 - **BATs & ELVs Not Consistent with Legislation**
 - **Little Political or Financial Support**
 - **Legislation Still Based on Soviet Legislation**

London – 16 October, 2008

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UNECE LRTAP TFHM Work Plan for 2009

- ❑ **Explore Options for New or Revised Protocol on Heavy Metals (Netherlands)**
- ❑ **Organize a Workshop in EECCA/SEE Area to Promote HM Protocol Ratifications**
- ❑ **Hold TFHM Meeting at Same Location in April/May 2009 to Involve HM Experts**
- ❑ **Interact with Gothenburg Protocol Expert Group on Particulate Matter to Explore Interactions between Heavy Metals and Particulate Matter Controls**

London – 16 October, 2008

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UNEP Heavy Metals Program

- **UNEP GC Mandates on Heavy Metals**
 - **21/6 (2001) Phase Out of Lead in Gasoline**
 - **22/4 (2003) Lead in Gasoline and Paints, Lead Exposure for Children, Improved Monitoring**
 - **23/9 (2005) Scientific Information on Pb & Cd Long-Range Environmental Transport**
 - **24/3 (2007) Acknowledges Data Gaps in Scientific Report and Need to Fill Those Gaps, and Compile Inventory of Existing Risk Management Measures for Pb, Cd and Hg**
 - **GC Meeting February 2009 in Nairobi**

London – 16 October, 2008

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UNEP Heavy Metals Program

- **Interim Scientific Review on Cadmium**
 - **First Draft Issued in Aug 2006 – Danish Consultant**
 - **Extensive Comments by USA, Canada and Industry**
 - **Revised Draft Issued in March 2008**
 - **Extensive Comments Again Submitted Since Original Comments were Largely Ignored**
 - **UNEP Secretariat Says “Document in Good Shape”**
 - **Working Group Has Largely Been Excluded**
 - **Final Draft Scheduled for November 2008**
 - **Conclusions to be Tabled at GC 25 in Nairobi**

London – 16 October, 2008

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UNEP Heavy Metals Program

- **Study on Effects in Africa of the Trade of Products with Lead, Cadmium or Mercury**
 - Sponsored by Chemicals Branch, Division of Trade, Industry and Economics (DTIE) of UNEP
 - “Generously” Financed by Government of Sweden
 - Detailed Trade Data Requested: CdS (Electroplating), NiCds, Pigments, Cadmium Metal, Stabilizers, Fertilizers, Ash, *E-Waste and Mobile Phones Which “Might” Contain Cadmium*, Any Other Known Uses
 - Very Little Data Available on Africa
 - Clearly Tied to IFCS Efforts to Eliminate Global Trade in Cadmium and Lead Products

London – 16 October, 2008

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IFCS Program on Lead, Cadmium and Mercury

- **Intergovernmental Forum on Chemical Safety (IFCS) Forum VI Held in Dakar, Senegal, 15-19 September 2008**
- **Specific Session Organized by Germany “International Transport of Pb and Cd via Trade: An International Concern?”**
- **Patrick de Metz of SAFT Made Presentation on Behalf of ICdA**

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IFCS Program on Lead, Cadmium and Mercury

- **ICdA Presentation Concentrated on Sources of Cadmium Exposure and Conclusions of the EU Risk Assessment on Cadmium**
- **Conclusion: Trade in Cadmium Products Does Not Lead to Unacceptable Risks**
- **Presentation was Not Challenged at the IFCS Forum**

London – 16 October, 2008

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IFCS Program on Lead, Cadmium and Mercury

- **The Political Approaches at IFCS**
 - **Germany, Sweden, Switzerland Pushing for Expansion of the Rotterdam Convention (Prior Informed Consent) through IFCS/UNEP**
 - **Germany and Others Attempted to “Railroad” Through an IFCS Group Consensus Statement**
 - **China Would Not Agree to Any Binding Measures**
 - **No Group Consensus Reached, But a President’s Statement will be Issued**
 - **US, Canada, Australia Would Oppose at UNEP and Favor Eliminating Any Policy Role for IFCS**

London – 16 October, 2008

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SAICM

- ❑ **Strategic Approach to International Chemicals Management Developed by Multi-Stakeholder, Multi-Sector Group (UNEP-IFCS-IOMC)**
- ❑ **Started in 2002 after Johannesburg World Summit Sustainable Development**
- ❑ **Aims to Achieve WSSD 2020 Goal**
 - **Minimization of Significant Adverse Effects**
 - **Transparent Science-Based Risk Assessment**
 - **Science-Based Risk Management**

London – 16 October, 2008

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SAICM

- ❑ **International Conference on Chemicals Management (ICCM-1) Dubai-Feb 2006**
- ❑ **ICCM-2 Proposed May 9-11, 2009**
- ❑ **Emphasis on Practical Solutions and Not “Contentious Negotiations”**
- ❑ **Supported by USA, Canada & Industry**
- ❑ **Not EU Dominated, Global in Scope**
- ❑ **IFCS Likely to be Phased Out by SAICM**
- ❑ **ICMM Represents Metals Industry**

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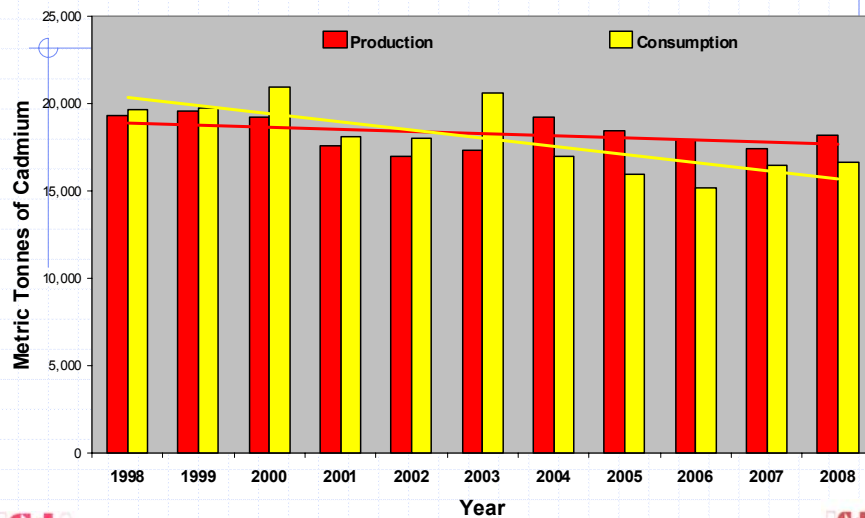
Cadmium Market Report

International Cadmium Association
General Assembly of Members

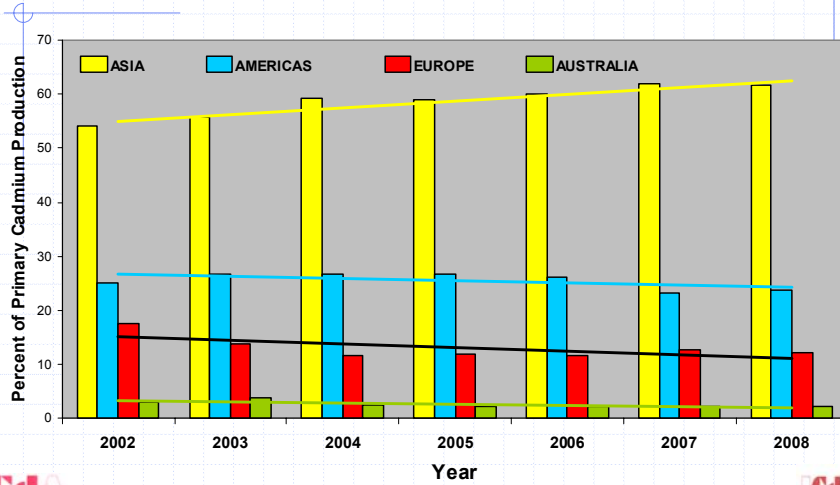
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Primary Cadmium Production and Consumption, 1998-2008



Geographical Trends in Primary Cadmium Production 2002 - 2008

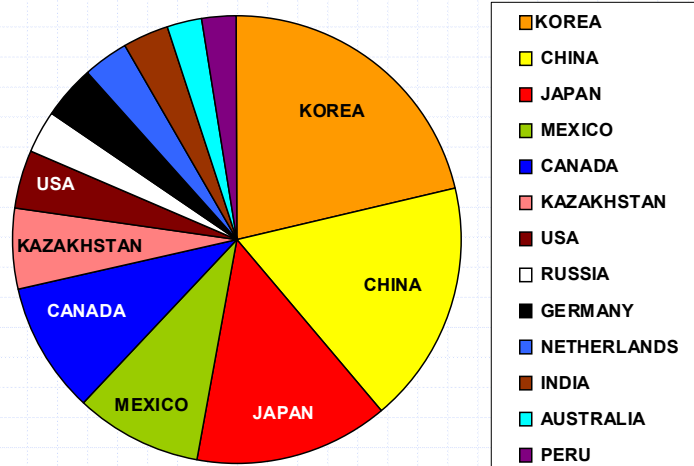


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2008 Primary Cadmium Production by Country

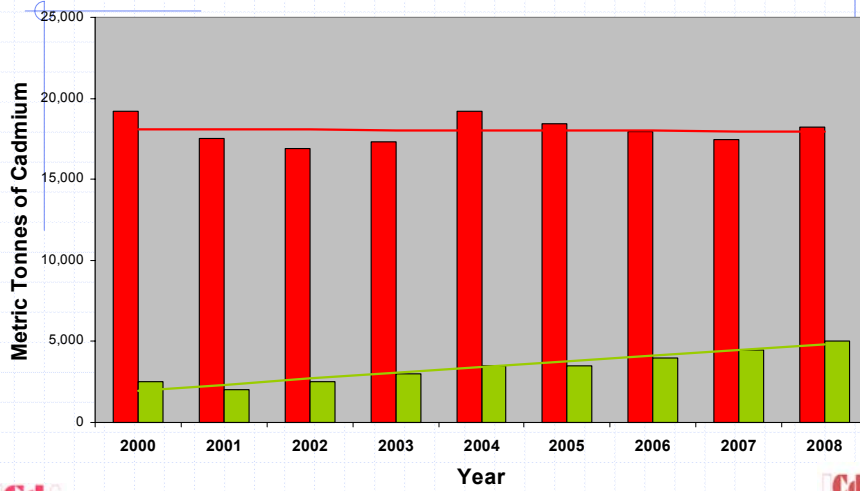


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Trends in Primary and Secondary Cadmium Production, 2000-2008

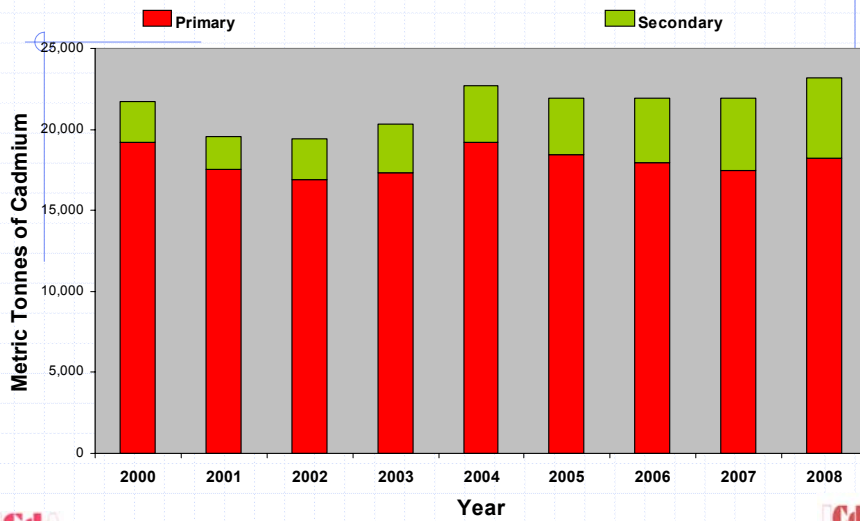


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Primary and Secondary Cadmium Production Trends, 2000-2008

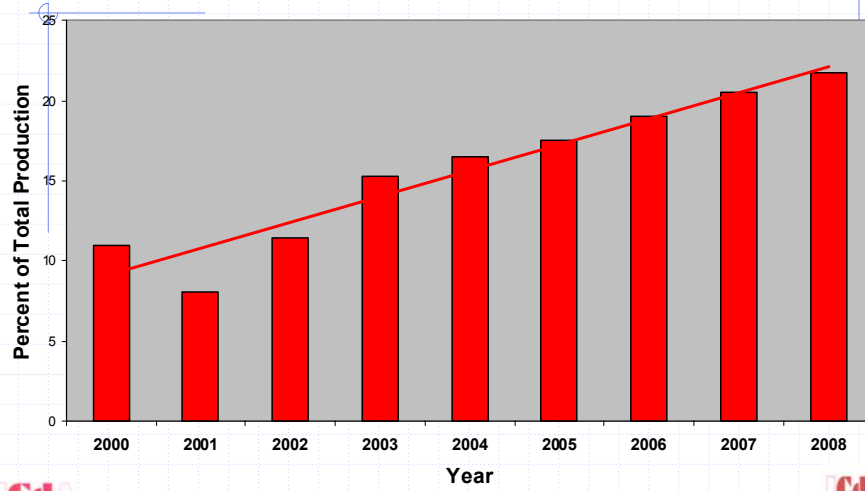


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**Worldwide Secondary Cadmium Production
as a Percent of Total Cadmium Production, 2000-2008**

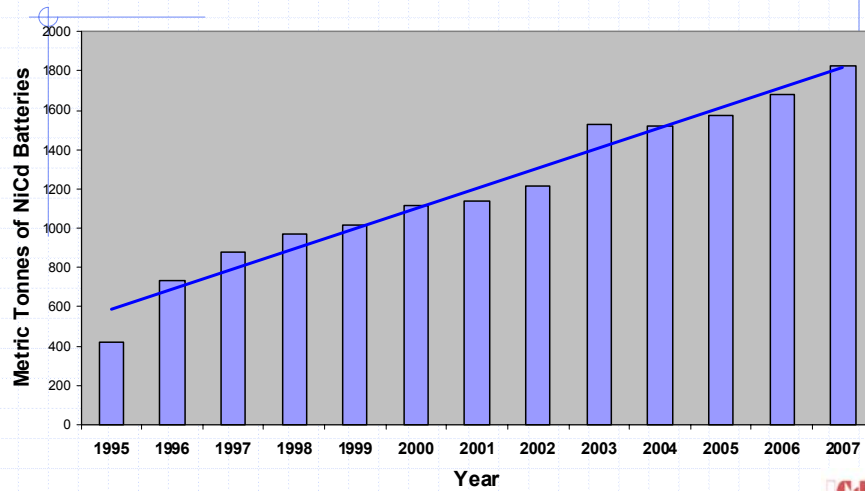


London – 16 October, 2008

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**NiCd Batteries Collected in USA and Canada by
the Rechargeable Battery Recycling Corporation**



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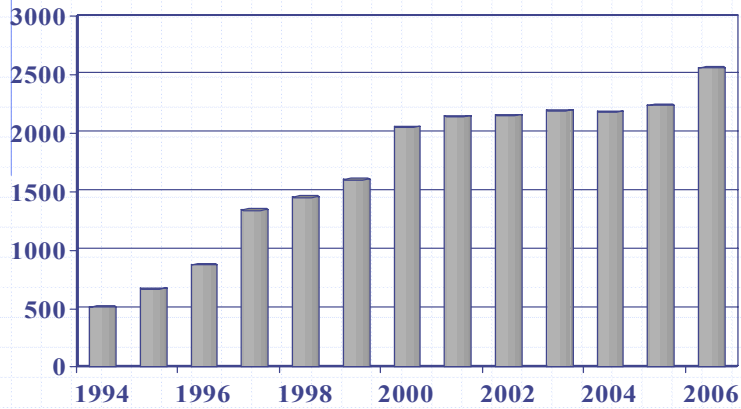
50





Sealed/Portable Ni-Cd Batteries

Spent Portable Ni-Cd Batteries from European Sources collected separately and processed in Recycling Plants (15 EU MS + CH + N) - Data in Metric Tonnes per year



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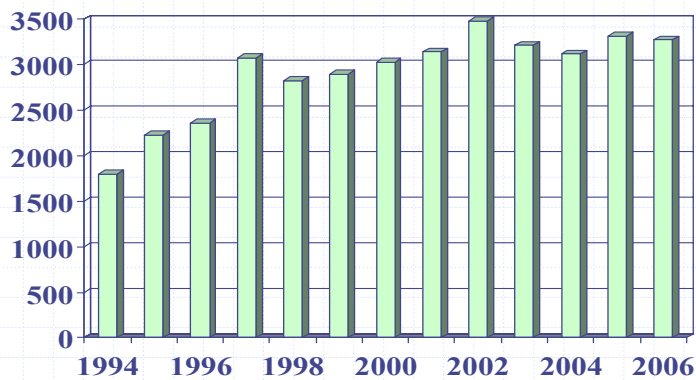
51



Industrial Ni-Cd Batteries

Spent Industrial Ni-Cd Batteries from European Sources collected separately and processed in Recycling Plants (15 EU MS + CH + N) - Data in Metric Tonnes per year

Industrial with Electrolyte

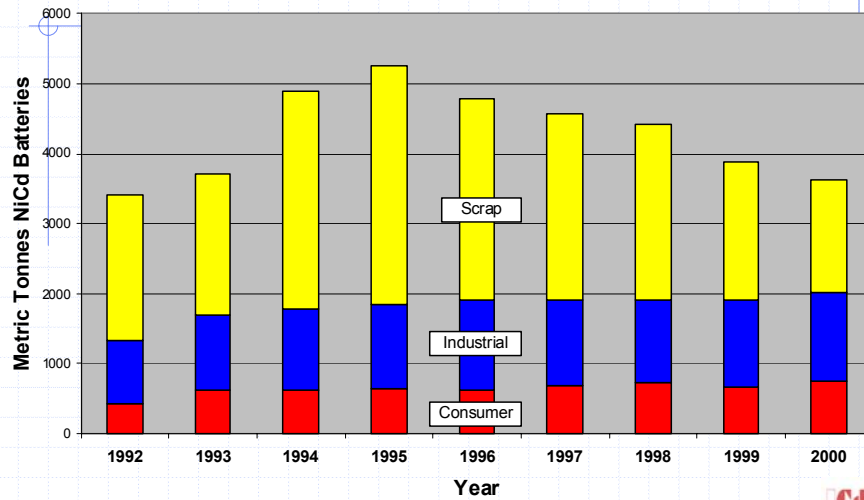


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NiCd Battery Recycling in Japan

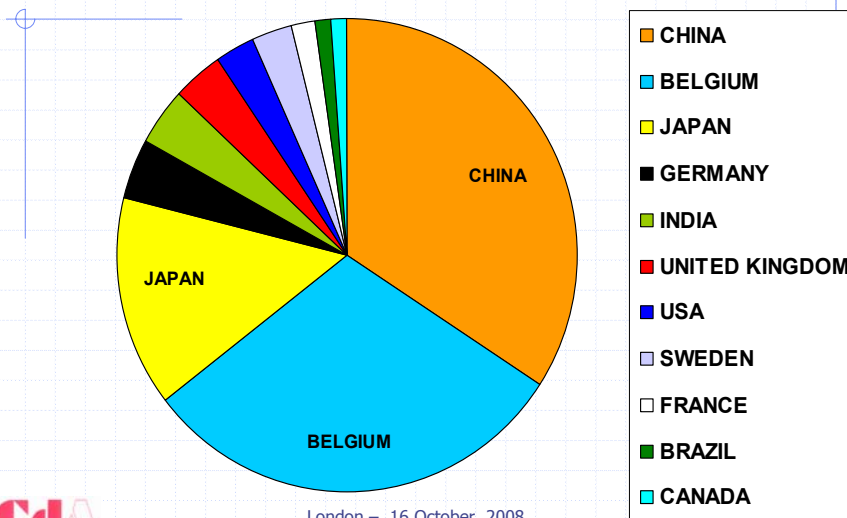


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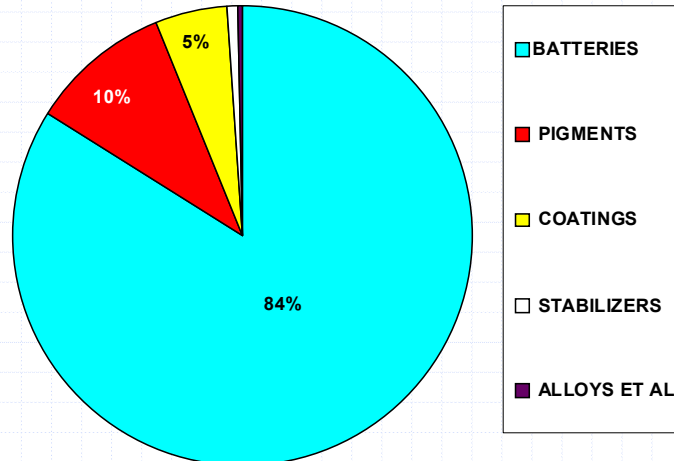
Estimated 2008 Primary Cadmium Consumption by Country



London – 16 October, 2008



2008 Cadmium Consumption by Applications



London – 16 October, 2008

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Trends in Cadmium Consumption Patterns, 2002-2008

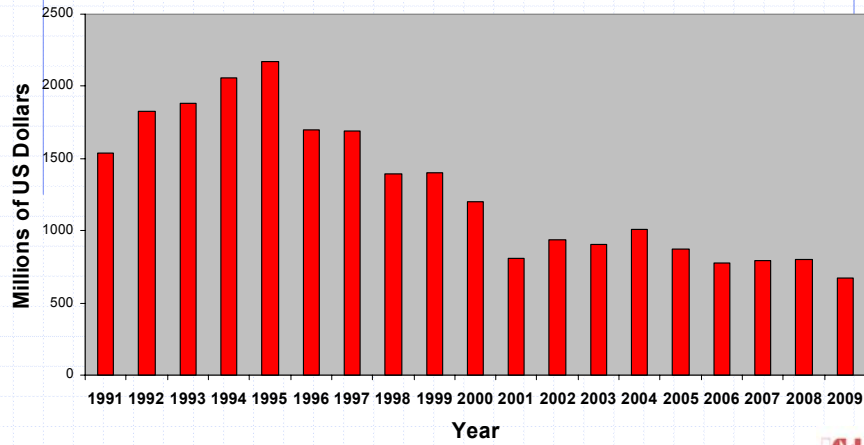


London – 16 October, 2008

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Worldwide Portable NiCd Battery Sales, 1991 - 2009 (Data Source: Takeshita 2008)

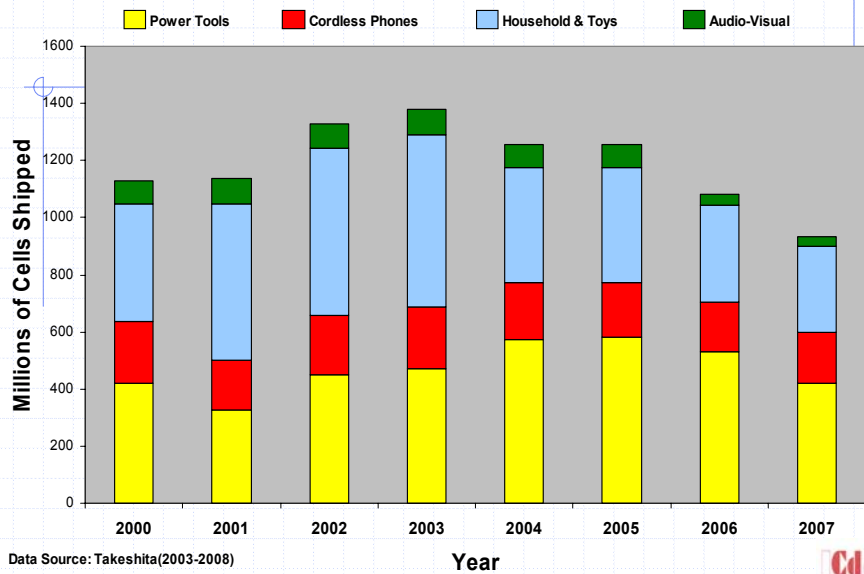


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Worldwide Consumer NiCd Shipments



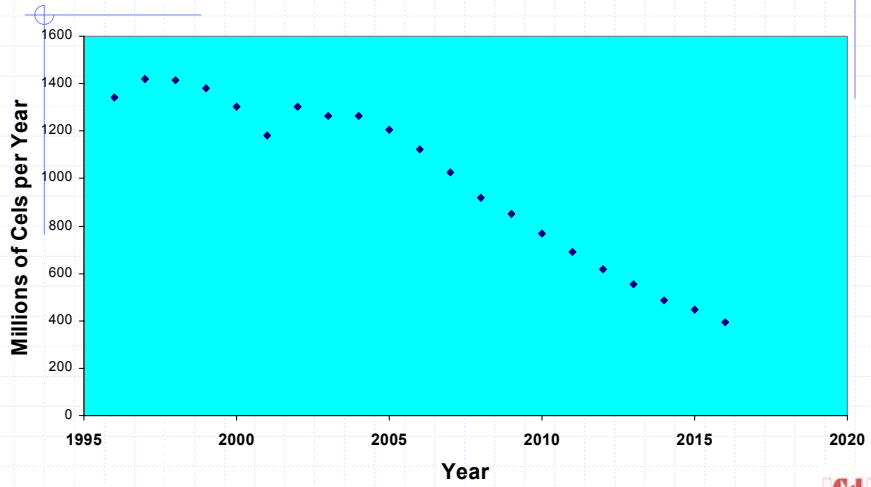
Data Source: Takeshita(2003-2008)

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**Portable NiCd Battery Demand Forecast,
1996 - 2016
(Data Source: Takeshita 2008)**

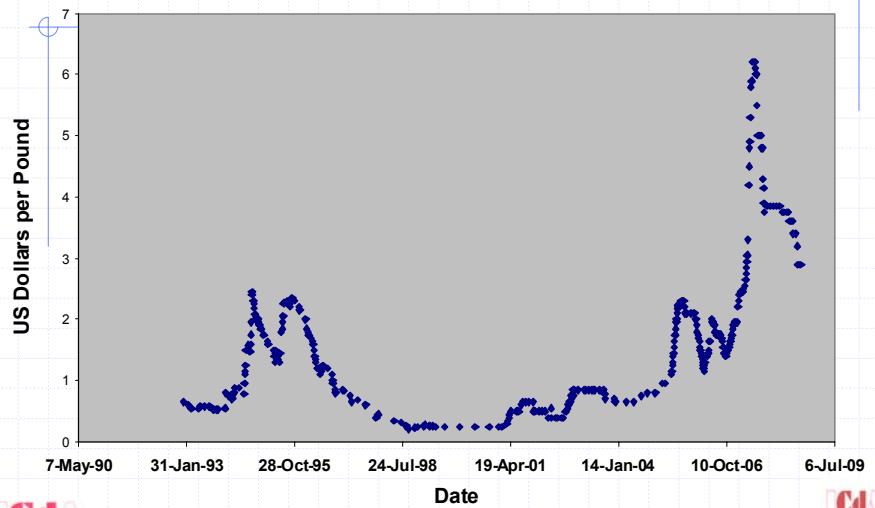


London - 16 October, 2008

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Metal Bulletin 99.99% Cadmium Price, 1993-2008



London - 16 October, 2008

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Next Meetings

- Next Board of Directors Meeting: Election of Chairman of the Board of Directors
 - December 17-18-19, 2008 ? tbc
- Next Environmental Health & Safety Committee Meeting:
 - November 24-25 , 2008 ? tbc
- Next Informational Meeting in North America: webmeeting participation ?
 - April 14-15-16 or 27-28-29, 2009 ? tbc
- Next ICdA General Assembly of Members:
 - **October 15, 2009 in London, UK**

London – 16 October, 2008

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PROPOSED SLATE OF DIRECTORS INTERNATIONAL CADMIUM ASSOCIATION

The following persons are proposed for election as Directors of the International Cadmium Association for a three-year term at its General Assembly of Members to be held in London on October 16, 2008:

Director	Patrick de Metz	SAFT S.A.
Director	Colin Graham	Rockwood Pigments (UK) Ltd;
Director	Anne Dekker	Nyrstar
Director	Emil Josendal	Boliden
Director	Mitsunori Takao	Sanyo Electric Co., Ltd.
Director	Timothy G. Pugh	Black & Decker Corporation
Director	Al Hardies	INMETCO
Director	Eric Nottez	SNAM
Director	Laurent Smits	Floridienne Chimie
Director	Mark Edwards	Teck Resources

The following person resigned as Directors of the ICdA as of October 16th 2008 :

- Graham White was elected a Director of ICdA in 2002 and served as Chairman for the past four years; he recently assumed other responsibilities in his group, announced his resignation from the ICdA Chairmanship last year, and confirmed his resignation from the ICdA Board of Directors as of the end of 2008.
- Corinne Faure-Rochu of SNAM was elected as Director of ICdA in 2005; she recently assumed additional responsibilities in her organization, and decided not to stand for re-election; her colleague Eric Nottez is proposed for election

The following persons are proposed as new Directors of ICdA as of October 16th 2008, in order to represent their respective member's category

- :
- CdO manufacturer: Laurent Smits of Floridienne Chimie SA based in Ath, Belgium
 - Cd-producer(Member of IZA): Mark Edwards of Teck Resources based in Vancouver, Canada

ICdA – General Assembly
October 16th 2008, 3 pm



SIX (6) Board decisions following communication to Board of Sept 11th from "Sub-Ctee on Proactivation"

Reminder: Sub-Ctee was formed at June 9th Board meeting

Members:

*Anne Dekker, Emil Josendal, Colin Graham, Eric Nottez,
Patrick de Metz*

1

Six (6) Board decisions



- ❑ 1- ICdA policy to include compliance with guidance with ICdA Guidance document for EU sites
- ❑ 2 - H&S Ctee to be set up to help EU ICdA members with implementation of ICdA guidance
- ❑ 3 - A more user friendly Guidance format is to be created
- ❑ 4 - Study on Cd exposure Data Trustee to be presented to Board by end of Feb 09
- ❑ 5 - Present industry efforts to SCOEL and national authorities to show industry efforts and provide guidance on OEL-BLV setting
- ❑ 6 – Monitor and (if needed meet) MS activity and decision process to ensure Cd and compounds are not proposed as Annex XV to ECHA for Annex XIV inclusion

2

1 - ICdA Policy

□ What:

- It shall be ICdA policy that its Members operating sites within the EU shall strive to implement the ICdA guidance document, [provided its prescriptions do not relax or infringe on national requirements]

□ Why:

- Guidance was built by ICdA expert consensus to ensure that Cd RA risk conclusions (iii) on workforce are being adressed

GA October 16th 2008

3



2 - H&S Comittee

□ What:

- A Ctee will be set up with immediate effect with the purpose of assisting EU sites of ICdA Members with the implementation of the Guidance

□ How:

- Quarterly meetings.
- First to be held before end of 2008.
- Invitees: site H&S managers (+ occ. doctors once a year)

□ Ressource:

- See profile developed by sub-ctee in last slides
- 15 to 20 days/year over 3 years max
- Budget 20k€/year

GA October 16th 2008

4



3 – Create a more User-Friendly ICdA Guidance document

- What:
 - ICdA Guidance document on Cd occupational exposure protection is a long and detailed document which needs to be turned into a « user-friendly » communicable leaflet.
- Why:
 - The clearer the easier to implement
- Resource:
 - Rewriting can be handled by H&S committee members
 - Small scale printing (a few hundred) can be obtained at minimal cost (max of max: 5k€).

GA October 16th 2008

5



4 - Data Trustee of Cd occupational exposure

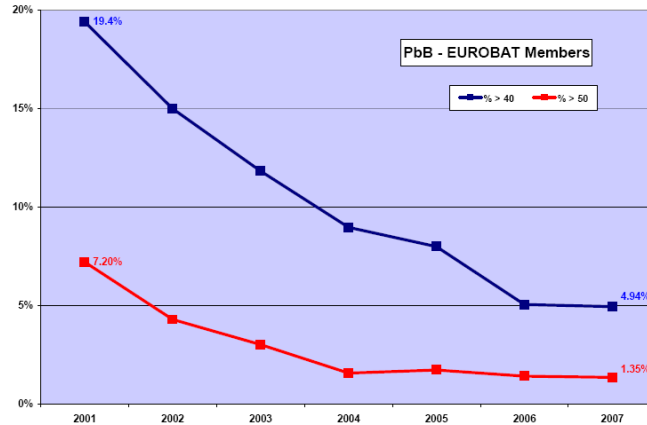
- What:
 - Anilize the pros/cons and the feasibility of setting up an exposure EU Data Trustee (see lead industry)
- Why:
 - Data trustee would consolidate data of EU industry relative to risk levels
 - Could be used to benchmark + to communicate to authorities about our commitment to improve
 - See lead industry example
- Ressource:
 - Board sub-committee will work on this and report to Board before end of February 2009 for final decision

GA October 16th 2008

6



Lead Data Trustee



GA October 16th 2008

7



5 - Meet SCOEL - National Authorities to present industry actions to protect workers

- What:
 - Show SCOEL and National authorities industry is serious about reducing risks to its workers
- Why:
 - So that no unreasonable exposure limit values (RA derived) are set by SCOEL or National Authorities
 - SCOEL: industry must (and can) request that it be granted an opportunity to present its action plans
 - National authorities: same action to influence representatives to SCOEL and to fend off national legislative efforts (France, Germany...)
- Ressource:
 - Presentation needs to be developed by volunteer group and made to SCOEL.
 - National members can present it to National Authorities on an as needed basis

GA October 16th 2008

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6 - Monitor and meet MS to ensure Annex XV proposals do not include Cd and compounds

- What:
 - Information needs to be gathered on key MS (SV, NW, DK, NL, DE, FR, AUT, UK) to check whether said MS are contemplating placing Cd and compounds in Annex XV
 - If such intent is identified, effective communication needs to be made with national authority
- Why:
 - Annex XV proposals are forwarded to ECHA for this agency to propose priority list to COM
 - COM selects amongst priority list to create Annex XIV
 - Annex XIV are substances that need to be authorized under REACH
- Ressource:
 - A contact person(s) needs to be established in each MS to monitor that MS
 - Message needs to be developed centrally



International Cadmium Association

BUSINESS PLAN 2009
and financial forecast 2009-2010-2011

Submitted for the approval of the Members
Of the International Cadmium Association

16 October 2008

International Cadmium Association

2009 Business Plan

1 Introduction

The International Cadmium Association confirms its strategic vision to be a forum for producers and users of the metal to share collective interests.

This Business Plan sets out the operational and financial plans for ICdA in 2009 and gives tentatively a 3 year perspective of the financial plan..

2 Mission and Objectives

ICdA's mission is:

- To monitor scientific and regulatory developments that may impact significantly members' cadmium-related activities
- To respond to regulatory proposals and make scientifically-based data available to the community
- To report on scientific and regulatory developments to members

ICdA's primary objectives are to ensure market access for cadmium products while respecting the principles of sustainable development, including the protection of human health and the environment.

3 ICdA Secretariat and Staff

IZA provides staffing and secretariat services for ICdA. Activities will largely be executed by three part-time principal staff members.

Principal ICdA officers are shown in Table 1.

Table 1: ICdA Staff 2009	
General Manager Mr. Christian Canoo	<i>Location:</i> Brussels, Belgium <i>Responsibilities:</i> Association management and control; EU regulatory affairs <i>Reports to:</i> ICdA Chairman <i>Min Activity level:</i> 0.3 man-year
Environment Assistant Mrs. Nôomi Lombaert	<i>Location:</i> Brussels, Belgium <i>Responsibilities:</i> EU and International regulatory affairs

International Cadmium Association

2009 Business Plan

	<i>Reports to:</i> General Manager <i>Min Activity level:</i> 0.33 man-year
Senior Consultant Mr Hugh Morrow	<i>Location:</i> Washington DC, USA <i>Responsibilities:</i> North American regulatory affairs; specific international regulatory affairs <i>Reports to:</i> General Manager <i>Min Activity level:</i> 0.35 man-year

These staffing arrangements are, in principle, flexible and higher levels of staffing can be applied dependent on ICdA requirements, other priority settings (e.g.REACH dossiers) and available funding.

3.1 Accounting and Administrative / secretarial support

ICdA does not employ any support staff. Administrative and secretarial support for ICdA's HQ will be drawn from IZA staff or otherwise outsourced. IZA will be reimbursed for costs incurred in providing this support. Accounting will be administered through IZA's internal systems, with ICdA retaining its separate bank accounts and audited annual accounts.

Office accommodation, office services, computing services and other support services will be provided by IZA.

3.2 Scientific Support

Expert support for regulatory affairs activities will be drawn, as required, from IZA's other resources. Support may also be drawn from other individuals/organizations, as required. These organizations will be reimbursed for costs incurred in providing this support.

4 2009 Activities

Activities in 2009 will focus on:

- Regulatory developments with impact on members' activities
- Communications strategy and activities

4.1 Regulatory Developments

4.1.1 European Union

Priorities:

International Cadmium Association

2009 Business Plan

- Follow-up of the measures decided in the Risk Reduction Strategy conducted under Regulation 793/93, i.e. interfacing with the SCOEL-works on Cd
- Broad communication on the ICdA Guidance document on occupational preventive management. In addition, a more user-friendly version would be an asset.
- REACH :
 - o Interfacing with autonomous Reach Cd Consortium
 - o Providing the "Trustee" function to that Consortium: current commitment for follow-up of a two year Kidney NOEL review (study Prof. Bernard UCL)
 - o providing scientific support if deemed necessary
- Revision of the BREF notes under IPPC
- Supporting actions to the European portable rechargeable battery association (RECHARGE)
- Monitoring of specific issues potentially related to Cd-pigments (Directive 91/338/EEC)
- Running an EH&S-Steering committee (3 to 4 times a year) in order to i.e. efficiently exchange views on implementation of the ICdA Guidance document

Monitoring level:

- EU directives for Groundwater, Soil Protection, Water Framework Directive, Waste, SCALE program (through Eurométaux)
- End-of-life Directives on Vehicles and other end of life directives, affecting certain cadmium products.

International Cadmium Association

2009 Business Plan

4.1.2 North America

Priorities:

- Activities on US EPA and Environment Canada proposals to impose restrictions on cadmium products or develop more stringent emission limits and occupational exposure limits on the cadmium-producing and cadmium-using industries.
- Activities in support of North American Metals Council on the NAFTA CEC Sound Management of Chemicals Program
- Activities in support of the collection and recycling of cadmium-containing products, particularly nickel-cadmium batteries, in both the United States and Canada. Ongoing responses to erroneous analyses of recycling rates for NiCd batteries.

Monitoring level:

- Proposed US State and Canadian Provincial legislation prohibiting the presence of cadmium in certain products.
- Toxicological reviews on cadmium and cadmium compounds by the Agency for Toxic Substances & Disease Registry (ATSDR), the National Toxicology Program (NTP), the Integrated Risk Information System (IRIS) and other agencies.

4.1.3 International

Priorities:

- UNECE Long Range Transboundary Air Pollution (LRTAP) Heavy Metals Protocol including possible tighter emission limit values and restrictions on cadmium products.
- UNEP Scientific Review on Cadmium and Heavy Metals Program evaluation of the long range transboundary contamination by cadmium, including global trade to developing nations, and the need to adopt binding global restrictions on cadmium products and international trade in cadmium products.
- IFCS / SAICM Approaches to the international management of cadmium, its compounds, and its products.

Monitoring level:

- The application of mandatory cadmium product recycling laws and EU-type restrictions on cadmium products in Asia, South America and Africa.
- WHO/FAO limits for dietary exposures to cadmium

International Cadmium Association

2009 Business Plan

4.2 Internal Communications and Association Meetings

Briefings on regulatory developments and consultations with members on association strategy/actions are an important element of ICdA activity.. Use of the pass-worded Intranet to ensure members have up-to-date access to information and positions will be an important part of this activity and will create a valuable archive for members' use.

One General Assembly of Members will be held in October (London, England). An information meeting may also be held in April/May in North America depending upon the preferences of ICdA Members. Other meetings and conference calls of the Board of Directors and ICdA Committees will be held as required to address specific developments.

4.3 Communications activities

There is a need to further integrate both general and sector-specific communications activities to support the regulatory affairs work and maintain confidence in markets. Specific suggestions are to update the public website (www.cadmium.org) with the more recent developments.

On request of ICdA-members, the "Cd Guidance Document" should receive a revised "user-friendly" version: production of a brochure / leaflet will be considered in 2009

4.4 Statistics and Market Information

A limited activity will be maintained to collate relevant statistical information on world cadmium production and use and will focus on the information needs of regulatory and communications activities.

International Cadmium Association

2009 Business Plan

5 2009 Financial Plan

The proposed 2009 financial plan and a 3y-budget perspective is given in Table 2.

Table 2: International Cadmium Association						1,03
3y '09-11' Financial Plan (EU€)						
	<u>2007</u> <u>Rev. *</u>	<u>2008</u> <u>Plan</u>	<u>2008 P&L</u> <u>Forecast 8+4</u>	<u>2009</u> <u>Plan</u>	<u>2010</u> <u>Plan</u>	<u>2011</u> <u>Plan</u>
STAFFING						
Headquarters	20.625	45.000	40.000	61.170	75.000	75.000
Sr Cons.(North America)	41.824	36.571	34.434	36.571	37.669	38.799
Scientific Support - Health	0	22.000	0	20.000	20.000	20.000
Scientific Support – Envir.	4.486	7.500	0	10.000	10.000	10.000
Legal support						
Secretarial	2.579	2.500	2.500	2.575	2.652	2.732
Administration/Accounting	12.391	6.000	6.000	8.240	8.487	8.742
Total Staff Costs	81.905	119.571	82.934	138.556	153.808	155.272
OPERATIONS						
Rent/Rates/Office services	10.439	12.000	12.000	12.000	12.360	12.731
Office Reloc. /Refurb.		0	0	0	0	0
Telecommunications	1.997	4.000	3.000	4.000	4.120	4.244
Post. & Express Services	702	650	650	650	669	689
IT support	1.885	4.500	3.000	4.500	4.635	4.774
Stationery & office suppl.	2.749	4.000	2.000	4.000	4.120	4.243
Banking Costs	1.276	1.000	700	1.000	1.030	1.061
Meetings	2.040	5.000	5.000	5.000	5.150	5.305
Travel & Subsistence	11.266	12.500	15.095	15.714	16.186	16.671
Membership	2.152	2.420	2.420	2.420	2.493	2.567
Publication	0	1.500	1.500	1.500	1.545	1.591
Taxes / Contingency	499	1.500	1.500	1.500	1.545	1.591
Total Operation Costs	35.005	49.069	46.865	52.284	53.852	55.468
Deprec.& non-deduct.	1.535	5.000	2.500	5.000	5.000	5.000
TOTAL Staff & Operational COSTS	118.445	173.641	132.299	195.840	212.661	215.740
SPECIAL STUDIES	155.343	0	0	0	0	0
- XYZ		0	0	0	0	0
- XYZ	155.343	0	0	0	0	0
TOTAL EXPENSES	273.787	173.641	132.299	195.840	212.661	215.740

International Cadmium Association

2009 Business Plan

INCOME						
Membership fees	179.883	190.868	185.327	179.827	177.267	177.267
Interest income	3.356	3.000	2.361	3.000	3.000	3.000
Exchange corrections	-5.218	-1.500	-1.530	-1.500	-1.500	-1.500
Other income (studies direct contribution)	106.666	0	0	0	0	0
TOTAL SUBSCRIPTION INCOME	284.688	192.368	186.158	181.327	178.767	178.767
BALANCE	10.901	18.727	53.859	-14.514	-33.894	-36.973
SURPLUS/(LOSS) FOR YEAR	10.901	18.727	53.859	-14.514	-33.894	-36.973
SURPLUS/(LOSS) BROUGHT FORWARD	101.453	112.354	112.354	166.213	151.700	117.806
SURPLUS/(LOSS) CARRIED FORWARD	112.354	131.081	166.213	151.700	117.806	80.833

Rates of subscription for 2009 are unchanged over 2008, and are given in Appendix I.



ASSESSMENT SCHEDULE 2009

The assessable period for 2009 Membership dues is based upon the pounds of cadmium, expressed on a contained metal basis, mined, produced, recycled or consumed during the period, January 1, 2008 through December 31, 2008. The Board of Directors has set the following assessment rates (euro per pound of cadmium contained) for 2008 – The same rates will apply in 2009:

<u>CLASSIFICATION</u>	<u>DUES BASIS</u>	<u>2009 DUES</u>
Cadmium Producers	Total Pounds of Cadmium Production	euro 0.025
	Minimum Assessment	euro 5,115
	Maximum Assessment	euro 51,140
Cadmium Recyclers	Total Pounds of Cadmium Production (excluding toll treatment)	euro 0.0128
	Minimum Assessment	euro 2,560
	Maximum Assessment	euro 25,570
Cadmium Oxide Producers	Total Pounds of Cadmium Contained In Cadmium Oxide Production (excluding Primary Metal Production reported above)	euro 0.0013
	Minimum Assessment	euro 2,560
	Maximum Assessment	euro 25,570
Cadmium Consumers	Total Pounds of Cadmium Consumption	euro 0.0026
	Minimum Assessment	euro 2,560
	Maximum Assessment	euro 25,570
Mining Companies	Total Pounds of Cadmium Mined (excluding Primary Metal Production reported above)	euro 0.0128
	Minimum Assessment	euro 2,560
	Maximum Assessment	euro 25,570
Others	International Zinc Association (IZA)	euro 95,000

ANNEX IV

Deloitte and Touche Audited Accounts for 2007 attached as separate Annex



Cadmium: Need for international action?

JUST FACTS

*IFCS - Forum VI – Dakar
15-19 September 2008*

Patrick de Metz - Saft

Where does cadmium come from?

THREE MAIN ROUTES:



Zinc extraction

- Extracted in the course of zinc mining and purification



Volcanoes



Erosion

- Naturally released through erosion, volcanic activity



Oil



Coal



Tobacco



Phosphate fertilizers



Metallic Ores

- As an impurity, present in several commodities



1 – Extracted in the course of zinc mining and purification

- ❑ Cadmium is naturally present in the earth's crust, with a high density in zinc ores
- ❑ Cd content is on average 0.3% of Zn content
- ❑ Zinc:
 - Production: 10 Million tons
 - Growth: 4% per annum
 - Africa is not a large source: 3% of world total zinc extraction, 1% of world total zinc refining
- ❑ Cadmium:
 - Production: 0.02 Million tons, flat for over 10 years
 - 1/3 of extracted cadmium is not refined
 - No cadmium refining takes place in Africa

3



2 – Naturally released

- ❑ Cadmium is released through natural events:
- ❑ Erosion
 - River erosion: WHO reports 15,000 t per annum are transported by rivers into the oceans
 - Wind erosion: no estimates available
- ❑ Volcanic activity
 - Estimated at 1,000 t per annum
 - High year on year variability

4



3 – Present as an impurity in traded commodities

- Cadmium is a naturally occurring impurity present in many internationally traded commodities:
 - Phosphate fertilizers
 - Tobacco (and cigarettes, cigars...)
 - Non renewable energy sources (coal, oil, peat)
 - Iron and steel, copper, lead ores (and related processes)
 - Cement...

Where is cadmium used (1)?

- Cadmium (extracted from zinc) is intentionally added to the following products:
 - **70%:** rechargeable consumer batteries
 - General purpose:
 - ✓ Progressively being replaced by higher power density batteries (same power, less volume), allows for smaller and lighter appliances
 - ✓ No need for robustness, no need for wide temperature range in consumer uses
 - ✓ At times replaced by non-rechargeable batteries (over 100 times more waste)
 - For cordless power tools (electrical cord replaced by battery):
 - ✓ Largest market in consumer Ni-Cd rechargeable batteries
 - ✓ In most segments, other technologies do not have the proper performance and reliability characteristics of Ni-Cd
 - ✓ *Remark: Europe and Africa both 750 Million inh. Sales of Cordless Power Tools from world market leader to Africa are 1/30th of those to Europe.*

Where is cadmium used (2)?

- Cadmium (extracted from zinc) is intentionally added to the following products:
 - **20%:** other specialty uses
 - Specialty pigments ("safety red")
 - PVC stabilizers
 - Anticorrosion coatings of airplane parts
 - Coating of specialty electrical connectors
 - Photovoltaic panels
 - Complex metal alloys for specialty uses (nuclear power stations...)
 - **10%:** industrial rechargeable batteries
 - Specialty product (<1% of Pb-acid market): Used mostly for back-up power when human or equipment safety is critical
 - Ex: all planes we flew with to Dakar use industrial Ni-Cd batteries
 - Other uses are high speed passenger trains, telecom and other networks, power plants...
 - Extended Producer Responsibility being implemented; recycling in European plants (too small a volume to recycle in Africa)
 - In such uses, no alternatives
 - *Remark: Europe and Africa both 750 Million inh. Sales of industrial Ni-Cd to Africa are 1/10th of those to Europe.*



7

Findings and Consequences

- When contemplating release minimization programs, prioritization needs to be made between these three families:
 - Cadmium intentionally added to products
 - Cadmium as an impurity within commodities (and related processes)
 - Naturally released cadmium

- Relative impact has been analyzed, studied and quantified thoroughly in Europe



8

EU Cadmium Risk Assessment

- Under EU law: over 100 substances have been placed on a priority list
 - To be analyzed for their intrinsic properties
 - Evaluated in their uses and impacts across Europe
 - By an official governmental organization
- In the case of cadmium
 - Responsible entity: Belgium Federal Ministry of Health, Family and Environment (not industry)
 - Reviewed by numerous expert committees of 27 Member States
 - Results and conclusions submitted to EU Commission in late 2007
 - Formally approved by 27 EU Member States and European Parliament in May 2008
 - **Recent, comprehensive, independent and up to date (duration: 9 years)**
- Report and conclusions **publicly** available on web site of the European Chemical Bureau:
 - http://ecb.jrc.it/DOCUMENTS/Existing-Chemicals/RISK_ASSESSMENT/REPORT/cdmetalreport303.pdf
 - Over 2000 pages long!

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EU Cd Risk Assessment (RA)

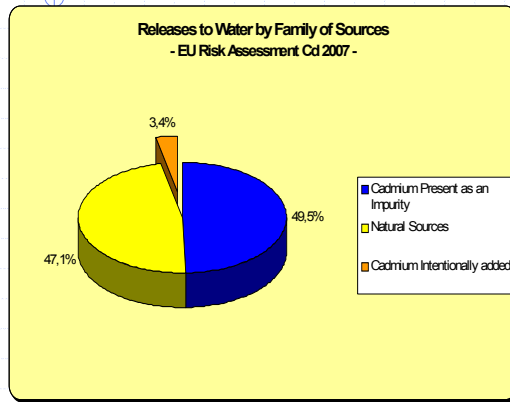
- Releases to the environment:
 - WATER
 - AIR
 - SOIL
- Human uptake:
 - WORKERS
 - GENERAL POPULATION: non-smokers
 - GENERAL POPULATION: smokers

10



Releases to the Environment

WATER (source: 2007 EU Cd RA)



Cadmium Present as an Impurity

- Metals mining
- Production of Iron and Steel
- Other non-ferrous metals production
- Phosphates processing and use
- Other activities (cement, glass, traffic...)
- Oil and Coal combustion plants
- Wood and peat incineration

Natural Sources Cadmium Intentionally Added

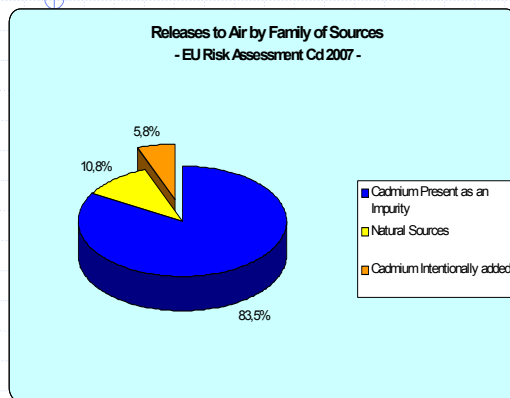
- Cd/CdO production
- Cd plating and batteries prod and recycling
- MSW at landfills
- Municipal Incineration

11



Releases to the Environment

AIR (source: 2007 EU Cd RA)



Cadmium Present as an Impurity

- Metals mining
- Production of Iron and Steel
- Other non-ferrous metals production
- Phosphates processing and use
- Other activities (cement, glass, traffic...)
- Oil and Coal combustion plants
- Wood and peat incineration

Natural Sources Cadmium Intentionally Added

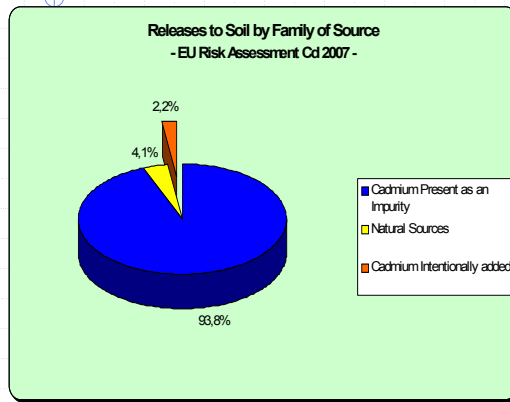
- Cd/CdO production
- Cd plating and batteries prod and recycling
- MSW at landfills
- Municipal Incineration

12



Releases to the Environment

SOIL (source: 2007 EU Cd RA)



Cadmium Present as an Impurity

- Metals mining
- Production of Iron and Steel
- Other non-ferrous metals production
- Phosphates processing and use
- Other activities (cement, glass, traffic...)
- Oil and Coal combustion plants
- Wood and peat incineration

Natural Sources Cadmium Intentionally Added

- Cd/CdO production
- Cd plating and batteries prod and recycling
- MSW at landfills
- Municipal Incineration

13



Human uptake

- WORKERS - (source: 2007 EU Cd RA)

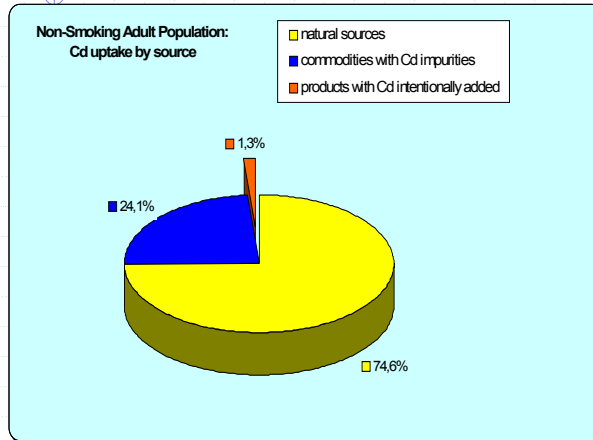
- For workers: main source of cadmium uptake is inhalation
- In EUROPE: workers exposed to cadmium work mainly in:
 - Battery manufacturing
 - Metal coating
 - Zinc (and other non-ferrous metals) smelting
 - Population is small: below 1,500
- In AFRICA: workers exposed to cadmium work mainly in:
 - Phosphate rock mining and fertilizer operations
 - Zinc (and other non ferrous metals) smelting
 - Population not evaluated, expected to be small

14



Human Uptake – GENERAL POPULATION

Non Smokers (source: 2007 EU Cd RA)



Cadmium Present as an Impurity

- Metals mining
- Production of Iron and Steel
- Other non-ferrous metals production
- Phosphates processing and use
- Other activities (cement, glass, traffic...)
- Oil and Coal combustion plants
- Wood and peat incineration

Natural Sources Cadmium Intentionally Added

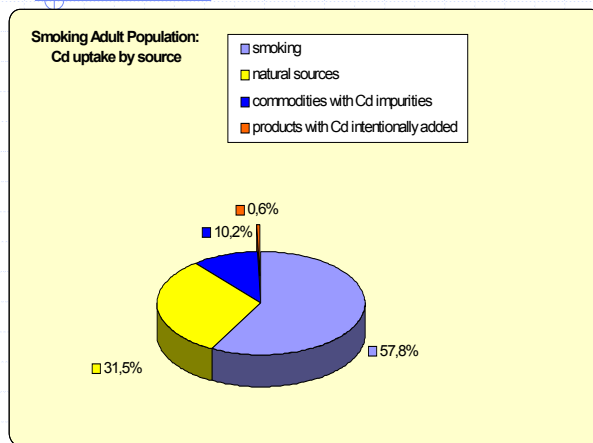
- Cd/CdO production
- Cd plating and batteries prod and recycling
- MSW at landfills
- Municipal Incineration



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Human Uptake – GENERAL POPULATION

Smokers (source: 2007 EU Cd RA)



Smoking Cadmium Present as an Impurity

- Metals mining
- Production of Iron and Steel
- Other non-ferrous metals production
- Phosphates processing and use
- Other activities (cement, glass, traffic...)
- Oil and Coal combustion plants
- Wood and peat incineration

Natural Sources Cadmium Intentionally Added

- Cd/CdO production
- Cd plating and batteries prod and recycling
- MSW at landfills
- Municipal Incineration



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Findings

- Action towards products with intentionally added cadmium will achieve no measurable results in reducing:
 - Environment releases
 - Human uptake

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Impact of Trade in: - COMMODITIES -

- These are traded mostly:
 - between developing nations AND
 - from developing nations to industrialized countries
- In 4 cases out of 5: cadmium present as an impurity is number one cause of environment releases and human uptake:
 - oil, coal
 - phosphate fertilizers,
 - tobacco,
 - metallic ores

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Impact of Trade in:

- GOODS w. intentionally added Cd -

- These are traded mostly from industrialized countries to developing economies:
 - All-purpose consumer rechargeable Ni-Cd batteries
 - Batteries in cordless power tools (battery replaces external cord)
 - Industrial Ni-Cd rechargeable batteries

- Action towards products with intentionally added cadmium will achieve no measurable results in reducing:
 - environment releases
 - or human uptake

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Conclusion

- Data shows that focusing on goods with intentionally added cadmium will achieve no positive results for the environment or human health

- Such focus would actually harm population/development by:
 - Reducing options for efficient housing construction
 - Increasing workplace accidents (corded tools vs. non-corded tools)
 - Crippling industrial assets and networks (planes, power plants...)
 - Reducing access to renewable energy (1/3 of world population not connected to electricity network)

- **When reviewing hard scientific data, the case that « trade in products containing lead and cadmium presents an unacceptable risk to human health or the environment » cannot be sustained**

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GLOSSARY OF ACRONYMS AND ABBREVIATIONS

ACGIH	American Conference of Governmental Industrial Hygienists
ATSDR	Agency for Toxic Substances and Disease Registry (USA)
BAT	Best Available Technology
CDC	Center for Disease Control (USA)
ChAMP	Chemicals Assessment and Management Program (USEPA)
COM	Council of Ministers (EU)
CMR	Carcinogenic, Muta-genetic and Reproductive Toxicant
CSA	Chemical Safety Assessments
DG	Directorate General
DTIE	Division of Trade, Industry and Economics (of UNEP)
DU	Downstream User
EB	Executive Body (of the UNECE LRTAP Treaty)
EC	European Commission
EECCA	Eastern Europe, Caucasus and Central Asia
ECHA	European Chemicals Agency
EINECS	European Inventory of Existing Chemical Substances
ELV	Emission Limit Value
EPA	Environmental Protection Agency (United States)
EU	European Union
FAO	Food and Agricultural Organization (United Nations)
GA	General Assembly (of Members of the International Cadmium Association)
GACT	Generally Available Control Technology
GC	Governing Council (of the United Nations Environment Program)
HM	Heavy Metals
IARC	International Agency for Research on Cancer
ICCM	International Conference on Chemicals Management (of SAICM)
ICMM	International Council on Metals and Mining
ICdA	International Cadmium Association
IFCS	Intergovernmental Forum for Chemical Safety
IOMC	International Organization for Management of Chemicals
IRIS	Integrated Risk Information System (USEPA)
IUCLID	International Uniform Chemical Information Database
IZA	International Zinc Association
IZA-E	International Zinc Association - Europe
JECFA	Joint Expert Committee on Food Additives
LRTAP	Long Range Transboundary Air Pollution
MS	Member States (of the European Union)
MSW	Municipal Solid Waste
NAMC	North American Metals Council
NESHAPS	National Emission Standards for Hazardous Air Pollutants
NOEL	No Observable Effect Level
NTP	National Toxicology Program (USA)
PNEC	Predicted No Effect Concentration

PRBA	Portable Rechargeable Battery Association (United States)
PTWI	Provisional Tolerable Weekly Intake
RA	Risk Assessment
RBRC	Rechargeable Battery Recycling Corporation (North America)
REACH	Registration, Evaluation & Authorization of Chemicals (EU)
RIP	REACH Implementation Projects
RRS	Risk Reduction Strategy (European Commission)
SAICM	Strategic Approach to International Chemicals Management
SCOEL	Sub-Committee on Occupational Exposure Levels
SEE	South East Europe
SIEF	Substances Information Exchange Forum
TCNES	Technical Committee on New and Existing Chemicals
TFHM	Task Force on Heavy Metals (UNECE LRTAP Heavy Metals Protocol)
TSCA	Toxic Substances Control Act (United States)
UCL	Universite Catholique Louvain (Belgium)
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
WGs	Working Groups
WGSR	Working Group on Strategies and Review (of UNECE LRTAP Treaty)
WHO	World Health Organization
WSSD	World Summit on Sustainable Development