



**MINUTES
GENERAL ASSEMBLY OF MEMBERS
INTERNATIONAL CADMIUM ASSOCIATION
Thursday, April 22, 2004 – 11:00 AM**

**The Carolina Inn
211 Pittsboro Street, Chapel Hill, North Carolina 27516 USA**

CALL TO ORDER

The General Assembly of Members of the International Cadmium Association was called to order at 11:05 AM by its Chairman, Marc von Schwerin of Noranda, Inc. The following persons were in attendance or were represented by their Proxy:

REPRESENTATIVE

Timothy G. Pugh
Mark Tomaczewski
Stephen Wilkinson
Murray E. Cook
Jeffrey S. Mamarella
Marc von Schwerin
William O. Wildes

MEMBERS' PROXIES

Michael Ball
Graham White
Siegfried Osswald
Mitsuyoshi Iwasaka
Jon Helliwell
Betsy Kraft-Liebermann
Norman England
Jacques Migniot
Charles Monahan
Mitsunori Takao

STAFF AND GUESTS

Mark Edwards
Lidia Regoli
Hugh Morrow

MEMBER COMPANY

Black & Decker Corporation
INMETCO
International Zinc Association
International Zinc Association
Millennium Specialty Chemicals
Noranda, Inc.
SAFT America, Inc.

MEMBER COMPANY

Acme Electric Corporation
Considar Metal Marketing
Ferro GmbH
Japan Mining Industry Association
Johnson Matthey Colours Ltd.
Kraft Chemical Company
Portable Rechargeable Battery Association
SLMC
Panasonic Industrial Company
Sanyo Electric Co., Ltd.

ORGANIZATION

Teck Cominco Limited
International Cadmium Association
International Cadmium Association

The Chairman introduced Dr. Lidia Regoli to the General Assembly as the incoming General Manager of the International Cadmium Association. He explained that she is working on zinc environmental issues for the International Zinc Association – Europe, but that, since the beginning of the year, she has been working part-time for ICdA such that coverage of cadmium issues has been maintained in the transition interval between January 1st and May 1st. As of May 1st, Lidia Regoli will be employed by the International Zinc Association, with 50% of her time allocated to ICdA management. The Chairman made a point to thank Raymond Sempels of the International Zinc Association – Europe for making Dr. Regoli available to work on cadmium issues during this transition period.

The Chairman then circulated the attendance roster for all attendees to sign, and asked each attendee to introduce herself / himself and their affiliation. Hugh Morrow was appointed to act as Secretary Pro-Tempore for the General Assembly of Members. The Chairman then asked if a quorum of Members were present or represented by Proxy for the transaction of business. Mr. Morrow responded that 16 of the association's 28 members were present in person or represented by proxy and thus a quorum was established for the transaction of business.

APPROVAL OF THE MINUTES OF OCTOBER 16, 2003 GENERAL ASSEMBLY OF MEMBERS

The Chairman noted that the Minutes of the October 16, 2003 General Assembly of Members, held in London, England, had been distributed to the membership for review and comment in November 2003. Since that time, no additions or corrections to the Minutes had been received. Mr. von Schwerin asked if there were now any additions or corrections to these Minutes as circulated. **There being no additions or corrections, and upon motion made by Tim Pugh, seconded by Chip Wildes, and approved by the General Assembly, the Minutes of the October 16, 2003 General Assembly of Members were approved as submitted.** These Minutes were signed by Chairman Marc von Schwerin and then given to Lidia Regoli to be included in the permanent record of Minutes of meetings at ICdA headquarters in Brussels.

MEMBERSHIP REPORT

Hugh Morrow summarized the changes in membership in the International Cadmium Association since its last General Assembly of Members in October 2003. His report is attached to these Minutes as Annex I. In accordance with the ICdA 2004 Business Plan and the Memorandum of Understanding between the International Cadmium Association and the International Zinc Association, the International Zinc Association joined ICdA in 2004 to represent the interests of the zinc/cadmium producers. Their annual contribution will be \$100,000. At the same time, the cadmium/zinc producers, Noranda Inc. and Outokumpu Zinc, have resigned their memberships choosing to be represented through the IZA membership. Both Outokumpu and Noranda will pay their 2004 dues in accordance with the By-Laws of the association.

UPDATE ON CADMIUM REGULATORY ISSUES

European Union Regulatory Issues – Lidia Regoli presented an overview on the major European Union regulatory issues affecting cadmium, a copy of which is attached to these Minutes as Annex II. These included:

1. a detailed review of the status of the EU risk assessment on health and on environment of cadmium and cadmium oxide, and an announcement that the anticipated next phase of discussions on Risk Management options are to start in 2004.
2. a review of the EU risk assessment on cadmium and cadmium oxide by the Committee on Science, Toxicity, Ecotoxicity and Environment (CSTEE). Although the CSTEE issued an opinion on the risk assessment on health, the opinion on the risk assessment on environment has been delayed until after a meeting between the members of CSTEE, the Rapporteur and industry at the end of June to discuss how the risk assessment on environment can be

- improved.
3. a review of the EU risk assessment on cadmium and cadmium oxide by the Organization for Economic Cooperation and Development (OECD). The outcome of the meeting, attended by Hugo Waeterschoot of Eurometaux, was generally positive, and resulted in a revision of the summary of the effects data. This summary now provides more transparency on the manner in which the the EU risk assessment derived the Predicted No Effect Concentrations (PNECs) which should allow for a more proper use of the effects data.
 4. the latest status of the targeted risk assessment on nickel-cadmium batteries and its relevance to the proposed revision of the EU Batteries Directive which has now been finalized by the Commission and sent to the EU Parliament where a different version is being proposed. The Parliament's version has now reintroduced the language containing a NiCd battery ban. CollectNiCad, ICdA and Eurometaux are working on a joint position paper raising the problematic issue of the Parliament taking decisions that are not based on the scientific evidence (Targeted Risk Assessment on NiCd Batteries) that was put forward by the Commission. The polarized positions of the Commission and the Parliament must now be discussed and reconciled.
 5. Dr. Regoli also discussed the EU's Water Framework Directive, Groundwater Directive and Air Quality Directive, all of which aim to achieve virtually zero water emission cadmium Levels by 2020 and background air emission cadmium levels by 2010.

North American and International Regulatory Issues – Hugh Morrow presented a summary of North American and International regulatory issues, a copy of which is attached to these Minutes as Annex III. The North American issues covered included the development of the U.S. EPA's Metals Assessment Framework to replace the Persistence, Bioavailable and Toxic (PBT) system previously used to evaluate metals; EPA's Guidance Document on Soil Screening Levels (SSLs) to determine levels of no concern for certain hazardous wastes including cadmium; the New York Academy of Sciences report on cadmium in the New York / New Jersey Harbor and its watershed; the recently proposed California legislation banning the use of cadmium in cellular telephones, identical to the EU's ROHS Directive; the National Toxicology Program's (NTP) evaluation of the toxicology of cadmium telluride (CdTe); and the recent NAFTA report "Taking Stock" which evaluates dangers to children's health, reproductive toxicity and carcinogenicity based on the USA's Toxic Release Inventory (TRI) and Canada's National Pollutant Registry Index (NPRI) both of which include transfers as well as releases, thus over-reporting releases, and on the Environmental Defense Fund's "scorecard" of carcinogens, reproductive toxicants, developmental and neurotoxicants.

The international issues of concern focused mainly on a high level of current activity within the United Nations Economic Commission for Europe's (UNECE) Long-Range Transboundary Air Pollution (LRTAP) Protocol on Heavy Metals. Present activities clearly indicate a concerted effort by the Nordic and central European countries to add additional metals to lead, mercury and cadmium which are currently covered, and to add additional products besides lead in gasoline and mercury in non-rechargeable batteries. Work within the OECD on the NiCd battery collection and recycling program has apparently been stopped pending the outcome of the EU Battery Directive. Efforts within the USA, Canada, Japan, Australia and Korea to affect the OECD review of the EU cadmium / cadmium oxide risk assessment were also described. Efforts by US industry to oppose the EU REACH program have also taken on political overtones in the United States with Republicans opposing the legislation and Democrats supporting it.

PROGRESS REPORT ON RESTRUCTURING

Staffing and Operations – Chairman Marc von Schwerin reviewed the steps which have been undertaken, those still underway, and those to be completed by the end of 2004. He stated that the reorganization was proceeding largely as planned initially at the meetings in Namur, Belgium in March 2003 and in Research Triangle Park, North Carolina in April 2003. As of January 1, 2004, administrative functions had been merged with those of the International Zinc Association including accounting and association management. Management of ICdA would now be carried out by IZA staff – with Lidia Regoli having a dedicated role of General Manager for ICdA. Hugh Morrow would act as a Senior Consultant and be responsible for North American regulatory affairs and certain international activities. The Memorandum of Understanding with

the International Zinc Association has been signed and International Zinc Association is now officially a member of the International Cadmium Association.

Discussion of Assessment Structure - Murray Cook presented some ideas as a thought starter on a revised assessment structure for the International Cadmium Association. This was in response to a proposal made at the previous meeting by the cadmium pigment producers that they may look favorably on higher fees for cadmium user members if this facilitated improved levels of activity. Mr. Cook's presentation is attached to these Minutes as Annex IV. He reminded that the present assessment rates will be utilized to establish core funding which covers general regulatory affairs monitoring and response and sending information to members. Additional project-based funding will be either on sector-specific projects or on generic projects which all members agree must be carried out for the sake of the industry. He emphasized that any additional funding, whether sector-specific or generic, would have to be established by agreement amongst the membership. He added that projects could be geographically based as well as sector based. Finally, Mr. Cook emphasized that, as much as possible, such additional projects and their funding mechanism should be included in the association's Annual Plan.

These concepts and revisions in the assessment structure will be discussed again in further detail at the next General Assembly in October in London to allow further input from European members.

Officers and Board of Directors – Hugh Morrow presented a listing of the Officers and Directors of the International Cadmium Association as elected on October 9, 2002 for a three-year term. This listing is attached to these Minutes as Annex V. Mr. Morrow noted that Gordon Hall, Michael Taylor and Hugh Morrow had retired as Directors of ICdA effective December 31, 2003. He also proposed that Murray E. Cook of the International Zinc Association be elected as a Director of the International Cadmium Association to represent IZA's membership.

Upon motion made by Chip Wildes, seconded by Marc von Schwerin, and approved by the General Assembly of Members, Murray E. Cook was elected as a Director of the International Cadmium Association.

Amendments to By-Laws of the International Cadmium Association – Marc von Schwerin reported that he, Murray Cook and Hugh Morrow had reviewed the By-Laws of the International Cadmium Association and found several areas where amendments might be required to make them consistent with the restructuring of the association and present practices. The Chairman indicated that proposals for changes in the By-Laws would be presented to the membership between April and October 2004 with the expectation that these changes could be formalized by the next meeting.

Closure of The Cadmium Council, Inc. – Hugh Morrow reported that steps were being undertaken to formally close The Cadmium Council, Inc. (CCI) as a legal entity in the United States. The proper Dissolution Resolution has been prepared along with a Plan of Dissolution and a New York State Certificate of Dissolution. These documents have been forwarded to the listed Board of Directors of The Cadmium Council, Inc. for their approval. Upon receipt of Board approval, the Dissolution Resolution will be sent to all members of ICdA who became members through their prior membership in The Cadmium Council for their approval. Once approved by the CCI Board and the CCI/ICdA Members, these documents will be filed with the State of New York, where CCI was first incorporated, and in the Commonwealth of Virginia, where an office is currently maintained. It is expected that the necessary approvals by the State of New York and the Commonwealth of Virginia will have been received by the General Assembly in October 2004 in London, and that The Cadmium Council will officially be dissolved by the end of 2004.

ICdA Members Website – Lidia Regoli reported on the development of plans for a Members-only Website rather than the general public website currently in place at www.cadmium.org. This public website has now been suspended per requests made in October 2003 to remove members names from the website, and to avoid excessive alteration costs. An updated site would be launched as soon as possible. A tentative outline for the new members-only website is attached to these Minutes as Annex VI. The concept is to provide a vast amount of information for all ICdA members so that they may access the current status of cadmium regulations, legislation, conferences, commercial information, reference articles, and member

contact points on either the commercial or environmental / human health side. It will be an enormous resource for ICdA members and allow them to stay as current as they wish to on a wide variety of issues.

Ms. Regoli indicated that the first step in revising the ICdA Members Website was to obtain input from all members on what they would specifically like to see included in the website structure. The second step would be to take down the current public website as requested by some members previously as it contains the names and contact details of members. The third step would be to put up the new members-only website as outlined in Annex VI and amended by Members input in the near future. All Members are kindly requested to send their ideas for a new Members website to Lidia Regoli at lregoli@cadmium.org.

FINANCIAL REPORT

Murray Cook presented a Financial Report for the International Cadmium Association's budget and forecast for 2004 which is attached to these Minutes as Annex VII. Overall expenses are forecast to be very close to the budgeted amount of \$210,300 for the year. Additional transition costs in the range of \$60,000 to \$65,000 will bring total expenses in the range of \$270,000 to \$275,000 against expected income of \$266,500. Year-end 2003 accounts were close to finalization and the year-end surplus brought forward to 2004 was not yet finalized. Both Tim Pugh and Chip Wildes noted that, while the financial situation for 2004 appeared under control, the situation in 2005 could be much tighter. Chairman Marc von Schwerin noted that in future years, the association expected to see its core budgets and membership income balanced at approximately the \$200,000 level.

UPDATE ON CADMIUM MARKET ISSUES

Hugh Morrow presented an overview of the present state and trends in the worldwide cadmium market which is attached to these Minutes as Annex VIII. He noted that primary cadmium production is decreasing steadily, especially in Europe, but that secondary cadmium supply through NiCd battery recycling is increasing, especially in North America. Cadmium stocks now appear to have been exhausted, but some partially processed cadmium is being sent to China for further refinement and conversion into materials for NiCd battery production in China. The five largest cadmium producers in the world are Japan, China, Korea, Canada and Mexico.

On the consumption side, the cadmium market continues to be dominated (80%) by nickel-cadmium batteries and China and Japan are by far the world's largest producers of NiCd batteries. After a marked drop in NiCd battery production between 2000 and 2001, both Japanese and Chinese NiCd battery production have increased steadily in the next three years. NiCd batteries are sold mostly into power tool, cordless telephone and household applications, but with also strong applications in emergency lighting and portable audio/visual applications. Industrial NiCd batteries, which account for only about 20% of the cadmium used in all NiCds, are dependent mainly upon aircraft, railway and uninterrupted power supply applications. However, growth is expected in the Hybrid Electric Vehicle (HEV) market and some HEVs will be powered by NiCds. The world's largest NiCd battery producers are Sanyo, BYD in China, Panasonic and SAFT.

Cadmium price has remained under \$1 per pound for many years now. After increasing to about \$0.85 per pound for 99.99 purity grade material for most of 2003, the *Metal Bulletin* price decreased in the fall of 2003 and now stands in the \$0.65 per pound range. The supposed imbalance between low primary production and high consumption has apparently been offset by increased secondary production and the processing of semi-refined materials in China. The possibility of a reintroduction of a NiCd battery ban in the European Union by the EU Parliament is expected to once again have a negative effect on the cadmium market and prices. However, some have conjectured that the proposed NiCd ban will not remain in the Directive after its second reading in the EU Parliament.

NEXT MEETING DATE

The next General Assembly of Members of the International Cadmium Association is scheduled to be held on Thursday, October 14, 2004 during London Metal Exchange (LME) Week in London, England. The venue will be established once those of the IZA, ILZRO and ICMM meetings have been established, and all members will be notified well in advance of the meeting.

ADJOURNMENT

There being no further business before the General Assembly of Members and upon motion duly made by Chip Wildes, seconded by Tim Pugh, and approved by the meeting, the General Assembly of Members of the International Cadmium Association was adjourned by its Chairman, Marc von Schwerin, at 3:42 PM.

Respectfully Submitted,

Hugh Morrow
Secretary, Pro-Tempore

Approved,

Marc von Schwerin
Chairman



ANNEX I

MEMBERSHIP REPORT INTERNATIONAL CADMIUM ASSOCIATION April 22, 2004

NEW MEMBERS

International Zinc Association

Per the ICdA 2004 Business Plan approved by the membership in late 2003 and the Memorandum of Understanding between the International Cadmium Association and the International Zinc Association (IZA), the International Zinc Association has joined the International Cadmium Association in 2004 to represent the interests of the zinc industry. Their annual contribution will be \$100,000.

RESIGNATIONS

Noranda, Inc.

Noranda, Inc. submitted its letter of resignation from the International Cadmium Association in late 2003 on the basis of the restructuring of the association and choosing to be represented through IZA. Noranda has indicated it will honor its final year's dues commitment per the ICdA By-Laws.

Outokumpu Zinc

Outokumpu Zinc also submitted its letter of resignation in 2003 based on the restructuring of the International Cadmium Association and also citing its much reduced cadmium production. Outokumpu will also retain its interest in cadmium through IZA's membership, and will honor its dues commitment for 2004 per the association's By-Laws.

Outcome of the EU RA on
Cd/CdO, and way forward
Chapel Hill, 22 April 2004

Lidia Regoli
International Cadmium Association
168, Avenue de Tervueren, B-1150
Brussels, B

Content

- Outcome of the Cd/CdO RA
 - Environment
 - Human health
 - Targetted Risk Assessment for batteries
- EU RA at CSTEE
- EU RA at OECD
- Other EU directives related to Cd

Conclusions of the EU RA environment (1)

- Concl (i): further information requested
 - Waters with very low hardness (<10 mg CaCO₃/l)
 - Cd bioavailability in sediments *-submitted 1st March '04*
- Concl (ii): no risk
 - Local water/sediment CdO producers
 - Most local soil scenarios
 - Number of regional water scenarios e.g. Germany
 - Most regional soil scenarios
 - Secondary poisoning top predators and terrestrial animals

Conclusions of the EU RA environment (2)

- Concl (iii): risk
 - Local water/sediment at 10 production and processing sites (stabilisers, pigments, plating, alloy)
 - Local soil: 3 sites
 - Regional water: cannot be excluded in certain regions
 - Regional soil: some regions e.g. UK
 - Waste water treatment plants: pigments, plating, alloys

Conclusions on EU RA environment: discussion

- Risk scenarios are result of:
 - High level of conservatism in RA
 - Use of default emission factors, older emission data...
 - But also realistic emission data
 - limited bioavailability correction
- Concl (i)
 - Softwaters: Industry has questioned relevancy of programme ⇨ ?
 - Sediments: AVS correction accepted in Zn RA, Cd case has been submitted to the Rapporteur

Conclusions of the EU RA human health: *workers*

- Concl (i) « on hold » for low dose-related neurobehavioural effects
- Concl (iii): at reported exposure levels, risk (after inhalation), for
 - Acute toxicity, respiratory irritation,
 - kidney & bone repeated dose toxicity
 - Genotoxicity, carcinogenicity, reprotoxicity

Conclusions of the EU RA human health: *consumers*

- **CdO: No risk**
- **Cd metal:**
 - risk for acute respiratory effects when using Cd containing brazing sticks
 - Risk for dermal exposure from imported Cd containing jewelry

Conclusions of the EU RA human health: *general population*

- **Concl (i) « on hold »** for low dose-related neurobehavioural effects
- **Concl (iii):**
 - At the mentioned exposure levels, health risks (kidney & bone (all scenarios except adult non-smokers) and lung repeated dose toxicity, carcinogenicity/genotoxicity for all scenarios) cannot be excluded upon environmental exposure.

Conclusions on EU RA Health: discussion

- Extreme conservatism/Swedish pressure made risk scenarios unavoidable
 - Tolerable weekly intake from WHO lowered, no healthy workers effect
- Yet,
 - Reported exposure at producing/processing sites is too high
 - Emissions from Cd production and processing only contributes 3,8 % to Cd input into environment

Conclusions on EU TRA on batteries (1)

Ni-Cd producing/recycling plants

- Concl(ii): no risk
 - to water (except 1 Cd recycler)
 - to STP
 - to soil
- Concl(iii): risk
 - to sediments (for all plants!!)
- Atmosphere:
 - For Ni-Cd producers, calculated levels are higher than the proposed levels in the 4th DD (5 ng/m^3)

Conclusions on EU TRA on batteries (2)

- Risk scenarios are result of:
 - High level of conservatism in RA (i.e. identified risk below bckgd for sediment)
 - limited bioavailability correction
- What can help?
 - Concl(i) for Sediments: AVS correction accepted in Zn RA, Cd case is ready
 - Monitoring data at site

EU RA at CSTE

- Human Health: CSTE Opinion received 28 Jan '04
- Environment: CSTE Opinion was expected early March
- TRA batteries: CSTE Opinion was expected early March
- Further process:
 - Rapporteur will compile opinions and issue « comments to the CSTE opinions on Cd files » timing?
 - RA environment is holding up the process
 - Re-open discussion at TM?

Main points of CSTE on Cd & CdO HH RA

- EXPOSURE - Indirect exposure via the environment:
 - Considers the total dietary range of Cd is >, recommends 10-70 µg/day (current RAR: 7-32 µg/day)
- EFFECTS -1) Toxicokinetics and metabolism
 - Considers that additional conservatism is needed on absorption rates
- EFFECTS -2) Acute and repeated dose toxicity: kidney
 - Considers LOAEL at 0,5 - 2 µg/g creatinine (current RAR: 2 µg/g)

Main points of CSTE on Cd & CdO HH RA

- RISK CHARACTERIZATION
 - Calculates MOS values based on a range of LOAELs (i.e. 0,5 -2 Cd-U for kidney)
 - Considers a concliii) regarding kidney applies also to adult non-smokers with sufficient iron stores.

Some general comments

- Genotoxicity and carcinogenicity:
CSTEE opinion refers to Cd cpds with no discussion on Cd speciation/differentiation in toxicity in different Cd cpds.
- CSTEE notes the absence of specific contribution to exposure from the different production and use activities.

CSTEE expert opinion on environment and TRA

- CSTEE opinion on environment and TRA on batteries was expected on March 4th but not yet issued
- Rumors that CSTEE has some major issues with environment RA as presented.
- CSTEE members and Rapporteur discussion in mid-May???
- Industry has requested to participate to any further discussion.
- TRA on batteries conclusions depend on the outcome of the RA environment.

EU RA at OECD

- Belgium submitted RA to OECD on 26 January '04
- Cadmium EU RA files : discussed at next SIAM meeting -April 22 in Paris
- H.Waeterschoot of Eurométaux is representing ICdA at the meeting
- Certain OECD member states have been contacted and briefed (Canada, USA, Australia)

Cadmium in the EU: « politically toxic »

- High political pressure on Cd emissions, in spite of proven limited effect on exposure
- Continue bilateral discussions with the Belgian Rapporteur ⇒ risk management to begin in 2004
- Industry needs to improve local performance
 - production, processing
 - Worker exposure
 - Emissions (if necessary)

EU directive on Batteries

Commission Proposal COM(2003)723

- Covering all batteries sold in the EU
- Aim: Prevent batteries being incinerated or landfill
- 90% recycling of collected portable batteries
- Recycling targets for portable battery types:
 - Pb-Acid batteries: all Pb, 65% of the average weight
 - Ni/Cd batteries: all Cd, 75% of the average weight
 - Other batteries: 55% of average weight
- Producer responsibility for costs for collection, treatment and recycling for industrial & automotive batteries
- For portable batteries, the costs are to be shared with national authorities

EU Directive on Batteries

- Parliament's final report (Blockland report) :
 - a radical shift away from Commission proposal
 - Does not reflect characteristics of batteries recycling
 - Purpose of directive changed to « ban the use of heavy metals in batteries and accumulators »
 - Introducing prohibitions for a wide range of battery systems incl. Pb, Cd, Hg without alternatives or scientific justification
 - Results from scientific investigations (i.e. Cd TRA on Batteries) prepared for the EC are ignored
 - No evaluation of economic and social impact of market restrictions
 - Setting of unachievable collection targets and recycling efficiencies for portable batteries

Water Framework Directive

(adopted in October 2000)

- Achieve 'good' quality status by 2010
 - Priority Hazardous Substances (PHS): Cd, Hg,..
To undergo measures aimed at the cessation of discharges:
 - « 0 » emissions by 2020!!
 - Metals need to reach « near background » levels
 - Methodology of metal backgrounds is being discussed
- Monitoring will begin in 2006
- Implementation of river basin management

Groundwater Directive

(New draft proposal received 19 September 2003)

- Good quality status by 2015
- Cd = '0' emissions by 2020 (cfr. WFD)
- Monitoring programmes to begin in 2006
- Clean-up of groundwater at contaminated sites
 - all metals
 - Thresholds for action set at 75% of the current levels
- Economic impact study ongoing

Air Quality Directive

(At Parliament)

- Air quality around industrial sites is an issue
- **Cd (5 ng/m³), As, Ni (20 ng/m³) by 2010 :**
 - Commission proposes assessment threshold values
 - Parliament proposes limit values
 - Council proposes target values
- Environment Committee Vote accepted Council's proposal for target values (with reference to BAT)

**ANNEX III. REGULATORY AFFAIRS REPORT
NORTH AMERICA AND INTERNATIONAL**

**Regulatory Affairs Report
North American
and International Activities**

**International Cadmium Association
General Assembly of Members**

**The Carolina Inn
211 Pittsboro Street, Chapel Hill, NC 27516 USA
April 22, 2004**

**Major North American
Cadmium Issues**

-
- **U.S. EPA Development of Metals Assessment Framework to Replace PBT**
 - **U.S. EPA Soil Screening Levels for Cadmium**
 - **New York Academy of Sciences Cd Report**
 - **California Cell Phone Recycling Act**
 - **National Toxicology Program on CdTe**
 - **NAFTA CEC SMOC Children's Health**

U.S. EPA Metals Assessment Framework

- **Originated as PBT Program on Metals in Late 1990s**
- **Strongly Opposed by Ad Hoc Metals Coalition**
- **Metals Changed to WMPL (Pb, Cd, Hg) in 2002**
- **EPA Metals Action Plan in 2002/2003**
- **Independent Expert White Papers (October 2003)**
- **Metals Assessment Framework**
 - **Expected Completion by End of 2004**
 - **Supported by Dept of Energy and Small Business Administration**
 - **U.S. House of Representatives Small Business Committee**
 - **TRI Lead Lawsuit Being Pursued by NFIB**
 - **Will Govern Future Regulation of Metals by EPA**

U.S. EPA Ecological Soil Screening Levels Report

- **Guidance Document Issued in Nov 2003**
- **Cadmium One of 9 Contaminants Listed**
- **Specify Concentration of No Concern But May Be Construed as Clean-Up Standards**
- **Cadmium Levels Reported**
 - **0.38 ppm for Mammals**
 - **1.0 ppm for Birds**
 - **140 ppm for Soil Invertebrates**
- **Information at www.epa.gov/ecotox/ecoss1**

New York Academy of Sciences Cadmium Report

- **Final Report Issued in December 2003**
- **Very Little Cadmium in Products Directly Released into NY/NJ Harbor Watershed**
- **Cadmium Releases to and Levels in the NY/NJ Harbor Decreased in Past 25 Years**
- **Emphasizes Collection and Recycling of Nickel-Cadmium Batteries**
- **Report: www.nyas.org/scitech/harbor**

California Cell Phone Recycling Act

- **A.B. 2901 Introduced February 20, 2004**
- **Prohibits Sale of Cell Phone If Prohibited Under EU ROHS Directive (2002/95/EC)**
- **Bans Intentional Cadmium in Cell Phones**
- **Effective January 1, 2007 or On or After Effective Date of 2002/95/EC**
- **Requires Cell Phone Collection and Recycling Programs Effective July 1, 2005**

NAFTA CEC Program on Children's Health

- **“Taking Stock” Report on Carcinogens, Developmental Toxicants & Neurotoxicants**
- **List Based on Environmental Defense Fund List of Suspected Neurological and Developmental Toxicants**
- **List Also Based on U.S. TRI & Canada NPRI**
- **Metals Listed Include Al, Ba, B, Co, Au, Fe, Ni, Se, Cu, Cd, Pb, Hg, Zn, “Metals”**
- **www.scorecard.org/chemical-profiles**

Major International Cadmium Issues

- **UNECE LRTAP Heavy Metals**
- **OECD NiCd Battery Collection and Recycling Program**
- **OECD Risk Assessment on Cd**
 - **Interactions with USA, Canada, Japan, Korea and Australia**
- **EU REACH Chemicals Proposal**
 - **Waxman Report**

UNECE LRTAP Heavy Metals Protocol

- **Ratified by 21 Countries to Date**
- **Entered into Force 29 December 2003**
- **UNECE Expert Group on HMs**
 - **Geneva, Switzerland 20-21 March 2003**
 - **Langen, Germany 17-18 November 2003**
 - **Brussels, Belgium 31 March–1 April 2004**
- **Workshop on Critical Loads of HMs**
 - **Potsdam, Germany 4-5 March 2004**

GENEVA MEETING OF EXPERT GROUP ON HMs

- **Effectiveness of Reducing Cd, Pb and Hg**
 - **Emissions, Modeling, Effects (USA/NL)**
- **Review of Other Metals Not in Protocol**
 - **Emissions, Modeling, Effects (USA/NL)**
- **Techniques for Controlling HM Emissions**
 - **BATs, Limit Values (Germany)**
- **Product Control & Management Measures**
 - **Revising Annexes VI & VII (Sweden/Canada)**

LANGEN WORKSHOP ON HEAVY METALS

- **Improved Emission Inventories**
- **Relevance of Effects-Based Approach**
 - **Critical Loads and Exceedance Maps**
- **Study Effectiveness of HM Protocol and the Costs of Additional Measures**
- **Recommendations for Further Work**
 - **Effect of pH on Critical Loads**
 - **Cadmium Input From Fertilizers**

POTSDAM WORKSHOP ON CRITICAL LOADS OF HMs

- **Organized Under UNECE ICP on Modeling and Mapping**
- **Agreed to Effects-Based Approach for Pb, Cd and Hg for HM Protocol Review**
- **Critical Loads including Critical Limits, Transfer Functions, Speciation All Considered Scientifically Sound**

BRUSSELS MEETING OF EXPERT GROUP ON HMs

- **No New Metals Have Been Proposed**
- **No New Product Control Measures**
- **Changes Suggested in BATs-Annex III**
- **Changes Proposed in ELVs Based on Changes in BATs, But Premature**
- **Expert Group to be Replaced by Task Force on Heavy Metals for Actual Review of Protocol. Industry Involved.**

Approach

Cat.	Description of the category
1	Combustion installations with a net rated thermal input exceeding 50 MW
5	Installations for the production of copper, lead and zinc from ore, concentrates or secondary raw materials by metallurgical processes with a capacity exceeding 30 tonnes of metal per day for primary installations and 15 tonnes of metal per day for secondary installations, or for any primary production of mercury.
6	Installations for the smelting (refining, foundry casting, etc.), including the alloying, of copper, lead and zinc, including recovered products, with a melting capacity exceeding 4 tonnes per day for lead or 20 tonnes per day for copper and zinc.
8	Installations for the manufacture of glass using lead in the process with a melting capacity exceeding 20 tonnes per day.
10	Installations for the incineration of hazardous or medical waste with a capacity exceeding 1 tonne per hour, or for the co-incineration of hazardous or medical waste specified in accordance with national legislation.
11	Installations for the incineration of municipal waste with a capacity exceeding 3 tonnes per hour, or for the co-incineration of municipal waste specified in accordance with national legislation.

Annex II, Selected Results

Primary and secondary non-ferrous metal industry (5 + 6)

➤ Production of copper and zinc, including Imperial Smelting furnaces

➤ **Paragraph 13**

Limit value for particulate emissions: 20 **5** mg/m³ ^{1,2)}

➤ **Paragraph 13a (new)**

Limit value for lead emissions: 1 mg/m³ ²⁾

➤ **Paragraph 13b (new)**

Limit value for mercury emissions: 0.05 mg/m³ ^{2,3)}

1) *BREF Non Ferrous Metals Industries*

2) *Technical Instructions on Air Quality Control – TA Luft*

3) *EU Position Paper on Mercury*

Annex II, Selected Results

Primary and secondary non-ferrous metal industry (5 + 6)

➤ Production of lead

➤ **Paragraph 14**

Limit value for particulate emissions: 10 **2** mg/m³ ¹⁾

➤ Primary production of mercury

➤ **Paragraph 15 (new)**

Limit value for particulate emissions: 5 mg/m³ ^{1,2)}

1) *Technical Instructions on Air Quality Control – TA Luft*

2) *BREF Non Ferrous Metals Industries*

Annex II, Selected Results Glass industry (8)

➤ Paragraph 17

Limit value for lead emissions: 5 **3** mg/m³

Limit value for lead emissions in container glass production using cullet: 0.8 mg/Nm³.¹⁾

➤ Paragraph 18 (new)

Limit value for cadmium emissions: 0.2 mg/Nm³ or 0.5 g/h¹⁾

➤ Paragraph 19 (new)

Limit value for dust emissions: 20 mg/Nm³ or 0.20 kg/h¹⁾

➤ Paragraph 20 (new)

For oxy-fuel burners and electrical heating it is necessary to evaluate the performances only in terms of specific mass emissions (kg/tonne of glass melted)^{1,2)}

1) *Technical Instructions on Air Quality Control – TA Luft*

2) *BREF Glass Manufacturing Industry*

Annex II, Selected Results Municipal, medical and hazardous waste incineration (10+11)

➤ Paragraph 22

Limit value for particulate emissions:

(b) 25 **10** mg/m³ for municipal waste incineration^{1,2)}

➤ Paragraph 23

Limit value for mercury emissions:

(a) 0.05 **0.03** mg/m³ for hazardous waste incineration¹⁾

(b) 0.08 **0.03** mg/m³ for municipal waste incineration¹⁾

➤ Paragraph 24 (new)

Limit value for cadmium + thallium emissions for hazardous waste incineration : 0.05 mg/m³¹⁾

1) *BREF Waste Incineration*


2) *Directive 2000/76/EC on the incineration of waste*

ANNEX IV. ASSESSMENT STRUCTURE

www.ZincWorld.org

International Cadmium Association

Future Options for Assessment Structure




1

www.ZincWorld.org

Principles of Operation

- Existing assessment structure maintains core activities including:
 - General regulatory affairs monitoring and response
 - Information provision to members
- Project-based funding
 - Sector specific projects – funded by the sector
 - Generic projects – funded by all members



2

Project Funding

- Sector specific
 - Initiated in response to specific challenges/opportunities
 - Costs divided by agreement
- Generic
 - Additional levy applied to all members (subject to agreement)
 - Preferably included in Annual Plan





International Cadmium Association

168 Avenue de Tervueren / Box 4 • B-1150 Brussels, Belgium

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Email : info@cadmium .org

ANNEX V

OFFICERS AND DIRECTORS INTERNATIONAL CADMIUM ASSOCIATION

The following persons were elected as Officers and Directors of the International Cadmium Association for a three-year term at its General Assembly of Members held on October 9, 2002:

Chairman	Marc von Schwerin	Noranda, Inc.
Vice Chairman	Robert Eloy	SAFT S.A.
Vice Chairman	Jon Heliwell	Johnson Matthey Colours
Director	Graham White	Considar Metal Marketing
Director	Archibaldo Deneken	Industria Minera Mexico
Director	Yves Dubois	Umicore S.A.
Director	Lars-Goran Bjorkqvist	Outokumpu Base Metals Oy
Director	Mitsunori Takao	Sanyo Electric Co., Ltd.
Director	Timothy G. Pugh	Black & Decker Corporation
Director	Kenneth L. Money	INMETCO
Director	Jacques David	S.N.A.M.

The following persons retired as Directors of the International Cadmium Association as of December 31, 2003:

Director	Gordon W. Hall	Falconbridge Limited
Director	Michael N. G. Taylor	International Cadmium Association
Director	Hugh Morrow	International Cadmium Association

It is proposed that Murray E. Cook of the International Zinc Association (IZA) be elected as a Director of the International Cadmium Association to represent IZA's membership.

ICdA North America

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Tel.: +1(703)759.7400 • Fax: +1(703)759.7003

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ANNEX VI

Structure for the ICdA Intranet for Access by ICdA Members

www.icdaextranet.be (use login: icda ; password: icda18)

Main Titles showing on the introductory page:

Regulatory Affairs

- International
- Europe
- North America

General Assembly

Legislation

Members Contact Information

Workshops and Conferences

Articles, Reviews and Reference Material on Cadmium

Supply, Demand and Commercial Information on Cadmium

Sub-Groups

Regulatory Affairs - International:

- OECD
 1. Evaluation of EU Cadmium Risk Assessment
 2. Collection and Recycling of NiCd Batteries
 3. Harmonization of Classification and Labeling
- UNECE Heavy Metals Protocol
- UNEP
 1. Heavy Metals Program
 2. Prior Informed Consent (Stockholm Convention)
- Joint FAO/WHO Expert Committee on Food Additives (JECFA)

Regulatory Affairs – Europe:

- Risk Assessment on Cadmium and Cadmium Oxide
 1. Human Health Risk Assessment

2. Environment Risk Assessment
3. Targeted Risk Assessment on NiCd Batteries
4. Targeted Risk Assessments on Pigments, Stabilizers and Coatings
 - W.S. Atkins Report (1998)
 - RPA Report (2001)

Regulatory Affairs – North-America:

- NAFTA CEC Sound Management of Chemicals Program
- US EPA Metals Assessment Framework and PBT Programs
- National Toxicology Program (NTP)
- Proposed US, Canadian and Mexican Federal Legislation
- Proposed State and Provincial Regulation and Legislation

General Assembly:

- Next General Assembly
- Minutes of previous meetings

Legislation:

- Batteries
- Pigments, stabilizers and coatings
- Waste
- Other

Members Contact Information:

List Members alphabetically by company with a contact name for environmental issues and a contact name for commercial issues.

Workshops and Conferences:

- Upcoming workshops and conferences

Articles, Reviews and Reference Material on Cadmium

- Human Health
 - ATSDR Toxicological Profile on Cadmium
 - US EPA Integrated Risk Information System
 - IARC Summary
 - Sorahan's Recent Papers on Cadmium Carcinogenicity
 - Recent Belgian Review on Cadmium and Renal Dysfunction
- Environment
 - Chaney's Papers on Cadmium Uptake from Soils
- Applications and General
 - US Geological Summary Paper on Cadmium
 - US Geological Summary on Cadmium Recycling

Supply, Demand and Commercial Information on Cadmium


- Metal Bulletin Minor Metals Conference Paper on Cadmium
- Market Report from Latest General Assembly
- SFP Market Report on Cadmium

ANNEX VII. FINANCIAL REPORT

www.ZincWorld.org

Report Against Plan 2004


<i>All US\$</i>	<u>2004 Budget</u>	<u>2004 Forecast</u>
Staffing	117,500	133,320
Scientific Support	15,000	10,000
Secretarial	5,000	5,000
Admin/Accounts	6,000	6,000
Office rent	14,000	13,000
Office Costs	9,000	9,000
Tel/Post/Ins	6500	6500
Meetings	10,000	8,000
Travel	20,000	18,000
CollectNiCad	2300	3000
Contingency	5,000	5,000
TOTAL COSTS	210,300	211,820



www.ZincWorld.org

Report Against Plan 2004 Summary

<i>All US\$</i>	<u>2004 Budget</u>	<u>2004 Forecast</u>
Total Costs	(210,300)	(211,820)
Transitional Costs	(65,000)	(60,000)
Subscription Income	266,500	266,500
Surplus/(Loss)	(8,800)	(5320)



5

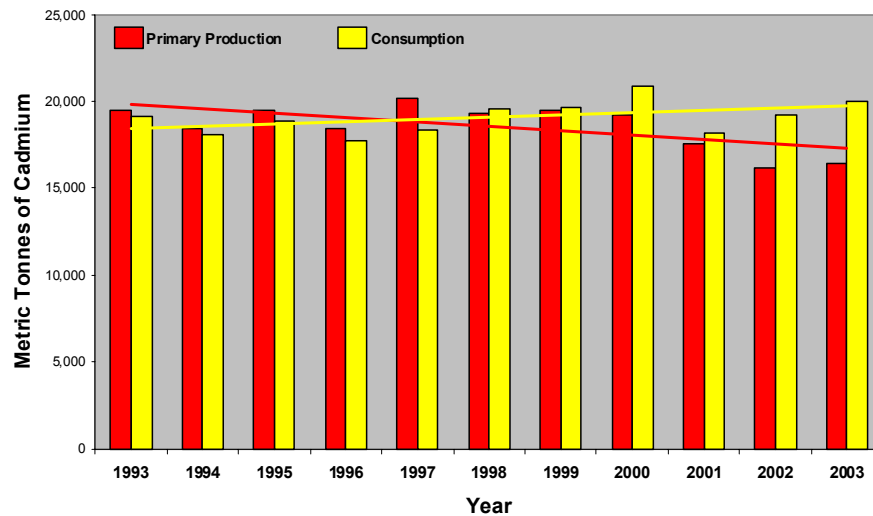
ANNEX VIII. MARKET REPORT

Cadmium Market Report

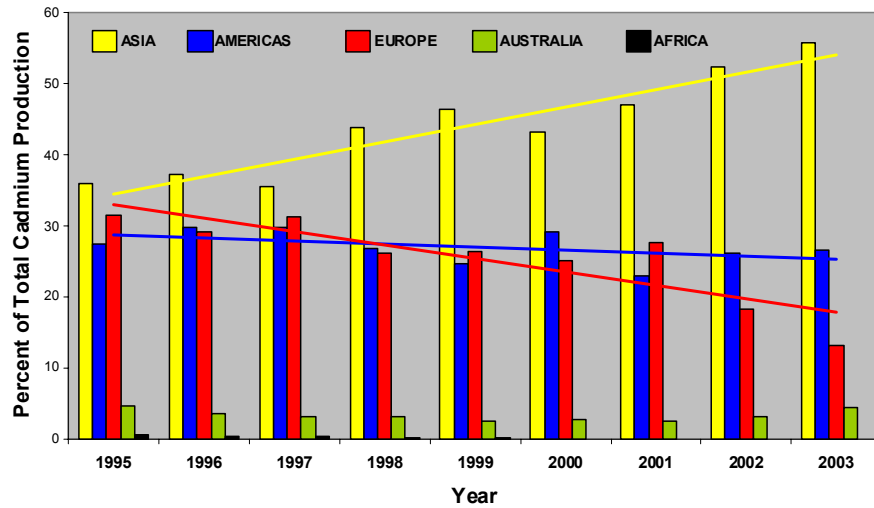
**International Cadmium Association
General Assembly of Members**

**The Carolina Inn
211 Pittsboro Street, Chapel Hill, North Carolina
April 22, 2004**

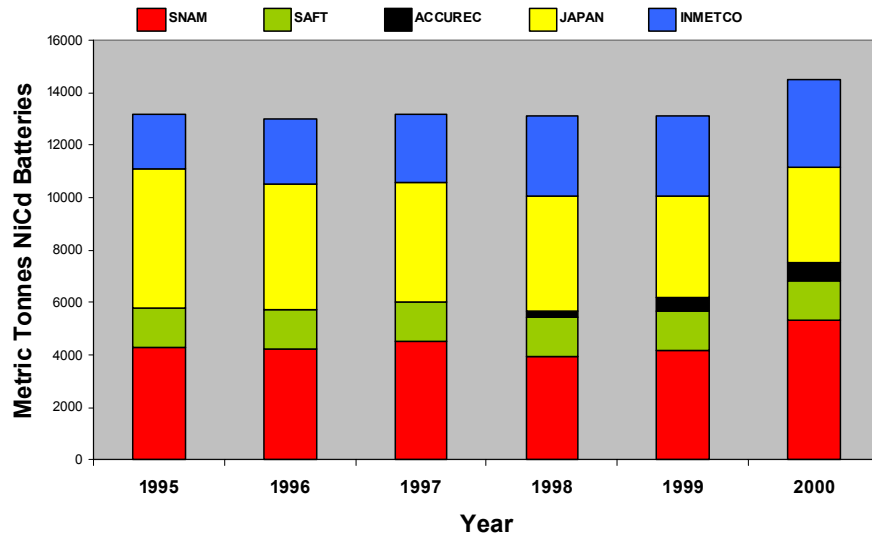
Cadmium Production and Consumption, 1993-2003



Geographical Cadmium Production, 1995-2003

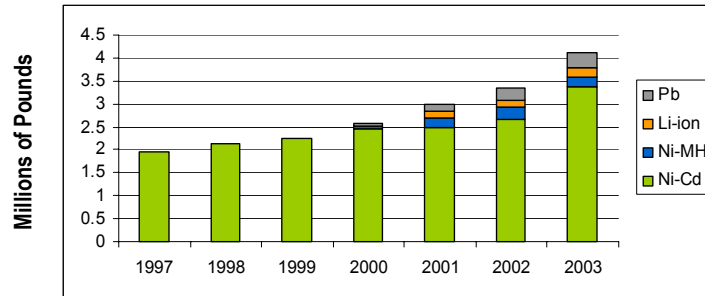


Worldwide NiCd Battery Recycling, 1995 - 2000



Total Rechargeable Batteries

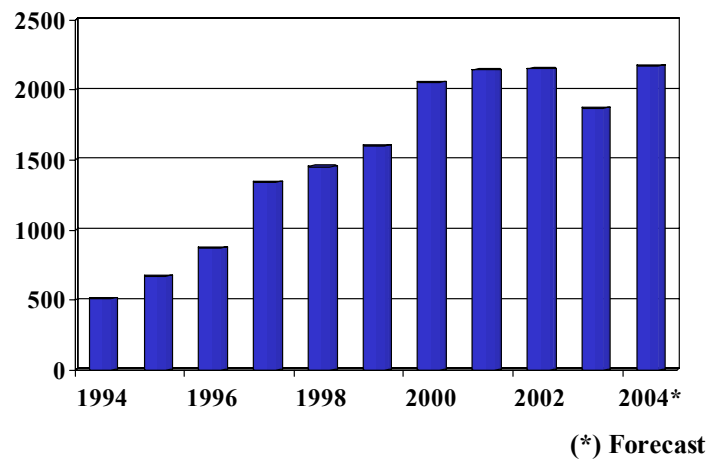
RBRC increased collection of all rechargeable batteries by 22% in 2003.



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Sealed/Portable Ni-Cd Batteries

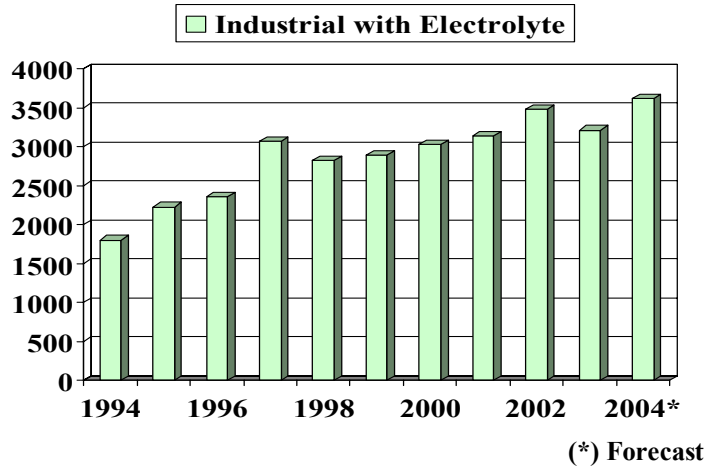
Spent Portable Ni-Cd Batteries from European Sources collected separately and processed in Recycling Plants (15 EU MS + CH + N) - Data in Metric Tonnes per year



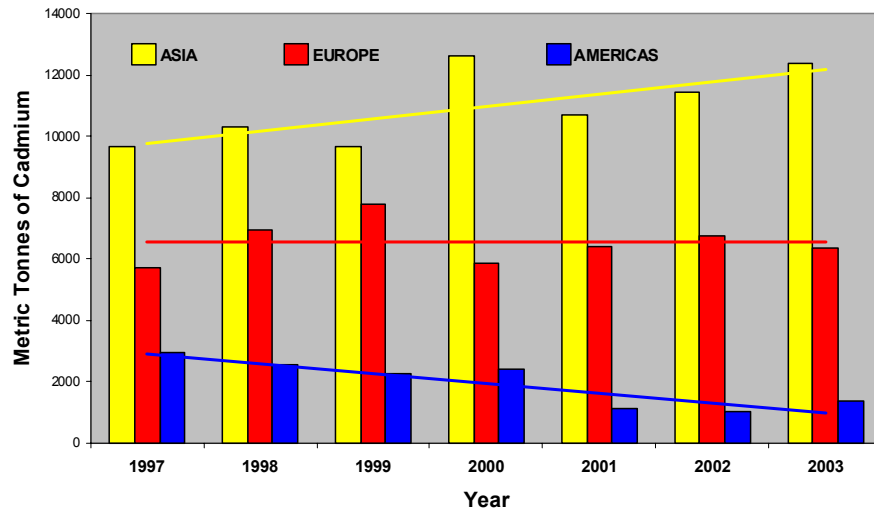
(*) Forecast

Industrial Ni-Cd Batteries

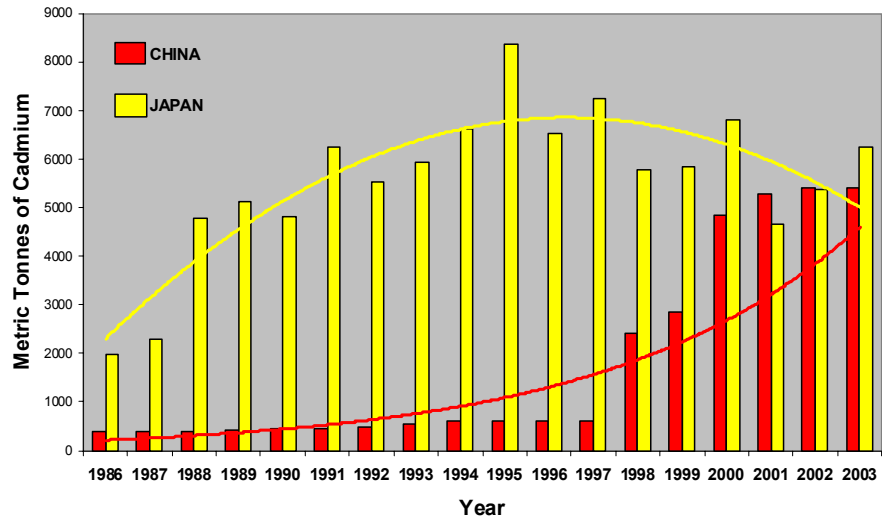
Spent Industrial Ni-Cd Batteries from European Sources collected separately and processed in Recycling Plants (15 EU MS + CH + N) - Data in Metric Tonnes per year



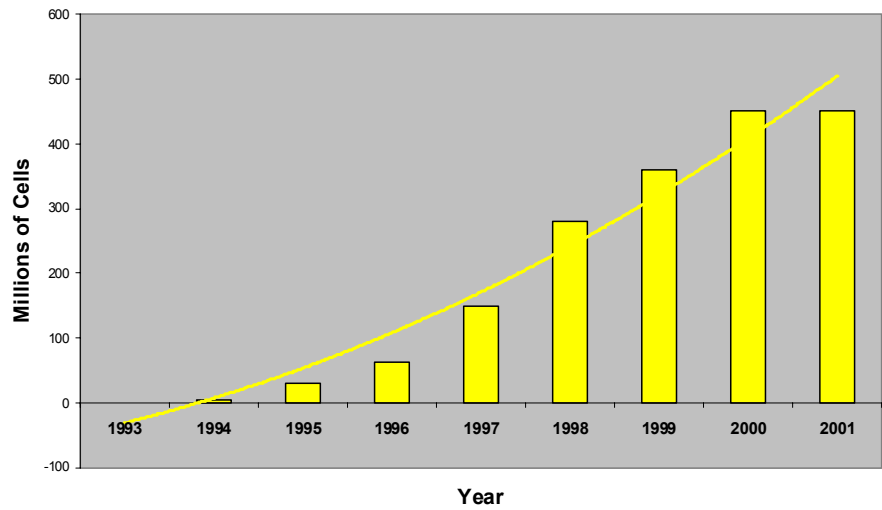
Geographical Cadmium Consumption, 1997 - 2003



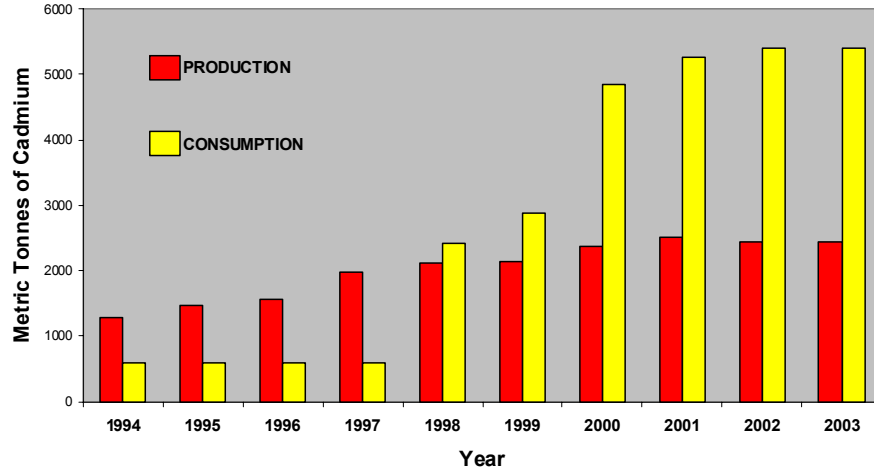
Chinese and Japanese Cadmium Consumption, 1986 - 2003



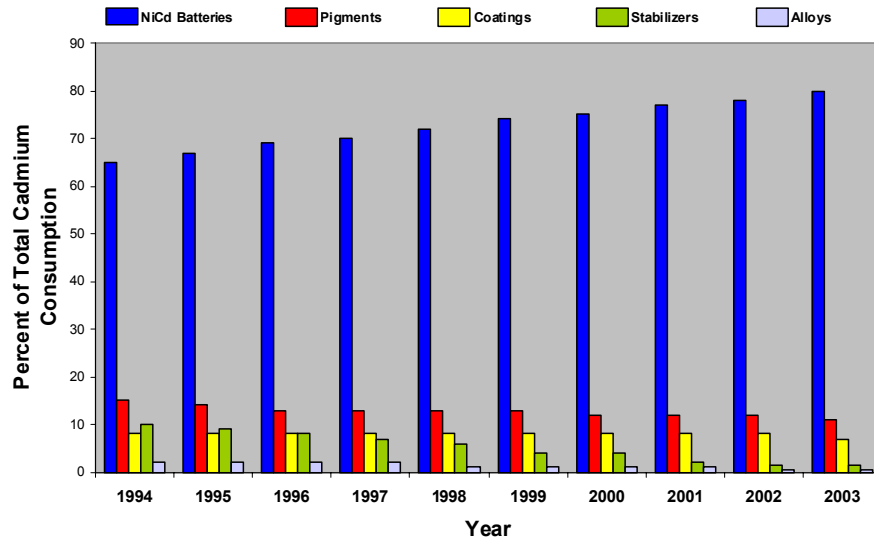
Chinese NiCd Battery Production, 1993 - 2001



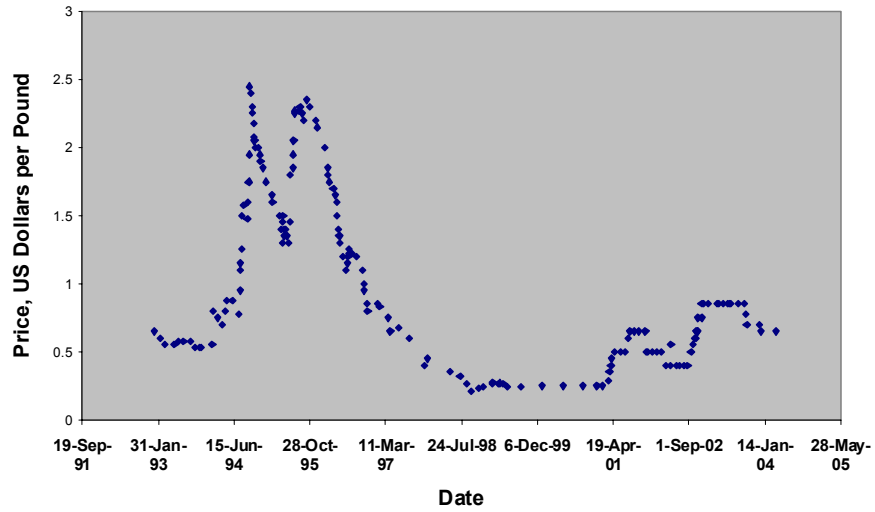
Chinese Cadmium Production and Consumption, 1994 - 2003



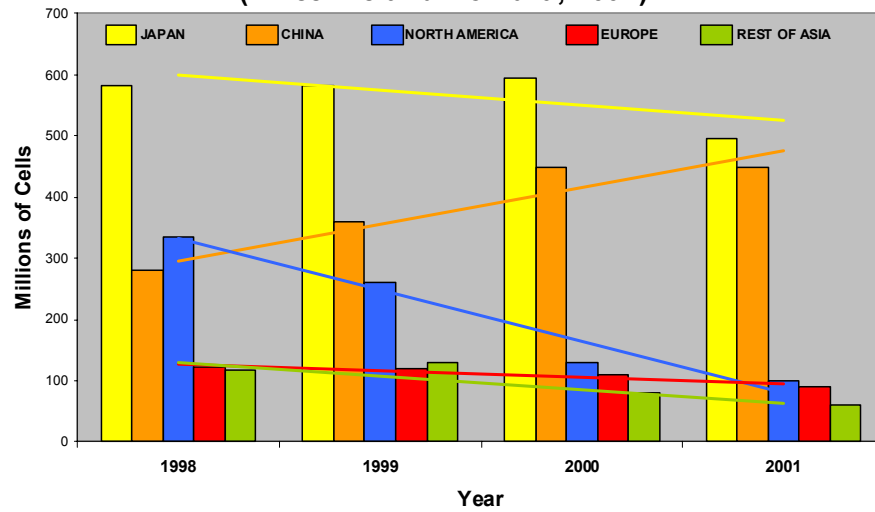
Cadmium Application Patterns, 1994 - 2003



Metal Bulletin 99.99 Cadmium Prices, 1993 - 2004

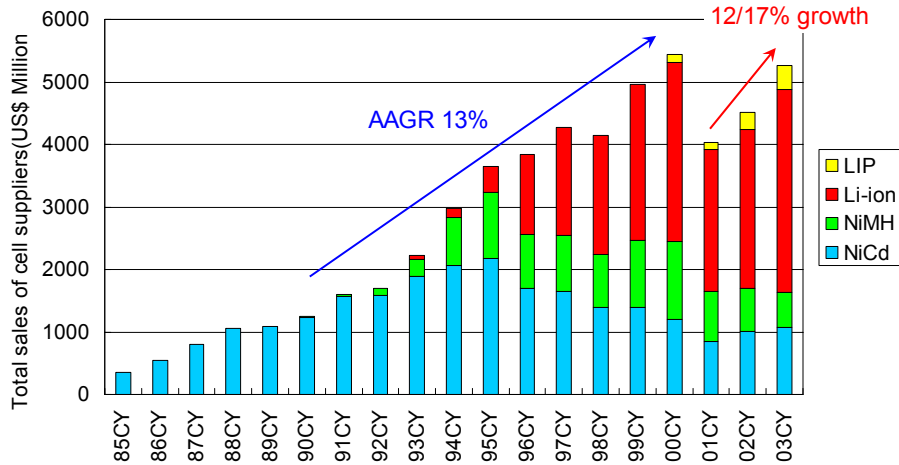


NiCd Battery Production, 1998 - 2001 (Avicenne and Nomura, 2002)



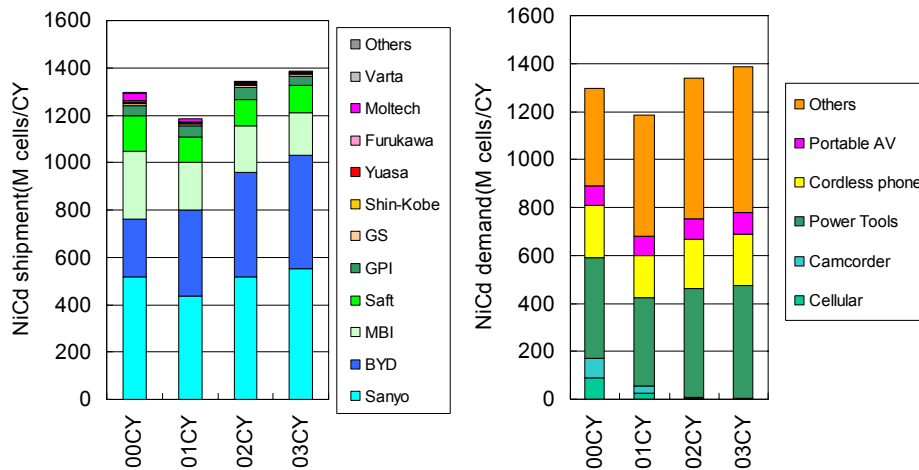
Quick recovery is realized by LIB/LIP growth

Fig.1 Worldwide portable battery market in Value



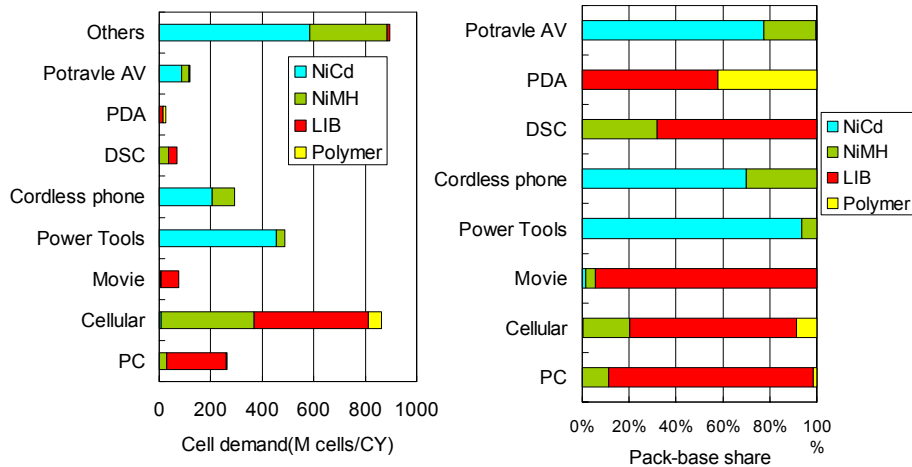
NiCd keeps the demand for power tools

Fig.4 NiCd shipment volume by supplier and application



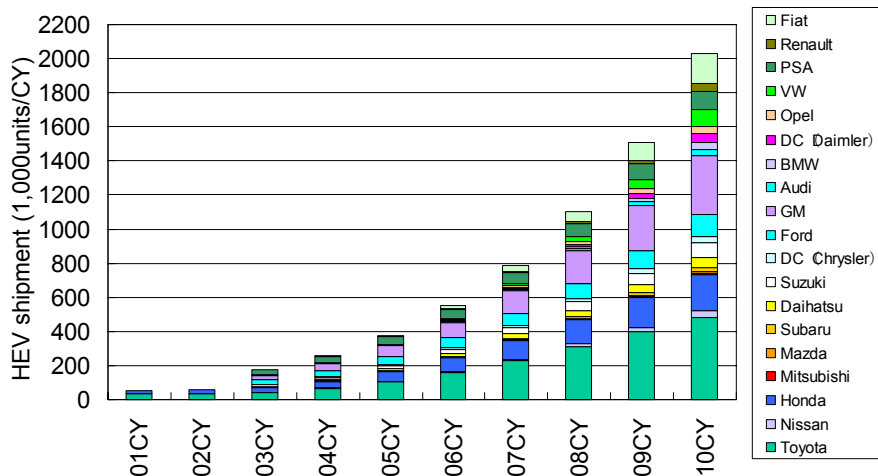
Legacy devices remain at NiCd, advanced devices move to LIB/LIP

Fig.5 WW portable battery shipment volume by application and pack-base share for each application (2002CY)



2M units x 500US\$ battery unit =
1B US\$ market

Fig.22 HEV market forecast



Summary

- **Primary Cadmium Supply Decreasing**
- **Cadmium Recycling Increasing**
- **Excess Cadmium Stocks Depleted**
- **Cadmium Prices Steady at \$0.50-0.70**
- **Applications Dominated by NiCds**
 - **Consumer: Power Tools, Emergency L&S**
 - **Industrial: Railways, Aircraft, UPS, HEVs**
- **China and Japan Dominate NiCds**

Summary

- **Cadmium Consumption Steady or Increasing in Both Japan and China But Decreasing in Europe and the Americas**
- **European Commission's Proposed Revision to Battery Directive Could Contain a NiCd Battery Ban**
- **NiCd Battery Collection and Recycling Must Continue to Grow to Avoid Future NiCd Bans**