19th International Congress for Battery Recycling ICBR 2014

September 24 – 26, 2014, Hamburg, Germany

Patronage:
Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety, Germany
Association of European Automotive and Industrial Battery Manufacturers (EUROBAT)
Call2Recycle®
EUCOBAT
European Battery Recycling Association (EBRA)
The European Association for Advanced Rechargeable Batteries (RECHARGE)
The Rechargeable Battery Association (PRBA)
FOREWORD

PROFESSOR BRUNO SCROSATI
Chairman of the Steering Committee International Congress for Battery Recycling

In one of the first editions of these fortunate series of congresses, I reported on a simple experiment that I had carried out in the terrace of my apartment in Rome. In synthesis, I planted in various pots flower plants. I crushed common, commercially available, labeled as mercury free, green AA batteries into the soil of a part of them. I followed the time evolution of the plants and saw that, while the battery-free ones had no changes, the leaves and the flowers of those containing the crushed batteries soon withered, faded and eventually died up.

The reason for citing this past event is that I believe that even today no battery is environmentally benign. Due to the present globalization we can likely have in the market batteries coming from countries where the environmental concern is not particularly high. Accordingly, spent batteries in general cannot be simply dumped in the urban waste, this makes recycling a top priority for our present society in Europe as well as worldwide. However, there are still differences among legislations and a certain confusion persists due to the renewal of the chemistries of modern batteries. Hence, a forum where these important matters can be carefully examined, discussed and evaluated by world leader experts, such as that provided by the series of the International Congress for Battery Recycling, ICBR, is a unique opportunity that cannot be missed by anyone involved in a field of continuously growing importance and evolution, such as that of battery recycling. Indeed, ICBR is worldwide rated as the top event where scientists, engineers, producers and recyclers can meet to share their opinions and discuss their business.

This year’s ICBR edition will be opened by a session with keynote lectures aimed to inform the audience on the battery legislation in force in Germany, Europe and worldwide, on the latest development of battery collection rates and recycling, as well as on the financial aspects that may be associated with these activities. The day will continue with a session where the new challenges for battery manufacturers and for the recycling industry will be presented by a series of lectures delivered by top experts in the field.

In the morning of the second day, we will be informed on the development of safety aspects linked to the presence of a large variety of lithium batteries on the market and the hazards created by their collection and transportation at end of life. In parallel, we will hear about recycling plants and related processes worldwide with particular focus on the best available technologies, on the certification of operators involved in the recycling chain and on the novel recycling efficiency calculation methodology. This important technical program will be worthily completed by test drives from Volkswagen and by the plant tour on the third day, this time directed to Redux Technology GmbH in Bremerhaven.

It is a great program that will stimulate interest and living discussions among the participants! On behalf of the Steering Committee I would like to express our thanks to all the experts who have accepted the invitation to deliver their talks and hence, to contribute with their presentations to the success of the congress.

In addition, don’t miss the Networking Dinner in the course of which superb food and drinks will be served, so that to provide the attendees with an enjoyable and relaxing atmosphere for meeting colleagues and establishing business contacts.

Such an outstanding program could only be ensured by the tireless dedication of the ICM staff who have worked very hard to make this congress another ICBR unforgettable experience.

Welcome to ICBR 2014, welcome to exciting Hamburg.
KEYNOTE SPEAKERS

HOLGER LANGE
State Secretary for Environment
Ministry for Urban Development and Environment
Free and Hanseatic City of Hamburg
Germany

“Opening Speech”

DR HELGE WENDENBURG
Director General
Water Management and Resource Conservation
Federal Ministry for the Environment, Nature Conservation,
Building and Nuclear Safety
Germany

“Opportunities and challenges in the context of the advancement of national product responsibility regulations”

WHO SHOULD ATTEND?

- Battery producers
- Recycling companies
- Waste management companies
- Battery collection schemes
- Battery collection and transportation companies
- Non ferrous metal traders
- Non ferrous metal industry
- Associations in the field of battery waste management
- Financing organization for battery recycling
- Environmental authorities
- Laboratories for material science
- Universities and research institutes
- Consultants
INTERNATIONAL STEERING COMMITTEE

PROFESSOR BRUNO SCROSATI
Chairman
Elettrochimica ed Energia (E&E)
President
Italy

DR JEAN-POL WIAUX
Chairman of the Scientific Committee
RECHARGE
Director General
Belgium

JAN BARTELS
STIBAT
Managing Director
Netherlands

GEORGIOS CHRYSSOS
Stiftung GRS Batterien
Managing Director
Germany

JILL LEDGER
Consultant
SAFT
Corporate Communication and Investor Relations
Director
France

MICHAEL GREEN
G&P Batteries Ltd.
Managing Director
United Kingdom

JACQUES DAVID
Consultant
France

DR DIETER OFFENTHALER
Batrec Industrie AG
Managing Director
Switzerland

CARL E. SMITH
Call2Recycle®
CEO/President
USA

MIKE TAKAO
Panasonic Corporation
Automotive & Industrial Systems Company
Corporate Environmental Promotion Group
Councilor, Japan

MARK R. TOMASZEWSKI
INMETCO
President
USA

DR ALAIN VASSART
EBRA
General Secretary
Belgium

JOHAN VAN PEPPERZEEL
Van Peperzeel B.V.
Managing Director
Netherlands

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EBRA
General Secretary
Belgium

JOHAN VAN PEPPERZEEL
Van Peperzeel B.V.
Managing Director
Netherlands
The 19th International Congress for Battery Recycling will be held from September 24 – 26, 2014 in the Hotel Atlantic Kempinski in beautiful Hamburg, Germany.

The Hotel is situated close to the train station, major shopping areas, and famous museums and theatres – a luxury oasis in the heart of Hamburg on the shores of lake Alster.

Hotel Atlantic Kempinski Hamburg*****
An der Alster 72–79
20099 Hamburg
Germany
Phone +49 40 28880
Fax +49 40 247129
www.kempinski.com/en/hamburg

Hamburg is not only Germany’s second largest metropolis, booming port-town and business center – locals claim it is also the country’s most beautiful city. Hamburg is best known for its maritime character: The port with the newly developed HafenCity district, the Elbe river and beautiful Alster lake, that invites for sailing trips in the middle of the city, all create a unique atmosphere.

In addition to its beautiful waterways, scenic views and generous parks, Hamburg offers an unmatched range of attractive sights, cultural events, great shopping and exciting nightlife. Symphony concerts and club culture, jazz festivals, theatrical performances and poetry slams are just as much part of Hamburg culture as are luxury brands and independent labels, haute cuisine and fish sandwiches at the famous Sunday fish market.

Hamburg also offers first class museums such as the Hamburg Art Gallery, the Bucerius Art Forum, or the International Maritime Museum. Those looking for excellent entertainment might want to see a ballet at the State Opera House, enjoy a pop concert at o2 World arena, or go to one of over 100 live music clubs. More than 40 stages, including the Thalia Theatre, the German Schauspielhaus and the English Theatre, offer almost anything from one-man plays to cabaret.

Shopping visitors will find the same broad range from international designer flagship stores to hip boutiques, large shopping malls and vintage thrift shops.

www.hamburg-tourism.de
WORKSHOPS
TUESDAY, SEPTEMBER 23, 2014

The following two workshops are organized by EBRA and RECHARGE. They will take place on Tuesday, September 23, 2014, the day before the congress. For EBRA and RECHARGE Members the workshops are free of charge.

14.00 – 15.30 CERTIFICATION OF BATTERY RECYCLING PLANTS

Update of the certification of battery recycling plants
by Dr Alain Vassart, EBRA, Belgium

16.00 – 18.00 TRANSPORT OF DANGEROUS GOODS

Update of the transport regulation at UN, ICAO and ADR levels by Dr Marco Ottaviani, ANIE-CSI, Italy and Dr Jean-Pol Wiaux, RECHARGE, Belgium

If you wish to participate at these workshops, please register by means of the registration form.

Der e-Golf. Das e-Auto.

Two that electrify: The XL1* is exciting the world. The e-Golf** impresses the environment. Because its energy consumption is extremely low. And if using energy from regenerative sources, it runs completely emission-free. But best of all: Even as an electric car the e-Golf remains a typical Golf. Test for yourself how easy electric is from now on.

Think Blue.

* Fuel consumption in l/100 km: combined 0.9, energy consumption in kWh/100 km: combined 7.2, CO₂ emissions in g/km: combined 21.
** Energy consumption in kWh/100 km: combined 12.7, CO₂ emissions in g/km: 0. Illustration depicts optional equipment at extra costs.
TUESDAY, SEPTEMBER 23, 2014

13.00 – 19.00 Registration
14.00 – 15.30 Workshop: Certification of battery recycling plants
16.00 – 18.00 Workshop: Transport of dangerous goods

WEDNESDAY, SEPTEMBER 24, 2014

08.00 – 09.45 Registration and welcome coffee in the exhibition area

Session 1: OPENING AND KEYNOTE SPEAKERS
09.45 – 11.30 "Welcome and Introduction"
Prof. Bruno Scrosati, Chairman of the Steering Committee

“Opening Speech”
Holger Lange, Ministry for Urban Development and Environment, Free and Hanseatic City of Hamburg, Germany

“Opportunities and challenges in the context of the advancement of national product responsibility regulations”
Dr. Helge Wendenburg, Water Management and Resource Conservation, Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety, Germany

Surprise Keynote Speaker

11.30 – 13.00 Lunch in the exhibition area

Session 2: Legislation
Session Chairman: Jill Ledger, SAFT, France
13.00 – 13.30 “Results of the Fitness Check on Waste Directives”
José Rizo Martin, European Commission, Belgium
13.30 – 14.00 “Priorities for the Battery Directive review”
Peter Binnemans, EUCOBAT, Belgium
14.00 – 14.30 “Battery Legislation: ‘Burning’ issues have not been removed”
Hans-Jochen Lueckefett, 1cc GmbH, Germany

14.30 – 15.00 Coffee break in the exhibition area

Session 3: Collection Efficiency
Session Chairman: Georgios Chryssos, Stiftung GRS Batterien, Germany
15.00 – 15.30 “How the battery life cycle influences the collection rate of battery collection schemes”
Peter Coonen, Bebat, Belgium
Bram Desmet, Möbius, Belgium
15.30 – 16.00 “Does mandatory collection affect compliance scheme performance?”
Carl E. Smith, Call2Recycle®, USA
16.00 – 16.30 “Battery and WEEE collection – Synergy or battlefield?”
Dr Petr Krotouchvič, ECOBAT s.r.o., Czech Republic
16.30 – 17.00 “Understanding consumer and professional practices for battery recycling to leverage actions in France”
Frédéric Hédouin, COREPILE S.A., France
Emmanuel Toussaint-Dauvergne, SCRELEC, France

19.30 Cocktail reception
20.00 Networking dinner
THURSDAY, SEPTEMBER 25, 2014

08.00 – 09.00 Welcome coffee in the exhibition area

Session 4: Safety I
Session Chairman: Johan Van Peperzeel, Van Peperzeel B.V., Netherlands
09.00 – 09.30 “Lithium batteries safety: From hazards to solutions”
Dr Jean-Pol Wiaux and Dr Claude Chanson, RECHARGE, Belgium
09.30 – 10.00 “Risks, challenges and opportunities – The business of sorting batteries”
Michael Green, G&P Batteries Ltd., United Kingdom
10.00 – 10.30 “What firefighters need to know when approaching a lithium battery fire”
Kurt Vollmacher, CTIF International Association of Fire and Rescue Services

10.30 – 11.00 Coffee break in the exhibition area

Session 5: Safety II
Session Chairman: Michael Green, G&P Batteries Ltd., United Kingdom
11.00 – 11.30 “Packaging materials for spent Li-Ion batteries”
Qiaoyan Pan, ACCUREC Recycling GmbH, Germany
11.30 – 12.00 “Development of an optimized fire safe transportation system for Lithium-based batteries for multiple purpose”
Prof. Ulrich Krause, GENIUS, Germany
12.00 – 12.30 “Minimizing risks of storing waste lithium batteries”
Daren E. Jorgensen, JET Environmental Services Inc., USA

12.30 – 14.00 Lunch in the exhibition area

Parallel Session 6: Technology I
Session Chairman: Dr Alain Vassart, EBRA, Belgium
11.00 – 11.30 “Sorting batteries with PGNAA”
Jan Sletsgaard, FORCE Technology, Denmark
11.30 – 12.00 “Phase chemistry study to support the technology development for the recycling of lithium ion batteries”
Elien Haccuria, PYROSEARCH, University of Queensland, Australia
12.00 – 12.30 “The recovery of valuable metals from portable batteries using plasma arc technology”
Stephen Gill, Tetronics International Ltd., United Kingdom

14.00 – 14.30 “Umicore’s roadmap towards industrial recycling for Advanced Batteries”
Sybott Brouwer, Umicore Battery Recycling, Belgium
14.30 – 15.00 “New recycling technologies needed – Requirements for batteries of tomorrow”
Sebastian Kross, Stiftung GRS Batterien, Germany
15.00 – 15.30 “Battery recycling at VEOLIA: The new roads”
Denis Foy, Euro Dieuze Industrie, France

15.30 – 16.00 Coffee break in the exhibition area

Session 7: Certification/Sustainability
Session Chairman: Dr Jean-Pol Wiaux, RECHARGE, Belgium
16.00 – 16.30 “Sustainability in the European portable power industry”
Hans Craen, EPBA, Belgium
16.30 – 17.00 “Battery Recycling Audit of supporting non-end-of-waste operations – The Redux case”
Prof. Bernd Friedrich, RWTH Aachen University, Germany
17.00 – 17.30 “The Why and How of the certification initiative for battery recycling plants”
Dr Alain Vassart, EBRA, Belgium

from 17.30 Farewell reception in the exhibition area
PLANT TOUR ICBR 2014
FRIDAY, SEPTEMBER 26, 2014

REDUX TECHNOLOGY GMBH, BREMERHAVEN

08.45
Departure by bus to Redux Technology GmbH, Bremerhaven

11.00
Arrival at Redux Technology GmbH, Bremerhaven

11.00 – 13.30
Visit of the battery sorting and recycling plant

15.45*
Arrival at Hamburg Airport

16.15*
Arrival at the Hotel Atlantic Kempinski

Battery Sorting and Recycling Plant

Redux GmbH has locations in Dietzenbach and Bremerhaven and is one of the leading battery recyclers in Europe. Our proprietary technique enables us to provide the entire portfolio of battery recycling at both locations and to offer our customers all services from sorting to recycling.

www.redux-gmbh.de

* No guarantee on arrival due to traffic conditions.
EXHIBITION AND POSTER PRESENTATIONS

EXHIBITION

The exhibition area provides your company with the perfect opportunity to reach key industry decision makers. Promote your products to all congress attendees.

The fee for an exhibition booth (2 m x 3 m) is as from EUR 3’000.– and for a poster presentation as from EUR 290.– for the full time of the conference.

Space is limited, so take the chance and book your exhibition booth or your poster presentation today!

As per May 23, 2014:

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>GLENCORE</td>
<td>Glencore Nickel International S.A., Belgium</td>
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<td>Metal Depot</td>
<td>Metal Depot Zurich AG, Switzerland</td>
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<td>Redux Recycling GmbH</td>
<td>Redux Recycling GmbH, Germany</td>
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<tr>
<td>Umicore Battery Recycling</td>
<td>Umicore Battery Recycling, Belgium</td>
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<td>VALDI – ERAMET</td>
<td>VALDI – ERAMET, France</td>
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<td>Volkswagen AG</td>
<td>Volkswagen AG, Germany</td>
</tr>
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On **Wednesday, September 24, 2014**, an unforgettable networking dinner will be organized for the participants of ICBR 2014.

Do not miss this perfect opportunity to meet your business partners and friends in a nice atmosphere and register to this event now.
Registration for the congress should be made by means of the registration form or online. Participants registering and paying **before July 31, 2014** will benefit from a reduced registration fee. The registration fee includes congress, entrance to the exhibition, proceedings and luncheons.

### REGISTRATION FEES

<table>
<thead>
<tr>
<th>Event</th>
<th>before July 31, 2014</th>
<th>after July 31, 2014</th>
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<tr>
<td>Congress Fee</td>
<td>EUR 1'390.–</td>
<td>EUR 1'490.–</td>
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<tr>
<td>Fee for participants</td>
<td>EUR 790.–</td>
<td>EUR 890.–</td>
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<tr>
<td>Fee for speakers</td>
<td>EUR 590.–</td>
<td>EUR 690.–</td>
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<tr>
<td>Networking dinner (Sept. 24)</td>
<td>EUR 100.–</td>
<td>EUR 120.–</td>
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<tr>
<td>Networking dinner for spouse (Sept. 24)</td>
<td>EUR 120.–</td>
<td>EUR 140.–</td>
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<tr>
<td><strong>Workshops (Tuesday, Sept. 23)</strong></td>
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<tr>
<td>Certification of battery recycling plants</td>
<td>EUR 30.–/0.–*</td>
<td>EUR 50.–/0.–*</td>
</tr>
<tr>
<td>Transport of dangerous goods</td>
<td>EUR 30.–/0.–*</td>
<td>EUR 50.–/0.–*</td>
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<tr>
<td>* Free of charge for EBRA and RECHARGE Members</td>
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### Online registration

You may also register online at: [www.icm.ch/icbr-2014](http://www.icm.ch/icbr-2014)

**Registration on site** EUR 100.– surcharge

### Additional Proceedings

If it is not possible for you to attend the congress, you may purchase the complete proceedings at EUR 350.–. Participants will get the proceedings free of charge.

### Payment

Payment should be made in EUR by bank transfer or by credit card. Wire payment to:

<table>
<thead>
<tr>
<th>Beneficiary:</th>
<th>ICM AG</th>
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<tr>
<td>Bank:</td>
<td>Neue Aargauer Bank, 5400 Baden, Switzerland</td>
</tr>
<tr>
<td>IBAN:</td>
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<td>Currency:</td>
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You and us:

Collection and recycling for portable and industrial batteries

GRS Batterien guarantees you professional collecting, sorting and recycling of spent batteries. Many years of experience in the handling of portable batteries has made it possible to implement the first nationwide collection system for industrial batteries, in particular industrial lithium accumulators from e-bikes.

We offer individual solutions for eco-friendly recycling to all producers and distributors in Germany.

www.grs-batterien.de