

# RETURN

RECYCLING NEWS FROM TOMRA

Winter 2001



SNEAK PREVIEW

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Introducing the all-new  
TOMRA website

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*Helping the World Recycle!*

## Taking Initiative

TOMRA's company philosophy embraces four primary elements, its mission, vision, business concept, and core values. As stated in the company philosophy page on the corporate website [www.tomra.com](http://www.tomra.com), "TOMRA prides itself on having a corporate culture that stands behind a shared philosophy emphasizing integrity, innovation, personal initiative, fighting spirit and enthusiasm as its fundamental principles of conduct –something which we believe truly distinguishes our company and has chartered our success throughout the years." There are countless examples of TOMRA employees who on a daily basis excel in exhibiting these qualities, and RETURN in a small way attempts to capture and highlight some of these stories so that all can be encouraged and inspired by their example. So show your TOMRA personal initiative and let us hear about your examples of TOMRA employees who are Living Our Values.

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## How about a TOMRA backpack to use for returning your empty containers?

Answer the following questions and have a chance to win a TOMRA backpack. All of the answers can be found in this issue of RETURN.

To participate, send your answers in an e-mail to: [britt.killingberg@tomra.no](mailto:britt.killingberg@tomra.no). In the subject field of the e-mail, please remember to write "RETURN contest" and be sure to include your name, address and contact number in the e-mail. The closing date is 31 January 2002. A drawing will be held among all the correct entries on 1 February 2002, and five winners will be selected and notified directly thereafter.

1. How many bottles does each tray hold in the robotic bottle-to-tray system provided by Tomra Finland?
2. What is the name of the award recently given to the TOMRA 83 HCp?
3. What is the name of the family of TOMRA RVMs produced by TOMRA's production center in Heinola, Finland?
4. What type of RVM capability makes possible the "Earn and Learn" program in California?
5. When was TOMRA's new corporate website launched?
6. Where and when will the Euroshop 2002 exhibition take place?
7. "Triple bottom line" refers to what three factors when measuring a company's impact on society?
8. What goal is being pursued by the alliance known as BEAR for the beverage container recycling rate in the United States?
9. How many organizations are members of BEAR?
10. Who received the TOMRA VIP award for autumn 2001?

**Good luck!**

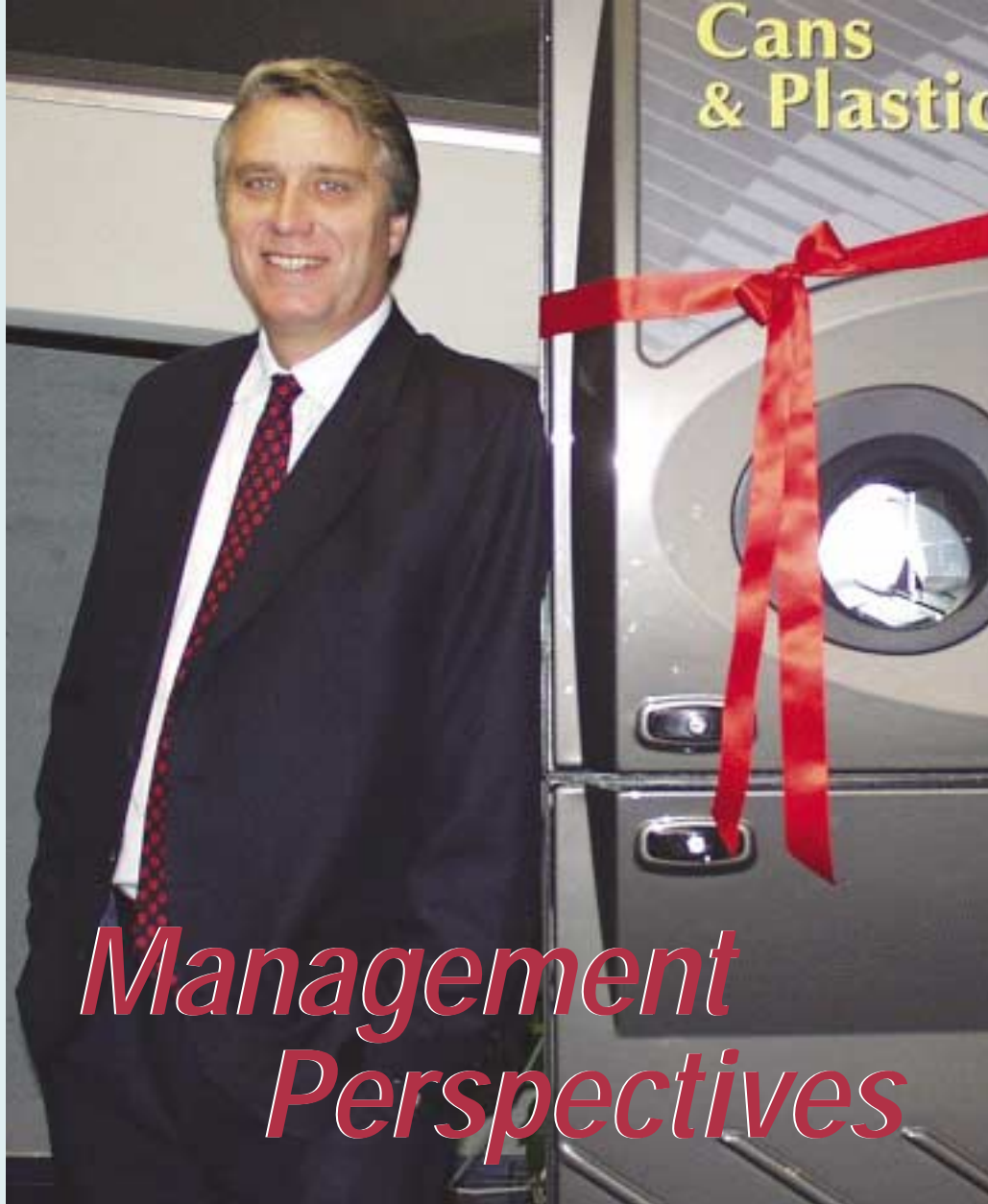


As we welcome in the holiday season, it signals a time which can mean many different things to different people. Many I am sure would agree that it is a time to review the events of the past year and evaluate the extent to which goals have been accomplished and how well one has responded to the year's unforeseen challenges. Many would also agree that it is a time of remembrance, a chance to reaffirm and show appreciation for the relationships in one's life. Certainly, it is a time of celebration, a chance to acknowledge the year's triumphs and enthusiastically ring in the opportunities of the New Year. And after a challenging year like the one that we have just gone through, these thoughts are perhaps even more in focus.

The acts of terror against the United States on September 11 have without a doubt left an indelible mark upon the world, but the courage, composure and compassion shown in response have I believe left an even greater impression, and will I hope form the lasting legacy of this experience. I am proud to report that TOMRA and its employees around the world have also responded, donating more than 28,000 dollars to the American Red Cross to go toward helping the victims of the September 11 tragedy.

Although the terrorist attacks and the ongoing uncertainty left in their wake have had serious repercussions for many industries, we do not expect that these events will have a direct negative impact on TOMRA's operations. These events have however accelerated what was an already declining economic cycle, something which has affected our ability to fully achieve our objectives relative to restructuring TOMRA's activities in North America. I feel however we have resolved the most pressing challenges in the US during the past year and are now poised on a solid platform for continued growth in this market. A more detailed account of TOMRA's reorganized business structure in North America can be found in a separate article in this issue.

Uncertainty has also prevailed in Europe during the past year, particularly with regard to the legislative process surrounding the proposed expansion of deposit systems in two key markets, Germany and Denmark. While this has contributed to lower revenues



than expected in Europe for the year, we feel that the outlook for growth in Europe will again be strong in the coming year.

The prospects for 2002 in my view look very bright for TOMRA. And I am not the only one to hold this viewpoint, as evidenced by the recent distinction TOMRA received in the October 29 issue of Forbes Global magazine. Forbes selected TOMRA as one of the 20 best companies worldwide to watch for in 2002, including our corporation as part of the "cream of the crop in the universe of small companies." Another recent distinction also provides a good example of why our company is considered so highly: our technology. The recently released TOMRA 83 HCp, the new flagship in the fleet of TOMRA reverse vending machines, received in November the Norwegian Design Council's Award for Design Excellence—an award acknowledging TOMRA's success in

marrying good esthetic and functional design while keeping in focus environmental and economic considerations. My congratulations go out to all the many TOMRA employees who contributed to creating such a well-conceived, and clearly well-received, product. In 2002 we should be able to fully leverage the sales opportunities provided for by this new machine platform.

In ending I would just like to wish all of TOMRA's stakeholders the very best for the holidays and the New Year, and to send a personal thanks to my TOMRA colleagues around the world for making TOMRA such a great company to be a part of. Merry Christmas!

*Erik Thorsen  
President & CEO*

## TOMRA on-site materials handling solutions

# Tomra Finland ushers in the use of robotics in reverse vending systems

Earlier this spring, Oy Tomra Ab installed one of the most technologically advanced in-store container handling systems in the world today. The system, delivered to a Prisma supermarket in Lahti, Finland, is based on the combination of TOMRA SmartSort components and a robotic bottle-to-tray system supplied by ABB according to Tomra Finland's specifications.

This is the first automated bottle-to-tray system to be installed anywhere in the world, and has been achieved through a collaboration between Oy Tomra Ab, Prisma Lahti, the Federation of the Brewing and Soft Drinks industries, the Finnish Food Marketing Association, the Finnish wine and liquor monopoly Alko (whose bottles can also be returned through this system), A-pulpo, EP-Logistics, and ABB.

The Prisma installation automatically sorts the different container types in the following manner:

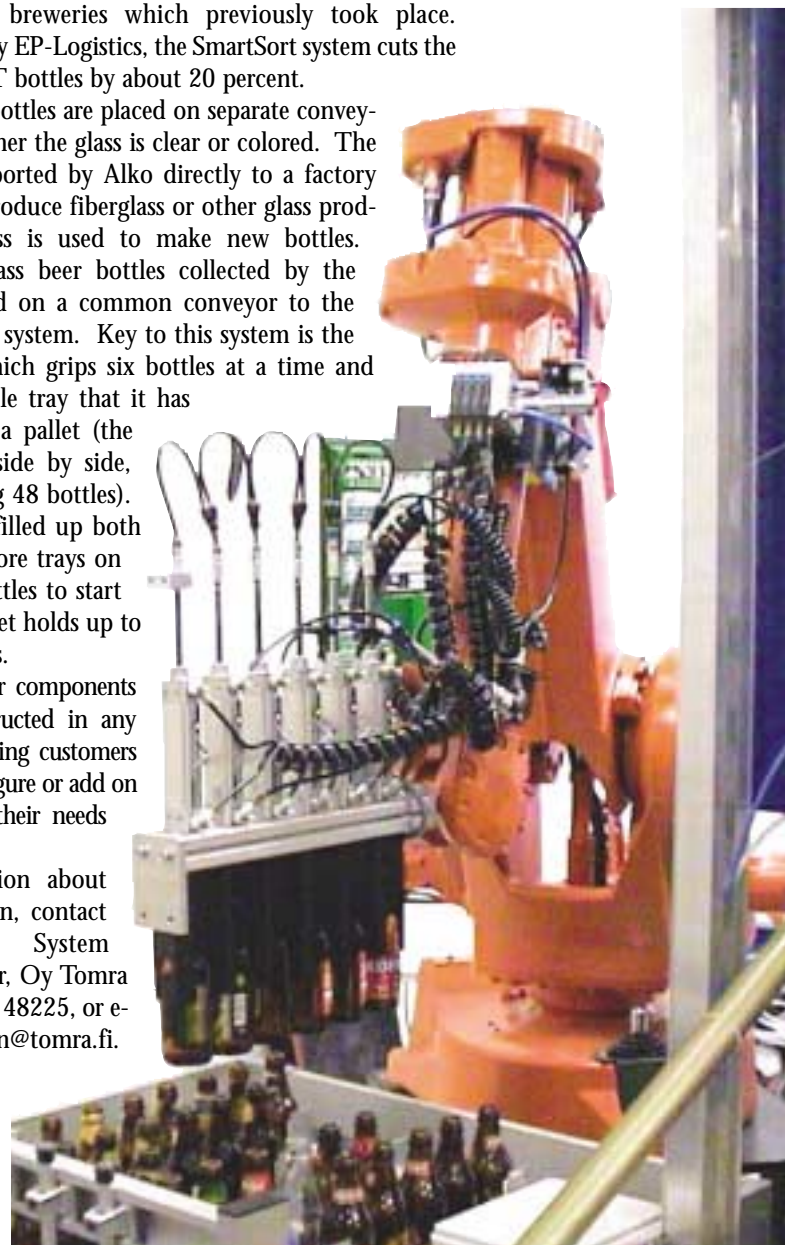
Each of the three breweries (Hartwall, Sinebrychoff and Olvi) has its refillable plastic bottles sorted into its own separate collection silo via SmartSort. This eliminates the need for the post-sorting and cross-delivery of

the bottles between breweries which previously took place. According to a study by EP-Logistics, the SmartSort system cuts the handling costs for PET bottles by about 20 percent.

Non-refillable glass bottles are placed on separate conveyors according to whether the glass is clear or colored. The colored glass is transported by Alko directly to a factory which uses them to produce fiberglass or other glass products. The clear glass is used to make new bottles. Refillable .33-liter glass beer bottles collected by the RVMs are transported on a common conveyor to the bottle-to-tray packing system. Key to this system is the ABB robotic arm, which grips six bottles at a time and places them in a bottle tray that it has previously placed on a pallet (the pallet fits two trays side by side, with each tray holding 48 bottles). When the robot has filled up both trays, it places two more trays on top of the stacked bottles to start a new level. Each pallet holds up to six levels of filled trays.

The system's modular components enable it to be constructed in any number of ways, allowing customers the flexibility to reconfigure or add on to the system should their needs change in the future.

For more information about this unique installation, contact Juha Ollikainen, System Development Manager, Oy Tomra Ab, at tel.: +358 9 825 48225, or e-mail: [juha.ollikainen@tomra.fi](mailto:juha.ollikainen@tomra.fi).



### Did you know:

The word "robot" was coined by the Czech playwright Karel Capek from the Czech word for forced labor or serf. The use of the word was first introduced into his play R.U.R. (Rossum's Universal Robots) which opened in Prague in January 1921. The term "robotics" refers to the study and use of robots, and was first used by the Russian-born American scientist and writer Isaac Asimov (born Jan. 2, 1920, died Apr. 6, 1992).

# TOMRA 83 HCp receives

# Award for Design Excellence



As the saying goes, "if you've got it, flaunt it," the TOMRA 83 HCp wasted no time in charming the hundreds in attendance with her graceful and alluring design. Of course her proud stable of TOMRA handlers were also on hand to bask in the limelight, with chief TOMRA industrial designer Roy Tandberg also taking center stage to accept well-deserved kudos. Not present but equally deserving of recognition for this award are HCp project manager, Kristian Holmen; product manager of TOMRA Ultima RVMs, Tom Steidel; and, Robert Lincoln, Executive Vice President in charge of sales and marketing at Tomra North America.

The leading award for design in Norway, the Award for Design Excellence is presented annually by the Norwegian Design Council in recognition of product design that has achieved excellence in merging functional, technical, economical and environmental considerations, in addition to esthetical aspects. TOMRA has now received this award a total of five times for its innovative RVM designs, including also the TOMRA 600 (1997), Piccolo (1993), TOMRA 300 (1987), and the TOMRA CAN-CAN (1984).

The TOMRA 83 HCp is currently being launched in the United States, and will be available in Europe in 2002. To find out all the capabilities of the TOMRA 83 HCp, visit the product pages at [www.tomra.com](http://www.tomra.com).

To book an appearance of the TOMRA 83 HCp on your "stage," contact your local TOMRA sales office or Ultima product manager Tom Steidel at tel.: +47 66 79 92 74; or e-mail: [tom.steidel@tomra.no](mailto:tom.steidel@tomra.no).

On November 28, amongst a blitz of camera flashes from the Norwegian paparazzi, the sleek and sexy starlet in the cavalcade of TOMRA reverse vending machines appeared center stage at the Hotel Bristol in Oslo, Norway to receive the Norwegian Design Council's coveted Award for Design Excellence.

Behind every great machine there's a great man. HCp chief designer Roy Tandberg steps forward to accept the Award for Design Excellence on behalf of TOMRA at the November 28 ceremony.



#### More to explore:

Find out more about the work of the Norwegian Design Council and their awards program at <http://www.norskdesh.no/english/>. Interested in learning about the product design process at TOMRA? Go to [www.tomra.com](http://www.tomra.com) and visit the industrial design pages within the R&D section under the main menu selection, About TOMRA/Technology.

## Tomra Systems Oy achieves

# ISO 14001 certification

One of TOMRA's goals for environmental management has been to achieve certification of all of its R&D and manufacturing units to the international standard for environmental management, ISO 14001.

**W**ith the ISO 14001 certification of Tomra Systems OY in Finland this summer, this target has been achieved and we can now proudly say that all TOMRA RVMs are designed and manufactured in facilities where all significant environmental aspects are considered and improved systematically—from R&D activities to waste handling.

Tomra Systems Oy has based its environmental management system on its existing ISO 9001 quality management system and on TOMRA's corporate environmental targets and objectives. The result is that TOMRA's R&D units in Norway and Finland develop new products according to the "TOMRA R&D Greenbook" which provides Design for Environment targets and guidelines for project managers and engineers.

TOMRA's ISO 14001 certified environmental management systems are designed to ensure that TOMRA applies great consideration to the environmental impact of its products both during their production and their lifetime in the marketplace. In addition to helping the environment, this will also help TOMRA develop even more efficient recycling solutions and demonstrate further that RVM-based recycling is the most eco-efficient model available to handle the collection of used beverage containers.

### Environmental objectives for TOMRA R&D and manufacturing:

- Reduce RVM energy consumption
- Reduce content of substances like lead, cadmium and certain flame retardants in RVMs
- Design RVMs to allow them to be easily dismantled and recycled at the end of their life-cycle
- Increase the use of recycled materials in RVMs and related equipment
- Reduce energy consumption, waste generation and water usage during production



## TOMRA MANUFACTURING

# Tomra Systems Oy, Finland

Located in the town of Heinola about an hour and a half's drive from the Helsinki airport, Tomra Systems Oy is home to TOMRA's R&D and production activities for reverse vending machines and systems designed especially for smaller premises with a lower volume of empty container returns. This product line, which comprises the family of TOMRA RVMs known as Minima, includes Trio (for refillable containers), Tempo (for both refillable and non-refillable containers), as well as Minican, Duo, Quattro and Bravo (for non-refillable containers).



TRIO testing



Engineering for Manufacturing



Assembly line

Pictured clockwise from top right: Petri Simonen, Mikko Pirkola, Marketta Moilanen, Peteri Laitinen, Tulja Heiskanen, Raija Mattila, Hannu Poikolainen.

In order to meet the increasing demand for the Minima series, Tomra Systems Oy is currently implementing measures that will maximize the capacity of its production facility while at the same time improve the cost-effectiveness of its production processes. The most significant change to occur will be an increase in the number of its subcontracting partnerships, which in turn will require a completely new factory layout and assembly process. These changes however will be implemented gradually in order not to disrupt the fulfillment of orders during the transition period. In other words, Minima customers will only stand to gain as a result of this process.

"The new factory configuration will give us a more efficient utilization of space for the stocking of machine parts and assemblies, and allow us to reap the full benefits of our Just-in-Time and Ship-To-Line logistics procedures. By increasing the use of subcontractors to deliver certain sub-assemblies, we will be able to boost capacity without having to incur the significant costs that adding on to our facility would have required," says Asko Pesonen, Managing Director of Tomra Systems Oy.

### Quality assurance

Tomra Systems Oy's Engineering for Manufacturing (EFM) department works

closely with all suppliers and subcontractors to ensure that the quality of all parts and sub-assemblies that go into making the Minima RVMs satisfy at all times TOMRA's exacting specifications. Further, all functions of Tomra Systems Oy are certified according to the ISO 9001 quality standard, as well as to the ISO 14001 Environmental Management System. This means that special attention is paid to environmental considerations throughout the production process, including for example the use of environmentally friendly product packing materials and optimizing transport procedures for the delivery of parts to the factory and the finished products out to customers.



Nestled within a forest of pine trees by the shore of a pristine lake, this serene setting is home to Tomra Systems Oy's modern, technology-driven factory and its 80 employees.

# Minima

-an ideal solution for  
lower return volumes



The Minima product line is designed to provide just the right solution for those customers who would like a reverse vending alternative to handle the return of empty beverage containers, but who perhaps do not need all of the advanced functions found in TOMRA's high volume solutions within the Ultima product family. Premises such as convenient stores and other small food markets with limited space available for the collection of empty containers will find that the Minima series offers a rational, space-saving reverse vending system that is perfectly suited for such locations.

For detailed information about the full range of Minima RVMs, visit the Products page at [www.tomra.com](http://www.tomra.com), or contact the Minima Product Group Manager, Mr. Ilkka Mäkijärvi in Heinola, Finland, at tel.: +358-3-583 32 60, or e-mail: [ilkka.makijarvi@tomrasystems.fi](mailto:ilkka.makijarvi@tomrasystems.fi).

The latest addition to the Minima family—the TOMRA Bravo. The Bravo is a free-standing RVM designed especially to handle aluminum and steel cans, refillable and non-refillable plastic as well as non-refillable glass bottles.



# RePLANET recycling centers helping schools to "Earn and Learn"

In November, TOMRA instituted the "Earn and Learn" program in California, a program giving customers at each participating rePLANET center the opportunity to donate the money earned from recycling their empty beverage containers to a specific school in the local neighborhood.

Customers recycling at participating rePLANETS can donate their funds to the local school by simply pushing the "Donate Here" button on one of the center's RVMs after they have returned their empty containers in the machine. The donation is then automatically registered online, and a receipt is printed out for the customer showing the donation amount and the name of the school receiving the donation.

This program is designed both to promote more recycling with rePLANET and at the same time encourage students to learn more about the value of recycling and conservation for society. Each school participating in the program also has the option of receiving a free curriculum manual to help teach students about the recycling process.

We believe this is a positive step in helping to educate a younger generation and the people in the community about the benefits of recycling their bottles and cans. Look for Tomra North America to run similar programs elsewhere in the future.



Interested in learning more about developing a fundraising program using TOMRA RVMs? In the U.S., contact Amy Esposito, Marketing Manager, Tomra North America, tel.: +1 203 455-5043, e-mail: [aesposito@tomrana.com](mailto:aesposito@tomrana.com). Outside the U.S., contact Knut Bjorvatn, Product Group Manager, Promotions, Tomra Europe AS, tel.: +47 66 79 92 02, e-mail: [knut.bjorvatn@tomra.no](mailto:knut.bjorvatn@tomra.no).

# TOMRA launches new and improved corporate website

# WWW.TOMRA ...more than

In addition to a totally new design, the content of TOMRA's new corporate website has been vastly expanded and completely updated. Compared to the previous version (which had been in place since the initial launch of the website in the beginning of 1998), the new release has over 250 more pages of information!

**T**OMRA's website is now packed with useful information for all of TOMRA's stakeholders, presented in a design that strikes a good balance we believe between visual appeal and ease of use.

## Some of the most notable additions to the site include:

- An expanded TOMRA history section that provides a general historical narrative of the company's first three decades, sepa-

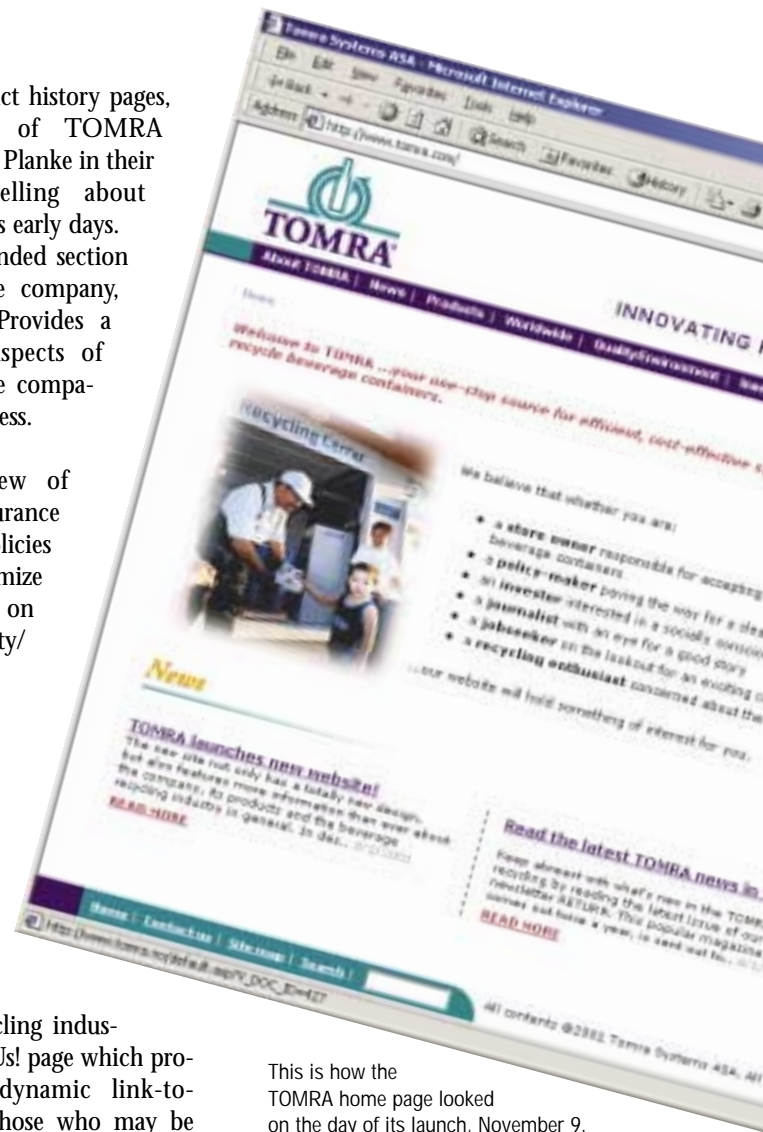
rate financial and product history pages, and video vignettes of TOMRA founders Tore and Petter Planke in their own colorful way telling about episodes from TOMRA's early days.

- A significantly expanded section about the heart of the company, TOMRA technology. Provides a detailed look at all aspects of TOMRA R&D and the company's manufacturing process.

- An extensive review of TOMRA's quality assurance methodology and its policies and procedures to maximize its net positive impact on the environment (Quality/Environment section).

- A more comprehensive Investor Relations section.

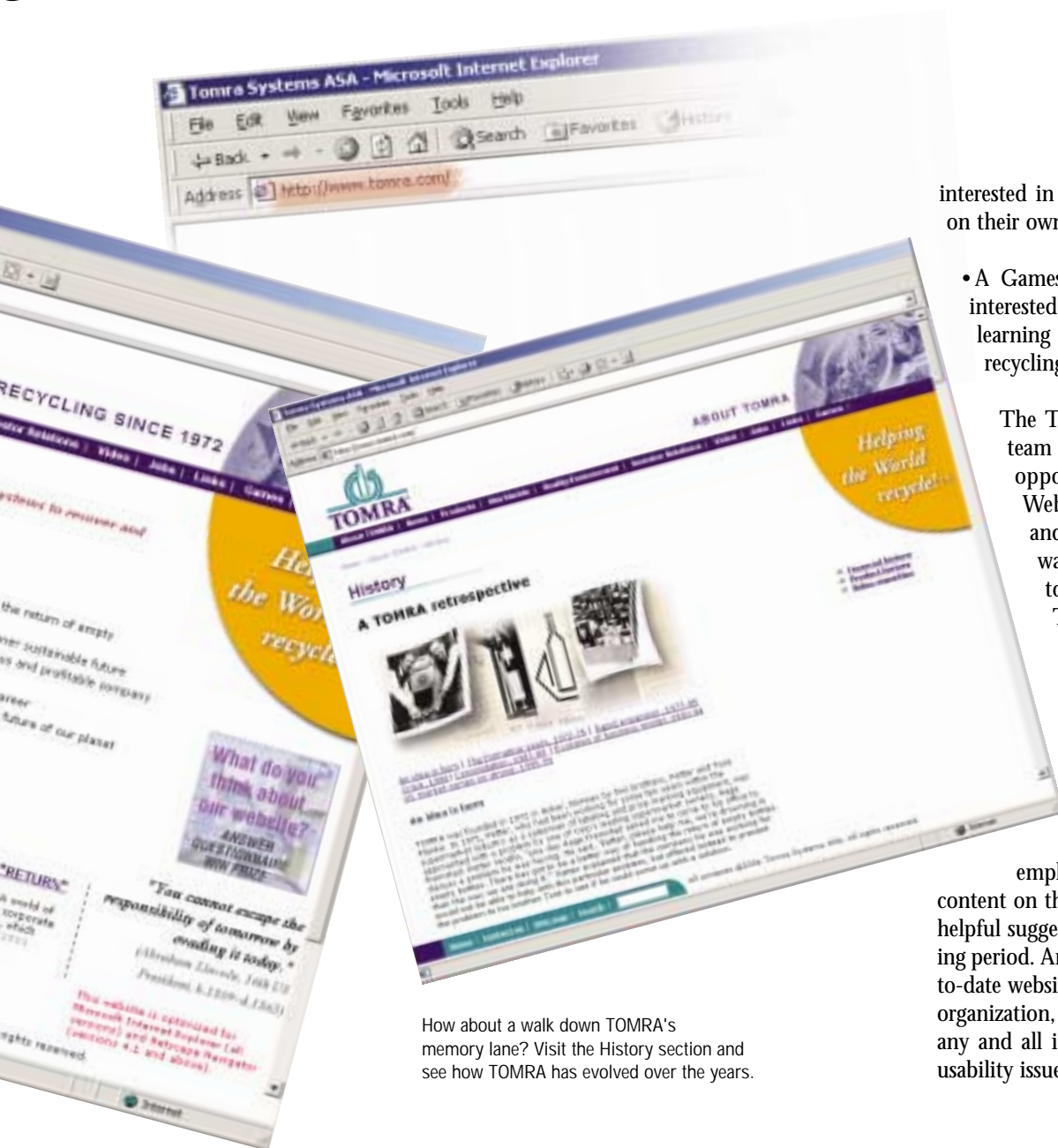
- A Links section which provides a full and varied list of links to organizations working within the beverage container recycling industry, as well as a Link to Us! page which provides a number of dynamic link-to-TOMRA banners for those who may be



This is how the TOMRA home page looked on the day of its launch, November 9.

# COM

## just a whole new look



How about a walk down TOMRA's memory lane? Visit the History section and see how TOMRA has evolved over the years.

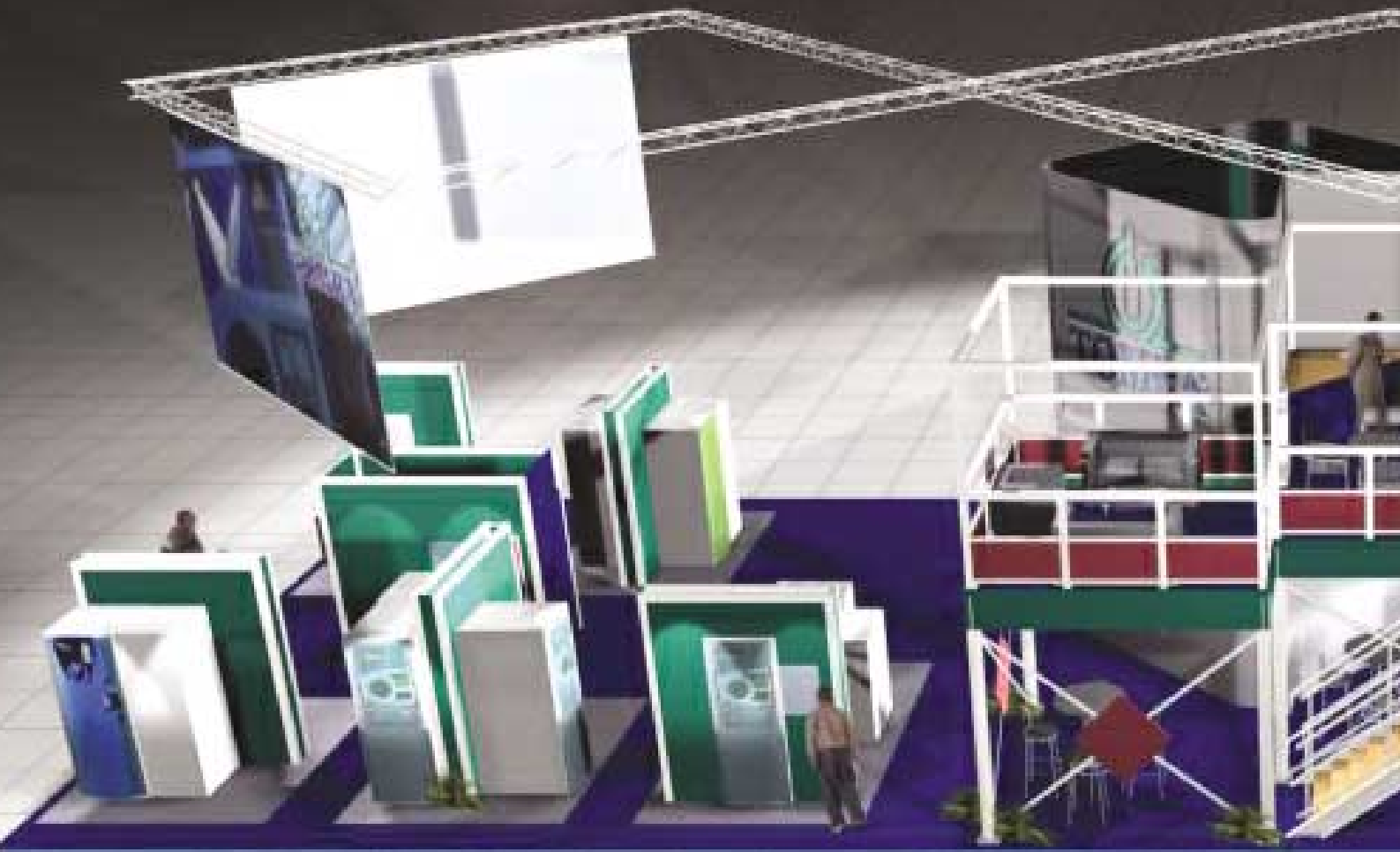
interested in providing a link to TOMRA on their own websites.

- A Games section for kids of all ages interested in having a little fun while learning more about TOMRA and the recycling process.

The TOMRA website development team would also like to take this opportunity to acknowledge Webscape ([www.webscape.no](http://www.webscape.no)) and its website publishing software WebX which is being used to publish the new website. The team would like to send out its appreciation and gratitude to the Webscape staff for their friendly and dedicated service in helping us to launch the new site.

The development team would also like to thank the many TOMRA employees who helped to form the content on the site and who have provided helpful suggestions during the website testing period. An interesting, dynamic and up-to-date website depends on everyone in the organization, and the team looks forward to any and all input concerning content and usability issues.

# Euroshop 2002:



The TOMRA starship is set to dock in Düsseldorf for the world's largest exhibition for the retail industry-Euroshop: the Global Retail Trade Fair, February 23 - 27, 2002.

**T**OMRA's "starship enterprise," a 300m<sup>2</sup> craft designed and built especially for Euroshop, will be carrying a full crew of TOMRA reverse vending solutions to greet the tens of thousands expected to attend the fair. And, in addition to the latest TOMRA RVMs presented on the main deck, the TOMRA stand will feature a two-story structure that houses a light catering area and an upstairs VIP lounge to provide those who climb aboard a relaxing atmosphere in which to take in the sights.

Some of the key attractions will be:

- TOMRA Ultima series design award winners, the TOMRA 83 HCp and the TOMRA 600/610 reverse vending machines, for installations who want the very best to handle high volumes of container returns.
- A full range of RVMs for stores with medium to small return volumes



–the latest within the TOMRA Minima series: Trio, Quattro, Tempo and Bravo.

- Logistima: see how TOMRA's efficient and flexible backroom solutions can make all the difference.
- TOMRA added-value options: experience the full potential of reverse vending with innovative RVM options such as TOMRA's couponing and card promotion programs.

Look for more information about TOMRA's participation at Euroshop on [www.tomra.com](http://www.tomra.com) as we get closer to the exhibition, or contact TOMRA's Euroshop project manager, Ann-Kristin Ytreberg, at tel.: +47 66 79 93 06, or e-mail: [ann.kristin.ytreberg@tomra.no](mailto:ann.kristin.ytreberg@tomra.no). For general information about the exhibition, check out [www.euroshop.de](http://www.euroshop.de).



# TOMRA

## - a leading socially responsible investment

Over the past few years, an interesting development has taken place in the financial markets. Financial institutions and analysts have begun to place increasing attention on not only how much value a company is creating for its owners, but also how companies are impacting other groups in society. It is called "Socially Responsible Investing" (SRI), and TOMRA is considered one of the star attractions.

The idea behind SRI is that business organizations need to take responsibility, not just for making a profit, but also for how that profit is made. Companies that have failed to align themselves with the concerns of society have been sent a clear message during the last decade by both consumers and investment markets, and now find themselves in the difficult and costly process of attempting to regain the public trust.

TOMRA, however, is a perfect investment object for SRI investors. Our innovative use of technology and systems analysis coupled with the mission "Helping the World recycle!" is good news for investors that want their money to be used positively for society while providing a sound financial return.

The result of this is the inclusion of TOMRA in all major sustainability ratings and indexes available. Both Dow Jones and FTSE now offer sustainability indexes in which companies are evaluated according to both financial, social and environmental criteria and performance. Being included on such indexes is not an easy matter, for it involves a complex process of detailed reporting and follow-up. Sustainability analysts quite rightly ask difficult questions and expect documented answers to many differ-

ent sustainability issues in order to ensure the credibility of such ratings. TOMRA is therefore proud to be recognized as a sustainability leader in both Dow Jones Sustainability Index World, Dow Jones Stoxx Sustainability Index, FTSE4Good and many smaller sustainability indexes and ratings worldwide.

Links to further information about SRI and sustainability indexes is available on TOMRA's corporate website, [www.tomra.com](http://www.tomra.com).



Update: TOMRA and CSR

# Social Responsibility:

## Making Profit to profit the Environment and Society

One could say the headline above expresses the essence of TOMRA's philosophy with regard to its practice of the internationally recognized concept for corporate management known as Corporate Social Responsibility, or CSR.

CSR is described as a management approach for measuring and managing a company's impact on society in three dimensions: financial, environmental and social. This is often referred to as the "triple bottom line," and is intended to help improve a company's impact on society and the environment as it pursues its commercial interests of growth and profit.

Although the notion of CSR has always been a central tenet within TOMRA's business practice, it was not until 1997 that TOMRA began stepping up its efforts to report in a systematic way on its CSR performance throughout the organization. This extensive work culminated in the release last year of the comprehensive Corporate Social Responsibility Policy and Reporting Initiative in the TOMRA 2000 Annual Report, which provided a wide range of performance statistics with regard to TOMRA's triple bottom line.

TOMRA has now therefore established a system-wide mechanism to measure, report and influence its financial, environmental and social impacts, and the results of this year's CSR reporting package will again be released as part of TOMRA's annual report.

Says Aleksander Mortensen, TOMRA Environmental Manager in charge of coor-

minating the corporation's CSR reporting, "TOMRA's CSR Policy states that TOMRA aims to 'create value for all stakeholder groups.' This is an ambitious yet attainable objective, which requires that each and every TOMRA employee take all of the three dimensions of performance into consideration while performing their everyday tasks and activities. We have made great progress in reaching TOMRA's ambitious goals in this regard, something which has not gone unnoticed by those organizations that monitor these indicators. My thanks go out to all my colleagues who have worked hard to make TOMRA a leader in CSR—keep up the good work!"

### THE TRIPLE BOTTOM LINE

#### Financial and Economic Impact

A company's financial impact is of course well understood—it is about creating growth and return on investment. This is the basic performance benchmark for all commercial businesses.

Economic impact has to do with the value a company creates for society. This includes wage payments to employees, contracts to suppliers, financial contribution to research programs and encouraging activities that benefit the company's local community.

#### Environmental Impact

A company's environmental impact represents the sum of its direct and indirect impacts, both positive and negative. Direct impacts are those which are directly controlled by the company's operations (such as energy consumption, waste management, etc.), while indirect impacts encompass a wide range of secondary effects resulting from the usage of a company's products or services.

#### Social Impact

Social impact relates to the way in which a company addresses such issues as workplace health and safety, community involvement, human rights, and its management of knowledge and human resources.



## BEAR project releases Value Chain Assessment Report

This spring, Businesses and Environmentalists Allied for Recycling (BEAR) launched the Multi-Stakeholder Recovery Project (MSRP), one of the central efforts in its goal to double the beverage container recycling rate in the United States.

**T**he MSRP is a three-stage initiative designed to move toward BEAR's goal of an 80 percent recycling rate for all beverage containers. Stage One began in May 2001 with the objective of identifying an industry-wide beverage container recovery program satisfying eleven guiding principles that can be supported by the groups most critical to its success (see facing page). A 14-member MSRP Task Force was formed to oversee research and seek agreement on this objective. The Task Force was comprised of members of BEAR's Steering Committee as well as representatives of a major beverage producer, a container producer, a waste management firm, a plastics processor, and local and state government. A 24-member Advisory Committee provided an even broader range of input from all types of stakeholders representing perspectives of the entire beverage container value chain.

The first stage of the MSRP has resulted in the release of a Value Chain Assessment Report to provide an objective, unbiased source of information on beverage container recovery programs. The research consulting team included R.W. Beck, Inc. (as lead), Franklin Associates Ltd., the Tellus Institute and Sound Resource Management Group. The key findings of their report are:

- In the absence of new programs, beverage container recycling rates are likely to steadily decline in future years.

This assumption is based on the fact that during the past decade, recovery rates declined at the same time that beverage container waste increased by more than 50 percent from 1992 to 1999, from 63.4 billion containers in 1992 to 96.9 billion in 1999. Aluminum can recycling rates dropped from a peak of 66.7 percent in 1992 to 55.6 percent in 1999, the lowest level in the last decade. PET bottle recycling rates dropped from 40 percent in 1995 to just over 20 percent in 1999.

- Deposit systems are the most effective in recovering containers from all types of generators.

Deposit systems are effective in recovering containers from a wide variety of locations, both residential and non-residential. Redemption rates for the types of beverage containers covered under traditional deposit laws average 78 percent (varying from a high of 95 percent in Michigan to a low of 72 percent in Massachusetts), with about 30 percent of all redemptions occurring through reverse vending machines. In the study year of 1999, California's unique redemption system achieved a redemption rate of 69 percent. With 29 percent of the population, the ten deposit states account for 51 percent of all beverage container recovery. The overall beverage container recovery rate in deposit states is 72 percent, compared to about 28 percent in non-deposit states. Curbside programs were

found to be the second most effective type of recovery method.

- Beverage container recovery has a net cost that must be covered by some type of funding mechanism.

After accounting for revenue from the sale of recovered materials, the total cost of the U.S. beverage container recovery system is approximately \$1.06 billion (or about 1.34 cents per container). Aluminum cans is the only category for which material revenue can completely offset collection and processing costs.

- Traditional deposit systems relying on manual labor (as opposed to reverse vending machines) are the most expensive programs evaluated.

Gross costs for traditional deposit systems are about 4.07 cents per container, net costs including revenue sales are about 2.67 cents per container. If unredeemed deposits are included as a revenue source, manual traditional deposit systems have a net cost of about 1.26 cents per container. These costs are relatively high due to the need for handling and redeeming containers in retail stores, and sorting containers by distributor and/or by brand.

(Continues on page 18)



# The BEAR essentials

A unique alliance of businesses, recyclers, environmentalists and other stakeholders working to maximize the recycling of beverage containers in the United States, BEAR is an initiative of Global Green USA, a not-for-profit organization based in Santa Monica, California seeking to foster a global value shift toward a sustainable and secure future.

BEAR was formed in September 2000 with the primary goal of raising the national recycling rate in the US from 40 percent to 80 percent. Its members are:

- |                               |                                   |
|-------------------------------|-----------------------------------|
| Beaulieu of America           | Natural Resources Defense Council |
| Container Recycling Institute | Plastrec, Inc.                    |
| EvCo Research LLC             | Recimex, Inc.                     |
| Global Green USA              | Tomra North America               |
| Grass Roots Recycling Network | Waste Not Georgia                 |
| Merlin Plastics Supply, Inc.  | Weisco Recycling Co.              |

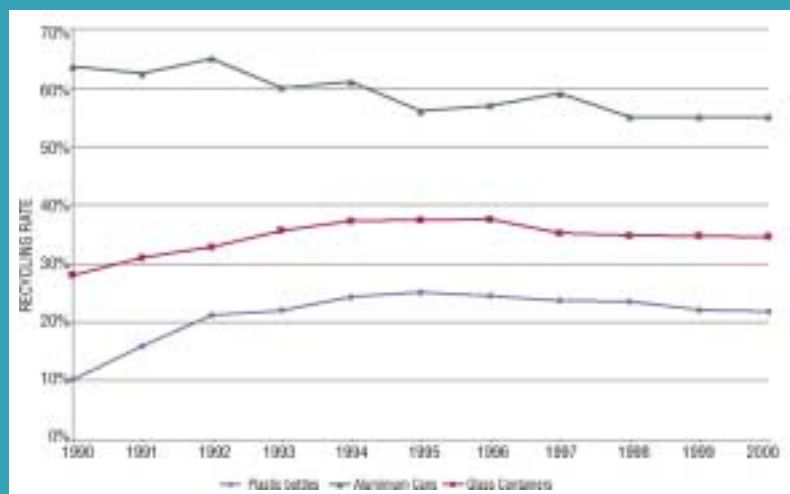
Information about these organizations can be found by going to the links menu at [www.tomra.com](http://www.tomra.com). Visit [www.globalgreen.org/BEAR/index.html](http://www.globalgreen.org/BEAR/index.html) for a full overview of the BEAR initiative.

More information about the BEAR project can also be provided by Tomra North America's environmental manager, Charles Riegle, at tel.: +1 203 455-5000, or e-mail: [Criegle@tomrana.com](mailto:Criegle@tomrana.com).

## MSRP Guiding Principles

- The project shall develop strategies that will ultimately achieve BEAR's objective of an 80% recycling rate for all beverage containers.
- Achieving a multi-stakeholder resolution may require participants to change long-held beliefs and current practices.
- Alliance participants will look at the widest possible range of policies and practices to achieve the recycling goal.
- Members of the supply chain (raw material producers, brand-owners, bottlers, distributors, manufacturers, retailers) and consumers shall share responsibility for the cost of recycling.
- Financial incentives are necessary to ensure recapture of low value materials.
- The solutions shall be economically sustainable, continually improving, and with long term viability. The program shall include benchmarks to monitor performance with agreed corrective actions to ensure sustainability.
- Participants recognize that technology and business and environmental conditions and situations change very rapidly. Therefore, it will be necessary that the solutions developed be sufficiently flexible to adapt to these changing conditions and yet remain true to the other principles therein.
- The project shall solicit input from a broad range of stakeholders, including members of the supply chain, consumers, the recycling industry and government agencies.
- Participants recognize that time is of the essence and commit to work diligently to support the tasks and processes in the project proposal.
- The project is targeted to be completed within four months of its initiation. Completion means that the members of the Multi-Stakeholder Task Force and BEAR's Executive Committee reach consensus on a recovery program and steps for moving forward, or that BEAR's Executive Committee determines such a consensus is not achievable.
- If the BEAR Executive committee and the Multi-Stakeholder Task Force are unable to reach consensus on a recovery program, BEAR may independently adopt a program and work towards its implementation with those individual stakeholder organizations that support it.

## Trends in Container Recycling Rates



Aluminum Association, American Plastics Council, Glass Packaging Institute. Rates shown are for all product types within each container type – not just beverages. Recycling rates calculated by weight. Aluminum Association recycling rate data were adjusted by subtracting imports from the numerator.



## BUSINESSES & ENVIRONMENTALISTS ALLIED FOR RECYCLING (B.E.A.R.)

- Curbside recovery services are the next most expensive program.

Typical curbside programs collecting commingled beverage containers have a gross cost of about 2.48 cents per container, or about 1.72 cents per container including revenue from material sales.

- The California Redemption System has the second lowest gross cost and the lowest net cost.

The gross operating cost of collection and intermediate processing in this system is about 1.5 cents per container, or 0.14 cents per container including revenue from material sales. If unredeemed deposits are counted, the program generates a "surplus" of .76 cents per container. In the California redemption system, recovery occurs through "old line recyclers" (buy-back centers in existence prior to the 1986 redemption law) and convenience zone recyclers affiliated with retail stores. These collectors have extremely low collection and processing costs. Unlike traditional deposit systems, the program does not require sorting by brand or distributors.

- If unredeemed deposits are considered as a revenue source, the costs of running the California redemption system and reverse vending machine based deposit systems can be covered.

Some have argued that unredeemed deposits, resulting from consumers' decision not to redeem covered containers, should be "counted" as a revenue source for deposit programs. In seven of the nine traditional deposit systems, these funds are allowed to remain with distributors to offset their costs of implementing the program and in the California system they are distributed to recyclers by the state administering agency. The graph on previous page

indicates that, when unredeemed deposits are included, the typical traditional deposit system using a reverse vending machine produces a "surplus" of about .28 cents per container, and the California redemption system, with a redemption rate of about 69 percent, produces a "surplus" of about .76 cents per container.

- Residential drop-off programs have the lowest gross cost.

The gross cost of these programs is about 1.1 cents per container and the net costs including material sales revenue are about .3 cents per container. The net cost of drop-off programs is particularly sensitive to the quality of materials, which is extremely variable.

- Because of their wide variability, no specific cost estimates were derived for non-residential programs.

These programs vary considerably, with some operated on a purely volunteer basis (e.g., in schools) or being bundled with garbage or janitorial service contracts (e.g., in certain office buildings or other work places).

- Funding responsibility varies for different recovery programs.

Curbside and residential drop-off programs are funded by local governments with revenue derived from tax and rate payers. Deposit systems are funded by unredeemed deposits derived from consumers and from handling or processing fees paid by distributors and/or brand owners.

Greg Garvey, CEO, TOMRA Global Business Development, and member of the BEAR Executive Committee, says "The BEAR Alliance presents stakeholders with an opportunity to depolarize the debate concerning the methodology for collecting

used beverage containers, and thus help build a consensus for the way in which we can achieve a significant improvement in the container recycling rate in the US. With the MSRP Report now completed, BEAR has achieved a very important first step toward this goal.

The significance of the report is that all stakeholders are in agreement on the numbers. The analysis is thorough and transparent, and therefore credible. It clearly states that some type of bring system based on convenience and a financial incentive is and will be the most effective and cost-efficient. I think everyone involved has come away from this initial process with the impression that we have laid the groundwork for the future of beverage container recycling in the United States.

BEAR's goal now is to promote the analysis of the report, and working on the basis of its findings, begin to develop a plan for implementing a recycling system that is both the most effective in terms of a recycling rate and the most efficient with regard to cost and environmental issues. I feel confident that with the consensus achieved thus far, BEAR will be successful in developing a plan that is satisfactory for the wide majority of stakeholders."

## TOMRA's Barcode Assignment Maintenance (BAM)

# BAM - Upgraded TIBS to make deposit refund accounting system even easier

Work is nearing completion on an upgrade to the US version of TIBS, TOMRA's data administration platform used to communicate with its RVM installations. Look for the upgrade to be released in the first quarter 2002.

**T**IBS, first developed by TOMRA in 1995 as the software used to run the remote registration, administration, and maintenance of data for the containers accepted by TOMRA RVMs, exists in two different versions: one system for the US and one for Europe. The main difference between the two versions is that in the US, TIBS handles the additional billing functions which in Europe are handled separately by independent deposit refund administration organizations.

The new US version will feature a number of improvements that will improve both its speed and ease of use. Those familiar with using TIBS will first notice the completely different look of the new version. BAM will also provide easier portability to other database back-ends which allows it to be used in multiple environments.

Another difference in the new version is the addition of point-in-time reporting. Point-in-time reporting will allow the user to track volumes over time, performing trend analysis and providing deeper insight into business opportunities.

BAM is integrated with the RVM Online Communications server written by Tomra Systems ASA. The collaborative effort between the US and Norwegian teams has been a great success! Both teams look forward to working more closely together to

bring complete solutions to TOMRA's business community while reducing duplication of effort.

Says Una Petroske, Director of Information Technology, Tomra North America, "the changes being integrated into

the new BAM system will make barcode entry and maintenance for TOMRA and our retailers a hassle free and faster task. I'm confident our customers will find this to be a significant improvement and appreciate its added benefits."

Barcode	Description	Property	Property	Price	To Date	Container Code
400000	New Coke 12oz	31	Aluminum Cans	19.7500		Cans
400200	COP Diet Coke 12 oz (Steel cans)	31	Aluminum Cans	19.7500		Cans
400300	Coke Classic 12 oz (Steel cans)	31	Aluminum Cans	19.7500		Cans
400500	Diet Coke 12 oz (Steel cans)	31	Aluminum Cans	19.7500		Cans
402500	COP Coke Classic 12 oz	31	Aluminum Cans	19.7500		Cans
400800	Cherry Coke 12 oz	31	Aluminum Cans	19.7500		Cans
404200	Diet Cherry Coke 12 oz	31	Aluminum Cans	19.7500		Cans
4000000000	Coke Classic 8.5oz	1	Diet PET	19.7500		PET15L
400700	Cherry Coke Carbur 16 oz	11	Diet Glass	19.7500		Glass04
400800	Cherry Diet Coke 16 oz	11	Diet Glass	19.7500		Glass04
400400	Coke 16 oz	11	Diet Glass	19.7500		Glass04
400200	COP Diet Coke 16 oz	11	Diet Glass	19.7500		Glass04
404300	COP Coke Classic Carbur 16 oz	11	Diet Glass	19.7500		Glass04
400300	Coke Classic 16 oz	11	Diet Glass	19.7500		Glass04
404100	Coke Classic Carbur 16 oz	11	Diet Glass	19.7500		Glass04
400400	Diet Coke 16 oz	11	Diet Glass	19.7500		Glass04
404200	Diet Coke Carbur 16 oz	11	Diet Glass	19.7500		Glass04
400100	COP Diet Coke 16 oz	11	Diet Glass	19.7500		Glass04
400300	COP Diet Coke Carbur 16 oz	11	Diet Glass	19.7500		Glass04
400500	Coke Classic 16 oz	11	Diet Glass	19.7500		Glass04
400700	Coke Classic 16 oz	11	Diet Glass	19.7500		Glass04
400800	Diet Coke 16oz	11	Diet Glass	19.7500		Glass04
401800	Diet Coke 8-oz	11	Diet Glass	19.7500		Glass04
4000000121	Coke 8.2oz	11	Diet Glass	19.7500		Glass04
4000000022	COP Coke Classic 20 oz	1	Diet PET	19.7500		PET08oz
4000000024	Cherry Coke 20 oz	1	Diet PET	19.7500		PET08oz
400300	Coke Classic 21.6	1	Diet PET	19.7500		PET15L
400200	Coke Classic Carbur 21.6	1	Diet PET	19.7500		PET15L
402400	COP Coke Classic 21.6	1	Diet PET	19.7500		PET15L
400500	COP Coke Classic Carbur 21.6	1	Diet PET	19.7500		PET15L

Tomra Metro introduces

# the VALIDATOR

## a new TOMRA receipt validation system

As an added measure to protect retailers against those who attempt to cash in fraudulent deposit receipts, Tomra Metro has unveiled the Validator, a system that makes it virtually impossible to fraudulently redeem a container deposit receipt.

**T**he Validator is an optional module that works in conjunction with all TOMRA RVMs having an electronic communication interface. When the RVM issues a deposit receipt to a customer, the machine at the same time sends the receipt information to the Validator system located at the store's customer service desk. When the receipt is brought to the service desk to be redeemed for cash, the store clerk passes the receipt's barcode through the Validator scanner to verify that the receipt has not previously been redeemed. Once verified, the receipt is flagged in the Validator system and marked with the time and the person performing the redemption.

This system not only makes it easy for store personnel to accurately verify deposit receipts, it also allows store management to generate a variety of reports relative to their store's redemption of containers utilizing the data collected and maintained by the Validator system.

While the Validator was developed specifically for the Tomra Metro market, it can be adapted and applied to any store configuration.

If you are interested in learning more about how the Validator system can be applied in your store, contact Amy Esposito, Marketing Manager, Tomra North America, at +1 203 455-5043 or by e-mail, [aesposito@tomrana.com](mailto:aesposito@tomrana.com).

## How well is your store protected against fraud?

Store owners utilizing TOMRA RVMs who follow recommended precautionary measures are under normal circumstances well protected against attempts to falsify, reuse or otherwise fraudulently redeem deposit refund receipts. However, some stores may find that they are exposed to greater risk and would benefit from a more vigilant security system. To meet this demand, TOMRA offers a variety of solutions based on electronic control software that can eliminate the possibility of deposit refund receipt fraud.

If your store is experiencing difficulties with improper redemption of deposit receipts, TOMRA can provide a solution suited to your store that will immediately begin saving you money. Contact Tom Steidel, Product Group Manager, Tomra Europe AS, tel.: +47 66 79 92 74; ae-mail: [tom.steidel@tomra.no](mailto:tom.steidel@tomra.no), for more information.

# Meet the **new, reorganized** Tomra North America

In October, Business Unit North America announced that it had implemented several key organizational changes designed to enable TOMRA to more effectively develop opportunities for growth in this region. Tomra North America is as a result now restructured into three distinct regional divisions: Tomra East, Tomra Canada, and Tomra Pacific.

## Tomra East

This division will encompass TOMRA's operations currently present in Connecticut, New York, Maine,

Massachusetts, Michigan, Iowa, and Vermont. **Michael Wellman**, who in addition to his previous responsibilities as President of Tomra Metro LLC, will now also serve as President of the newly formed Tomra East division. **Steve Nee**, General Manager of Tomra New York Recycling LLC., now assumes responsibility for TOMRA's materials handling operations throughout the Tomra East region as well as generally coordinating these activities throughout the North American business unit. Further, **Linda Thompson**, Director of Human Resources for Tomra East, will now provide human resource support and coordination for Tomra North America in addition to her primary HR duties within Tomra East.

## Tomra Canada

This division will oversee TOMRA's two units currently in operation in Canada,

Camco Recycling Inc. and Les Systèmes Tomra, as well as gain responsibility for developing new growth initiatives in the country. Anne-Marie Chronas, in addition to her duties as managing director of Camco Recycling, now assumes the position of President of Tomra Canada.

## Tomra Pacific

Tomra Pacific administrates TOMRA's activities in California and Hawaii. Steven Buckley serves as President of the organization.

Business support functions provided by Tomra North America for TOMRA's individual operating units are now grouped into four areas: Sales & Marketing (headed by Robert Lincoln); Administration and Business Development (directed by Tony Della Volpe); Materials Handling (headed by Steve Nee); and, Human Resources (Linda Thompson).

## New offices for Tomra Pacific and Tomra Germany



Tomra Pacific's new address is: 150 Klug Circle, Corona, CA 92880-5424.  
Telephone: +1 909 520-1700; Fax: +1 909 520-1701.



Tomra Systems GmbH is now located at: Walder Strasse 53, D-40724 Hilden, Germany. Telephone: +49-2103-2002 (ext. 111); Fax: +49-2103-2002-126.

# Transitions

Over the past half year TOMRA has undergone a number of changes to its organizational structure worldwide, including the creation of a new business unit for South America to coordinate the company's expanding activities in this region. Joining Tomra Europe and Tomra North America as TOMRA's third regional business unit, RETURN welcomes Tomra South America to the TOMRA family. Here are the latest members of TOMRA's senior management team:

## SOUTH AMERICA



**Carlos Eduardo Goncalves, President, Tomra South America, S.A.**

Carlos Eduardo Goncalves (34) joined TOMRA as of August 6, 2001, as President of Business Unit South America.

Carlos holds a BA in Law and a master's degree in International and Corporate Law, and started his career working for one of Brazil's most prestigious law firms, Noronha Advogados. From there he went on to the North American law firm of Taylor, Brion, Buker and Greene, where he developed a full service legal and consulting department targeting Latin American businesses based in the US.

Carlos also has held a number of senior management positions within the consulting and media industries, and prior to joining TOMRA, Carlos was President and CEO of Advanstar Latin America, the local subsidiary of the US-based media giant Advanstar Communications.

**José Roberto Giosa, President, Tomra Latasa Reciclagem S.A.**



José came onboard from Latasa in March of this year during the formation of Tomra Latasa, a joint venture between TOMRA (70%) and Latasa S.A.(30%), the largest producer of alu-

minum cans in South America. As President, José is in charge of Tomra Latasa's extensive activities that include container collection, processing and aluminum recycling in Brazil, Chile and Argentina.

José holds a degree in economics with a specialization in finance planning and an MBA in marketing. He was responsible for introducing Latasa's can recycling programs in Brazil (1991), Argentina (1995) and Chile (1996), and for nine years directed the Recycling and Reclamation Division and Metal Supply for Latasa. He is also the coordinator of the Brazilian Aluminum Association's National Commission of Recycling.

## EUROPE

As reported in the last issue of RETURN, Håkon Erngren will be assuming the leadership of Tomra Systems AB in Sweden January 2, 2002, following the retirement of managing director Fred Norling. RETURN also welcomes:

**Heiner Bevers, Managing Director, Tomra Systems GmbH**



Heiner (41) took over as Tomra Germany's managing director on September 17.

Heiner comes to TOMRA with extensive experience from several senior sales and marketing positions both in and outside Germany. This experience includes 13 years with Proctor & Gamble, ending as the director of P&G's Global Metro Team when he left the company in 1999 to serve as managing director of the Consumer Division of Werner & Mertz.

Heiner and his wife and two children live in Kronberg.

# Fred Norling - Last of the first, first of the last

Before Tomra Systems AB's managing director Fred Norling hands over the director's chair to Håkon Erngren at the end of the year and heads off into retirement, TOMRA CEO Erik Thorsen would like to use this opportunity to send a fond farewell to one of the "last of the pioneers" within the reverse vending industry.

**I**'m sure that all those who know Fred Norling would agree that he is one of a kind. He is also last of a kind, having been involved with the sale of equipment for collecting empty beverage containers in one capacity or another for longer than anyone can remember, or at least before TOMRA founders Petter and Tore Planke started tinkering around with their idea for a new kind of RVM in 1971.

Fred began his career with Hugin Kassaregister AB in Sweden, a company which in addition to making cash registers and other equipment for the retail trade, produced a line of equipment for accepting the return of empty beverage containers. And the man responsible for selling this equipment? That's right, Fred Norling.

Working with Hugin, Fred competed against TOMRA up until 1979 when TOMRA and Hugin entered into a partnership in which Hugin agreed to disband their own RVM production and devote their sales and service apparatus to TOMRA RVMs. The man who headed up Hugin's distribution and service of TOMRA's RVMs? Fred Norling.

So it went, until 1990 when TOMRA established its own subsidiary in Sweden, Tomra Systems AB. The man selected to run this new enterprise? Fred Norling, naturally.

I myself have had the pleasure of working with Fred since 1986, and will sorely miss the exceptional good humor and entertainment that Fred has brought to the many TOMRA management gatherings over the years. Fred could always be counted on to present an engaging and entertaining speech, a rousing rendition of the latest song, or dazzle us with his dangerous dancing skills. And it's hard to say which I enjoyed more. Throughout the years Fred has always stood out as a perfect example of TOMRA's core values of Personal Initiative, Innovation, Enthusiasm, Fighting Spirit and Integrity. TOMRA's position in Sweden has been achieved to a large degree I believe through Fred's impeccable honesty and integrity, and his exceptional skills at building positive relationships. His innovation and initiative have repeatedly helped drive TOMRA to develop new and better solutions in response to business opportunities, and the fact that Sweden was first out in Europe to develop a well-functioning system for handling non-refillable containers which would later become a model for other countries, can greatly be attributed to Fred's fighting spirit.

Many thanks Fred for your long and dedicated service to TOMRA—we will all miss your experience, leadership and good humor, but want to wish you all the best of luck with your future plans in retirement. Now at least you won't have to worry any more about getting people to put all their different empty containers in one "hole," and can concentrate on getting your golf ball in the hole instead!

*Sincerely,  
Erik Thorsen*



# Living our Values



**Neil Kelley**  
General Manager, Tomra  
Massachusetts, LLC, BU  
North America

**A**s part of its ongoing efforts to recognize the commitment of its employees to the company's Core Values, Tomra Systems ASA has initiated the TOMRA Values In Practice (VIP) Award. The VIP Award is presented twice a year in the spring and fall, and is open to all employees within the Tomra Group. After each business unit conducts its own nomination process, a winner is selected from the group of finalists by TOMRA's Executive Committee, EXECOM.

**The winner of the Autumn 2001 TOMRA VIP Award for Personal Initiative is:**

**Neil Kelley**  
*General Manager, Tomra Massachusetts, LLC, BU North America*

Neil joined TOMRA in April 2000 to take over the direction of TOMRA's collection and processing activities based in Worcester, Massachusetts, and although relatively new to TOMRA, Neil has quickly demonstrated an outstanding commitment to TOMRA's Core Values.

Neil in his short time with TOMRA has earned great respect for both himself and the company through his active community involvement and willingness to go beyond the call of duty to voluntarily step in and provide constructive assistance where needed.

With impressive personal initiative, Neil has managed to successfully work through and resolve pressing organizational and personnel issues within the company, garnering full support from his staff. His strong teambuilding skills and ability to lead by example have created a very positive and motivating atmosphere for his co-workers, displaying an openness and level of professionalism that are a true reflection of the guiding tenets behind our corporate Core Values.

*Congratulations Neil!*

In recognition of their achievements, TOMRA VIP Award winners receive:

- Warrants to buy 600 shares of TOMRA stock according to the same terms included in the TOMRA Share Bonus Plan of the same year.
- Inclusion on the VIP Award winners' plaque displayed at the Tomra Group headquarters in Asker, Norway.
- A handmade Norwegian pewter mug, engraved with the winner's name and distinction.
- An article highlighting the employee's achievement in RETURN.
- A framed copy of the RETURN article and the VIP Award certificate.

## PERSONAL INITIATIVE

Innovation

Enthusiasm

Fighting Spirit

Integrity



TOMRA Core Values

**Also deserving special mention are:**

**VIP Runner-up:** John Roger Johansen, Project Engineer, Tomra Systems ASA, Asker  
**Nominee:** Arjan Rous, Sales Planner, Tomra Systems, B.V., BU Europe