

# Annual Report 2012



# The year in brief

- Net sales increased by three percent to SEK248 million (2011: SEK240 million). The profit for the year, after financial items, was SEK7.7 (12) million.
- The number of employees in the Stockholm, Gothenburg and Beijing offices as of 31 December 2012 was 212 (192).
- *Indigo*, the four-year MISTRA research programme led by IVL, commenced officially at the beginning of 2012. With a budget of SEK25 million, the project focuses particularly on the role of industry in climate programmes.
- In 2012, IVL initiated a resource efficiency platform – CERISE – bringing together business, research and public authority stakeholders to expand knowledge in this area.
- *RECO Baltic 21 Tech*, the IVL-led EU-project was declared both a Flagship and a Lighthouse project. This gives the project considerable potential to play a significant role in formulating new policy recommendations and directives in the future.
- Activities at Hammarby Sjöstadsverk received an additional boost in 2012 due, among other things, to the allocation of an additional SEK10 million in funding by Vinnova for the development of tomorrow's public wastewater treatment facility into a production plant for public goods. Xylem and the Swedish Association of Graduate Engineers also contributed funding.
- In 2012, AFA Insurance approved a total of almost SEK10 million for projects designed to improve working conditions in the cleaning industry, the interior environment on board ships and research into health care in the public sector.
- Vinnova's 2012 statistical report dealing with Swedish participation in the EU's Seventh Framework Programme for Research and Technical Development (FP7) indicates a very positive trend for IVL. The company is placed third in the list of top Swedish players with the strongest FP7 presence and the highest level of approved funding from the programme in the environmental sector, headed only by Lund University and the Swedish University of Agricultural Sciences (SLU). In all, IVL is an active participant in 47 different EU-funded research programmes.

KEY FIGURES	2012	2011	2010
Net sales, SEK million	248	240	194
Net profit after financial Items, SEK million	7.7	12.1	-3.2
Number of employees, person-years	199	186	178
Return on adjusted equity, %	9.7	17.5	Neg.
Investments, SEK million	6.2	3.1	3.3



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# Sustainability with other nuances

IVL continues to grow in all of its areas of activity, despite the uneasy economic situation in Europe and the rest of the world. We now number over 200 employees, and we are working continuously to develop and broaden our competencies and recruitment base to meet the perceived needs of business, public authorities and society as a whole.

IVL's mission is to undertake applied research and contract assignments with the aim of promoting ecological, economic and socially sustainable growth within business and society at large. We operate across boundaries and industries, enabling us to identify issues that are not apparent to others and initiate collaborative action that progresses the development of broadly-based and sustainable solutions.

An example of this is provided within the area of sustainable transport, in which IVL, Chalmers University of Technology, Gothenburg (CTH) and the KappAhl clothing chain have jointly, and on behalf of freight management company Geodis Wilson, developed a method of logistics analysis with an environmental focus. The project envisages a future situation in which key variables in the transport and logistics industry are changed, and the findings will be made available in the form of an app in which different scenarios can be simulated.

## **GROWING NEED FOR CLIMATE ADAPTATION**

The need for climate adaptation and climate-smart solutions has grown although the environmental debate in the media has cooled off. IVL has developed local climate and vulnerability analyses that can be used to identify areas of risk in a changed climate. We are also participating in a number of EU-funded projects in the climate area, including Green Clime Adapt for evaluating 'green' climate adaptation tools. IVL has also published a report on ways of preventing damage to wastewater and sewerage networks from back pressure, which presently accounts for about 80 percent of water damage associated with weather and climate change in Sweden.

For over 20 years, IVL has been assisting companies and organisations to develop products and solutions possessing satisfactory environmental qualities while also meeting customer needs. This year, for example, we developed tools for use by local authorities and institutional caterers in selecting foods and menus with a lower climate impact.

Recognising the growing importance of recyclability and waste prevention, IVL has published a new manual providing practical advice and descriptive examples of func-

tioning recycling activities that not only reduce municipal waste, but contribute to the creation of job opportunities and economic benefit alike. In 2012, the IVL-led RECO Baltic 21 Tech (RB21T) project – an international project undertaken within the framework of the EU's Baltic Sea Strategy – was declared both a Flagship and a Lighthouse project, giving it considerable potential to play a significant role in formulating future EU policy recommendations and directives. Issues of inadequate transboundary action in the area of waste management, as well as ways and means of creating innovative business opportunities in the cleantech industry, are being studied as part of the project.

## **WASTEWATER TREATMENT FACILITIES BECOME PRODUCTION PLANTS**

In another notable IVL initiative, the wastewater treatment plants of today are being transformed into production plants as part of a joint project involving a number of export-driven Swedish companies, the Swedish Association of Graduate Engineers, public authorities, water and sanitation companies, universities and institutes of technology, with funding of SEK10 million from Vinnova. The project has attracted major interest, and our pilot and demonstration plant, Hammarby Sjöstadswerk, has been visited by Sweden's Minister for IT and Energy, accompanied by the US ambassador.

IVL continues to grow in the international arena. After more than 25 years of activity in China, mainly in the context of aid-related programmes administered by the Swedish International Development Cooperation Agency (Sida) or the EU, IVL now accepts contracts directly from Chinese public authorities and companies. IVL currently has five employees in China and operations are being focused on collaborative strategic research, for example in the form of a new collaborative agreement with the University of Tsinghua in Beijing, one of the nation's highest ranked institutions.

## **ENVIRONMENTAL RIGHTS IN CHINA**

Another interesting project was undertaken in China in 2012, specifically in the Guizhou province. This two-year, IVL-led EuropeAid project, overall objective is to improve the country's environmental management by facilitating public access to judicial review of environmental breaches and protecting the environmental rights of citizens.

Sustainable development became an issue of international importance during the year. In April, the Swedish

**“IVL continues to deliver customer benefit, as demonstrated – among other things – by our latest customer survey and our steady growth in sales”**

government hosted the Stockholm+40 conference to mark the 40th anniversary of the first UN Conference on the Human Environment held in Stockholm in 1972. The purpose of the event was to assemble players from the international community for a dialogue on sustainable development and its challenges.

IVL took part in Stockholm+40 and arranged a round-table discussion on the theme of ‘What do we want our sustainable future to look like’ in collaboration with the Confederation of Swedish Enterprise and the Swedish UN Association. The results of the conference were subsequently used as an input for Rio+20, the UN Conference on Sustainable Development held in Rio de Janeiro in June 2012.

In the Brundtland Commission report published in 1987, sustainable development is defined as ‘development that meets the needs of the present without compromising the ability of future generations to meet their own needs’. The three dimensions of sustainable development – economic, social and environmental – must support each other mutually and in harmony. The concept of sustainable development was recognised as an overriding principle for the work of the UN at the organisation’s World Summit meeting in Johannesburg in 2002.

**SOCIETAL ISSUES ASSUME GREATER IMPORTANCE**

Sustainable development has acquired other nuances since the publication of the Brundtland Report. Unlike the earlier focus on measurements and ‘end of pipe’ solutions, environmental issues now extend to changes in behaviour and the development of sustainable solutions for society as a whole, with the societal dimensions of environmental and sustainability projects assuming ever-greater importance. Environmental issues and environmental policy are becoming increasingly integrated with other areas (such as business, housing, energy and finance) both in Sweden and the EU. In addition, society



is tending to become less able to manage all sustainability issues concurrently, dealing with just one at a time.

One of the long-term goals of IVL Swedish Environmental Research Institute is to ensure that its research and contract assignments support the sustainability activities of companies, public authorities and society, while also helping to strengthen Swedish competitiveness. We will achieve that goal by continuing to pursue applied research and working on an interdisciplinary basis, while adopting a systems perspective and working towards concrete solutions. We will continue to collaborate with universities, institutes of technology, companies and industrial organisations. Last, but not least, we will continue to lead the way and work on sustainability in all of its nuances.

*Tord Svedberg*  
President & CEO

# This is IVL

## SWEDEN'S FIRST ENVIRONMENTAL RESEARCH INSTITUTE

Founded jointly by the Swedish government and Swedish business in 1966, IVL is the oldest environmental research institute in Sweden. Operating as a limited company since 1982, it is owned by the Foundation of the Swedish Environmental Research Institute (SIVL), whose purpose is to promote long-term conditions for environmental research and, through its ownership, guarantee IVL an independent status.

IVL employs over 200 people, 64 percent of whom hold academic qualifications and 28 percent research qualifications, at its offices in Stockholm, Gothenburg and Beijing.

## COVERING THE ENTIRE SUSTAINABILITY SPECTRUM

IVL works actively across the entire area of sustainability. In addition to its traditional expertise in the environmental field, the company employs behavioural scientists, economists and social scientists. Our activities range across the complete industrial spectrum and our customers represent Swedish society in its entirety. IVL is also involved in comprehensive international activities concentrated mainly on China and India. Europe is regarded as the company's domestic market.

## BOTH RESEARCH AND CONTRACT ASSIGNMENTS

Research and development programmes form the basis of IVL's activities. Just over half of the company's total operations consists of research which is either funded jointly by the Swedish government and the Swedish business sector, or through grant aid furnished by national research bodies, research foundations and the EU.

## COLLABORATION AND NETWORKS

One element of IVL's strategy is to establish and develop close collaboration with business, international research

bodies and third-level institutions. For this reason, the company is an active participant in a series of international research networks and other collaborative ventures. In Sweden, it enjoys close cooperation particularly with Chalmers University of Technology, Gothenburg (CTH), Lund University (LTH) and the Royal Institute of Technology, Stockholm (KTH).

## KNOWLEDGE COMMUNICATION

Apart from its series of published reports and articles in scientific journals, IVL disseminates knowledge through lectures and participation in seminars. In addition, the institute holds its own courses and seminars under the banner of IVL Knowledge for professionals in area of environment and sustainable development.

## LABORATORIES AND TEST FACILITIES

Advanced chemical analysis – both organic and inorganic – is carried out in IVL's own accredited laboratories, while new technologies for more resource-efficient production are developed in its experimental laboratory. The interior environment laboratory is equipped with resources and equipment necessary for the advanced analysis of emissions, particulates, asbestos and a number of different microorganisms, notably mould.

Together with KTH, IVL also owns and operates Hammarby Sjöstadswerk, a unique pilot and test facility for advanced wastewater treatment technology.

## ENVIRONMENT AND QUALITY

IVL deals with environmental and quality management, as well as work environment issues, within the framework of an integrated management system, which has been awarded environmental and quality certification under ISO 14001 and ISO 9001 respectively. Goals are established and monitored under a specified management system procedure.

### MISSION

IVL Swedish Environmental Research Institute undertakes applied research and contract assignments with the aim of promoting ecological, economic and socially sustainable growth within business and society at large.

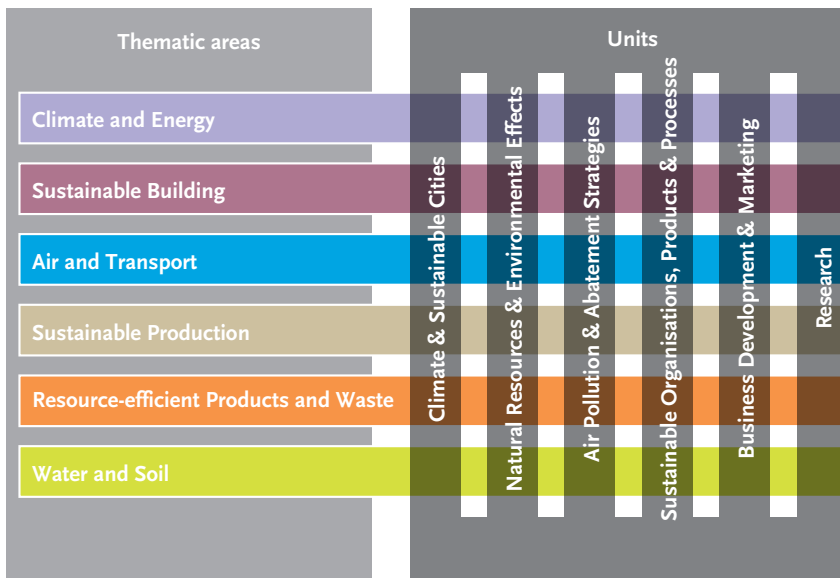
### VALUES

IVL's values are founded on credibility, foresight and a holistic approach.

### VISION

- We are the leading player in Sweden, and an important player in Europe and the world, in providing innovative, competitive and customer-driven solutions to the environmental and sustainability issues of both today and tomorrow.
- We are an internationally attractive workplace and a contributor of unique expertise in strong alliances with other world-leading research environments and companies.
- We are the obvious meeting place and a significant bridgebuilder between universities and other third-level institutions, the business community, public authorities and political decision-makers in the community.
- We are shaping the future of the institute through our credibility and independence.

## “Research and contracts for a sustainable future”



### Organisation

In terms of organisation, the company consists of four operational units, supported by Business Development & Marketing and Research units, as well as by Finance, Human Resources, and IT & Communication staff functions. All units collaborate within six thematic areas that also represent IVL's market offering. The thematic areas are Climate and Energy; Sustainable Building; Air and Transport; Sustainable Production; Resource-efficient Products and Waste; and Water and Soil.

Jacob  
Lindblom



Age: 43

Education: MSc in construction engineering and energy technology

Currently working on: Energy usage in buildings

Age: 40

Education: PhD in environmental chemistry

Currently working on:

Research and project management in environmental chemistry, with particular focus on PFAS substances



Karin  
Norström

Age: 37

Education: ME in technical biology; studying for doctorate in applied environmental science

Currently working on: Modelling of organic substances in the environment; importance of the indoor environment in the spread of chemicals and human exposure to them

Anna  
Palm Cousins



# Research at IVL

Open research and development work, consisting of both grant-aided and co-financed research projects, account for a little over half of IVL's total activities. The results of these activities are published and are available to all interested parties. Research assignments are also undertaken directly on behalf of external customers.

## **CO-FINANCED PROJECTS – UNIQUE FORM OF FINANCING FOR SWEDISH COMPANIES**

Co-financed research programmes offer Swedish companies and industries a unique opportunity of carrying out research projects at IVL, with funding from the Swedish government and Swedish business. The research is conducted within the framework of the thematic areas of Climate and Energy; Air and Transport; Water and Soil; Resource-efficient Products and Waste; Sustainable Building; and Sustainable Production.

State funding for co-financed research carried out at IVL is administered by the Swedish Environmental Protection Agency and the Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning (Formas). This totalled SEK34 million in 2012.

A co-financed research and development project must be based on an environmental problem or possess environmentally relevant development potential. As common factors, research projects must be of general societal interest, while also incorporating significant elements of research and development. Last, but not least, they must fall within the framework of the operational plan for IVL research adopted by SIVL.

Participation in co-financed research projects is open to all private companies and organisations. Examples of this type of project are described on pages 8 and 13.

## **GRANT-AIDED RESEARCH**

Most of the funding for IVL's grant-aided research is provided by the Swedish EPA and the Swedish Foundation for Strategic Environmental Research (MISTRA). However, grant aid is also sought and received from Formas, Vinnova and other sources.

IVL is leading a number of major research programmes, including Entwined and Indigo (both funded by MISTRA), as well as several programmes funded by the Swedish EPA, such as the Swedish Clean Air Research Programme (SCARP) and Climate Change and Environmental Objectives (CLEO), as well as Sustainable waste management and Chemitecs, both of which were concluded in 2012.

## **EU-FUNDED RESEARCH**

A statistical report published by Vinnova at the end of 2012, and dealing with Swedish participation in the EU's Seventh Framework Programme for Research and Technical Development (FP7), indicates a very positive trend for IVL. With 17 participations, the company is placed third in the list of top Swedish players with the strongest FP7 presence and the highest level of approved funding from the programme in the environmental sector. With 19 and 18 participations respectively, only Lund University and the Swedish University of Agricultural Sciences (SLU) are ranked ahead of IVL.

FP7 is the second biggest source of finance for Swedish research bodies. Overall, the country is ninth among the nations with the highest number of FP7 contracts, with Germany, Britain and France as the leading financial beneficiaries to date. The programme will run until the end of 2013.

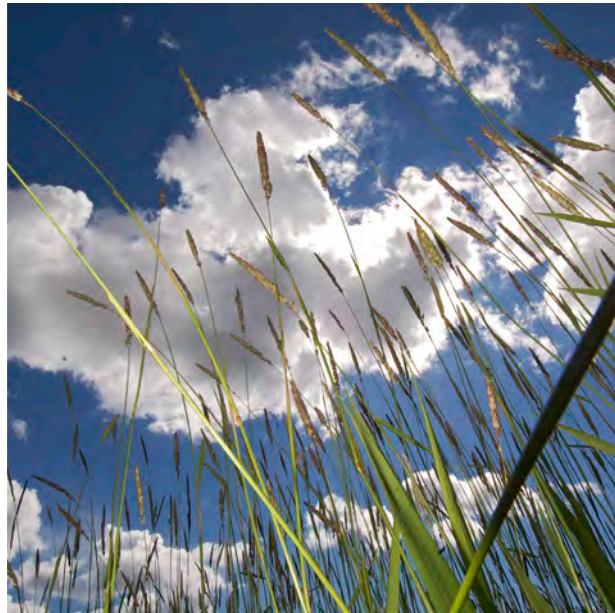
In all, IVL was involved in 40 different EU-funded research projects in 2012, in areas ranging from fundamental environmental issues concerning emissions, the dispersion and effects of environmental pollutants, climate, sustainable building and environmental engineering, to the development of tools, indicators and models for the environmental and resource evaluation of products and processes.

## **IVL CONTACT:**

JOHN MUNTHE

**“Scientific quality, together with applicability and relevance to societal development, are keywords in IVL's research”**





## A SELECTION OF EU PROJECTS UNDERTAKEN IN 2012

PROJECT	PROGRAMME	AIM	BUDGET, SEK million
FUSIONS	FP7	Reduction of food waste in the food chain	4
DIAMOND	FP7	Improvement of wastewater treatment plant efficiency	1.6
EGP (Environmental Governance Programme in Guizhou)	EuropeAid	To improve and protect the environmental rights of citizens in Guizhou province in China	1.2
EUNICE	FP7	Designing and validation of an in-wheel motor concept for electric vehicles	2.9
NAWADES	FP7	Development of a resource-efficient seawater desalination system	3.3
Mongolia PSCP	EU Switch Asia	Supporting the development of a 'greener' and more energy-efficient building industry	5.4

# Towards more sustainable building

As one of the company's six thematic areas, Sustainable Building is the area within IVL that affects most sectors of the community. In addition to housing and business premises, it deals with infrastructure and different supply systems, as well as social sustainability, an area which is of particular importance in the context of the numerous 'Million Programme' districts that have now reached the point of requiring renovation. In this and the following spread, we describe some of the current projects that fall within the broader meaning of sustainable building, both in Sweden and internationally.

## URBAN AND REGIONAL PLANNING

### CLIMATE ADAPTATION IN SWEDISH COMMUNITIES

With the aid of scenarios describing how the climate can be affected over a long period, IVL researchers, in collaboration with different local authorities, have studied the effects of floods and landslides on roads, water supply systems and dwellings. Together with partners such as CTH, the City of Gothenburg and River City Gothenburg, IVL has also analysed the influence of three different climate adaptation strategies – attack, retreat and defence – on the prospects for sustainable development of the Frihamn area in Gothenburg.

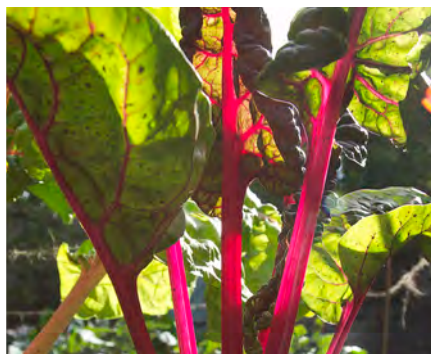
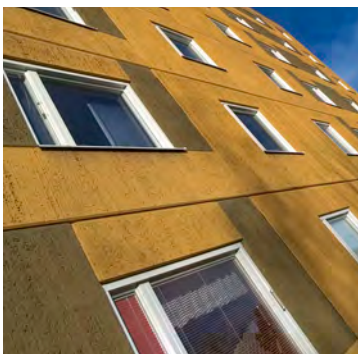
### EFFECTS OF URBAN INFILL DEVELOPMENT ON AIR QUALITY

As part of one current project, IVL is studying the effects of urban infill development on air quality. Interest in this type of development is high given its cost-effectiveness since it allows the existing infrastructure to be used. However, since infill building can alter the conditions for dispersing atmospheric pollutants, the aim of

the project is to demonstrate how buildings of various types affect pollutant levels and, based on a number of scenarios, to propose recommendations regarding the development of relevant building structures and urban infill.

### MAKING 'MILLION PROGRAMME' AREAS MORE SUSTAINABLE AND ATTRACTIVE

Over 200 million European inhabitants live in 'Million Programme' areas that will require renewal within the near future. In this context, the major challenges are to combine technical redevelopment with the reinforcement of social sustainability, include local residents in the renewal process, and secure investment in areas with limited economic resources. IVL is currently working with the VTT Technical Research Centre of Finland to develop 'Urban Living Labs' that will involve residents and other stakeholders in developing innovative solutions with the help of users. The project is being undertaken in conjunction with the current renewal of two 'Million Programme' districts in Sweden and Finland.





## BUILDING AND HOUSING

### CERTIFICATION FOR MORE SUSTAINABLE URBAN AREAS

Interest in environmental certification has grown rapidly in recent years, and a great deal of work has been carried out in order to adapt international certification systems to Swedish building regulations and standards. In addition, IVL is taking part in a collaborative project with consultants WSP to develop recommendations for adapting the British BREEAM Communities system to Swedish conditions. IVL, which has two qualified BREEAM Communities assessors, is studying how existing areas can be certified using classification and certification systems, and is also examining water issues within this context.

### GREENER AND MORE ENERGY-EFFICIENT PRODUCTION IN MONGOLIA

As part of an EU-funded project, IVL is working to support the development of a 'greener' and more energy-efficient building industry in Mongolia. Since improving the energy efficiency of the built environment is critical to counteracting climatic changes, the project has consid-

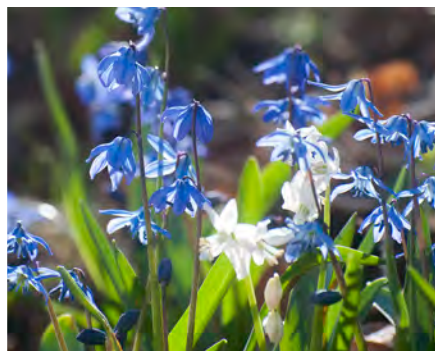
erable potential in terms of beneficial effects, given the current construction boom in Mongolia.

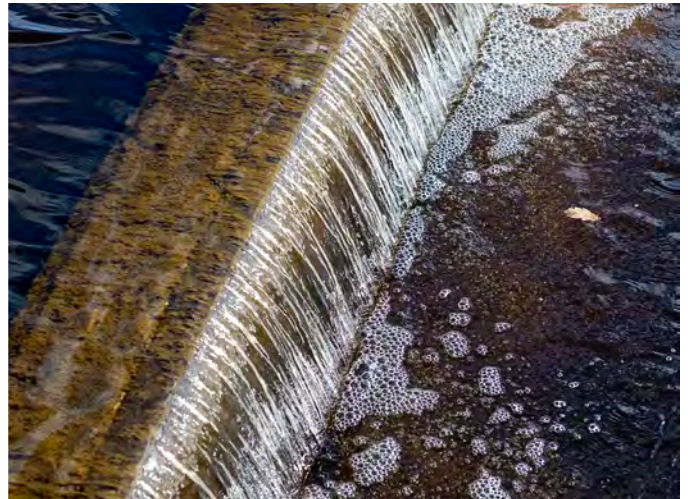
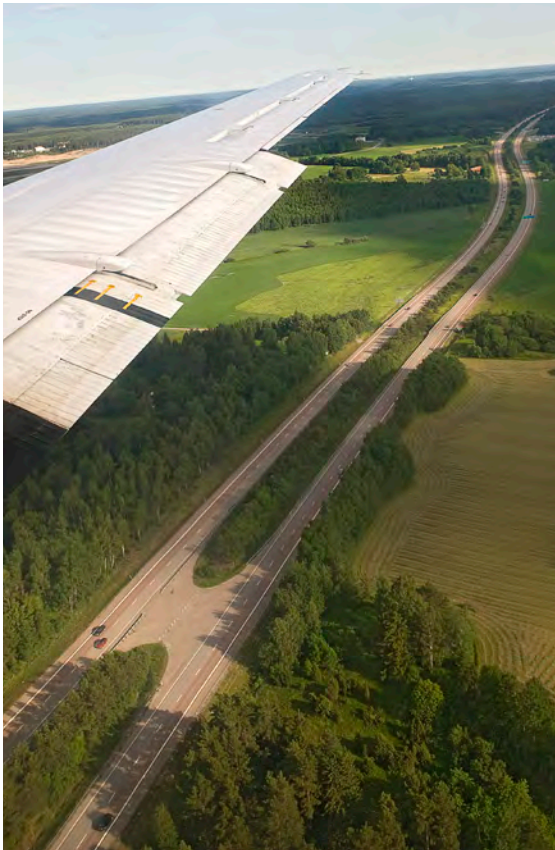
### MAKING NON-TOXIC BUILDING EASIER

IVL, together with its subsidiary, BASTAonline, Skanska and the Swedish Transport Administration, has undertaken a project to develop a working methodology for non-toxic construction. A number of building and construction projects in the road, rail and construction sectors will be monitored to measure and test the extent to which it is currently possible to erect a building without using toxic substances. BASTA has already established a product database listing over 80,000 items that do not contain especially hazardous substances and meet BASTA system requirements. BASTA has also developed the Project Manager, a tool for documenting and monitoring products selected at every stage of the building process, which also facilitates non-toxic building.

### DEMONSTRATION OF LOW-ENERGY BUILDING

IVL is working with 13 organisations in Sweden, Ireland and Spain on an EU-funded research project to demon-





strate the practicality of constructing buildings with very low energy usage. New heating, cooling and ventilation solutions will be tested as part of this project. Building occupiers and users play a key role in this context since one of the project goals is to encourage more climate-smart behaviour.

#### **NEW METHOD OF ASSESSING INDOOR AIR QUALITY IN LOW-ENERGY HOUSES**

Although the majority of people in the western world spend most of their time indoors, there are no maximum limits on the levels of contaminants in indoor air. At the same time, the need to conserve energy has led the building industry to develop a building concept for sealed, low-energy houses, often known as passive houses. IVL researchers are engaged in a project to develop strategies and methodologies for assessing indoor air quality in houses of this type to ensure the best possible conditions.

#### **DEVELOPMENT OF GOOD MOULD REMOVAL PRACTICE**

Mould growth in buildings is a problem that is frequently encountered during renovation and rebuilding work. Although it may be observed at the start of work, it is equally likely to emerge as an unexpected and unwanted problem that exposes building workers to health risks. The purpose of the project is to develop advice and recommendations that will ensure safe, high-quality

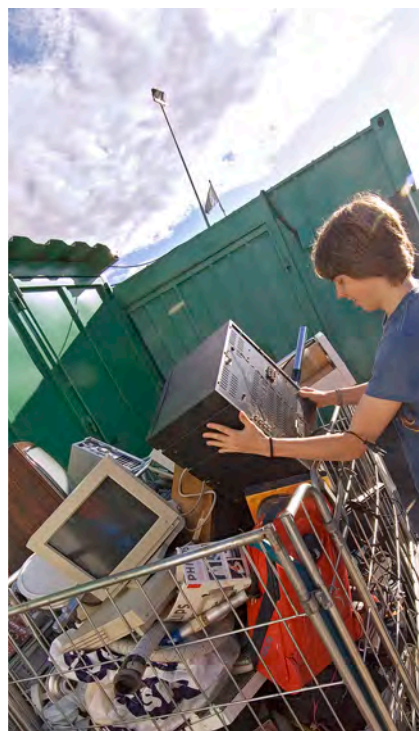
working when removing mould, and when renovating and rebuilding structures that have been attacked.

#### **ENVIRONMENTAL AND HEALTHY BUILDING PRODUCTS IN CHINA**

IVL is a project partner in an EU programme for sustainable building renovation and interior design in China. The purpose is to establish conditions that will enable Chinese building and furnishing companies to specify sustainable building materials in order to minimise environmental risks and health hazards to building workers and residents. Part of the work is designed to improve the standard of knowledge of sustainable building among the large number of small and medium-sized companies in the Chinese building sector.

#### **INCREASED REUSE OF BUILDING MATERIALS**

Working as part of the EU-funded IRCOW research programme, IVL has studied the feasibility of increasing material reuse in the building industry. Using the principle of 'reverse purchasing economics', the aim of the IVL researchers was to identify ways of directing demolition material flows back into the buildings rather than burning or consigning them to landfill. In this context, a major problem is the fact that new materials have become cheaper than labour costs, severely inhibiting material reuse. One challenge is to develop systems for documenting and assuring the quality of reused materials, and for defining and evaluating the environmental benefits of reuse.



## INFRASTRUCTURE

### FROM WASTEWATER TO CLEAN WATER

In a situation characterised by increasing water stress in large parts of the world, particularly in rapidly growing cities, IVL is now focusing extensively on innovations designed to establish wastewater treatment plants suppliers of reusable water, surplus energy and nutrients, using the Hammarby Sjöstadsværk test facility for development purposes. To achieve this goal, research and development projects are conducted in areas such as the elimination of pharmaceutical residues, improving the efficiency of the treatment process, and increasing biogas recovery.

### PRINCIP: DEVELOPING CLIMATE-SMART PLANS FOR ENERGY SUPPLY

In the context of developing effective solutions and reaching climate-smart decisions on energy supply, the PRINCIP project has recorded useful experience, and analysed strengths and weaknesses in the Kattegatt and Skagerrak regions. In addition to IVL, the project partners include the City of Gothenburg, Municipality of Aalborg and Aalborg University. PRINCIP stands for PROactive and INtegrated Climate change In resource Planning.

### WEIGHT-BASED WASTE TARIFF IMPROVES SORTING AT SOURCE

A study carried out by IVL shows that a weight-based refuse tariff improves sorting at source, although it does not appear to reduce the total quantity of refuse. Thus,

although the cost of refuse disposal does not influence domestic consumption patterns, a change in tariff may improve the quality of sorting.

### RESOURCE-EFFICIENT WASTE MANAGEMENT

Major efforts are under way to maximise the resource efficiency of waste management, creating the need to measure the resource-efficiency of the sector, including both its current status and the future requirement of monitoring and measuring results over a period of years. To meet this demand, IVL is developing aids, or indicators, to facilitate the measurement and evaluation of data as required.

### IVL CONTACTS:

ÖSTEN EKENGREN  
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 ANNA JARNEHAMMAR  
 BJÖRNE OLSSON  
 KARIN SJÖBERG

# Making a difference: IVL research abroad

In 2012, IVL personnel were involved in almost 40 different EU-funded research projects.

## **SUCCESSFUL BALTIC PROJECT IN SUSTAINABLE WASTE MANAGEMENT**

IVL is directing the EU-funded *Reco Baltic 21 Tech (RB21T)* research programme, whose purpose is to promote sustainable waste management in the entire Baltic region. The overall objective is to enhance the opportunities, at both local and regional level, of adopting waste management programmes that will support the implementation of the EU waste directives, and to resolve the problems that inhibit sustainable waste management. At present, success in achieving the targets varies considerably from country to country. For example, whereas Sweden collects and makes effective use of 97 percent of all household waste, the situation is the opposite in Poland, where only 10 percent is processed.

*RB21T* is part of the EU's Baltic Sea strategy and much of the project work is devoted to issues relating to trans-boundary action in the waste management area, as well as to ways of developing innovative business opportunities in environmental engineering.

Selected projects within the Baltic Sea strategy have been designated as Flagship projects. As one of these, *Reco Baltic 21 Tech* has acquired a significant status in Europe and will be capable of influencing the future development of waste management in the Baltic region.

## **CONTINUED GROWTH WITHOUT HIGHER ENVIRONMENTAL IMPACT**

The purpose of the EU-funded *DYNAMIX* research programme is to develop dynamic and robust policy instrument packages that will enable long-term economic growth to be decoupled from resource utilisation and its environmental effects. This is a task that will call for comprehensive change in the organisation and regulation of production and consumption compared with the present model. The project's main target group consists of those decision-makers at European and national level who develop and implement resource-efficient policy instruments. In addition to IVL, the project consortium includes six other European players.

## **FUSIONS TO CUT EUROPEAN FOOD WASTE BY 50 PERCENT**

The aim of the four-year, EU-funded *FUSIONS* research programme is to create the conditions for more efficient re-

source utilisation and a significant reduction in food waste throughout the entire food chain. A rough estimate shows that 76 kg of food per person is thrown away annually in Europe. The project will help to harmonise the process of monitoring food waste, provide greater opportunities for implementing socially innovative measures for optimising the use of foodstuffs in the food chain and developing guidelines for a common European policy on food waste.

## **IMPROVEMENT OF ENVIRONMENTAL RIGHTS OF CITIZENS IN CHINA**

Many people in China are currently affected by serious environmental problems, the most acute of which relate to air, water and pollution from waste. Moreover, public access to legal remedy for adverse environmental impact is limited and people are also unaware of their environmental rights. This is the background to an IVL-led project financed by the EU's EuropeAid agency. Forming part of the EU-China Environmental Governance Programme (EGP), the purpose of the project is to facilitate public access to judicial review of environmental breaches, and to protect the environmental rights of citizens in Guizhou province.

## **EFFICIENT SEAWATER DESALINATION**

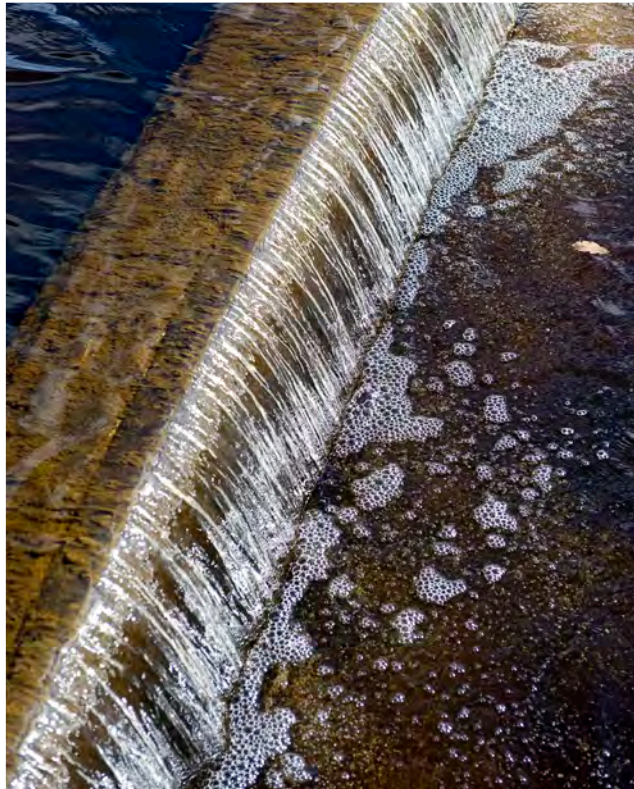
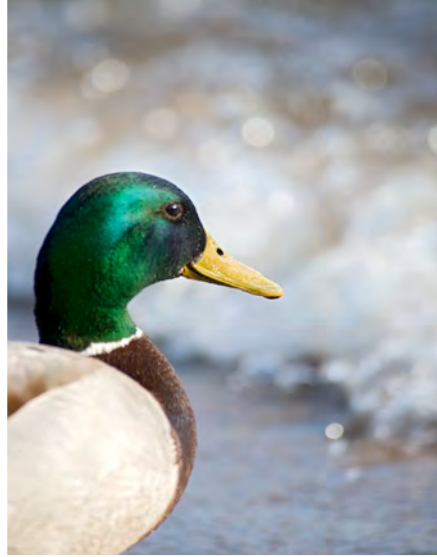
A total of 63 million cubic metres of sea water is desalinated every day and in many places this is the only source of fresh water. Development of a self-cleaning membrane system for seawater desalination based on reverse osmosis technology is the object of an EU-funded project in which IVL is a partner. The aim is to extend membrane life while reducing both energy and chemicals usage compared with present methods.

## **ECO-EFFICIENT WATER MANAGEMENT IN THE CHEMICALS INDUSTRY**

IVL is a partner in an EU-funded research project to develop, test and evaluate new strategies, methods and techniques for achieving economically and ecologically efficient water management in the European chemicals industry. Known as *E4Water*, the project – in which IVL is responsible for the environmental assessment aspect – aims to reduce water consumption by 20-40 percent, effluents from production by 30-70 percent and energy usage by 15-40 percent in the cases under study.

## **NEW, SUSTAINABLE CONCEPT FOR ELECTRIC CARS OF THE FUTURE**

IVL is participating with a number of EU countries in a collaborative research programme known as *EUNICE*



*(Eco-design and Validation of In-Wheel Concept for Electric Vehicles)*, with the aim of developing a completely new electric car concept with the drive motors mounted in the front wheels. The project has its origins in the relatively poor battery performance of modern electric vehicles, and it is hoped that it will produce an environmentally and commercially sustainable concept for the electric cars of the future. IVL is developing life-cycle analysis (LCA)

guidelines for the planned new electric car prototype, and is also carrying out a material flow analysis of selected critical materials.

**IVL contacts:**

ÖSTEN EKENGREN  
ELIN ERIKSSON  
ANNA JARNEHAMMAR

# Our meeting places

## PROMOTING DIALOGUE BETWEEN ENVIRONMENTAL STAKEHOLDERS

IVL plays a number of important societal roles. One of these is to act as a bridgebuilder between the research community and the rest of society in order to ensure that the latest solutions and technologies are translated quickly into practical applications. Another role is to establish neutral arenas for dialogue on the environment and sustainable development. The events hosted by IVL play a major role in this context. Now running for several

years, the State of the Environment conference and Sustainable Transport conference have become major fora where researchers, corporate leaders, politicians and other decision-makers meet, while updating themselves on the latest developments in the environmental field, discussing solutions and establishing new collaborations. The annual Baltic Sea seminar has become an appreciated meeting place for stakeholders dealing with environmental and expansion issues in the Baltic region.



*State of the Environment 2012 focused on the role of business in sustainability programmes. A panel of Swedish CEOs discussed how business should proceed to advance its positions. From left: Johan Kuylenstierna, CEO of Stockholm Environment Institute; Karl-Henrik Robért, founder of Swedish non-profit organisation, The Natural Step; Petter Stordalen, owner of property developers Home Invest, which operates the Nordic Choice Hotels chain; Sarah McPhee, CEO of pensions provider SPP; Katherine Löfberg, part-owner of coffee company Löfbergs Lila; and Johan Skoglund, president of housing developers JM.*

*An attendance of 350 people representing a wide cross-section of Swedish environmental interests took part in the televised conference held at the Münchenbryggeriet conference centre in Stockholm.*







IVL has established a meeting place for stakeholders involved in environmental and sustainability issues in the Baltic region on board Teaterskeppet (The Theatre Ship) moored at Skeppsbro Quay in Stockholm. The theme of the 2012 conference was 'Initiatives, financing and collaboration for sustainable growth in the Baltic region'.

Below, left: Anders Alm of Nordic Investment Bank, Robert Hall of the Swedish Institute and Paula Biveson of Baltic Compass discuss how various players can proceed to secure financial support for collaborative projects in the Baltic Sea region.



Sustainable Transport 2012 dealt with current and controversial topics, such as the new sulphur limits for marine fuels and major infrastructural programmes. The sustainable city was another theme to receive particular attention. Professor Anna Dubois of CTH (pictured bottom right) gave the keynote address on the main challenges facing the transport sector.



Jakob Lagercrantz of The Swedish Association of Green Motorists, Professor Jonas Eliasson of KTH and Stockholm Traffic Commissioner Ulla Hamilton were among the speakers in the debate on 'Major infrastructural programmes – does the environment want us to speed up or slow down?'.

Below: IVL transport researcher Linda Styhre in lively discussion with a delegate at the Sustainable Transport event.



# Sustainability and social responsibility

Since IVL's mission is to work for sustainable economic, ecological and social growth, sustainability is a fully integrated aspect of its day-to-day activities. The company's research projects and contract assignments are focused on a range from mapping environmental problems to the development of solutions and preventive measures, including the economic and social aspects. As a result, IVL possess very significant opportunities of leaving a positive sustainability imprint by the advice we give our principals, and by ensuring that our research is translated into practical application in the community.

## VALUE SYSTEM AND CODE OF CONDUCT

IVL's value system is founded on credibility, foresight, a holistic approach, engagement and usefulness. In 2012, the company developed a Code of Conduct based on this value system and on the ten principles of the UN Global Compact dealing with human rights, labour law and corruption.

The Code of Conduct has been adopted by the board of IVL as a means of emphasising the principles that apply to every employee and board member, as well as of guiding the company's behaviour vis-à-vis its employees, suppliers, business partners and other stakeholders. IVL exhorts all suppliers and collaborative partners to observe the code, whose principles must be applied in assessing current and future suppliers. All employees have been informed of the code and have tested its implications in workshops. The complete Code of Conduct is available both on the company's intranet and on IVL's web site on the Internet.

## ENVIRONMENTAL ACTIVITIES

IVL deals with environmental issues within the framework of an integrated management system, which has been certified under ISO 14001. Customer advisory services, company travel and energy usage have been identified as the most significant factors in this context. In 2012, we commenced the development of a new assessment tool to demonstrate the potential benefits of our advisory services to our customers. These will probably yield more consistent results in 2013.

### Video conferences reduce travel frequency

IVL has long been working to reduce the number of trips made by employees and increase the efficiency of its work by improving its videoconferencing facilities. Divided equally between the Stockholm and Gothenburg offices, the company's conference rooms with video support are occupied over 60 percent of the available time by video-assisted meetings.

Compared with 2011, the company's environmental footprint from domestic rail and air travel increased

by 22 percent in 2012. This was due to increased travel associated primarily with international project activities in which air travel was the most reasonable option (8.5 percent), together with an 8.2 percent growth in IVL personnel numbers compared with 2011. The number of rail journeys increased by 15 percent over the five-year period 2008-12.

However, IVL's international operations make air travel unavoidable and the number of projects increased in countries such as China and India in 2012. As a result, the company's environmental footprint from air travel to these countries increased by 19 percent compared with the previous year.

## IT and energy usage

The annual energy usage of the IT function has been reduced significantly in stages since 2009. However, the demand for data storage and updated communications technology, as well as more and larger monitors, has absorbed part of these savings. In general, IVL seeks to minimise the overall environmental impact of its activities without compromising function or reliability. Environmental improvement measures in the IT area include environmentally compatible processing and sorting of packaging, influencing suppliers and products at the procurement stage, and assessing suppliers on a regular basis.

## DIALOGUE WITH STAKEHOLDERS

A systematic dialogue with stakeholders is maintained within the framework of the thematic committees that reflect the of six thematic areas of the company's organisation: Water and Soil; Air and Transport; Resource-efficient Products and Waste; Sustainable Building; Climate and Energy; and Sustainable Production. The committees are composed of representatives from government, public authorities and various branches of business. Regular meetings of the thematic committees are held with the twin aims of identifying future research needs and communicating the key findings of current R&D projects conducted by IVL. The meetings also provide the committee members with the opportunity of expressing their views and asking relevant questions about the operation.

Regular customer surveys – which have now been replaced by in-depth personal interviews – are held to ensure that customers are satisfied with the company's services. Customers representing business, local authorities and government agencies were interviewed in the 2012 survey, in which the customer satisfaction index was 4.0 (4.0) compared with a maximum rating of 5.0.



**SOCIAL RESPONSIBILITY**

The great majority of IVL's activities take place in Sweden, where the labour law structure of legislation and collective agreements is a minimum commitment. Similar requirements are applied to our suppliers and our operation in Beijing. Supplier assessment is carried out on a regular basis.

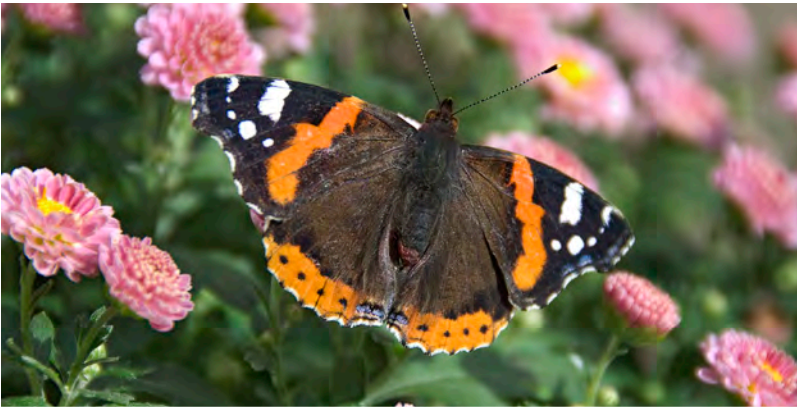
Equality is a given at IVL. The company's work is governed by an overall policy and plan for equality and parity of treatment.

Executive management, managers and employees must all work to ensure that our activities and corporate culture are characterised by a diversity perspective and by parity of treatment, reinforcing IVL's credibility as an adviser on sustainability issues.

In terms of gender, the IVL workforce of 48 percent men and 52 percent women is well balanced. Executive management also features an even gender balance.

Our objectives are to create an attractive workplace that will continue to attract talented employees in the future, and to ensure that IVL is perceived as a collaborative partner with high ethical ideals, both in terms of its behaviour and the performance of its assignments (see also Our employees on facing page).

**IVL contact:**  
PER-OLOF SKOUGH



# Our employees

Well-qualified, creative and engaged employees are essential to successful R&D programmes. As a result, the focus in 2012 was on competence development and on in-house measures designed to create an attractive workplace.

IVL's aim is to maintain steady growth, both in terms of the number and overall standard of competence of its workforce. Employee numbers at our offices in Stockholm, Gothenburg and Beijing increased by about 10 percent to 212 in 2012.

In terms of gender, the IVL workforce is relatively well balanced, with 48 percent men and 52 percent women. Of the total workforce, 92 percent hold academic qualifications and 28 percent research qualifications.

## ATTRACTIVE WORKPLACE

IVL has been carrying out employee satisfaction surveys with the help of an outside organisation since 2008.

These are designed to measure trust, pride and comradeship at both organisational and unit level, and to enable employees to identify both what is good about the job and what could be subject to improvement.

The results are used by the company as a basis for developing action plans. The employee satisfaction index (ESI) is calculated from the scores awarded by the employees to the survey statement "Overall, I would regard this as a good workplace". Although this indicator improved steadily during the first three years of the survey, it fell slightly on the last occasion. As a result, a focus has been placed on the identification and management of stress-related issues, as well as on managerial and leadership development. In addition, a broadly-based in-house working group has been developing concrete proposals for facilitating internal communication and creating a more attractive workplace.

## COMPETENCE DEVELOPMENT

For the last two years, IVL has been conducting a programme dealing with roles and positions, primarily to highlight career and development opportunities for employees, and to develop a competence planning tool. This

has yielded a model that is used and evaluated during the annual employee appraisal meetings.

The company's approach to competence development may be expressed in terms of the '70-20-10 model', which means that on-the-job training accounts for 70 percent of professional development, training by more experienced colleagues for 20 percent, and formal training activities for the remaining 10 percent.

The aim is to ensure that all employees undergo at least two days of competence development every year in the form of defined activities. This target was achieved in 2012.

A special project management training course has been held for the last couple of years. Training is carried out both by IVL itself and with the assistance of outside lecturers. In 2012, a total of 113 employees took at least one of the five course modules. The aim of the course is, in line with the company's management system, to improve the quality of management and further professionalise IVL's project managers. Practically all of IVL's work takes the form of projects, from small internal projects to external contracts and very large research programmes funded either by Swedish or international research financiers.

## WORK ENVIRONMENT AND HEALTH

IVL's work environment activities are conducted on the basis of yearly plans and delegated responsibilities, and the company has occupational health agreements covering all employees. All employees are offered regular health checks, and can also avail of medical treatment for illness and work-related problems. In addition, all employees receive a fitness training allowance. IVL promotes the wellbeing and health of its employees by providing financial support for its very active cultural and sporting associations.

## IVL contact:

ANNA WESTBERG

*Julia  
Hansson*



Age: 34

Education: PhD in energy and environment

Currently working on: Renewable energy, focusing on bio-energy and renewable fuels, energy systems analysis and policy analysis



*Katarina  
Hansson*



Age: 39

Education: MSc in physical geography; international MSc in applied environmental technology

Currently working on: Environmental toxins in biological materials, national environmental monitoring of organic substances in air and precipitation, and the occurrence and dispersion of chemicals in the environment

Age: 32  
Education: Forester and economist  
Currently working on: Bioenergy and climate; policy instruments for renewable energy



*Jonas  
Höglund*

*Momina  
Bibi*



Age: 31

Education: MSc in analytical chemistry

Currently working on: Analysis of perfluorinated substances such as PFOS and PFOA

# Directors' report

**The board and CEO of IVL Swedish Environmental Research Institute Ltd. hereby submit their report and statement of accounts for the operating year 1 January 2012 to 31 December 2012.**

IVL Swedish Environmental Research Institute is owned by the Foundation of the Swedish Environmental Research Institute (SIVL). The boards of the company and the foundation are appointed by the Swedish government and Swedish industry. IVL undertakes research projects and contract assignments in the environmental field. Established in 1966, the company employed a total of 212 people in Stockholm, Gothenburg and Beijing as of 31 December 2012. IVL has been a limited company since 1982 and reported net sales of SEK248 million in 2012.

## *Operations and organisation*

The purpose of IVL's operations is to promote ecological, economic and socially sustainable growth within business and society at large by performing research and contract assignments. The operation is organised into four operational units, together with research, business development and marketing units operating laterally across the organisation. IVL's research activities are defined in a long-term plan that is updated continuously by a research council. All units interact in a matrix organisation covering six thematic areas: Climate and Energy; Water and Soil; Air and Transport; Sustainable Building; Sustainable Production, and Resource-efficient Products and Waste.

IVL's working methodology is characterised by an interdisciplinary and holistic approach. In contrast with its original focus on the solution of environmental problems caused by industrial emissions, the company now works actively across the entire area of sustainability. In addition to its traditional expertise in the environmental field, IVL now employs behavioural scientists, economists and social scientists.

Our activities range across the entire industrial spectrum and our customers represent Swedish society in its entirety, from small and medium enterprises to large multinationals, industrial and trade organisations, public agencies – of which the Swedish EPA is the biggest single principal – local authorities and other organisations.

IVL is also involved in comprehensive international activities concentrated mainly on China and India, Russia and the EECCA nations. Europe is regarded as the company's domestic market.

## *Subsidiaries*

BASTAonline AB has been owned by IVL (60%) and the Swedish Construction Federation (40%) since 2007. Based at IVL's offices in Stockholm, the company administers and develops the BASTA system of evaluating and phasing out particularly hazardous substances in building materials. Totalling 58 initially, the number of suppliers joining the system had increased to 286 by the end of 2012, by which time 21,500 products, corresponding to over 80,000 individual items, had been registered. The BASTA Project Handling tool was further developed in 2011 to meet user demands. The tool has enhanced the usefulness of the BASTA system, especially since it can be interlinked with the Swedish Green Building Council and Swedish BREEAM classification systems.

Strategic collaboration between Skanska, the Swedish Transport Administration and IVL was initiated in 2012 to undertake a

development project under the title of Building with Basta, whose purpose is to develop a working methodology for non-toxic construction.

During the year, the board of BASTAonline AB took a strategic decision to undertake marketing activities. As a result, the company's operating profit for 2012 was somewhat lower at SEK50 thousand compared with SEK240,000 the previous year.

## **Business climate and future development**

Population growth, urbanisation and climate change are factors underlying the urgent sustainability-related challenges that we face today. These, in turn, are exerting greater pressure on resources, both limited and renewable, causing food and water shortages, poverty, an increasing demand for energy and effects on human health, while highlighting the need for international agreements.

Progress in achieving international agreements on climate issues has been modest in recent years, and the outlook appeared very bleak during the Doha Climate Change Conference negotiations in November 2012. Despite this, a first, small step towards a new global climate agreement was taken in the form of Platform Doha, while the much-criticised Kyoto Protocol was extended to 2020.

IVL personnel monitor the trend in climate negotiations on an ongoing basis and provide the negotiators with policy information through channels such as the two MISTRA-funded programmes, Clipore and Entwined.

The major challenge in the immediate future, in an unstable and stagnating world economy, is to develop sustainable long-term energy and resource solutions. With improved resource efficiency as a prime focus, and with its roots in interdisciplinarity and systems analysis, IVL is ideally positioned in this context. The company's long-term growth targets remain in place and new personnel were recruited continuously in 2012. This will continue in 2013.

The environment, environmental engineering and energy are priority areas of the EU's Seventh Framework Programme for Research and Technical Development (FP7). IVL has been highly successful in these areas for many years and was placed third, after Lund University and the Swedish University of Agricultural Sciences (SLU), in the 2012 Vinnova list of Swedish players involved in the highest number of FP7 environmental projects.

In all, IVL is a participant in over 40 EU-funded research projects, and is represented in all of the EU's environmental and energy-related research programmes.

## *Basic funding*

IVL and other research institutes play a decisive and recognised role in increasing the competitiveness of Swedish industry, while ensuring that business benefits from the research conducted by the universities and other third-level institutions. Most research institutes are guaranteed basic funding from the national budget to expand and maintain their expertise.

Although IVL has not been granted this type of assistance over the years, it will qualify for a certain level of basic funding through the Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning (Formas) in 2013. This will facilitate the company's long-term capacity to remain in the forefront of environmental research and contribute to the development of Swedish industry.

## KEY EVENTS DURING THE YEAR

### *VAT case*

A 2010 court judgement prohibited IVL from claiming relief in respect of tax paid on costs attributable to its grant-aided activities. In addition, the judgement was made retrospective for five years. An appeal by IVL against that part of the judgement was dismissed by the Supreme Administrative Court of Sweden in 2012. This decision is now the subject of a further appeal by the company to the Administrative Court of Appeal in Stockholm. The amount in question (approximately SEK7.7 million) has been paid to the Swedish Tax Board.

### *International activities*

IVL's international activities are concentrated in China and India. The company is also active to a certain extent in Russia and the EECCA (Eastern Europe, Caucasus and Central Asia) nations.

After more than 25 years of activity in China, mainly in the context of aid-related programmes administered by the Swedish International Development Cooperation Agency (Sida) or the EU, IVL now accepts contracts directly from Chinese public authorities and companies. Operations in China – where IVL currently has five employees in the Chinese office – are also being focused on collaborative strategic research in areas including municipal water treatment. In 2012, IVL signed memoranda of understanding with the University of Tsinghua.

IVL's environmental collaboration with the Chinese Research Academy of Environmental Sciences (CRAES) – now one of the foremost advisors to the Chinese government – is also being developed further. Together with CRAES, IVL is planning a major project to measure atmospheric emissions and is also discussing the establishment of a joint laboratory.

IVL and the Tianjin Academy of Environmental Sciences (TAES) have been joint owners of the Sino-Swedish Environmental Technology Development Centre (SEC) for over ten years. SEC has helped a large number of Swedish environmental technology companies to enter the Chinese market. In 2012, these included ECOMB, a company supplying technology for reducing nitrogen oxide emissions.

A two-year EuropeAid project was initiated in 2012. Led by IVL, the overall purpose of the project is to improve China's environmental administration. At this stage, the aim is to facilitate public access to judicial examination of environmental breaches and to protect the environmental rights of citizens in the Guizhou province.

IVL has been carrying out projects in India for many years. A new Sida-backed project designed to develop sustainable drinking water supplies was launched in 2012, while the existing project (also supported by Sida) to modernise and streamline the rapidly expanding Indian pulp and paper industry continued. IVL is also working on behalf of the Swedish Energy Agency on projects for recovering energy from waste materials, primarily sludges, in Bangalore. In addition, IVL is conducting a project on behalf of the European Chamber of Commerce in Brussels with the aim of increasing cooperation between India and Europe in areas including environmental engineering and energy.

### *Communication, courses and seminars*

Communication, together with the organisation of courses and seminars, are part of Business Development & Marketing. As such, the function is an integral part of the company's operational development.

Communication has become an increasingly important element, both in general terms and as part of research programmes, as a means of disseminating information regarding IVL's activities. Courses and seminars play a vital part in this context, not least as a means of strengthening IVL's role as an arena where stakeholders from the research, business, public and political worlds can meet. In 2012, the State of the Environment and Sustainable Transport conferences, together with the Baltic Sea Seminar, reaffirmed the company's role as an important meeting place for environmental interests in Sweden, attracting steadily growing numbers of participants.

Courses and seminars for both internal and external customers are produced under a special brand known as IVL Kunskap. In 2012, about 30 courses in environmental building were developed and held on behalf of the Sweden Green Building Council. In all, over 50 courses, conferences and seminars were held during the year.

### **Code of Conduct**

A Code of Conduct was developed during the year based on the ten principles of the UN Global Compact and IVL's own value system. Seminars on the subject were held for all managers and personnel.

### **Collaboration with universities and institutes of technology**

The establishment and development of close cooperation with the business sector, international research bodies and third-level institutions is part of IVL's strategy. As part of this, IVL has formalised its cooperation with the Royal Institute of Technology, Stockholm (KTH), Chalmers University of Technology, Gothenburg (CTH), and the Faculty of Engineering at Lund University (LTH).

As an example, the company has initiated a dedicated programme in collaboration with CTH to develop an infrastructure for long-term competence development and research in the transport and logistics area. IVL's primary role is to develop a database and a support function for long-term data processing, and to initiate and pursue transport research in collaboration with CTH.

At present, four IVL employees hold adjunct professorships at KTH, CTH and the University of Gothenburg, while a fourth holds a VinnMer fellowship at CTH under the auspices of the Chalmers Energy Initiative.

### *Hammarby Sjöstadsverk*

IVL and KTH are joint owners of the Hammarby Sjöstadsverk R&D facility, which is a national resource for the development of wastewater treatment technology. The facility is used both by IVL and KTH for their own research, and by outside stakeholders for testing new treatment technologies on effluents of various types.

In 2012, the facility received a significant boost in the form of a Vinnova grant of SEK10 million for a project entitled Tomorrow's municipal water treatment – a production plant for public goods. This project incorporates the four-year SEK47 million research project currently being carried out jointly by IVL, Xylem and the Swedish Association of Graduate Engineers.

Several other major projects have been carried out at Hammarby Sjöstadsverk to study increased biogas recovery, more efficient methods of nitrogen extraction, the treatment of pharmaceutical residues, and the reduction of greenhouse gas emissions from wastewater treatment and sludge handling operations.

Together with KTH, Uppsala University, the Swedish University of Agricultural Sciences (SLU) and Mälardalen University, and aided by funding from the Swedish Water & Wastewater Association (SWWA) and municipal authorities in the Mälardalen region, Hammarby Sjöstadsverk is part of a centre for municipal water treatment.

#### **Swedish Lifecycle Center (CPM)**

IVL operates the Swedish Lifecycle Center (CPM) in collaboration with CTH. The purpose of CPM – which became a national centre for LCM (Life Cycle Management) activities in 2012 – is to reduce the environmental impact of products and reinforce competence in the area of sustainable products. Apart from IVL and Chalmers, bodies associated with the centre include KTH, the Technical Research Institute of Sweden (SP) and a large number of international companies, such as the Volvo Group, SKF, ABB and Akzo Nobel.

#### **Mistra Urban Futures**

Mistra Urban Futures is a Gothenburg-based international centre for sustainable urban development. In addition to IVL, the partners in the consortium are CTH, University of Gothenburg, City of Gothenburg, Gothenburg Regional Association of Local Authorities (GR), Västra Götaland Region and Västra Götaland County Administrative Board. As of 2012, 'Mistra Urban Futures' entered a second phase, and IVL has participated in the development of both the centre itself, and the projects 'Business-driven sustainable urban development', and 'Knowledge and working for a socially sustainable city', projects relating to infill development in urban areas.

#### **Other cooperative ventures and major networks**

IVL's role is to act as a bridgebuilder between the research and business communities, and to create arenas for interaction between different players in society. This is one of the reasons why IVL is leading or participating in networks and other cooperative ventures of various types, some of which are featured above. Others include:

**SWEDEN GREEN BUILDING COUNCIL (SGBC)** is a non-profit organisation that is open to all Swedish building and property sector companies and organisations that wish to develop and influence sustainability activities in their field. Together with companies and organisations including Skanska, NCC, Fastighetsägarna and Akademiska Hus, IVL is a founder member of SGBC and is represented on its board.

**STOCKHOLM CLEANTECH**, a development of the Stockholm Environmental Technology Centre, was initiated by IVL and is administered by it. Stockholm Cleantech interconnects visitors, stakeholders, projects, technologies, companies and researchers in the environmental technology field in the Stockholm/Mälardalen region.

**SWEDISH ENVIRONMENTAL EMISSIONS DATABASE (SMED)** is a consortium formed in 2001 by IVL, Statistics Sweden (SCB), the Swedish Meteorological and Hydrological Institute (SMHI) and the Swedish University of Agricultural Sciences (SLU) to compile and develop Swedish competence in emission statistics relating to action programmes in the areas of air and water pollution, waste, and hazardous substances and chemicals. SMED has been supplying all of the data required for Sweden's international reporting in these areas since 2006.

**SWEDISH NETWORK FOR TRANSPORT AND ENVIRONMENT (NTM)**. As a member of the network, IVL has worked in formal collabora-

tion with NTM since 2009. The aim is to strengthen cooperation by placing IVL's expertise at the disposal of NTM's members and working groups.

**EUROPEAN NETWORK OF ENVIRONMENTAL RESEARCH ORGANISATIONS (ENERO)** is a grouping of European research institutes operating under the umbrella of the European Research Area (ERA). IVL is an active member.

**NORMAN** is a network of reference laboratories and research organisations involved in the screening of new, environmentally hazardous chemicals. Established in 2005 with support from the EU's Sixth Framework Programme, NORMAN is now a permanent network financed by its membership. IVL has been a 'founding member' since 2009.

**EURAQUA** is the European Network of Freshwater Research Organisations. IVL is the Swedish representative.

#### **Ratio of research projects to contracts**

Revenue from fees during the year was divided between research projects and contracts in the ratio of 55% to 45% (compared with 54% and 46% respectively in 2011). In this context, research projects are defined as projects funded jointly by the Swedish government and Swedish industry through the Foundation of the Swedish Environmental Research Institute (SIVL), as well as activities financed by grants from public research agencies, research institutes, the EU and similar bodies. Co-financed activities accounted for 19% (21%) of fee-based revenue and grant-aided activities for 36% (33%).

IVL's research is an integral part of the company's operations and is a prerequisite to its ability to undertake assignments using leading-edge expertise.

Contracts undertaken by IVL include both short-term consultancy and analytical assignments, as well as more comprehensive national and international contracts of a research and development nature.

#### **Assignments**

In 2012, IVL continued with its assignment from the Swedish government to assist with the reconstruction of the basic infrastructure in Iraq, in collaboration with the Swedish Export Council, and to help in expanding trade between the two countries. Working visits and meetings with companies were organised as part of a training programme designed to bring Iraqi decision-makers, engineers and researchers together with Swedish companies in the environmental and engineering fields.

In addition to contracts from business, IVL undertakes major assignments for the Swedish EPA. Among other things, the company is responsible for data collection as part of the national and international environmental monitoring programmes in the areas of atmospheric and precipitation chemistry, air quality in population centres, environmental toxin levels and metals in biological materials. IVL also maintains a screening database of environmental toxins and metals.

#### **Current EU projects**

A large number of projects funded by various EU organs, mainly the Seventh Framework Programme for Research (FP7), was approved and initiated in 2012.



EU research programmes in which IVL is involved and which commenced in 2012 include

- FUSIONS, aimed at reducing food waste in Europe,
- DYNAMIX, a research programme designed to identify dynamic policy mixes that can lead to decoupling the environmental impact of EU resource use from economic growth,
- EUNICE, for the development and evaluation of an electric car prototype driven by in-wheel motors,
- NAWADES, for the development of a self-cleaning membrane system for seawater desalination.

IVL has been awarded two major assignments within the framework of the EU's Switch Asia programme, one of which was started in 2012 to support the development of 'greener' and more energy-efficient building methods in Mongolia.

At present, IVL is participating as coordinator or partner in over 40 EU projects.

#### *Other current research programmes*

IVL is currently leading two research programmes funded by the Swedish Foundation for Strategic Environmental Research (MISTRA). The first of these is Indigo, a four-year programme with a budget of SEK25 million, focusing on climate policy regulatory instruments and how these should be configured at international level, with particular emphasis on the role of industry in climate programmes. The second is Entwined, which is concerned with the interaction between international environmental policies and global trade, with the focus on transboundary issues. IVL is also involved in Closing the loop, another major research project within the framework of the MISTRA programme.

For the last couple of years, IVL has been leading four major research programmes financed by the Swedish EPA. These are SCARP (Swedish Clean Air Research Programme), Chemitecs (a study of the emission of organic substances from goods), Sustainable Waste Management, and Climate Change and Environmental Objectives (CLEO), whose purpose is to study how future climate change will influence the prospect of achieving Sweden's environmental objectives. Chemitecs and Sustainable Waste Management were concluded in 2012.

AFA Insurance is financing a number of IVL projects dealing with work environment issues. In 2012, the company provided a total of almost SEK10 million in funding for projects relating to improved working conditions in the cleaning industry, the interior environment on board ships and research into health care in the public sector.

#### **Co-financed research**

The Foundation of the Swedish Environmental Research Institute (SIVL) is owner of the company and principal of IVL's co-financed activities. In 2012, research was conducted in six thematic areas:

- Climate and Energy
- Air and Transport
- Water and Soil
- Resource-efficient Products and Waste
- Sustainable Building
- Sustainable Production

In 2012, SIVL continued its ongoing operational review in which two thematic areas per year are examined by an external assessment group. Focusing on the thematic areas of Air and Transport and Resource-efficient Products and Waste, this year's assessment indicated that IVL possesses very high competence in these areas. Improvement proposals highlighted the importance of continued work to set goals and establish KPIs for subsequent monitoring.

Funding totalling SEK34 million for co-financed research was available to SIVL in 2012 in the form of Swedish government grants of SEK17 (17) million to the Swedish EPA and SEK17 (17) million to the Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning (Formas). Total funding for co-financed research is comprised of these grants, together with funds of SEK22.6 (21) million from the Swedish business sector and SEK23.4 (17) million from the EU. Formas supports advanced scientific research by providing the option of top-up funding (of over 50%) for scientific publications.

Including some basic finance, funding of SEK37 million for co-financed research will be available to SIVL in 2013.

#### *Examples of co-financed research*

The following are examples of co-financed research projects approved and/or commenced in 2012 in the respective thematic areas:

**CLIMATE AND ENERGY:** Consequences of climate change for the energy sector; Analysis of climate and sustainability aspects of biofuels from a Swedish perspective; Resource efficiency and environmental values of district heating

**AIR AND TRANSPORT:** Dust pollution – particle emissions from diffuse sources; Effects of infill development on air quality; Best available environmental data for automotive fuels

**RESOURCE-EFFICIENT PRODUCTS AND WASTE:** Indicators for resource-efficient waste treatment; Biodegradable bags for food waste; Environmental consequences of EU recycling goals on processing of wood waste

**SUSTAINABLE BUILDING:** Building with Basta; Reducing greenhouse gas emissions through infill development of commuter station neighbourhoods; Sustainable building interior renovation and decoration

**SUSTAINABLE PRODUCTION:** Mould cleanup; Diamond: An optimised data management model for wastewater treatment plants; Reuse of treated wastewaters

**WATER AND SOIL:** Modelling of nutrient dynamics in a coastal zone; Phos-Cad; Development and implementation of environmental risk assessment in Fass.se 2012

#### **ENVIRONMENTAL AND QUALITY MANAGEMENT**

IVL deals with environmental and quality issues within the framework of an integrated management system. The system, including its application by IVL, is certified in accordance with ISO environmental and quality management standards SS-EN ISO 14001 and SS-EN ISO 9001 respectively. Certification is reviewed annually and the system is re-certified periodically by an accredited inspection agency.

Most of the company's work relating to sampling, field measurement and analysis is accredited and inspected regularly by SWEDAC (the national Swedish accreditation authority) in accordance with SS-EN ISO 17025.

Environmental and quality activities are governed by the company's environmental and quality policies, which are implemented in the form of both overall and specific goals. Customer advisory services, company travel and energy usage have been identified as the most significant factors in this context. Efforts are under way to evaluate the environmental impact of the company's customer advisory services by carrying out post-project sustainability assessments. These will yield results in 2013.

Further development of its videoconferencing equipment with the aim of increasing the number of meetings and discussions that can be held without the need for travel is part of the company's internal quality and environmental activities. Plans are under way to equip a lecture room in Stockholm with video facilities and internet technology. Divided equally between the Stockholm and Gothenburg offices, the six conference rooms equipped with video support are occupied 60 (50) percent of the available time by video-assisted meetings.

Compared with 2011, the company's environmental footprint from domestic rail and air travel increased by 22 percent in 2012. This is due to increased travel associated primarily with international project activities where air travel is the most reasonable option (8.5 percent), together with an 8.2 percent growth in IVL personnel numbers compared with 2011. The number of rail journeys increased by 1.6 percent compared with 2011 and by 15 percent over the five-year period from 2008 to 2011.

However, IVL's international operations make air travel unavoidable and the company's total environmental footprint increased by 19 percent in 2012 compared with the previous year due to the higher level of attendance required by new projects in countries such as China and India. However, in terms of grammes per kilometre, the environmental loading declined steadily from 127 to 121 g/km – a four percent reduction – over the five-year period 2008-12, probably due to more efficient aircraft types. In terms of grammes of carbon dioxide per SEK of revenue, the flight index fell from 8.1 to 7.6 during the same period.

IVL's quality activities have a customer relations focus. For this reason, activities are monitored continuously to ensure that customers are satisfied with the company's services. Due to a low response frequency, the customer survey was replaced by personal interviews in autumn 2012. Two customers per operational unit were selected for telephone interview. These were representative of business, local authorities and government agencies. The customer satisfaction index for 2012 was 4.0 (4.0). In addition to several improvement proposals, the internal report on the interviews revealed a positive image of IVL as a professional and important working partner and supplier.

### IT and energy usage

IT has reduced its annual energy usage significantly since 2009. However, the demand for data storage and updated communications technology, as well as more, and bigger, monitors, has absorbed part of the savings.

In general, IVL seeks to minimise the overall environmental impact of its activities without compromising function or reliability. This also applies to the IT area, whose environmental improvement measures include environmentally compatible processing and sorting of packaging, influencing suppliers and products at the purchasing stage, and regular assessment of suppliers.

## NET SALES, NET INCOME AND CAPITAL STRUCTURE Group

The group's net sales for the financial year increased by 3 percent, totalling SEK247,827 (2011: 230,924) thousand, yielding a net profit after financial items of SEK7,692 (12,053) thousand. The net profit after taxes was SEK5,304 (10,349) thousand. The return on adjusted equity was 9.7 (17.5) percent and the return on capital employed 5.5 (8.6) percent.

The group's total assets increased to SEK151,199 (140,680) thousand and its total equity capital to SEK61,171 (55,889) thousand. Cash flow was positive at SEK6,956 (18,336) thousand.

Capital investment in inventories and equipment totalled SEK6,215 (3,145) thousand. The equity/assets ratio was unchanged at 39.4 (39.7) percent.

### Parent company

IVL's net sales for the financial year increased by 3 percent, totalling SEK247,139 (239,014) thousand, yielding a net profit after financial items of SEK8,009 (6,270) thousand. The net profit after taxes was SEK4,265 (6,054) thousand.

Total assets amounted to SEK150,744 (140,256) thousand and total equity capital to SEK40,961 (36,696) thousand. Adjusted equity capital was estimated at SEK45,711 (40,172) thousand. Cash flow was SEK7,124 (18,148) thousand. The return on adjusted equity was 13.7 (12.4) percent and the return on capital employed 6.0 (4.8) percent.

Capital investment in inventories and equipment totalled SEK6,208 (3,145) thousand. The equity/assets ratio increased to 30.3 (28.6) percent.

## PARENT COMPANY EMPLOYEES

### Structure and personnel turnover

During the operating year, the number of employees averaged 199 (184), of whom 48 (51) percent were men and 52 (49) percent women. Of the workforce, 28 (29) percent hold research qualifications, while 64 (65) percent hold masters degrees in engineering or other academic qualifications.

During the year, 10 (9) permanent employees left the company for other positions. New recruitment totalled 14 persons in areas including sustainable building, waste, environmental declarations and transport.

### Equality and parity of treatment

IVL implements an overall policy and plan to ensure equality and parity of treatment. Developed by a representative group, this is implemented in the form of a yearly plan. Executive management, managers and employees must all work to ensure that our activities and corporate culture are characterised by a diversity perspective and by parity of treatment, contributing to IVL's credibility as an adviser on sustainability issues.

### Chargeability rate

The chargeability rate for the period was 66.2 (68.0) percent. Chargeability rate is defined as the proportion of total attendance time that is invoiced to the customer. The remaining (in-house) time is devoted to marketing, training, technical maintenance, management and administration.

## Absences and holidays

During the year, total absences, including holidays, accounted for 23.5 (23.4) of normal working time. Sick leave accounted for 2.7 (2.4) percent and holiday time for 8.8 (8.9) percent. Leave of absence accounted for 9.6 (9.6) percent, of which 6.6 (6.8) percent was parental leave. Normal working time is defined as working time including holiday time and overtime worked, less absences due to sick leave, sickness of a child, parental leave or other leave of absence, as well as compensatory leave. The same basis is used to calculate the average number of paid-up years in Note 5 Personnel costs.

## Special report on sick leave for period 1 January – 31 December 2012

Figures for employee sick leave are given below. These are stated as a percentage of total normal working time, and also include details of continuous sick leave totalling 60 days or more (defined as long-term sick leave), figures for men and women, and sick leave in different age groups. In the following summary, sick leave is shown as a percentage of normal working time, less leave of absence and parental leave. The method of calculation is, therefore, different to that used above for absences and holidays.

Group	TOTAL SICK LEAVE as percentage of normal working time		LONG-TERM SICK LEAVE as percentage of nor- mal working time	
	2012	2011	2012	2011
All employees	2.8	2.5	0.8	0.4
Women	3.3	2.9	1.0	0.5
Men	2.2	2.0	0.5	0.4
29 years or younger	1.2	2.5	0	0.0
30-49 years	3.7	2.3	1.2	0.1
50 years or older	1.4	2.7	0	1.2

## Other personnel information

Personnel turnover,%	2012	2011
Number of employees to resign as percentage of average workforce for year	5.0	4.9
– including pension	5.0	6.0

Age distribution,%	2012	2011
<b>Age</b>		
20–29	13	15
30–39	36	34
40–49	23	23
50–59	16	16
60–69	12	12
Average age: 42 (42) years		

Key financial indicators per employee (figures in SEK thousand)	2012	2011
Sales, excl. expenses	1,051	1,104
Salaries	617	614
Net profit/loss after financial items	40	34

Length of service,%	2012	2011
<b>Length of service, years</b>		
–2	20	19
2–10	45	43
> 10	35	38
Average length of service: 10 (10) years		

Qualification,%	2012	2011
PhD	26	26
Other research qualification	2	3
Graduate engineer	33	30
Other academic qualification	31	36
Technical high school qualification	8	6

# Summary of business and financial ratios

(figures in SEK thousand)

	GROUP					PARENT COMPANY				
	2012	2011	2010	2009	2008	2012	2011	2010	2009	2008
<b>Sales and profit/loss</b>										
Invoiced fees and expenses	247,827	239,924	193,986	204,542	196,261	247,139	239,014	193,022	203,939	195,483
Operating profit after depreciation	7,529	11,308	-3,322	5,338	5,539	7,874	5,527	-1,965	1,496	5,623
Operating profit after financial items	7,692	12,053	-3,322	5,401	6,183	8,009	6,270	-1,822	1,706	6,253
Profit margin, %	3.1	5.0	Neg	2.6	3.2	3.2	2.6	Neg	0.8	3.2
<b>Capital structure</b>										
Fixed assets	13,803	12,564	14,233	16,636	16,936	14,420	13,182	14,837	17,225	17,514
Current assets	137,396	128,116	111,329	126,489	120,232	136,322	127,074	110,247	125,779	119,124
Equity	61,171	55,889	45,527	50,079	46,020	40,962	36,696	30,642	30,517	30,128
Untaxed reserves						6,444	4,717	4,666	9,578	8,602
Current liabilities	82,883	78,000	73,857	84,204	82,181	103,336	98,843	88,892	101,031	95,035
Provisions	7,145	6,791	6,178	8,842	8,967	-	-	884	1,878	2,873
Total assets	155,199	140,680	125,562	143,125	137,168	150,744	140,256	125,084	143,004	136,638
Adjusted equity						45,711	40,172	34,081	37,576	36,321
Equity, annual funds	58,530	50,708	47,803	48,050	43,852	42,292	37,127	35,828	36,949	34,208
Capital employed, annual funds	147,940	133,121	134,344	140,147	117,667	145,500	132,670	134,044	139,821	117,455
Equity/assets ratio, %	39.4	39.7	36.3	35.0	33.6	30.3	28.6	27.2	26.3	26.6
Current ratio	1.66	1.64	1.51	1.50	1.46	1.32	1.29	1.24	1.24	1.25
<b>Profitability</b>										
Return on adjusted equity, %	9.7	17.5	Neg	8.1	10.2	13.7	12.4	Neg	3.4	13.2
Return on adjusted equity, 5-year average, %	8.1	7.0				7.8	6.0			
Return on capital employed, %	5.5	9.1	Neg	3.9	5.1	6.0	4.8	Neg	1.3	6.0
<b>Other</b>										
Capital expenditure	6,215	3,145	3,296	5,603	1,961	6,208	3,145	3,296	5,595	1,947
Invoiced sales per employee, incl. expenses	1,239	1,290	1,090	1,175	1,182	1,242	1,299	1,097	1,193	1,192
Invoiced sales per employee, fees and analyses	1,049	1,097	969	1,151	1,119	1,051	1,104	974	1,168	1,128
Chargeability rate, %	66.2	67.0	66.1	67.7	65.0	66.2	68.0	66.1	67.7	65.0
Number of employees	200	186	178	174	166	199	184	176	171	164
Personnel costs per employee	614	608	613	611	606	617	614	618	622	612

#### Adjusted equity

Total equity, plus untaxed reserves, less deduction of standard tax at 26.3 %.

#### Equity/assets ratio

Adjusted equity relative to balance sheet total.

#### Annualised employees

The number of employees for the year expressed in terms of full-time positions. The actual number of employees is higher due to part-time working and the fact that some employees work only part of the year.

#### Profit margin

Net profit after financial items as a percentage of net sales.

#### Chargeability rate

Time charged to client as a proportion of total work attendance.

#### Return on capital employed

Profit after net financial items plus interest expenses relative to average balance sheet total.

#### Current ratio

Current assets divided by current liabilities.

#### Return on equity

Profit after net financial items and deduction of standard tax at 26.3% relative to average adjusted equity.

# Proposed appropriation of profits

(figures in SEK)

The following funds are available to the Annual General Meeting:

Profit carried forward	28,296,474
Profit for year	<u>4,265,085</u>
Total	32,561,559

The board and CEO propose that the total profit be distributed as follows:

To be carried forward	<u>32,561,559</u>
Total	32,561,559

See the income statement, balance sheet, cash flow statement, and notes to the financial statements and accounts for information on the results reported by the parent company and group for the financial year, as well as the general financial position as of 31 December 2012.

# Income statement

(figures in SEK thousand)

		GROUP		PARENT COMPANY	
		2012	2011	2012	2011
<b>Operating income</b>					
Net sales	Note 1	247,827	239,924	247,139	239,014
Change in work in progress	Note 2	-28,416	-20,892	-28,027	-26,492
Other operating income	Note 3	274	453	274	453
		<b>219,685</b>	<b>219,485</b>	<b>219,386</b>	<b>212,975</b>
<b>Operating expenses</b>					
Expenses		-34,397	-41,449	-34,397	-41,449
Other external expenses	Note 4	-46,110	-45,889	-45,577	-45,269
Personnel costs	Note 5	-126,674	-116,032	-126,567	-115,938
Depreciation of tangible and intangible fixed assets	Note 6	-4,975	-4,807	-4,971	-4,792
		<b>-212,156</b>	<b>-208,177</b>	<b>-211,512</b>	<b>-207,448</b>
<b>Operating profit/loss</b>		<b>7,529</b>	<b>11,308</b>	<b>7,874</b>	<b>5,527</b>
<b>Earnings from financial investments</b>					
Interest income	Note 7	938	872	910	870
Interest expenses	Note 7	-775	-127	-775	-127
<b>Profit/loss after financial items</b>		<b>7,692</b>	<b>12,053</b>	<b>8,009</b>	<b>6,270</b>
Appropriations	Note 8			-1,727	-52
Tax on profit for year	Note 9	-2,388	-1,704	-2,017	-164
<b>NET PROFIT/LOSS</b>		<b>5,304</b>	<b>10,349</b>	<b>4,265</b>	<b>6,054</b>

# Balance sheet

(figures in SEK thousand)

		GROUP		PARENT COMPANY	
		2012	2011	2012	2011
<b>ASSETS</b>					
<i>Fixed assets</i>					
Intangible fixed assets	Note 10	2,065	680	2,065	680
Tangible fixed assets	Note 11	11,728	11,874	11,704	11,851
Financial assets	Note 12	10	10	651	651
<b>Total fixed assets</b>		<b>13,803</b>	<b>12,564</b>	<b>14,420</b>	<b>13,182</b>
<i>Current assets</i>					
<b>Current receivables</b>					
Accounts receivable, trade		53,315	53,096	53,136	53,093
Receivables from group companies		17,791	15,006	18,020	15,254
Income taxes recoverable		2,871	4,829	2,897	4,739
Other receivables		293	462	132	440
Prepaid expenses and accrued income	Note 13	6,836	5,369	6,836	5,369
<b>Total current receivables</b>		<b>81,106</b>	<b>78,762</b>	<b>81,021</b>	<b>78,895</b>
<b>Cash and bank balances</b>		<b>56,290</b>	<b>49,354</b>	<b>55,303</b>	<b>48,179</b>
<b>Total current assets</b>		<b>137,396</b>	<b>128,116</b>	<b>136,324</b>	<b>127,074</b>
<b>TOTAL ASSETS</b>		<b>151,199</b>	<b>140,680</b>	<b>150,744</b>	<b>140,256</b>
<b>EQUITY AND LIABILITIES</b>					
<i>Equity</i>					
<b>Restricted equity</b>					
Share capital (7,000 shares)	Note 14	7,000	7,000	7,000	7,000
Restricted reserves		21,429	20,431	1,400	1,400
<b>Non-restricted equity</b>		<b>28,429</b>	<b>27,431</b>	<b>8,400</b>	<b>8,400</b>
<b>Non-restricted reserves</b>					
Profit/loss for year		27,438	18,109	28,296	22,242
Total non-restricted equity		5,304	10,349	4,265	6,054
<b>Non-restricted equity</b>		<b>32,742</b>	<b>28,458</b>	<b>32,561</b>	<b>28,296</b>
<b>TOTAL EQUITY</b>		<b>61,171</b>	<b>55,889</b>	<b>40,961</b>	<b>36,696</b>
<b>Provisions</b>	Note 15	<b>7,145</b>	<b>6,791</b>	<b>-</b>	<b>-</b>
<b>Untaxed reserves</b>	Note 8			<b>6,444</b>	<b>4,717</b>
<i>Current liabilities</i>					
Advance payments for work in progress	Note 2	47,159	32,229	67,772	53,231
Accounts payable, trade		12,193	13,390	12,082	13,366
Other liabilities		11,897	13,369	11,956	13,367
Accrued expenses and deferred income	Note 16	11,634	19,012	11,529	18,879
<b>Total current liabilities</b>		<b>82,883</b>	<b>78,000</b>	<b>103,339</b>	<b>98,843</b>
<b>TOTAL EQUITY AND LIABILITIES</b>		<b>151,199</b>	<b>140,680</b>	<b>150,744</b>	<b>140,256</b>
<b>MEMORANDUM ITEMS</b>					
Pledged assets	Note 17	5,000	5,000	5,000	5,000

# Cash flow statement

(figures in SEK thousand)

	GROUP		PARENT COMPANY	
	2012	2011	2012	2011
<b>Operating activities</b>				
Profit/loss after financial items	7,692	12,053	8,009	6,270
Income tax paid	-3,870	4,025	-3,846	4,095
Adjustment for non-cash items	-77	-3,130	-175	-2,964
<b>Cash flow from operating activities before changes in working capital</b>	<b>3,745</b>	<b>12,948</b>	<b>3,988</b>	<b>7,401</b>
<b>Cash flow from changes in working capital</b>				
Increase/decrease in receivables	-2,835	4,617	-2,501	4,253
Increase/decrease in accounts payable, trade	-1,197	-2,717	-1,284	-2,592
Decrease in other liabilities	-1,472	4,118	-1,411	4,116
Increase/decrease in advance payments for work in progress	14,930	2,520	14,541	8,120
<b>Cash flow from operating activities</b>	<b>13,171</b>	<b>21,486</b>	<b>13,333</b>	<b>-21,298</b>
<b>Investment activities</b>				
Purchase of property, plant and equipment	-4,300	-3,145	-4,293	-3,145
Acquisition of intangible assets	-1,915	-	-1,915	-
Change in financial assets	-	-5	-	-5
<b>Cash flow from investment activities</b>	<b>-6,215</b>	<b>-3,150</b>	<b>-6,208</b>	<b>-3,150</b>
<b>Financing activities</b>				
<b>Cash flow from financing activities</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
Cash flow for year	6,956	18,336	7,125	18,148
Opening cash and bank balances	49,354	30,993	48,179	30,019
Exchange rate difference in cash and cash equivalents	-20	25	-1	12
<b>Closing cash and bank balances</b>	<b>56,290</b>	<b>49,354</b>	<b>55,303</b>	<b>48,179</b>



# Comments and notes to the accounts

## Parent company and ownership structure

IVL is a wholly-owned subsidiary of the Foundation of the Swedish Environmental Research Institute (SIVL), corporate identity number 802006-2611, whose head office is located in Stockholm. On conversion of the former Swedish Institute for Water and Air Pollution Research (IVL) into a limited company in 1982, the original share capital was allocated equally to the foundation by agreement between the Swedish government and the Swedish business sector. The aim of the foundation is to promote the long-term conditions required for environmental research and, through its ownership, guarantee the independent status of IVL. The foundation is responsible for the funds allocated by the Swedish government and the Swedish business sector for co-financed environmental research carried out by IVL. The foundation is governed by a representative board of directors, half of whose members are appointed by the Swedish government and half by Swedish business. The chairman of the board is appointed by the government.

## Financing

The company's operations are financed by current cash flow and by an unused bank overdraft facility of SEK5 million.

## Accounting and valuation principles

The accounts comply with the provisions of the Swedish Annual Accounts Act, the general rules of the Swedish Accounting Standards Board and the applicable recommendations of the Swedish Financial Accounting Standards Council. The accounting principles are unchanged from the previous year.

## Consolidated accounts

The consolidated accounts have been prepared in accordance with Recommendation RR 14, Joint Ventures, of the Swedish Financial Accounting Standards Council. Consolidation of the associated company, Sino-Swedish (Tianjin) Environmental Technology Development Co. Ltd. and of BASTAonline AB (in which IVL has a 60 percent holding), has been carried out using the proportional method.

The annual accounts of the associated company have been converted using the current method, which means that the balance sheet assets and liabilities have been converted at closing day rates. The income statement has been converted at the average rate for the year. Conversion differences do not affect the consolidated accounts, but are allocated directly to equity.

The untaxed reserves shown in the consolidated accounts are divided into restricted equity, equivalent to 73.7 percent of the group's untaxed reserves, and deferred tax liability, equivalent to 26.3 percent of untaxed reserves. In the consolidated accounts, the

tax reserve element of uninvoiced research and consultancy assignments has been valued at the quoted price, and allocated in corresponding manner to equity and deferred tax (in accordance with the accounting principle described under 'Work in progress' below).

Applying the lower tax rate of 22.0 percent with effect from the current year would increase the Group's equity by approximately SEK1.2 million.

## Associated companies

Associated company shareholdings are not reported in the consolidated accounts since their operations are negligible relative to those of the group (see also Note 12).

## Work in progress, parent company

Work in progress is defined as uninvoiced research and consultancy services carried out on a current-account or a fixed-price basis.

Under Swedish taxation law, fixed-price contracts shall be valued at the lower of the accrued direct and indirect costs, less any advance payments received from clients, providing scope for the creation of a reserve in respect of work in progress.

Fixed-price work in progress is valued at the lower of the production cost and invoicing value. The production cost has been calculated using a prudent valuation; in other words, by applying a value above a minimum and below a maximum permissible fiscal value, in accordance with good accounting practice.

Work in progress on a current-account basis is valued at the invoicing value.

In grant-aided projects in which IVL is a contract partner of the research financier, and disburses project funds to other project participants, the funds in question are not reported as sales revenue, but are entered directly in the balance sheet under 'Advance payments for work in progress'. This means that the invoiced amounts and outlay costs are reduced by an amount corresponding to the funds received from this source for disbursement to other project partners.

## Revenues

Revenues from services delivered are recognised at the pace of completion. Successive revenue recognition is applied to all those assignments whose outcome can be calculated in a satisfactory manner. Most assignments are carried out at a fixed or a ceiling price, in which case the revenues in the profit and loss statement are based on the degree of completion on the closing day. Revenues from assignments carried out on a current account basis are recognised at the pace of completion and are normally invoiced to the customer the following month.

# Notes

## Note 1 NET SALES (FIGURES IN SEK THOUSAND)

	GROUP		PARENT COMPANY	
	2012	2011	2012	2011
<b>Net sales are divided between:</b>				
Invoiced fees and analyses	209,833	204,086	209,145	203,176
Invoiced expenses	37,994	35,838	37,994	35,838
<b>Total net sales</b>	<b>247,827</b>	<b>239,924</b>	<b>247,139</b>	<b>239,014</b>

Of the net sales for the year, 19.8 (25.4) percent consists of amounts invoiced to the parent company as remuneration for co-financed research conducted by the company on a contract basis.

## Note 2 ADVANCE PAYMENTS FOR WORK IN PROGRESS (FIGURES IN SEK THOUSAND)

	GROUP		PARENT COMPANY	
	31 Dec 2012	31 Dec 2011	31 Dec 2012	31 Dec 2011
Assignment costs	692,916	601,243	673,303	580,241
Invoiced in advance	-740,075	-633,472	-740,075	-633,472
<b>Book value</b>	<b>47,159</b>	<b>32,229</b>	<b>67,772</b>	<b>53,231</b>
<b>Change reported:</b>				
<b>in income statement</b>	<b>28,416</b>	<b>20,892</b>	<b>28,027</b>	<b>26,492</b>
<b>in balance statement</b>	<b>-13,486</b>	<b>-18,372</b>	<b>-13,486</b>	<b>-18,372</b>
<b>Total change for year</b>	<b>14,930</b>	<b>2,520</b>	<b>14,541</b>	<b>8,120</b>

## Note 3 OTHER OPERATING INCOME (FIGURES IN SEK THOUSAND)

	GROUP		PARENT COMPANY	
	2012	2011	2012	2011
Other income	274	453	274	453
<b>Total other income</b>	<b>274</b>	<b>453</b>	<b>274</b>	<b>453</b>

## Note 4 OTHER EXTERNAL COSTS (FIGURES IN SEK THOUSAND)

### Group and parent company

The item includes audit fees of SEK441 (331) thousand paid to the company's auditor and SEK15 (15) thousand to other group auditors.

Charges for financial leasing agreements in 2012 amounted to SEK 15,386 (14,704) thousand. The charges shown include rental contracts for premises, company cars, computers and certain office equipment. Leasing charges for these agreements in future years are allocated as follows:

	2013	2014	2015	2016	2017
Leasing charges, other	1,457	972			
Premises	12,900	13,100	13,300	13,500	13,700
<b>Total</b>	<b>14,357</b>	<b>14,072</b>	<b>13,300</b>	<b>13,500</b>	<b>13,500</b>

## Note 5 PERSONNEL COSTS (FIGURES IN SEK THOUSAND)

Salaries and other remuneration

Parent company	2012		2011	
	Salaries and other remuneration	Payroll overheads (of which pension costs)	Salaries and other remuneration	Payroll overheads (of which pension costs)
Board and CEO	2,296	1,535	2,206	1,463
Other employees	81,078	38,249	74,529	35,262
<b>Total</b>	<b>83,374</b>	<b>39,784</b>	<b>76,735</b>	<b>36,725</b>
		<b>(10,995)</b>		<b>(10,524)</b>

### Group

The group also pays the salaries of the CEO of the joint-venture company, amounting to SEK90 (90) thousand, and other permanent employees amounting to SEK60 (60) thousand.

The average number of employees<sup>1)</sup> for the year was as follows:

Parent company	2012			2011		
	Men	Women	Total	Men	Women	Total
Stockholm	61	52	113	61	41	102
Göteborg	31	50	81	31	48	79
Beijing	3	2	5	1	2	3
<b>Total</b>	<b>95</b>	<b>104</b>	<b>199</b>	<b>93</b>	<b>91</b>	<b>184</b>

<sup>1)</sup> defined as full-time, salaried employees

Number of employees in company management group (of which executive management):

	2012	2011
Men	6 (5)	6 (5)
Women	5 (0)	5 (0)

### Group

The group employs an additional person in an executive management position.

## Management

### Parent company

In accordance with the decision of Annual General Meeting, a total of SEK605 (538) thousand was paid in fees to members of the board. Of this amount, the chair of the board received SEK 60 (60) thousand.

The position of CEO of the parent company is subject to a period of notice of 12 months by the company, as well as a severance payment equivalent to 12 times the incumbent's fixed monthly salary. Should the position or responsibilities of the CEO be altered as a result of significant changes in the company's operations, or by a change in ownership structure affecting the majority of company shares, the CEO shall be entitled to resign subject to notice of six months and to receive a severance payment equivalent to 18 times his or her fixed monthly salary. The CEO shall be entitled to a pension from the age of 62. The CEO's pension is of the defined contribution type and an amount equivalent to 35 percent of salary for the particular year, including the benefit of a company car, is allocated annually for this purpose. If the pension is taken after age 62, old-age pension contributions shall be paid in full as though the CEO had continued to work until age 65.

### Group

The CEO of the joint-venture company is employed on a full-time basis for one year as of 1 July 2012. Other than a statutory pension, no pension entitlement applies.

## Note 6 DEPRECIATION OF TANGIBLE AND INTANGIBLE FIXED ASSETS

### Group and parent company

Depreciation according to plan of fixtures and equipment is applied annually at a rate of 10 to 20 percent of the acquisition value, from the date of acquisition by the parent company during the year.

Depreciation according to plan of fixtures and equipment is applied on the basis of the remaining economic life of the asset, in accordance with a valuation developed specifically for the international joint venture.

Depreciation according to plan of capitalised expenditure for software development is applied annually at a rate of 20 to 33.3 percent of the acquisition value, from the date of completion during the year.

Depreciation of business goodwill is applied at 20 percent of the acquisition value. The need for depreciation is assessed on the basis of the current value of future surpluses.

## Note 7 INTEREST INCOME AND EXPENSES

### Group and parent company

The item includes accrued bank interest of SEK919 (849) thousand. Of the interest expenses for the parent company, SEK63 (70) thousand relates to group companies.

## Note 8 APPROPRIATIONS AND UNTAXED RESERVES (FIGURES IN SEK THOUSAND)

	PARENT COMPANY	
	31 Dec 2012	31 Dec 2011
Opening untaxed reserves	4,717	4,666
Accumulated depreciation above plan	786	52
Change in tax allocation reserve	-2,513	-
<b>Total appropriations</b>	<b>1,727</b>	<b>52</b>
<b>Closing untaxed reserves</b>	<b>6,444</b>	<b>4,717</b>
of which deferred tax at 26.3%	1,695	1,241

## Note 9 TAX ON PROFIT FOR YEAR (FIGURES IN SEK THOUSAND)

	GROUP		PARENT COMPANY	
	2012	2011	2012	2011
Estimate of effective tax rate				
Profit/loss before tax	7,692	12,053	6,282	6,218
Tax at current tax rate of 26.3%	1,661	2,541	1,652	1,635
Non-taxable income	-3	-1,889	-3	-1,889
Non-deductible expenses	325	400	325	400
Tax from previous year	-4	-29	-4	-29
Current tax expenses, international	54	68	47	47
Deferred tax	355	613	-	-
<b>Effective tax</b>	<b>2,388</b>	<b>1,704</b>	<b>2,017</b>	<b>164</b>
<b>Effective tax rate, %</b>	<b>31.0</b>	<b>14.1</b>	<b>32.1</b>	<b>2.6</b>

## Note 10 INTANGIBLE FIXED ASSETS (FIGURES IN SEK THOUSAND)

	DEVELOPMENT COSTS		GOODWILL	
	31 Dec 2012	31 Dec 2011	31 Dec 2012	31 Dec 2011
Opening acquisition value	1,277	1,277	1,800	1,800
Acquisitions for year	1,915	-	-	-
<b>Closing accumulated acquisition value</b>	<b>3,192</b>	<b>1,277</b>	<b>1,800</b>	<b>1,800</b>
Opening depreciation	-1,107	-805	-1,290	-930
Depreciation for year	-170	-302	-360	-360
<b>Closing accumulated depreciation</b>	<b>1,277</b>	<b>-1,107</b>	<b>-1,650</b>	<b>-1,290</b>
<b>Closing residual value according to plan</b>	<b>1,915</b>	<b>170</b>	<b>150</b>	<b>510</b>

**Note 11 TANGIBLE FIXED ASSETS (FIGURES IN SEK THOUSAND)**

	GROUP		PARENT COMPANY	
	31 Dec 2012	31 Dec 2011	31 Dec 2012	31 Dec 2011
Opening acquisition value	85,625	82,472	85,435	82,290
Purchases for year	4300	3,145	4,293	3,145
Exchange rate differential/scrapped equipment	-10	8		-
Closing accumulated acquisition value	89,915	85,625	89,728	85,435
Opening depreciation	-73,751	-69,586	-73,584	-69,441
Exchange rate differential/scrapped equipment	9	-20	1	-13
Depreciation for year	-4,445	-4,145	-4,441	-4,130
Closing accumulated depreciation	-78,187	-73,751	-78,025	-73,584
Closing residual value according to plan	11,728	11,874	11,704	11,851

**Note 12 FINANCIAL ASSETS***Shares and holdings*

Company	Number	GROUP		PARENT COMPANY	
		Hold-ing,%	Booked	Nominal	Booked
IVL Swedish Environmental Research Institute foundation for staff training	1		5	5	5
BASTAonline AB	600	60	-	60	60
WEREC Water Eco-system Recovery AB	100	10	5	5	5
Sino-Swedish (Tianjin) Environmental Technology Development Co. Ltd	1	50	-	581	581
<b>Total</b>			10	651	651

**Note 13 PREPAID EXPENSES AND ACCRUED INCOME (FIGURES IN SEK THOUSAND)**

	GROUP		PARENT COMPANY	
	31 Dec 2012	31 Dec 2011	31 Dec 2012	31 Dec 2011
Rental of offices and premises	3,309	3,270	3,309	3,270
Other prepaid expenses	3,526	2,099	3,526	2,099
<b>Year-end total</b>	<b>6,835</b>	<b>5,369</b>	<b>6,835</b>	<b>5,369</b>

**Note 14 EQUITY (FIGURES IN SEK THOUSAND)**

Group	Share capital	Statutory reserves	Non-restricted reserves	Profit/loss for year	Total
Opening balance	7,000	20,431	18,109	10,349	55,889
Appropriation per AGM			10,349	-10,349	
Transfer between restricted and non-restricted equity		998	-998		
Translation difference			-22		-22
<b>Profit/loss for year</b>				<b>5,304</b>	<b>5304</b>
Closing balance	7,000	21,429	27,438	5,304	61,172
Parent company	Share capital	Statutory reserves	Profit/loss brought forward	Profit/loss for year	Total
Opening balance	7,000	1,400	22,242	6,054	36,696
Appropriation per AGM			6,054	-6,054	
<b>Profit/loss for year</b>				<b>4,265</b>	<b>4,265</b>
Closing balance	7,000	1,400	28,296	4,265	40,961

**Note 15 PROVISIONS (FIGURES IN SEK THOUSAND)**

	GROUP		PARENT COMPANY	
	31 Dec 2012	31 Dec 2011	31 Dec 2012	31 Dec 2011
Deferred tax	7,145	6,791	-	-
<b>Year-end total</b>	<b>7,145</b>	<b>6,791</b>	<b>-</b>	<b>-</b>

**Note 16** ACCRUED EXPENSES AND DEFERRED INCOME (FIGURES IN SEK THOUSAND)

	GROUP		PARENT COMPANY	
	31 Dec 2012	31 Dec 2011	31 Dec 2012	31 Dec 2011
Holiday and overtime liabilities	5,715	5,013	5,715	5,013
Accrued payroll overheads	4,743	4,527	4,743	4,527
Other accrued expenses	1,176	1,798	1,071	1,665
Provision for VAT arrears, 2005-2008		7,674	–	7,674
<b>Year-end total</b>	<b>11,634</b>	<b>19,012</b>	<b>11,529</b>	<b>18,879</b>

**Note 17** PLEDGED ASSETS AND CONTINGENT LIABILITIES (FIGURES IN SEK THOUSAND)

	31 Dec 2012	31 Dec 2011
Pledged assets		
Floating charges	5,000	5,000
<b>Total</b>	<b>5,000</b>	<b>5,000</b>

Stockholm, 6 March 2013

Annika Helker Lundström  
*Chair of the Board*

Lars-Göran Bergquist

Peter Nygårds

Christer Forsgren

Johan Strandberg  
*Staff representative*

Gunilla Saltin

Kerstin Cederlöf

Birgitta Palmberger

Kurt Palmgren

Håkan Stripple  
*Staff representative*

Tord Svedberg  
*President and CEO*

Our auditor's report was submitted on 11 April 2013  
Rödl & Partner Nordic AB

Ulf H Davéus  
*Authorised Public Accountant*

# Auditor's report

To the Annual General Meeting of IVL Swedish Environmental Research Institute Ltd.  
Corporate identity number 556116-2446:

## Report on annual accounts and consolidated accounts

We have audited the annual accounts and consolidated accounts of IVL Swedish Environmental Research Institute Ltd. for the financial year 2012.

## Responsibility of board and CEO for annual accounts and consolidated accounts

The board and CEO are responsible for preparing annual accounts and consolidated accounts providing a true representation of the company's situation in accordance with the Swedish Annual Accounts Act, and for such internal control as deemed necessary by them to prepare annual accounts and consolidated accounts not containing material errors, whether due to impropriety or inaccuracy.

## Auditor's responsibility

Our responsibility is to express an opinion on the annual accounts and consolidated accounts on the basis of our audit. The audit was conducted in accordance with International Standards on Auditing (ISA) and with accepted auditing practice in Sweden. These standards require us to observe the norms of professional ethics, and to plan and perform the audit in a manner offering reasonable assurance that the annual accounts and consolidated accounts do not contain material errors.

An audit involves the sourcing, by various means, of audit evidence relating to figures and other information given in the annual accounts and consolidated accounts. The auditor specifies any measures that require to be taken, among other things by assessing the risk of material errors in the annual accounts and consolidated accounts, whether due to impropriety or inaccuracy. As part of this risk assessment, the auditor takes cognisance of those internal control aspects that are relevant to the manner in which the company prepares the annual accounts and consolidated accounts in order to provide a true representation of its situation, with the aim of formulating inspection measures that are appropriate to the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the company's internal control procedures. An audit also includes an assessment of the suitability of the accounting principles used, and of the reasonableness of the estimates made by the board of directors and CEO in the accounts, as well as their overall presentation in the annual accounts and consolidated accounts.

We believe that the audit evidence that we have gathered provides an adequate and appropriate basis for our opinions.

## Opinions

In our opinion, the annual accounts and consolidated accounts have been prepared in accordance with the Swedish Annual Accounts Act and, in all essential respects, provide a true representation of the financial position of the parent company and group as of 31 December 2012, and of their financial performance and cash flow for the year in accordance with the said act. The directors' report is consistent with the other parts of the annual report.

We recommend, therefore, that the Annual General Meeting adopt the income statements and balance sheets of the parent company and group.

## Report on other legal and statutory requirements

In addition to our audit of the annual accounts and consolidated accounts, we have audited the proposal concerning the allocation of the company's profit or loss, and the administration of IVL Swedish Environmental Research Institute by the board and CEO in the year 2012.

## Responsibility of board and CEO

The board is responsible for the proposed allocation of the company's profit or loss, while the board and CEO are responsible for the administration of the company under the Swedish Companies Act.

## Auditor's responsibility

Our responsibility is to express a reasonably certain opinion on the proposed allocation of the company's profit or loss, and on the administration of the company, on the basis of our audit. The audit was conducted in accordance with accepted auditing practice in Sweden.

As a basis for our opinion on the board's proposed allocation of the company's profit or loss, we have examined whether the proposal is consistent with the Swedish Companies Act.

As a basis for our opinion concerning discharge from liability, we have, in addition to our audit of the annual accounts and consolidated accounts, examined significant decisions and actions of the company, as well as its circumstances, in order to determine the liability for damages to the company, if any, of any board member or the CEO. We have, furthermore, examined whether any board member or the CEO has, in any other way, acted in contravention of the Swedish Companies Act, the Swedish Annual Accounts Act or the company's articles of association.

We believe that the audit evidence that we have gathered provides an adequate and appropriate basis for our opinions.

## Opinions

We recommend that the Annual General Meeting allocate the profit in accordance with the proposal made in the directors' report, and discharge the members of the board of directors and the CEO from liability for the financial year.

Stockholm, 11 April 2013  
Rödl & Partner Nordic AB

Ulf H Davéus  
*Authorised Public Accountant*

# Corporate governance

The corporate governance of IVL Swedish Environmental Research Institute is founded on Swedish law and best practice, taking account of the Swedish Code of Corporate Governance. The code is not implemented fully since it has been framed mainly for publicly quoted companies and companies with spread ownership.

## Owners

IVL Swedish Environmental Research Institute has been wholly owned by the Foundation of the Swedish Environmental Research Institute (SIVL) since 2004. On conversion of the former Swedish Institute for Water and Air Pollution Research (IVL) into a limited company in 1982, the original share capital was allocated equally to the foundation by agreement between the Swedish government and the Swedish business sector.

The aim of the foundation is to promote the long-term conditions required for environmental research and, through its ownership, guarantee the independent status of IVL. The foundation is responsible for the funds allocated by the Swedish government and the Swedish business sector for co-financed environmental and sustainability research carried out by IVL.

The foundation is governed by a representative board of directors, of whom the chairman and six members are appointed by the Swedish government and seven members by Swedish business. The chairman of the board has a casting vote.

## Annual General Meeting

The Annual General Meeting of IVL is usually held at the end of May. Members are notified of the AGM by post. The owner, SIVL, is represented at the AGM by its chair.

All board members were re-elected at the AGM held at the end of May 2012.

## Nomination procedure

SIVL is the sole owner of IVL and proposes members to the board of IVL, partly by inviting nominations from business interests for four ordinary members and one deputy member, and partly by inviting nominations from government for the position of chair, as well as for three ordinary members and one deputy member.

The board of IVL shall comprise at least four and no more than eight ordinary members, together with at least one and no more than two deputy members. In addition, the staff shall be entitled to appoint two ordinary and two deputy members.

The members of the board of IVL are presented on page 39.

## Board activities in 2012

The board is responsible, under the Swedish Companies Act and the company's articles of association, for the organisation and administration of the company. Every year, the board draws up rules of procedure, together with a working instruction for the CEO, governing the division of work between the board and the CEO.

In 2012, under the rules of procedure, the board held four ordinary meetings in addition to the May post-election meeting. As usual, the ordinary board meetings were held in conjunction with the announcement of the company's interim or annual results.

Among other things, the May AGM adopted new rules of procedure for the board and a working instruction for the CEO. Items on the agenda at the December meeting included the company's budget for 2013, as well as its goals and strategy document. An addi-

tional board meeting was held in June to discuss the company's long-term strategy.

## Remuneration committee

Under the rules of procedure for the board of IVL Swedish Environmental Research Institute, the board is charged with appointing a remuneration committee to deal with issues relating to employment and salary conditions. The committee proposes the salary, other forms of remuneration and other conditions of employment for the CEO, which are submitted to the board for ratification. The corresponding conditions for other members of the company's executive management are proposed by the CEO and ratified by the remuneration committee. The company does not operate an incentive scheme.

## Board remuneration

The remuneration of the chair and board members was determined by the 2012 AGM, which approved the payment of SEK78 (62) thousand to the chair and a total of SEK332 (296) thousand to the board members. Staff representatives on the board do not receive remuneration.

## External audit

The task of the auditors is, on behalf of the owners, to carry out an independent audit of the administration of the board and the CEO, and of the annual accounts and financial statements.

Rödl & Partner, with Ulf Davéus as chief auditor, have been appointed as auditors for the period up to the 2014 AGM. An authorised public accountant, Ulf Davéus has been responsible for IVL's financial audits since 1994.

## Company management

The CEO is responsible for the ongoing administration of the company in accordance with the guidelines and other instructions of the board. The CEO's working instruction was adopted on 30 May 2012 in conjunction with the board's post-election meeting.

The company's executive management group is comprised of the CEO, two executive vice presidents, the CFO and the Vice President, Research. The management group includes four unit heads, with the Director of Human Resources, Information Director and Director of Quality and Environment as adjunct members.

Tord Svedberg, born in 1958, received his MSc in chemistry from KTH in 1983 and has been CEO of IVL Swedish Environmental Research Institute since 2008. Prior to that, he held various top management positions at Pharmacia (1984-90), Astra (1990-99) and AstraZeneca (1990-2007), including head of manufacturing in Sweden and member of group management. A member of the Royal Swedish Academy of Engineering Sciences, he also sits on the boards of Unimedica AB (since 2008) and Galilaeus Oy (since 2010).

Mats Ridner, born in 1955, holds a BSc in economics from Stockholm School of Economics and has been CFO since 1994.

Åke Iverfeldt, born in 1954, was awarded a doctorate in chemistry by the University of Gothenburg in 1986, and is executive vice president and head of the Business Development and Marketing unit. He has been with the company since 1985 with the exception of a break from 1992 to 1993, when he worked as a section head at Stockholm County Council.

Östen Ekengren, born in 1952, received his MSc in chemistry from KTH in 1978, and is executive vice president and head of the Business Development and Marketing unit. He joined the company in 1978.

John Munthe, born in 1960, received his doctorate in chemistry from the University of Gothenburg in 1992 and has been Vice President, Research since 2010. He joined the company in 1992 and has been a department head since 1994.

The unit heads, CFO and Vice President, Research report to the CEO.

The executive management group is supported by Finance, HR, Communication and Business Development staff functions, as well as by quality and environmental management systems.

### **Internal control**

Internal control of the company is based on IVL's operational and management system. This also comprises the company's integrated quality and environmental management systems, which are certified under ISO 9001 and ISO 14001 respectively. Focusing on the core activity of 'offering/selling and carrying out research and contract assignments in the environmental sector', the management system embodies guideline documents, procedures and tools relating to all company processes. Internal control of financial

reporting is provided by the control environment, including the organisation, decision paths, authorities and responsibilities that are documented and communicated in guideline documents. All guideline documents, procedures and tools are available on the company intranet.

Every year, the board draws up rules of procedure that govern the division of responsibilities between the board and the CEO, as well as financial reporting to the board. The board is provided with financial reports at every meeting. These contain outturn and budget figures for the relevant period, including comparison with the corresponding period the previous year, as well as details of orders in hand, investments and a number of key performance indicators.

### **Risk analysis and management**

The management system also includes procedures and a methodology for performing annual risk analyses covering every aspect from financial risks and conditions, IT security, business climate factors and customer relations, to competence losses and risks associated with image and brand. Risk analyses are accompanied by action plans. The management system is subject to a biannual internal audit, and to continuous monitoring by independent quality and environmental inspectors.



# Board of directors



**ANNIKA HELKER LUNDSTRÖM**  
CHAIR  
Member since 2010  
CEO, Svensk Vindenergi



**LARS-GÖRAN BERGQUIST**  
Member since 2000  
Chair of SIVL



**KERSTIN CEDERLÖF**  
Member since 2004  
Director, Swedish  
Environmental  
Protection Agency



**CHRISTER FORSGREN**  
Member since 2008  
Director, Stena Metall



**PETER NYGÅRDS**  
Member since 2008  
Director, Swedbank



**BIRGITTA PALMBERGER**  
Member since 2005  
Department head,  
Swedish Energy Agency



**KURT PALMGREN**  
Member since 2003  
Director



**GUNILLA SALTIN**  
Member since 2010  
CEO and acting President,  
Södra Cell



**JOHAN STRANDBERG**  
Member since 2011  
Staff representative



**HÅKAN STRIPPLE**  
Member since 2011  
Staff representative

## Deputy members

LARS EKECRANTZ, Ministry of the Environment

PERNILLA BENGTTSSON, staff representative

JONAS FEJES, staff representative

# Executive management group



**TORD SVEDBERG**  
President & CEO



**ÖSTEN EKENGREN**  
Executive Vice President,  
Business Development and  
Marketing



**ÅKE IVERFELDT**  
Executive Vice President,  
Business Development and  
Marketing



**MATS RIDNER**  
Chief Financial Officer



**JOHN MUNTHE**  
Vice President, Research



**ELIN ERIKSSON**  
Director, Sustainable  
Organisations, Products &  
Processes



**ANNA JARNEHAMMAR**  
Director, Climate &  
Sustainable Cities



**BJÖRNE OLSSON**  
Director, Natural Resources &  
Environmental Effects

## *Adjunct members*



**KARIN SJÖBERG**  
Director, Air Pollution &  
Abatement Strategies



**EVA BINGEL**  
Information Director



**ANNA WESTBERG**  
Director, Human Resources



**PER-OLOF SKOUGH**  
Director, Environment and  
Quality

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