



ANNUAL REVIEW 2015

SP TECHNICAL RESEARCH INSTITUTE OF SWEDEN

PDF VERSION OF THE DIGITAL ANNUAL REVIEW



THE YEAR IN BRIEF

SP AS A PARTNER IN INNOVATION

In 2015 SP Technical Research Institute of Sweden continued to develop as an international innovation partner to Swedish business.

SP's 1,500 employees have contributed to the development and innovation processes of 10,000 customers through research, development, advanced laboratories, experimental methods, standardised testing and certification and much more. As an industrial research institute, SP helps create sustainable, long-term solutions to major societal challenges such as climate change, urbanisation, scarce resources and demographic changes. With its in-depth technical expertise, industry know-how and overall perspective on the challenges, SP contributes to innovation and to enhancing the competitiveness of Swedish business.

CONTINUED SUSTAINABLE GROWTH

In accordance with its current strategy, SP is continuing to grow and to increase its international presence. In 2015 net sales increased by 8 %, with the international share of sales even somewhat higher.

ENHANCING THE INSTITUTE SECTOR

Sweden needs an internationally leading institute sector if it is to support the competitiveness of Swedish businesses in a global market. In 2015, along with other parts of RISE, SP began a process for shaping a more cohesive institute sector. With a shared strategy and increased collaboration, the RISE institutes will be able to offer better and entirely new services. The process will continue in 2016. See how it develops at www.ri.se

FIGURES IN BRIEF

In 2015 SP had more than 10,000 customers. Internationally, we worked for customers from 73 countries. At year-end we employed 1,471 people – 925 men and 546 women. The collective expertise of SP's employees is huge. 423 hold a doctorate or licentiate, 615 have an engineering degree or other degree and 220 are qualified engineers.

A POPULAR EMPLOYER

SP has climbed further up the list of popular employers. SP took seventh place in Universum's Career Barometer survey of the most attractive employers in Sweden as ranked by engineering graduates. More than 12,000 professionals with degrees took part in the vote.

SP IS SUSTAINABILITY

Sustainability is at the heart of SP's operations. Every day the Group works to deliver services or solve problems from a sustainable ecological, economic or social perspective: risk and safety solutions for individuals, energy-efficient systems for cities, food and medicines of the right quality for use in the right way, and much more.

SP's sustainability concept is based on wanting to make a difference in the world. Practising what we preach enhances the company's credibility and allows trusting relationships to be built up. It means that we try to reduce our ecological footprint both systematically and at an individual level. It also involves sharing knowledge with our colleagues and always being attentive to and impartial with our customers.

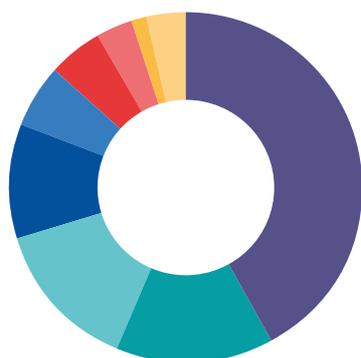
A NEW ADDITION TO THE GROUP: URBAN WATER MANAGEMENT

In 2015 Urban Water Management Sweden joined the SP family, enhancing the Group's expertise in the field of water and wastewater and creating new opportunities for innovation and increased exports from Sweden. Better planning to achieve sustainable use of water and wastewater could reduce both human suffering and social costs.

SP CONTINUES TO GROW INTERNATIONALLY

Developing into a leading international partner in innovation means we need to be at the forefront of knowledge and collaborate with leading international customers. In 2015 SP worked for international customers from 73 countries. We took part in 121 EU projects. SP's goal for 2016 is to increase income from international customers by 15 %.

SP GROUP FUNDING 2015



- Vinnova, Sweden's innovation agency
- Swedish Energy Agency
- RISE
- Formas, the Swedish Research Council
- Swedish Board of Agriculture
- Trafikverket, the Swedish Transport Administration
- Tillväxtverket, the Swedish Agency for Economic and Regional Growth
- MSB, the Swedish Civil Contingencies Agency
- Other

SP IN BRIEF

INNOVATION FOR A SUSTAINABLE SOCIETY

SP offers a wide range of services – everything from applied research and innovation management to technical assessment.

Applying and spreading knowledge is an important task of an industrial research institute, and the Group publishes extensively in scientific journals. We produce reports and manuals and run a wide range of courses. In 2015 SP's researchers and experts published 241 reviewed articles.

» Our **vision** is to be a leading international partner in innovation

SP develops specialist research and innovation environments in its 20 technical departments and subsidiaries. Expertise from different disciplines is coordinated to tackle various industrial and societal challenges through six business areas.

The SP Group comprises the parent company SP Technical Research Institute of Sweden and ten subsidiaries. Together they represent a leading group of institutes working for innovation and sustainable development in business and society.

SP is owned by RISE Research Institutes of Sweden AB. Of our 1,471 employees, 86 % have a doctorate or licentiate or an engineering or other degree.

CEO'S COMMENTS

2015 was a good and important year. We are continuing on our journey of growth in our development as an innovation partner to business. If we are to maintain our position as a leading international partner in innovation we need to think innovatively at every stage and find new angles and new business models. SP's specialist expertise and breadth are contributing to sustainable solutions for many environmental problems, while our skilled employees are making growth possible at all levels: ideas, funded research projects, new institute environments and satisfied customers.

SUSTAINABILITY AND GROWTH TO ADD EVEN GREATER VALUE

2015 was a good and important year. We are continuing on our journey of growth in our development as an innovation partner to business and society.

SP has a mission to work for sustainable growth in Sweden by enhancing business competitiveness and innovation. We feel that the institute sector in Sweden is still too small, however, so we have had a pronounced growth strategy in recent years.

Our efforts to help build a sustainable society are bearing fruit in the form of new knowledge and new solutions – embracing everything from improved fire safety in buses to adapting foods so that old people can get the nourishment they need.

SP's breadth and specialist expertise enable us to tackle societal and industrial challenges in many areas and for many customers.

During the year we increased our net sales by 8 % to more than SEK 1.6 billion in 2015, 20% of which was international, and we work for more than 10,000 customers.

SOME SIGNIFICANT EVENTS

2015 was characterised by our work within the RISE Group to bring about a stronger, united institute sector. We are working to bring together expertise in the current group of institutes so as to add even greater value for business.

During the year our ability to renew EU-funded research projects was put to the test in the transition to Horizon 2020, the new research programme. We participated in just over 120 EU projects during the year, 14 of which were coordinated by the SP Group.

We also gained a number of new colleagues, including through the acquisition of the company Urban Water Management Sweden – a centre of excellence in the field of water and wastewater that provides an important anchor for our Built Environment sector. 2015 was also the year in which SP took new steps towards innovation management – assisting customers that need effective guidance through the innovation process.

We are also reaching out to customers in new ways. During the year we launched 12 separate innovation podcasts in which other business operators talk about their challenges. This can be used to learn lessons from others' experiences.

AN ATTRACTIVE EMPLOYER

SP is a knowledge-intensive business; our employees are our most important resource and the backbone of everything we do.

I am pleased to say that for the third successive year we have advanced in popularity in the Career Barometer surveys. SP has been climbing up the chart for three years and is now ranked the 8th most attractive employer in the technical sector. Among young professional engineers SP was ranked 6th.

We are proud of this; we believe that the results are based on the interdisciplinary and energising culture that the SP Group signals.

During the year we also employed an additional 153 people, making nearly 1,500 (1 367) people in the company in total.

INTERNAL WORK

SP allowed all its employees to take part in producing its vision for the coming three-year period up to 2017. Our vision – a leading international partner in innovation – comes from our own employees.

Our strategy is further based on partnership and cooperation; helping each other. We will be internationally competitive. We will develop new expertise, ensure high quality and work on sustainability issues. We will also build effective solutions for our business in the years ahead. For this we need a strong internal culture.

A LEADING INTERNATIONAL PARTNER IN INNOVATION

To enable us to develop as a leading international partner in innovation and to be competitive internationally we need to be able to take on more roles in an increasingly complex innovation system.

For our part, this means being able to do various things that supplement what our customers can do themselves. We are also working to clarify what the concept of an innovation partner means for the individual, so that they can develop their own role in the process.

It is also a matter of establishing more specialities and applying generic expertise to more areas.

There is a great need for new leading physical infrastructure, such as testbeds and laboratories. Overall, then, we are talking about the development of an innovation infrastructure – comprising people and physical structure – to add greater value for Swedish businesses. Today SP already makes around 70 tests and demonstration facilities available, and more are planned.

THE FUTURE

The future will bring plenty of challenges for us as a player in research and innovation.

Our customers are active in many markets, but SP cannot be physically present everywhere. We need to develop new ways of working and networks – partly so that we can link up our customers with knowledge out in the world, and partly so that we ourselves are linked up with new opportunities to build up an economic base, new knowledge, new solutions and new partnerships with both Swedish and international industry.

Together with our sister organisations within RISE we will continue our work to become a leading international partner in innovation.

John Rune Nielsen, President and CEO

OUR WORLD AND MARKETS

EXPERTISE THAT CHALLENGES THE WORLD AROUND US

SP has over 10,000 customers in more than 70 countries including Sweden. Due to the breadth of our operations, SP is affected by many factors in the outside world. Six of the most significant factors are described here.

SUSTAINABILITY

Globally, there is increasing focus on sustainability issues throughout society – as is clearly reflected in both SP's research projects and in the market in general. One clear example is the trend towards sustainable urban development, where traditional technical aspects such as energy efficiency are being combined with financial and social aspects. Climate change is creating a need for sustainable solutions that not only deal with the consequences of a changed climate, but also help to slow down emissions.

The ongoing urbanisation in the world is bringing to a head the issues of climate change and sustainability, and putting them in a wider perspective. It is a huge challenge, but it is also driving the development of new sustainable solutions for transport, food supply, waste, information, health, energy, water, wastewater and much else besides.

GLOBALISATION

More and more issues start from a global perspective – whether social challenges, climate change or economic development. For SP, as for other companies, this means that we are acting in a global market in which our customers could be anywhere in the world – but also that they can choose to approach the service provider that they feel has the best offering, regardless of geography.

SP's main competition in the international market is from large research institutes in other countries.

We want to be able to offer internationally leading expertise in order to add value for Swedish business. This requires not just deliberate investment in international recruitment and in employees with a good track

record, but also a high level of participation in prominent research and innovation environments globally.

SP has been increasing its international sales for a number of years and we are planning for further international growth. In 2015 20 % of net sales came from the international market. Our largest five international markets are currently Norway, Germany, Denmark, Finland and the US.

ECONOMIC CYCLES

SP's customers are affected by the economic cycles in their various markets, both in Sweden and internationally.

A downturn in the economy restricts our customers' opportunities to pursue development, to finance research, to conduct testing and to utilise other technical services.

SP's broad customer base and operations within many different sectors provide opportunities to fend off fluctuations in the economy.

The economic cycle for research and development is somewhat different to the economic cycle of the global market. This is partly due to the effects of public funding, but mainly it is because development projects carry on even through fluctuations in industry.

DEMONSTRATION

Testing, demonstration and experimental assessment are in many cases vital if new ideas and solutions are to make it to market.

Most products and processes therefore undergo verification of their properties and their ability to meet the requirements set by various players.

Interpreting external factors and spotting future demand quickly is an important part of SP's recipe for success. As a natural part of developing a strong innovation system, SP is therefore continually investing in new experimental infrastructure – so that businesses, public sector organisations and the academic sphere can all gain access to new test and demonstration facilities.

RESEARCH FUNDING

A significant external factor when it comes to financing research and innovation is the terms of the research institutes' compensation levels and opportunities to apply for national and international grants. European budget allocations are highly significant. As far as SP is concerned, the EU's framework programme Horizon 2020 is particularly important because it determines a large portion of international research up until the year 2020. The Swedish government's forthcoming research and innovation bill is another important framework, and both SP and RISE were involved in this during 2015, giving their views and making suggestions.

COLLABORATION

Traditional borders between sectors and nations are increasingly being erased. Solutions to the big challenges facing society are to be found in the border areas between different disciplines, in international collaboration and innovative research environments.

Increasing interaction creates the conditions for new innovations to emerge. Collaboration also means that the costs of experimental resources and other infrastructure can be shared. SP actively links up specialist expertise from different areas. Many sectors are facing a need for changes which must be addressed using expertise from various scientific disciplines. One example is the development of methods and technology for biorefineries, which is driving lasting change within both forestry and the energy, agricultural, food and chemical industries.

BUSINESS AREAS

WE TAKE ON THE GLOBAL CHALLENGES

SP's operations are gathered into six business areas aimed at today's major global challenges.

Each area coordinates specialist expertise and development areas across the Group's 20 technical departments and subsidiaries, in order to take on society's and thus our customers' challenges in an optimal way. Each business area leads a strategic development agenda within its respective field and identifies new areas that could benefit from SP's expertise.

ENERGY

More stringent environmental requirements and a growing global population demand new low-carbon energy solutions. This applies to everything from how to heat and cool buildings and dispose of waste, to the development of new fuels and renewable energy sources. SP's broad and innovative work is providing alternative and highly efficient energy solutions.

LIFE SCIENCE

Life Science is a field of research with many expectations. The progress in stem cell research means that medicines can now be tested on biological material rather than on animals. Another example is SP's work on resistance to antibiotics; a new way to treat infectious diseases is synthetic peptides with antimicrobial properties.

BUILT ENVIRONMENT

SP's researchers develop strategies for future sustainable solutions. One of the big challenges in the area of the built environment is resource efficiency as regards materials, processes and technical solutions, with minimal environmental impact during production, construction, use and not least recycling.

INFORMATION & COMMUNICATIONS TECHNOLOGY (ICT)

In the future, all products and systems are expected to be connected to the internet. SP is active in this area, including as one of the co-creators of THINGS – an open development environment for companies that are in one way or another developing solutions for what is known as "the internet of things". Vehicle

communication, future transport solutions and solutions for control and visualisation of smarter energy systems are some of the areas in which SP is involved.

RISK, SAFETY & SECURITY

Our ever more complex and high-tech society is giving rise to greater risk and vulnerability. Examples of projects in this area include active traffic safety systems, with sensors and advanced electronics helping to avoid collisions on the roads. SP also works on projects that increase society's and industry's ability to deal with threats to infrastructure as well as natural disasters such as forest fires.

TRANSPORT

Creating lasting transport solutions for future generations is a general challenge. Fossil fuels need to be phased out and renewable energy introduced. SP works on sustainable transport solutions that are energy-efficient, reliable and safe. At the advanced AstaZero test facility, active safety systems for vehicles are being developed that will contribute to reducing the number of road accidents.

TECHNICAL DEPARTMENTS

Structural & Solid Mechanics Researches into and performs assignments relating to the mechanical properties of different materials.

Certification One of the country's leading players in the area. Certifies to a wide range of standards within management systems and products as well as for individuals.

Electronics Works mainly on the safety and reliability of electronic products in demanding environments.

Energy & Bioeconomy Research, technical appraisal and implementation within biochemistry and sustainable urban/built environment.

Fire Research Fire research and associated safety and risk analyses.

Food & Bioscience Research, development and training within foods and bioscience.

Sustainable Built Environment Technical appraisal, research and training within materials and products, plus the building as a system, sustainable cities, infrastructure and facilities.

Calibration & Verification Technical measurement services for trade and industry, with employees based throughout Sweden from Luleå in the north to Malmö in the south.

Chemistry, Materials & Surfaces Organic and inorganic analytical chemistry plus a broad spectrum of areas within materials science.

Measurement Technology Services and applied research within measurement technology for industry. The department is also Sweden's national metrology centre.

SUBSIDIARIES

AstaZero AB

CBI Swedish Cement and Concrete Research Institute

Glafo, the Glass Research Institute

JTI Swedish Institute of Agricultural and

Environmental Engineering

SMP Svensk Maskinprovning AB

SP Energy Technology Center AB

SP Fire Research A/S

SP Process Development AB

SP Processum AB

SP Denmark (SP Sveriges Tekniska Forskningsinstitut A/S)

SUSTAINABILITY

SP WANTS TO MAKE A DIFFERENCE

Sustainability is at the heart of what SP does and is the starting point for our daily operations. Our greatest contribution to sustainable development is our services. These provide knowledge and innovation that help our customers to develop sustainable products, processes, methods and services from an ecological, social and economic perspective – from the impact of climate change to the effects of urbanisation or foods adapted to an ageing population.

SP uses a sustainability model that it has developed itself to measure our performance in this area. Practising what we preach makes our work more credible, while trusting relationships are essential if we are to assist our stakeholders and customers in an effective partnership.

UNIQUE METHOD MEASURES THE UNMEASURABLE

SP has produced its own sustainability index in order to monitor and develop sustainability work. The measurement method involves a mix of expert assessments and mathematics. It is based on collaborative international research over a number of years with leading experts in everything from sociology and psychology to mathematics.

“Measuring the unmeasurable” involves bringing together expertise and variables that could not previously

be combined; the figure for carbon emissions or the number of air miles is weighed together with how employees rate their own health or their psychosocial working environment.

The result of combining figures for emissions, travel and recycling with psychosocial factors has attracted great interest both nationally and internationally. It is hoped that the index will gradually be able to be used in more companies and developed into an ISO standard in the future.

ELEMENTS MEASURED:

- Use of resources
- Collaboration
- Expertise
- Wellbeing
- Ethics
- Equality
- Diversity
- Quality
- Attentiveness
- Transport and travel per employee
- Waste per employee
- Energy consumption per employee
- Hazardous waste
- Food waste per employee

66

OUT OF 100

Sustainability Index

EMPLOYEES

HIGHLY QUALIFIED SPECIALIST EXPERTISE

SP's operations are all about applying specialist expertise to support business and other stakeholders. Our ability to combine expertise from different areas allows us to use multidisciplinary and interdisciplinary methods and approaches.

Of the company's approximately 1,500 employees, 29 % hold a doctorate or licentiate and 42 % have an engineering degree. SP has employees based in Trondheim in Norway, in Copenhagen in Denmark and at around 20 locations in Sweden.

ATTRACTIVE EMPLOYER

In 2015 SP advanced further up the Career Barometer list of the most attractive employers. Among young professionals, SP climbed from 10th place to 8th; among engineering graduates, SP came 6th.

SP RISES UP THE CAREER BAROMETER

In 2015 SP advanced further up the Career Barometer list of the most attractive employers. Among young professionals, SP climbed from 10th place to 8th; among professionals with an engineering degree, SP came 6th.

More than 12,000 professionals under the age of 40 voted in Universum's survey of the best places to work. "The results show that SP has succeeded well in its long-term strategy of marketing itself as a good place to work with great opportunities to develop," says SP's Director of Human Resources Anita Olson.

For a number of years SP has visited universities and schools and taken part in careers fairs in order to make the business more visible.

TOP TEN

Best places to work for professionals with an engineering degree: Google, ÅF, IKEA, Sweca, Spotify, SP, Volvo Cars, Volvo Group, ABB and Ericsson.

NEW RECRUITMENT CONCEPT

During the year SP produced a new concept that uses recruitment videos released on its website. It is hoped that the faces of real people who speak personally to viewers will attract more people to apply for advertised positions with SP.

In conjunction with this, a new search function has also been created to facilitate new recruitment. The Talent Network database search function means that both managers and applicants can find each other more easily among the applicants and vacant positions in each professional area.

ENVIRONMENTALLY SOUND WEB TRAINING

An important part of SP's growth strategy is that all employees must feel involved, and during the year SP worked actively to train its personnel in matters relating to the work environment. Basic web training in the form of a video was produced during the year. This is the first time that SP has used this format for training and the response has been very positive.

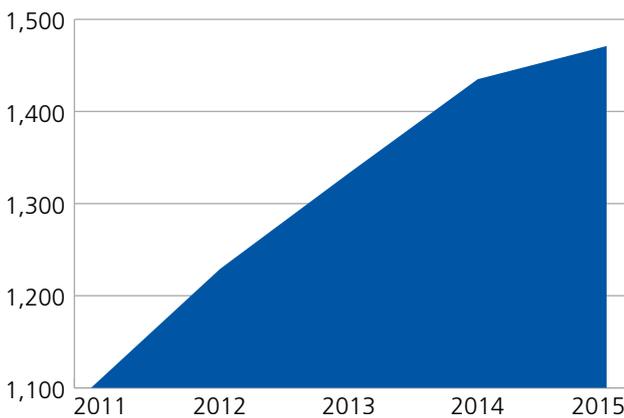
The training is mandatory for all employees and since SP has a wide geographical spread, web training saves much time and resources. SP is now planning to develop the concept so that web training can be used in more areas in future.

VALUES AND CULTURE

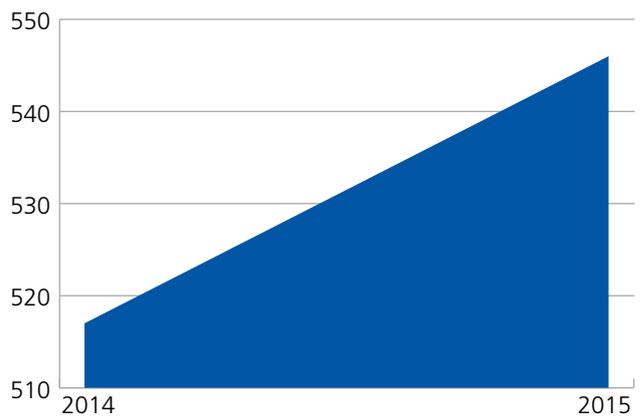
Our annual staff survey returned an employee satisfaction index score of 63, with employees giving their highest ratings for the engaging and inspiring nature of the work.



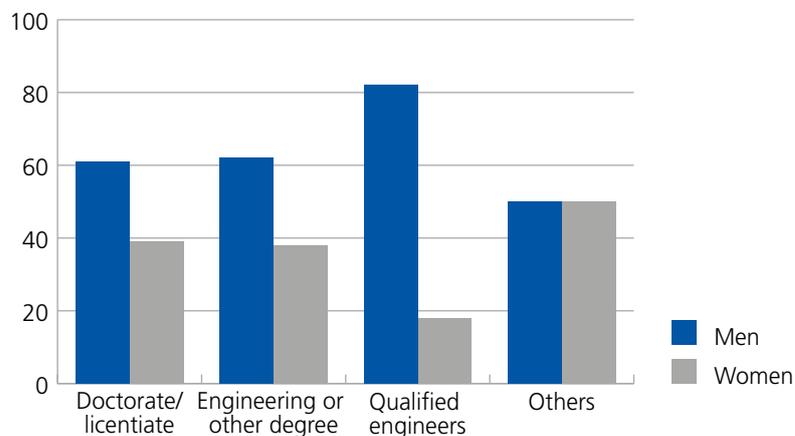
A GROWING WORKFORCE



INCREASING NUMBERS OF WOMEN



GENDER BREAKDOWN AMONG PROFESSIONAL GROUPS



ACTIVE ENVIRONMENTAL WORK

SP's specialist expertise and breadth can help produce solutions for a better environment. This is true whether the problem is polluted seas, global warming or issues associated with population growth and rapidly growing cities.

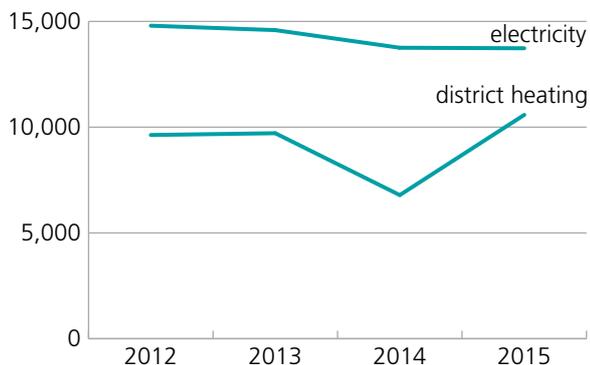
We also try to be a role model on environmental issues and we conduct targeted internal work to improve our own environmental performance.

In 2015 SP reduced its own emissions of greenhouse gases further. This is partly because the year was warmer than usual, but it was also due to investments in new energy-efficient facilities and to targeted long-term environmental work.

SP's main environmental impacts are from travel and transportation, chemicals, the generation of waste and energy consumption. The Group

works on a daily basis to improve all these aspects. As well as reducing its energy consumption and thereby its emissions, a new chemical management system was taken into use during 2015 which means that all chemicals are meticulously registered, stored and managed. Other measures for the benefit of the environment included continued investment in travel-free meetings, the "Travel Portal" that keeps statistics on employees' transport choices, vegetarian options in dining rooms and the purchase of more electric vehicles.

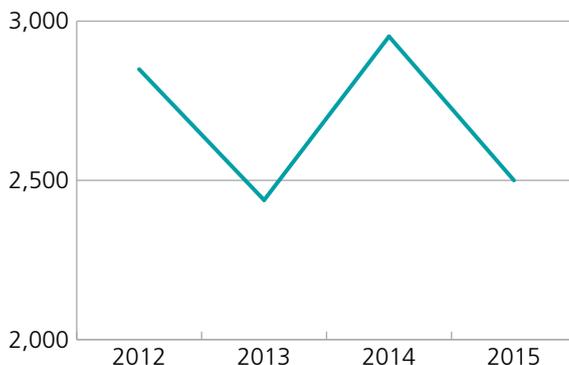
ENERGY CONSUMPTION – DISTRICT HEATING AND ELECTRICITY PER EMPLOYEE (KWH PER EMPLOYEE)



CARBON EMISSIONS FROM ELECTRICITY AND DISTRICT HEATING (CO₂ PER EMPLOYEE, KG)



CARBON EMISSIONS PER EMPLOYEE FROM TRAVEL AND TRANSPORTATION (CO₂ PER EMPLOYEE, KG)





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CASE STUDIES:

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