The carbon footprint issue

Watching our step

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Why do we care about our footprint?

Going 100% renewable

Actions with benefits
– Making the case for greener and healthier cities

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Jesse Crumpler, USA. Jesse has type 2 diabetes.
Read more about Jesse on the back cover.
Why do we care about our footprint?

Lars Frueergaard Jørgensen, Executive Vice President of Corporate Development – and future CEO – reflects on how Novo Nordisk can play a role in offering solutions that are good for people’s health and the planet.

Going 100% renewable

Novo Nordisk has set a target to power all its global production sites with 100% renewable electricity by 2020 and must look for solutions both near and far.

Taking carbon emissions to the product level

People with diabetes may be wondering about the environmental impact of their medicine, so Novo Nordisk decided to calculate the carbon footprint at all the stages of a product’s life from raw materials to disposal.

Better health leads to less carbon emissions

Reducing the footprint of the healthcare industry has started to become a priority. Read the perspectives of Gary Cohen, Co-Founder and President of Health Care Without Harm and Charlotta Brask, head of the sustainability department at Stockholm County Council.
Listening to suppliers to find carbon reductions
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Actions with benefits – Making the case for greener and healthier cities
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People driving sustainability – A view from the green room
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Lars Fruegaard Jørgensen, Executive Vice President of Corporate Development – and future CEO – reflects on how Novo Nordisk can play a role in offering solutions that are good for people’s health and the planet.

When I joined Novo Nordisk 25 years ago as a young economist in Health Care, Economy & Planning, I have to admit that environmental considerations were not very high on my agenda. Fortunately, it was already on the radar of other colleagues across the organisation and, in the same year, they invited representatives of NGOs with critical voices to visit the company to discuss environmental issues.

Over the years, this dialogue and our own experiences have led us to establish a Novo Nordisk framework for environmental management. Through our willingness to engage in challenging conversations on sensitive subjects, we laid the foundation for our approach to becoming a more sustainable business.

Today we know that many aspects of good health are also beneficial for the planet – and vice versa. At Novo Nordisk we are committed to supporting green policies that benefit both the environment and people’s health.
We have achieved significant reductions in our environmental footprint across the organisation. And today we see a new role for Novo Nordisk, as an active contributor to more sustainable healthcare products and services. Therefore we have broadened the scope of our environmental strategy.

**Being transparent down to the product level**

Increasingly, healthcare professionals, patients and our own employees want to know about the environmental impact of our products. We are answering this request by tracking the carbon emissions at each step in the value chain, from raw materials to production to the product use and disposal.

In this issue of TBL Quarterly, we feature three articles that demonstrate some of the actions we are taking to reduce the carbon impact of our products.

Starting with our production, where we have set a target to have 100% renewable electricity at all our production sites by 2020 as part of our commitment to the RE100 initiative. In our supply chain, we are collaborating with our upstream suppliers to help them achieve carbon reductions. And across our regional and country offices, employees are finding their own ways to contribute to more responsible and sustainable workplaces.

**The carbon footprint of diabetes**

Our thinking does not stop once our products reach the patient. The healthcare sector is also a contributor to carbon emissions. Diabetes care impacts emissions from a range of healthcare services, including hospital stays and physician and clinical treatment. If a person with diabetes is in control of their blood glucose levels, and feeling well, the demand on some healthcare services can be lessened.

Novo Nordisk has been working with both healthcare professionals and healthcare providers to find solutions that improve health and reduce carbon emissions. In this issue we bring you the perspectives and insights from two professionals to help highlight where these solutions can be found.

Lastly, we cannot address diabetes, specifically type 2 diabetes, and carbon reduction without addressing prevention. Two thirds of the world’s 415 million people with diabetes live in urban areas, and cities account for two thirds of global energy consumption and more than 70% of carbon emissions.

We have a strong partnership with the C40 Cities Climate Leadership Group where we aim to strengthen the role of cities in the fight against climate change and poor health. As you explore this issue, you can read our interview with Rachel Huxley, who talks about C40’s recent research that looks into the co-benefits of climate action.

Whether you are a healthcare professional, a patient or a concerned citizen, I hope you find inspiration in this issue and see the opportunity for a win-win – healthy people, healthy planet.

**Lars Fruegaard Jorgensen**

Executive Vice President of Corporate Development (and CEO as of 1 January 2017)

Novo Nordisk

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**“Increasingly, healthcare professionals, patients and our own employees want to know about the environmental impacts of our products.”**

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**TRACKING CARBON EMISSIONS AT EACH STEP IN THE VALUE CHAIN**

- **RAW MATERIALS**
  - Glucose, ethanol, plastic, glass

- **PURCHASED GOODS**
  - Office supplies, IT equipment

- **SERVICES**
  - Business flights, company cars

- **PRODUCTION**
  - Electricity, steam, facilities

- **DISTRIBUTION**
  - Road, air, sea

- **WASTE**
  - Production waste, product waste
People with diabetes may be wondering about the environmental impact of their medicine, so Novo Nordisk decided to calculate the carbon footprint at all the stages of a product’s life from raw materials to disposal.

“Yes, I am concerned about climate change. For diabetes treatment, we use a lot of insulin, needles and test strips, which go in the trash. I change my needles around five times a day and test strips between 10 and twenty times,” says Corentin Cherhal, who has type 1 diabetes and is one of the elite cyclists for Team Novo Nordisk.

“If this is just in one day, it’s crazy to think about one month or one year. It is not a question of using less or more; because we have to use it.”

Corentin is not alone. Consumers are becoming more sophisticated in their buying decisions and increasingly express a preference for products and services that have validated environmental credentials and several companies have started to look into this when it comes to products like washing detergent, milk and toilet paper.

And if you live with diabetes, you may also be wondering about the carbon footprint of your medicine including the pens and needles that you use.

Research shows that doctors and nurses are also increasingly aware of the environmental impact of the medicine they prescribe, as well as other impacts related to caring for patients and treating illness. Recent studies suggest that 87% of healthcare professionals consider climate change relevant to direct patient care and 78% surveyed believe that they can positively contribute to effective action.

Understanding the environmental impact of individual products
Novo Nordisk wants to know its product carbon footprint as well, to take on the responsibility to reduce the environmental impact of its products so that healthcare providers and patients don’t need to be concerned, but can focus on the right treatment.

Generating carbon emissions knowledge at the product level requires measuring environmental impacts at all the stages of a product’s life from cradle to grave, including raw materials, production, distribution, use and disposal by the end user.

More than 20 years ago, Novo Nordisk conducted its first Life Cycle Assessment (LCA) calculations of one of its devices and has for many years used LCA in its development process to ensure environmentally sound devices.

Four years ago, the company decided to take LCA to the next level, employing a full time LCA expert to calculate the carbon footprint of Novo Nordisk treatments.

“In Novo Nordisk, when we talk about environmental impact, we chose to take it to the product level, because more and more we see decisions are made on a product level,” says Jakob Riis, Executive Vice President and Head of North America Operations.

“We also need to understand and report the environmental impact of the individual products and not just Novo Nordisk as a whole. Increasingly, we are going to see that the environmental aspects will matter.”

Understanding the environmental footprint and carbon emissions generated by each individual product requires extensive data collection and analysis. The product carbon footprint reports are made according to international LCA standards and guidelines and the reports are validated by a third party.

“This is a way for us to have an external LCA expert validate our calculations, which we believe is the right thing to do, even though it is not a requirement,” says Nanja Hedal Kløverpris, Project Manager in Corporate Environmental Strategy, Novo Nordisk.

Equivalent to making a cup of tea
The results confirmed that the environmental impact from all stages of the life cycle counts. Raw materials as well as energy consumption are the most important factors, while packaging only accounts for approximately 5% of the total product carbon footprint.
“LCA results are rather complicated to communicate and it can be difficult to relate to. Therefore, we try to make it easily understandable by using comparators that people can relate to,” says Nanja.

One of the key findings is that the carbon footprint from one day of insulin treatment in an injectable prefilled device, including the needle, is equivalent to making a cup of tea.

“One of the great conclusions from this assessment is that the impact on the environment from patients using our products is really, really small,” says Jacob who sees the outcome of the analysis as a positive starting point to continue to make reductions and begin a dialogue with doctors and other stakeholders.

One thing is clear, following a product’s carbon footprint certainly leads to new and interesting paths.

What is a product carbon footprint?

Carbon emissions can occur during each stage of the product life cycle: Raw material production, manufacturing of a product, distribution, use and waste management. The product carbon footprint is a measure of the total amount of carbon emitted throughout the entire life cycle of a product. Novo Nordisk considers a one year treatment scenario that includes the active ingredient, the pen, the needle and the packaging. Each of these elements consists of several process steps that contribute to the carbon footprint.

The healthcare industry contributes to carbon emissions and reducing its footprint has started to become a priority. Increasingly, people close to healthcare services are taking notice. Read the perspectives of Gary Cohen, Co-Founder and President of Health Care Without Harm and Charlotta Brask, Head of the sustainability department at Stockholm County Council.

There is growing consensus that climate change is not just an environmental crisis but also a public health crisis. Climate change is affecting the health of people ranging from heat-related illness to poor air quality to weather-related injury and rising food prices. Data from the World Health Organization for example suggests that climate change causes an estimated 150,000 deaths every year.

Interestingly, the healthcare system itself has a role to play when it comes to addressing climate change.

A bitter pill to swallow

It is an unfortunate truth, not to mention a bit of irony, that the healthcare industry – whose main purpose is to make people healthier – is a significant contributor to carbon emissions. In the US alone, hospitals, clinical services and pharmaceutical production accounts for over 9% of all greenhouse emissions, an increase of 28% over the last decade.

It is no surprise that reducing the carbon footprint of the healthcare industry has started to become a priority among decision makers along the care pathway, including governments, industry and healthcare providers. In the UK for example, the National Health Service (NHS) is required by law to reduce its carbon emissions by 80% in 2050 as compared to a 1990 baseline. The Sustainable Development Unit (SDU) of NHS monitors the progress by publishing a carbon footprint report every 2-3 years.

One of the people who has had climate change and healthcare on his agenda for many years is Gary Cohen, Co-Founder and President of the organisation Health Care Without Harm, based in the US. For twenty years Health Care Without Harm has been building a social movement inside healthcare for improved planetary health.
“The healthcare sector is in a unique position to reframe climate change to be a medical emergency and its solutions as the greatest public health opportunity of this century,” says Gary. “We have a responsibility to expand our mission to healing communities and the planet.”

As part of his work, Gary also founded the CleanMed conference which is a regular venue to bring stakeholders together to share the latest thinking and strategies for sustainable healthcare and speed up the learning across systems and countries.

The age of transparency
Charlotta Brask is one of the people busy reducing the carbon emissions of healthcare. Charlotta attended the CleanMed Europe Conference in October 2016. She works as head of the sustainability department at Stockholm County Council which is responsible for all publicly-financed healthcare and public transport in Stockholm County, the most densely populated county of Sweden with more than two million inhabitants.

Charlotta’s job is to continuously decrease the environmental impact of healthcare in the county. Her team’s focus is on chemicals, energy use, transportation, and procurement of pharmaceuticals.

Stockholm County Council for example requires that suppliers of pharmaceuticals have procedures that ensure that their production is in compliance with national legislation concerning the environment, safety and health and monitor and control discharges and/or emissions to the ground, water and air from the production unit. In the future, she hopes that there will be an established model to evaluate environmental impact from the entire product, including the carbon footprint, in public procurement.

Gary is also convinced that more will be expected of suppliers of pharmaceutical products going forward.

“As we learn more and more about the overall carbon footprint of the supply chain, we can expect that health systems and ministries will begin to favour pharmaceuticals that are less toxic and have a lower carbon footprint, as well as have an overall more responsible environmental footprint,” Gary says. “This is the age of transparency.”

Considering carbon emissions along the full care pathway
According to Charlotta, reducing the footprint of the healthcare industry is also about integrating environmental aspects in the therapeutic guidelines.

“I am particularly inspired by Sonia Roschnik, the former Head of Sustainable Development Unit at NHS, who emphasises that we need to get sustainability into the heart of the profession in healthcare,” says Charlotta.

She notes that the most efficient healthcare is often the most environmentally friendly healthcare. “If the patient enters the healthcare system at the right time and place and get the proper care with a high level of patient security, it will result in the lowest environmental footprint because we save resources,” says Charlotta.

This also goes for diabetes treatment. The diabetes carbon footprint is complex and driven by multiple factors that include blood sugar monitoring, care management, medication for additional comorbidities and hospital stays.

Improving treatment outcomes is a critical part of the conversation. Improving blood sugar control not only leads to better health and fewer diabetes-related complications for the patient, it also results in fewer carbon emissions. This correlation is due to a reduction in treatment requirements which in turn reduces carbon intensive resources, like ambulances and emergency room medical equipment.
Addressing root causes
To Gary, it is not only about better and more efficient care. He believes there is a need to take it a step further.

“We need to get beyond a mechanistic sick care model and build integrated systems of care. Healthcare providers need to understand the social, environmental and psychological conditions under which people live and become sick in the first place,” he argues.

He would also like to see the pharmaceutical industry take on a bigger role when it comes to preventing disease: “The industry needs to move beyond ‘corporate social responsibility’ and play their part in a world where climate change will impact the health of billions of people,” he notes. “Multinational pharma companies will need to find a way to play a major role in addressing these new realities – there is no room to sit this crisis out.”

What is a patient carbon footprint?
While the product carbon footprint is the carbon footprint associated with a product’s lifecycle, the patient carbon footprint is the carbon footprint associated with a patient’s lifetime as seen from the healthcare system’s point of view. The patient carbon footprint takes a holistic approach to the healthcare-related carbon emissions, which include the product carbon footprint, the product footprint related to additional medical devices (e.g. blood glucose monitoring), and the healthcare system itself (e.g. care management, other medication, and hospital admissions).
To reduce its environmental impact and support long-term sustainability of the business, Novo Nordisk has set itself the target of powering its global production with 100% renewable electricity by 2020. In order to achieve this target, the company must look for green solutions both near and far.

Tou Zhijian County in Taibus lies on Mongolia’s southern border in a region of China known as Inner Mongolia. This beautiful and tranquil location was home to Lizheng Leo Zhen for many years.

“This is the place I was born. The landscape is almost flat with broad grasslands and just a few hills. During my childhood there were not so many trees, houses or roads, but lots of crops. There were a small number of villages and the people who lived here were kind and honest. I enjoyed living in Taibus very much. I often recall my time there happily: climbing the hills, working the crops, enjoying the stars during the night and snow in winter.”

Leo moved to Tianjin after high school to follow his chosen career path and in 2008 began to work for Novo Nordisk, China, at its production site Tianjin, as a component engineer.

Living in the city is very different to rural Taibus. Most of the power in northern China comes from coal-fired power stations and smog caused by heavy air pollution can block out the sun. At the end of 2015, Tianjin issued its first red alert for air pollution, closing kindergartens, schools and effecting the operational hours of businesses. Anti-smog masks became a popular choice for Christmas gifts.

Harnessing wind power
Coal-fired electricity is not only a contributor to air pollution but also to carbon emissions. In 2015, Novo Nordisk’s production site in Tianjin rose to the challenge of moving away from coal based electricity. The production site in Tianjin reached its goal of using 100% renewable electricity for all its production. This was made possible through the purchase of green energy from a new wind farm in Leo’s hometown.

“I am so proud that the place where I grew up is helping to achieve Novo Nordisk’s goal of protecting and improving the environment.”

The Taibus Banner Wind Project consists of 33 turbines, which deliver 200 GWh of electricity to the North China power grid annually. The wind farm produces clean electricity that is truly additional – meaning that the project wouldn’t have been created without financial support from the corporate sector – fulfils all environmental criteria, improves air quality and provides employment opportunities.

“I have seen the wind farm a few times during the drive back to my hometown. It is not so big from far away, but when you stand beside it, you are impressed with its size. It has brought job opportunities to local people, improved the roads and surrounding wasteland, and most importantly it is helping to protect our environment,” says Leo with a smile.

During 2015-16 Novo Nordisk will acquire 40,000 MWh from the wind farm. The savings equal roughly 14,500 tonnes of CO2 in 2015 and 30,000 tonnes in 2016. To put this in context, in 2014, 30,000 tonnes of CO2 was 25% of the total Novo Nordisk emissions from production sites globally. Put into layman terms, this equals roughly 30,000 return flights on economy class to Beijing from Europe.

The search for global green solutions

Acknowledging that climate change caused by carbon emissions poses a significant threat to human health and development, last year Novo Nordisk committed that all its production facilities worldwide would be run on renewable electricity by 2020.

“This 100% target is the logical next step in the company’s history of working to reduce its carbon footprint,” says Vibeke Burchard, Senior Global Project Manager in Novo Nordisk, who recently returned from a trip where she visited the Taibus Banner Wind Project. “But finding solutions for green energy at all production sites around the world is no easy task.”

On-site renewable electricity is not always the optimal solution as this might require more space than what is available. Novo Nordisk therefore has to investigate the market for feasible suppliers and agreeing with the grid owners is a very complex and time consuming task. Development of a wind project in China is now on its fifth year. And Vibeke has been part of the project from the start together with colleague Flemming Sørensen, Senior Category Manager in Novo Nordisk.

“We have a global strategy but need individual solutions for each location,” explains Flemming. “There can be multiple regulatory bodies for each region so we need to identify trustworthy renewable energy suppliers for each production facility.”

Flemming explains that some markets are more mature when it comes to renewable energy production, but other markets are in their infancy.

“In immature markets, renewable energy isn’t so readily available,” says Flemming. “This makes it harder and more time consuming to find cost-effective solutions.”

Getting closer to the goal

However, to date Novo Nordisk has achieved 78% renewable power for its production, with sites in Denmark using power from offshore wind farms, Brazil relying on hydropower, Japan purchasing green power certificates and China using the Taibus Banner Wind Project. “Solutions for the company’s remaining production sites are still under investigation”, says Flemming.

“We are planning on using solar energy for our US sites, from plants connected to the electricity grid. In France, we are considering on-site solar panels but this will not produce enough energy to cover all our production needs. We are therefore looking at grid connected solar power to supplement what we generate locally,” he says.

Identifying renewable electricity supplies for Novo Nordisk’s production sites in Russia, Algeria and Iran is the biggest challenge, which may take several more years. “We are closely monitoring the renewable power market in these countries and are determined to find reliable, economically- and environmentally viable solutions,” stresses Flemming.

“We are determined to delivering on our target of 100% renewable electricity for all our production sites by 2020 as part of our commitment to RE100 (see box). I know we will get this done, no matter the challenges. And next year we will already begin to look at post-2020 solutions for some of our facilities,” says Flemming.

The company is currently looking into a solar farm in the US and new wind farms in Northern Europe and China.

Also Leo is convinced that Novo Nordisk will deliver on its ambitions despite the fact that challenges still remain. “I am proud to work for Novo Nordisk,” says Leo. “It is a responsible company and we do what we promise to do.”

RE100

Novo Nordisk joined RE100 in 2015. RE100 is a collaborative, global initiative of businesses, which are committed to using 100% renewable electricity and are working to increase demand for – and delivery of – renewable energy. The private sector accounts for around half of the world’s electricity consumption. Switching this demand to renewable energy will drive the transformation of the global energy market and aid the transition to a low carbon economy. Companies joining RE100 are encouraged to set a public goal to procure 100% of their electricity from renewable sources by a specified year.

For more information, see www.RE100.org
Sometimes you have to look back to move an agenda forward. As carbon emissions become an increasingly societal and business critical issue, Novo Nordisk is collaborating with its suppliers to inspire them to realise their carbon emission reduction potential.

For the last decade, Novo Nordisk has focused on reducing its carbon emissions from production. These efforts helped the company realise a return on investment from energy saving projects of approximately EUR 55 million and an annual carbon emissions reduction of 46,000 tonnes between 2005 and 2015.

The potential for even greater reductions is there, but it requires actions outside the factory walls.

A direct focus on indirect emissions

Novo Nordisk recently calculated that while production-related carbon emissions account for about 6% of the company’s emissions, nearly twice that much come from the sourcing of raw materials that go into the production of final products.1

Last year the company broadened its scope and began to focus on reducing carbon emissions outside its immediate control. Identifying areas in the value chain with significant opportunities for reductions, such as emissions from suppliers of raw materials, has now become a priority.

“Over the past years we have gained a great deal of insights and developed in-house expertise to reduce our carbon emissions,” explains Morten Storgård Petersen, Global Project Manager, Corporate Environmental Strategy at Novo Nordisk.

“But we also know from personal experience that energy saving and carbon reducing initiatives can be challenging and take time.”

Reducing the company’s indirect emissions therefore requires close collaboration with suppliers. And this is where Strategic Sourcing plays a crucial role.

A natural next step

Anders Alberg works as Senior Category Manager in Strategic Sourcing at Novo Nordisk, the department responsible for sourcing all raw materials that go into the manufacturing of Novo Nordisk’s products.

“I work with a group of highly specialised suppliers that are critical to making sure that we can deliver products to patients,” explains Anders. “Developing more strategic and long-term partnerships with these suppliers is one of our top priorities.”

In addition to quality and reliability, Anders also stresses broader expectations for the company’s suppliers.

“In our area, we have worked with responsible sourcing for several years where we make sure that our suppliers live up to global social and environmental standards,” says Anders.

“We have now taken a natural step moving beyond compliance towards a more engaging and opportunity-driven collaboration.”

But how does Novo Nordisk get suppliers on board?

According to Anders, it is first of all about clearly communicating that investing in energy saving initiatives makes good business sense, leading to long-term benefits – including reduced costs, enhanced reputation, reduced dependency on fossil fuels, fulfilment of stakeholder expectations and expanded in-house capabilities.

The conversation typically starts by putting carbon reductions on the agenda at the regular business reviews with the supplier. “It does take a while to convince them because the suppliers also need to put in resources, but it is slowly gaining more traction now,” he says.

And then Morten and his team steps in. “If a supplier is willing to collaborate with us, we discuss five potential enablers to reduce carbon emissions (see box) and ask the supplier to share data on energy consumption," says Morten.

“The next step is to listen to what the supplier is particularly interested in and explore their carbon reduction potential together. Novo Nordisk also learns a lot from the process.”

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1. Read about the full analysis in Novo Nordisk’s environmental profit and loss account, 2014, available at: [http://www2.mst.dk/Udgiv/publications/2014/02/978-87-93178-02-1.pdf](http://www2.mst.dk/Udgiv/publications/2014/02/978-87-93178-02-1.pdf)
Collaboration is key
Gerresheimer AG, a manufacturer of advanced glass and plastic packaging products for medication and drug delivery devices, is one of the suppliers collaborating with Novo Nordisk to reduce its carbon emissions.

“We began speaking with Novo Nordisk about energy efficiency and carbon emissions last year. They gave us a new perspective on this issue and so we agreed to have an energy screening at our production site Horšovský Týn in the Czech Republic,” says Vaclav Plas, technical customer support at Gerresheimer.

Following a three-day review of the facility, a list of recommendations for energy saving was created, which would save 11% of the production facility’s annual energy consumption, equalling approximately 2,700 tonnes of carbon emissions and EUR 260,000.

“It was interesting to discover the possibilities where we could improve. We have implemented two out of nine recommendations and are happy to be saving energy – and therefore money – as well as reducing our carbon emissions. We hope to implement more of the energy screening recommendations next year,” Vaclav reports.

Invest now for the future
Novo Nordisk hopes that tangible results like those experienced by Gerresheimer will alleviate concerns suppliers may have regarding the cost of energy saving initiatives, as long-term benefits outweigh the initial investment.

Anders expects that climate will become a more integrated part of supplier collaboration going forward. “Right now I am excited to start collaborating with one of our Italian suppliers and we will work with two additional partnerships in 2017,” he says.

In the future, he also sees potential in working closely with suppliers when they for example design and build a new production facility.

“Ultimately we want to inspire suppliers to invest in green solutions. This is good for their profit, their business, their brand and their environmental profile,” Morten adds. “We hope more of our suppliers will join us in the fight against climate change.”

Novo Nordisk shares knowledge and experience with suppliers to address carbon reductions, by focusing on five areas or ‘enablers’:

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<tr>
<th>Enablers</th>
<th>Desired outcome</th>
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<td>Renewable energy</td>
<td>Reduce CO₂ emissions through sourcing of energy from renewable sources</td>
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<td>Energy efficient design</td>
<td>Reduce energy consumption in new facilities through energy efficient designs</td>
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<td>Energy screening</td>
<td>Reduce energy consumption in existing facilities by identifying opportunities to save energy</td>
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<td>Energy management</td>
<td>Increase energy efficiency in the organisation by implementing energy management</td>
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<td>Process optimisation</td>
<td>Minimise waste and optimise production by applying process optimisation across the organisation</td>
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Employees take action on climate change

It may not make a huge difference in the big carbon emissions picture, but small steps also count. Many employees in Novo Nordisk want to do their part to limiting the company’s environmental footprint. Check out these three examples where employees from across the world are taking action.

Argentina: From trash to lunchboxes
Leonardo Ortega is a manager working with Corporate Branding and Changing Diabetes® in Novo Nordisk’s affiliate in Buenos Aires, Argentina. One of his top priorities is to demonstrate the company’s commitment to people living with a chronic condition, like diabetes. At different events, this normally includes creating a range of big and flashy roll-up banners.

This made Leonardo reflect about the environmental footprint he leaves behind. “I think I am responsible for the amount of trash I have helped create and I felt the need to do something with the metres and metres of canvas we produce,” he explains.

He decided to get creative with his colleagues Daniela Avellaneda and Florencia Laura to find ways to give the banners a second life. Leonardo describes it as a ‘trial and error’ process where they explored different ideas from table cloths to plastic pads for hospitals mattresses.

“In the end, they decided that it was most suitable to focus on items such as handbags, pencil cases, lunch boxes, iPad cases and folders.”

Telling a story
In the beginning, the recycled products were used as a way to reinforce the company’s commitment to environmental responsibility. “Because Novo Nordisk does not have a manufacturing site in Argentina, it can sometimes feel as if we are not doing enough when it comes to environmental responsibility,” he explains. “But now we can show all our colleagues something more tangible.” The recycled banners were also made into lunch boxes and used to support awareness activities encouraging healthy eating.

Shortly after, Leonardo and his colleagues went even further with ideas for how the products could be put into good use outside the company office. For example, pencil cases were donated to schools.

“When allowed, some of the items have also been distributed to healthcare professionals. For example, an
iPad case was developed that was made with the banners from one of our product launches,“ he adds.

Leonardo emphasises that all the pictures of people, products and logos are of course cut off out of respect for the individuals portrayed and to avoid violation of any rules regarding promotion. Instead, a hangtag has been added to all the items that explains where the material comes from. In this way it becomes more than just a gimmick but a way to tell a story.

**Denmark: The day the canteen went meat-free**

Inspired by Paul McCartney’s Meat-free Mondays, Novo Nordisk employees in Hillerød, Denmark created their own meat-free day with a multi-coloured, tasty buffet of vegetarian dishes.

Vegetarian options are abundant in many countries, but in Denmark meat often plays a big part of the meal – also when it comes to workplace canteens. Novo Nordisk business analyst Tanja Bageløv Jørgensen and Senior Project Manager Pankaj Sharma are both vegetarians and they decided to challenge this. In 2015, after Novo Nordisk announced its renewable energy commitment to reduce carbon emissions, they thought ‘why not try out a meat-free day at our local canteen?’

“A key message in today’s climate debate is that meat consumption is contributing to increased carbon emissions,” says Tanja.

Pankaj adds that the initiative was not just to create awareness about the carbon footprint of the food we consume, but also to challenge myths about vegetarian food.

“Our intention with the meat-free event was to create awareness about a vegetarian diet being both tasty, healthy and filling. And in addition, it has a positive contribution to the environment,” he says.

**Throwing a veggie party**

On the meat-free day, the canteen was decorated with green balloons and posters hung on the walls with nutrition facts and photos of famous persons living on a vegetarian diet, such as sportsmen and scientists. The canteen distributed recipes with the vegetarian dishes that were served. It turned out to be a huge success. Before lunch was even served, the take-away option from the canteen was sold out already at 9:15am on the day.

A small survey was conducted after the first Meat-free Monday, showing that only few people missed the meat option. More than 80% of the employees who had dined in the canteen that day thought the food was very good or excellent. Many also commented that the food was filling. Furthermore, more than 70% of the respondents thought it would be great to implement a once-weekly meat-free day in the canteen and almost half of the respondents were inspired to implement a once-weekly meat-free day at home.

Due to the big interest, Novo Nordisk is now investigating how to scale up the initiative across several other canteens in Denmark.

“We have decided that we will look into the possibility to implement a regular vegetarian day in designated canteens around our sites and we are currently in dialogue with two of our suppliers,” says Klaus Nørgaard Andersen who works as coordinator responsible for catering in Novo Nordisk’s Corporate Facilities.

“We would like to offer our colleagues a new food experience and we think it is a nice example of living the Triple Bottom Line in practice although it is small scale.”
Japan: Launch of the green office campaign
Most people working in an office have been guilty of printing out a few too many meeting agendas or reports they might never get the time to read.

Ole Mølskov Bech certainly was familiar with this feeling. “A few years ago I made a little survey for myself. For one month I kept a list of number of pages I printed, so every time I sent a document for printing I noted down the number of pages. The next month I did the same, but I was much more conscious about whether I needed to print or not,” he says. “Believe me the results were pretty striking and ever since, I have really tried only to print when I really need a hard copy!”

When Ole took over as President of Novo Nordisk’s Japanese affiliate in the first half year of 2016, he and his team decided to do something about this issue – and add a competitive element on top of it.

First they did a few calculations and found out that in 2015, a total 30,000 pieces of paper were printed each day. The amount equalled JPY 40,000 per person (approx. USD 355). The annual cost turned out to be a substantial JPY 44 million (approx. USD 390,000).

Scaling a small mountain of paper
In July 2016, employees set aside time to clean up in cabinets and desks together with their teams. Before sending it all to recycling, they were encouraged to stack all papers, measure the height and report the number.

“We also ran a campaign where employees who cleaned up their desks were asked to take photos before and after the clean-up,” says Director Noriko Okazaki. “Colleagues would then vote for the best and most creative photo and the winner would receive a small prize.”

In total, 771 employees from the home office in Tokyo, sales offices across the country and the production site in Koriyama participated in the green office campaign. Once all stacks had been reported, the height of all waste paper was more than 92 meters (approx. 300 feet)!

Ole and his management team decided to donate an equal amount of the volume of papers to the environmental protection group, Green Earth Center. The group drives afforestation projects within Japan and China. The amount of the donation was JPY 556,000 (approx. USD 5,000).

“We think this project was a good and simple opportunity to visualise how much paper we consume and accumulate and let that help us think twice every time we push the print button,” says Ole.
The links between climate change and type 2 diabetes

Climate change and diabetes are two urgent challenges in the 21st century which have a multitude of social, environmental and financial implications. This infographic provides an overview of their root causes and interconnections.¹

1 Adapted from hand-out developed by IDF in consultation with an expert advisory group and with the support of Bupa “Diabetes and climate change: Interconnected global risks to health and development”, 2012.
Actions with benefits
– Making the case for greener and healthier cities

What’s the value of introducing bike lanes in a city? Turning roads into pedestrian streets? Or setting up a bike share scheme? Rachel Huxley, Research Manager for C40 Cities Climate Leadership Group, is working to put a social, environmental and financial value on these initiatives, so that city mayors can take appropriate action.

Today, half the world’s population live in cities and 70% of cities are already dealing with the effects of climate change. This means that hundreds of millions of people are exposed to risks such as flooding from rising sea levels, powerful storms or deadly heatwaves.

At the same time, urbanisation has transformed the way we live, eat, work and move, exposing more people to the risk of developing chronic diseases like type 2 diabetes. But although cities might be vulnerable, they are also the communities with the greatest potential to deliver change.

“Many cities across the globe have started initiatives to increase the number of journeys taken on foot or by bike which are known to have both climate and health benefits. Yet not everyone recognises these benefits. Making a compelling case for environmental policies is a key challenge for mayors and city leaders,” says Rachel who is based in London and a keen cyclist herself.

“With this new research, we’re aiming to develop a method for collecting and analysing data to measure the benefits of climate action in cities.”

The link between climate and health
Poor public health and climate change share many of the same root causes such as processed food, motorised transportation and lack of green spaces which contribute to carbon emissions and promote unhealthy lifestyles.

Interestingly, they also share some of the same benefits. That’s why C40, a network of the world’s megacities committed to addressing climate change, partnered up with Novo Nordisk in 2015 to advance research on the role of cities in the fight against climate change and poor health. The aim is to help city leaders build a case for specific policies that will have the greatest impact on both emission reductions and improved health. This is exactly what Rachel is looking into.

“Diabetes is often referred to as an emergency in slow motion and so is climate change in many ways,” says Rachel. “There is a lot of focus on integrated thinking in research on sustainable development but we found that there is a gap when it comes to measuring co-benefits of climate action. So we want to create a global and practical standard for cities to do this,” she adds.

Mexico City was a great place to start this research, because it faces several interconnected challenges of air pollution, congestion and obesity. For example, the number of premature deaths linked to air pollution in Mexico City increased from 17,000 in 2005 to 21,000 in 2010. There are roughly four million vehicles and this

Rachel Huxley, Research Manager for C40 Cities Climate Leadership Group

The EcoBici bike share scheme in Mexico City counts more than 6,000 bikes.
number grows each year. The reported prevalence of type 2 diabetes in Mexico City metropolitan area is 13.9% for adults and 74% are overweight or obese.

What’s a bike share scheme worth?
The pilot, a joint collaboration between C40, Novo Nordisk, the City of Mexico and Arup, a global consulting firm, looks into three concrete initiatives focusing on bikeability and walkability in Mexico City. This includes the introduction of bike lanes, a bike share scheme called EcoBici and the pedestrianisation of a major avenue, Madero Street. These were efforts that the city government initiated as part of its ‘Plan Verde’ launched in 2007 that sets out a 15-year sustainable pathway for Mexico City.

Since then, the city government has worked to make cycling a viable, safe and popular alternative to private cars. For example, the EcoBici bike share scheme today counts more than 6,000 bikes, 444 docks and over 100,000 users covering an area of more than 35 km².

C40’s research shows that this initiative has major social, environmental and financial benefits that can be measured (see box).

This serves as useful insights for Mexico City. In the C40 research report, Tanya Müller García, Secretary for the Environment, Mexico City, states that “we know climate actions have wider benefits for our citizens, being able to evaluate them is vital for us. By understanding the full benefits of policy and projects we can make more informed choices and take action that creates not only climate positive cities but a better quality of life for our citizens.”

And the research also aims to unlock actions beyond Mexico City.

Benefits beyond Mexico City
“C40 was founded on the principle of cities learning from each other to accelerate efforts to tackle climate change and that has never been more important. There is no time to waste if we want to deliver on the promise of the Paris Agreement, which means cities need to see what has worked elsewhere and implement the best ideas,” says Rachel. “We know that every city is different, and the scope of this study was limited. But now we are developing a method that can help cities take more informed decisions about which policies and projects are likely to be most beneficial to both the environment and the health of their citizens.”

The research will continue beyond Mexico City and additional studies are looking into urban forestry in Melbourne; energy efficiency retrofits in New York City; and Bus Rapid Transit in Santiago, Chile.

To Rachel, the work is very meaningful: “I am motivated by the people that I work with and after 15 years in the field, I am more optimistic than ever. The research also aligns well with my personal view on sustainable development,” she says.

“Back home in London, I always get around by bike. It is my favourite means of transportation and I would like more people around the world to enjoy the same benefits!”

1. UNDESA. United Nations Department of Economic and Social Affairs. World Urbanization Prospects, the 2014 Revision, Highlights. 2014. 978-92-1-151517-6
— People driving sustainability

A view from the green room

With a background in engineering and business administration, Dorethe Nielsen leads the team setting the direction of Novo Nordisk’s environmental strategy. Here she shares her thoughts on important milestones and areas where there is room for improvement.

How long have you been working at Novo Nordisk and can you tell us about your current role?
I started in Novo Nordisk in 2013 and today I head up a department called Corporate Environmental Strategy. My team is leading the implementation of Novo Nordisk’s environment strategy and is responsible for strategy development and execution around reducing the environmental impact from the company’s activities.

What environmental accomplishments that the company has made have you been most proud of?
The long term commitment Novo Nordisk has had to drive both environmental performance and also disclosure of our performance. I like the fact that environmental actions are embedded in our Articles of Association and that we have an integrated way of thinking. I believe in bold targets and close follow-up and that is why I am very proud of our recent target to have 100% renewable electricity at all our production sites by 2020.

Novo Nordisk has started to measure carbon emissions at the product level, why this change?
We have for many years been looking at the environmental impact from our production activities. As a natural next step we have widened the scope to include impacts from our value chain and our products. We see that stakeholders, including payers, healthcare professionals and patients, are becoming increasingly aware of the environmental footprint of medicine as well as other impacts related to healthcare. We also believe that going all the way down to the product level is a more holistic way to look at our environmental responsibility.

Tools, guidelines and data for generating carbon emissions knowledge at the product level have also improved rapidly over the last years and have now reached a level where we believe the balance between the comprehensive work load and the value creation is right.

Does that mean that patients can now access all environmental data about their products?
Environmental data at a product level is quite complex and we strive to communicate the environmental impacts of our products in a language that is easily understandable. Therefore we use carbon emissions as our primary measure and compare it to daily consumables, like a cup of tea.

There are some details that we prefer not to make publically available due to competitive reasons but we are willing to share and discuss some of the data with groups such as healthcare professionals and payers.

You say that the carbon footprint from one day of insulin treatment in an injectable prefilled device, including the needle, is equivalent to “a cup of tea” — what do you base that on?
We have developed product carbon footprints according to international standards for Life Cycle Assessment (LCA). Our data and calculations are verified by a third party. The carbon footprint of tea is based on a cradle-to-grave study of the total carbon emissions from all stages of black Darjeeling tea cultivation and processing in India including distribution to Europe, packaging, boiling of water in Germany and disposal.

We know that “a cup of tea” is an ambiguous measure and there are many different types of tea and brewing methods, but the calculation gives a good indication of the size of the impacts related to treatment of diabetes.

What are some of the ways the product footprint could be reduced even further going forward?
We have very high quality requirements and will never compromise on patients’ safety and the efficacy of our products. We strive to make sound environmental products and there will always be ways to improve further. The LCA data gives us new perspective on our products’ environmental impact and we will further explore the data to make targeted improvements across our activities.

It is also important to keep in mind that although producing a pharmaceutical product causes carbon emissions, the size of that carbon footprint is counter-balanced by the emissions saved as the medicine lowers diabetes-related complications. The best way to reduce the environmental impact from treating diabetes is therefore to keep the patient in good control to avoid complications which require extra treatment.

What is Novo Nordisk doing about other environmental impacts, such as waste and water consumption?
As part of our certified environmental management
system, we work to minimise the use of all sorts of resources, including water. When we have production in water scarce areas, we are extra cautious about minimising the water consumption.

It is not possible to totally avoid waste, but when possible, we are re-using and recycling materials to be more resource efficient. However, in recent years we have seen an increase in waste streams that contain substances that require special treatment and here it is difficult to find environmentally friendly alternatives.

Is there an area where Novo Nordisk is challenged?
We see a growing global regulatory pressure on the use of chemicals for manufacturing and we must be able to navigate in this very complex landscape. Novo Nordisk follows this development very closely to implement new regulations in due time. Currently our focus is on the requirements of the EU REACH regulation urging the industry to phase out certain hazardous substances. This is a challenge but reaching the target and finding adequate non-hazardous alternatives and supporting the use of safe chemicals in general is a top priority for us.

Why doesn’t Novo Nordisk make biodegradable pens?
We make products that must comply with high regulatory standards and biodegradable materials do currently not fulfi l these requirements. We have a big social responsibility towards our patients and must ensure high quality throughout the lifetime of the product and at different temperatures and humidity. Therefore it is unfortunately not possible to use biodegradable materials.

Does Novo Nordisk use recycled materials in its packaging?
It is essential that our products reach patients without damage. To ensure a strong and uniform quality of our packaging, we have not used recycled fibres for the cardboard boxes that are in direct contact with our product, but it is an area that we are looking into. For distribution from Novo Nordisk to the pharmacies, we use cardboard boxes made with recycled fibres.

Is there an organisation that inspires you when it comes to environmental stewardship?
I think Kaiser Permanente, the US healthcare provider, is taking a leadership role, not just when it comes to improving own operations but also raising the bar of the entire sector in the US and beyond. They have a very holistic approach recognising that healthy communities and a healthy environment are critical to the health and wellness of people and they are integrating this into all areas of their organisation. They also continuously track their carbon emissions and have an aim to become carbon net positive in 2025.

Your career is focused on environmental responsibility but what do you do to reduce your environmental footprint in your personal life?
I think it is easy to be environmentally friendly in Denmark. We have good waste sorting, you can be guided as a consumer on which brands that are most environmentally friendly and you have good opportunities for installing solar panels in your home. I commute a long distance to work every day and I am currently investigating if an electric/hybrid car could be our next choice.

Jesse Crumpler and his wife, USA

Jesse Crumpler has type 2 diabetes. He likes to fish, ski and garden vegetables as well as staying active by walking five to six days a week. Taking steps to reduce Novo Nordisk’s carbon footprint is how we act with environmental responsibility towards people with diabetes, ensuring that the impact from the use of our products is as small as possible.

Novo Nordisk is a global healthcare company with more than 90 years of innovation and leadership in diabetes care. We manage our business in accordance with the Triple Bottom Line business principle and consider the financial, environmental and social impact of our business decisions.

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