Sustainability report 2022

GroenLeven Geeft je energie

GroenLeven

Geeft je energie

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> **By thinking big, doing good and being decisive, we want to contribute to a better and cleaner world – now and in the future.**

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GroenLeven's most material sustainability topics

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About this report

Welcome to GroenLeven's second sustainability report. As a key role player in the Dutch renewable energy transition, sustainability lies at the heart of our business. However, reaching national and global climate change goals requires the combined effort of businesses, policymakers and individuals, and we are more likely to reach these goals if we share with one another what we learn along the way and work together.

GROENLEVEN REPORTING

The renewable energy sector is relatively young but also dynamic, and we pride ourselves on our ability to face challenges head-on and solve problems innovatively. We publish this report in the hope that our innovations in renewable energy solutions will inspire others and lead to more open dialogue on how to preserve and improve life on Earth, and restore the balance between human inhabitants and the natural environment.

This sustainability report complements our annual report. This year we added a chapter on GroenLeven's carbon footprint and climate change ambition as part of our ongoing effort to mitigate any potential negative impact of our activities and operations on the natural environment.

REPORTING SCOPE, BOUNDARY AND DEFINITIONS

We report on the financial year from 1 January 2022 to 31 December 2022.

The information in this report relates to GroenLeven and its operations. Based on our ownership structure, relevant information on BayWa r.e. has been included in terms of governance and information flow.

We use the following timeframes in our reporting:

- Short term – this year
- Medium term – the next three years
- Long term – the next five to 10 years

Energy Infrastructure Partners is involved in energy infrastructure investment, with a focus on high-quality, large-scale renewables and system-critical energy infrastructure.

Energy Infrastructure Partners

The **BayWa Group** was founded in 1923 and is a global player in trading, logistics and services within the agriculture, energy and building materials market. All the Group's renewable energy activities are concentrated within BayWa r.e.

BayWa Group

BayWa r.e. is owned by Energy Infrastructure Partners and the BayWa Group. BayWa r.e. is a renewable energy developer, service provider, distributor and energy solutions provider headquartered in Munich. BayWa r.e. operates in 30 countries in Europe, the Americas and the Asia-Pacific region.

BayWa r.e.

GroenLeven is wholly owned by BayWa r.e.

GroenLeven

MATERIALITY, APPROVAL AND ASSURANCE

The materiality process completed for our 2021 report was reviewed by management and found to be adequate and appropriate for this report in terms of the current status of reporting standards under development. The material topics reflect what is important to GroenLeven and our stakeholders when we talk about sustainability impacts, risks and opportunities. We marginally updated the materiality based on advancing insights (GHG emissions including scope 3). To substantiate this, we include a variety of internal and external stakeholder perspectives in this report.

In developing the content of this report, we also considered the following frameworks and standards, inter alia to align key performance indicators (KPIs) used in this report to standard definitions:

- United Nations Sustainable Development Goals (SDGs)
- Global Reporting Initiative (GRI) standards
- European Corporate Sustainability Reporting Directive (CSRD) and the draft European Sustainability Reporting Standards (ESRS)
- Sustainability Accounting Standards Board (SASB) standard for Solar Technology and Project Developers

The GroenLeven Management Board recognises the contribution we can make to the activities as defined in the European Union (EU) Taxonomy. Find detail about our taxonomy-aligned activities on page 40.

GroenLeven's finance and strategy teams guided the process to develop this report. They worked with internal content owners and external stakeholders to obtain information. As such, we made good progress this year in enhancing our sustainability reporting. Management is confident that the information in this report is fairly represented based on management review and control procedures. We intend to further improve our reporting and will consider external assurance in future.

GroenLeven at a glance[1]

Core business

Design, construct, operate and maintain large-scale renewable energy solutions.

Leeuwarden

Headquarters in Friesland, Netherlands.

11

11 years in operation

Founded by Sytse Brouwer, Margriet Bolink and Hans van den Brug in 2012.

BayWa

Ownership

As of 2021, BayWa r.e. holds 100% of GroenLeven's shares.

131

131 Employees

Employed staff on payroll at year-end 2022.

Our mission

Decarbonise the energy system in the Benelux while ensuring uninterrupted supply through 100% renewable sources.

Our goal

Contribute to combating global warming and preserving long-term habitability for all life on Earth, both now and in the future.

Largest investor
in Dutch solar energy

Dual-function projects on land, water and rooftops, in parking lots and above fruit.

nr 1

5th

5th largest investor
in the Dutch energy transition

Following major oil and gas companies.

Sustainability performance at a glance[1]

75,032 tCO_2

annual CO_2 savings from GroenLeven solar installations in 2022.

1 GWp

solar PV capacity installed.

300,000

Annually producing ~1 TWh of green electricity, equal to the annual electricity consumption of approximately 300,000 households.

Zero incidents with leave as a result.

7%

7% of all solar panels in the Netherlands are installed by GroenLeven.

>15

>15 ecological research projects performed in 2022.

2 million

solar panels installed since inception.

1.5 gigawatt

1.5 gigawatt peak (GWp) renewable energy pipeline to 2026.

27 solar projects

27 solar projects constructed in 2022 of which 3 are large-scale and 24 are rooftop projects.

Peter Paul Weeda & Ewoud Helmholt

Message from the Management Board

As we enter our 12th year of operation, GroenLeven looks forward to optimising and broadening our value contribution by further diversifying our renewable energy solutions.

YEAR IN REVIEW

2022 was a challenging year for much of Europe in terms of energy availability and affordability. The Russian invasion of Ukraine in February 2022 led to an energy crisis across the continent followed by a sharp increase in energy prices, and a scramble to identify alternative energy sources to reduce dependence on Russia's gas supplies.

For some countries these pressures moved the renewable energy agenda to the backburner, while others embraced the opportunity to accelerate green energy production. The Netherlands was in the latter group.

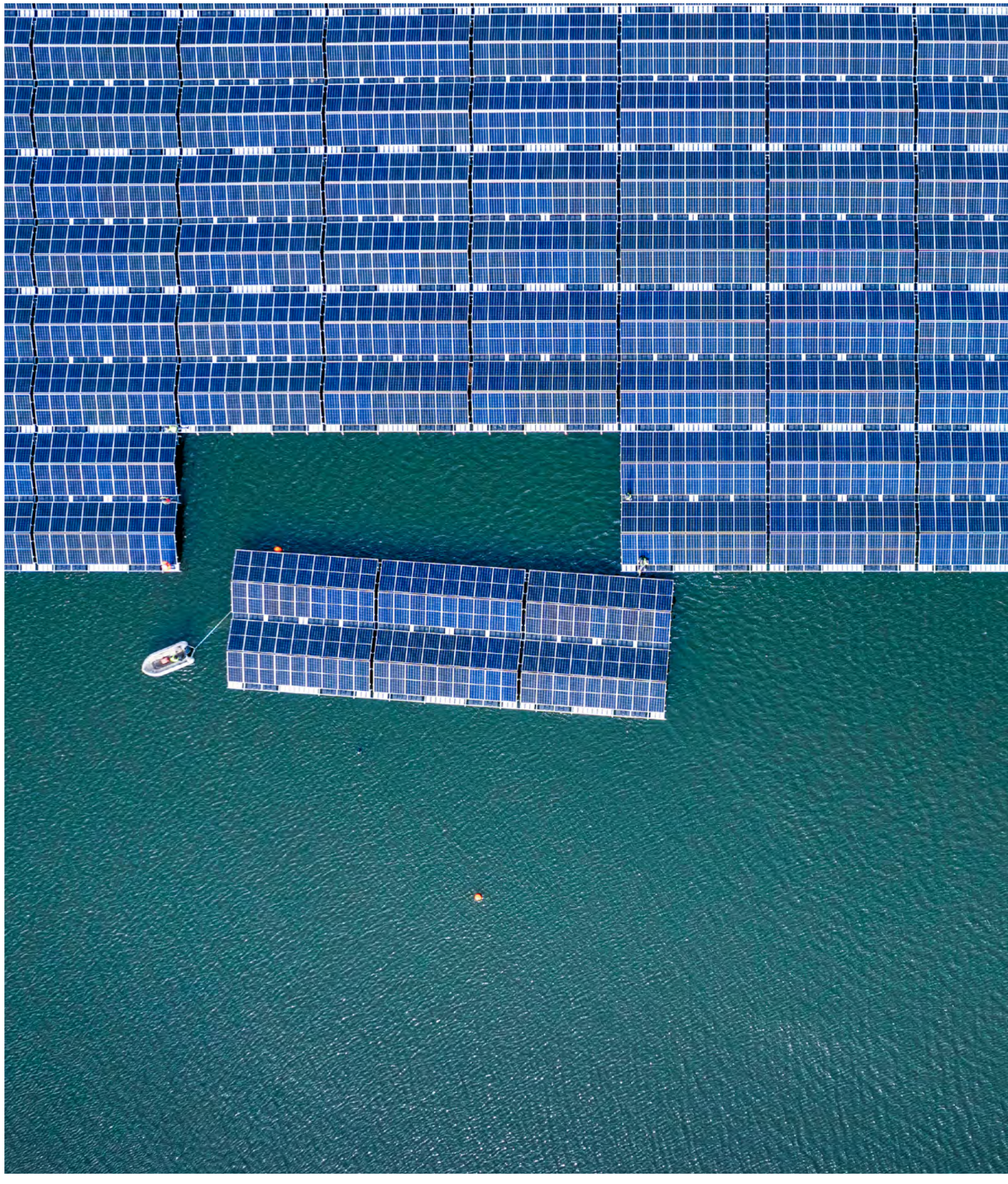
Although we still lag other EU countries in terms of renewable energy, the Netherlands was the unquestionable solar energy leader of 2022. We generated 40% of our electricity from the sun, and this was the first year in which solar generation surpassed that of coal. Solar energy plays an essential role in the Dutch renewable energy transition because it is a proven and cost-effective technology that can be deployed relatively quickly.

CHALLENGES

GroenLeven celebrates the progress made in 2022 towards the renewable energy transition, but unprecedented growth often leads to challenges – and these too were evident in our business.

The increased demand for renewable energy technologies across many parts of Europe led to shortages of products and components, which increased prices and lengthened lead times. As the solar sector in the Netherlands matures, government subsidies are decreasing and this adds further cost pressures to large projects. Due to limited space in our country there is a preference for dual-function renewable energy installations (such as solar panels on roofs, carports or sand extraction lakes), which are more expensive than single-function applications (such as a traditional ground-mounted solar park).

Although we produced more solar energy in 2022, the Dutch electricity grid cannot keep up with the increase in demand for renewable energy. Permit procedures remain lengthy and complex, and although the number of solar panels on residential roofs increased, nimbyism ("not in my back yard") remains a challenge when it comes to approval for large-scale renewable energy projects.



"The key to a real transition to a fossil-free world does not lie in innovation, technology or smart solutions. It lies in the realisation that we are in the same boat together. We need far-reaching and sustainable solutions that involve everyone – residents, districts, neighbourhoods and municipalities. Collaboration and buy-in are critical requirements in the energy transition."

Peter Paul Weeda
Chief Executive Officer

RESPONSE

In a market that has grown rapidly over the past few years, GroenLeven's reputation for quality, reliability and service stands us in good stead. We are one of the more entrenched players in the renewable energy market, and have extensive experience in large-scale dual-function applications and floating solar parks.

Innovation has always been a core part of our DNA, and in 2022 we established a dedicated department for New Business and Improvement Projects that focuses on developing innovative solutions and implementing them at scale. In only a few short months this department has formed a strategic partnership to speed up the rollout of solar carports, and has over 30 additional projects that are being assessed for execution. See page 60 for more information in this regard.

By combining elements of our procurement capability with that of BayWa r.e. – our 100% shareholder and a global player in renewable energy – we are able to negotiate favourable terms with suppliers while also driving the human rights agenda. In this way we support a sustainable supply chain that delivers value to customers, workers and communities. See page 44 for more information on human rights and our supply chain.

We acknowledge that, in the dynamic and complex renewable energy sector, working alone is unlikely to yield the results we require to reach national and international climate change goals. In 2022 we ran projects with several industry stakeholders, allowing us to learn from one another, share best practices, and solve problems more quickly and effectively. We have also developed some innovative models to encourage local ownership of projects, which are described on page 93.

NEW PHASE FOR GROENLEVEN

To keep pace with the energy transition, we need to maintain our market position in a sector that has become much more complex and challenging. This means leveraging our stability by optimising and broadening our value contribution.

To ensure our long-term sustainability and continue shaping the future of renewable energy in the Netherlands, we are investigating options to increase GroenLeven's ownership of renewable energy projects. In other words, in addition to implementing and then selling solutions, and developing customised solutions for clients, we aim to build our own capabilities as an independent power producer.

We are also expanding our focus from solar energy to integrated energy solutions, with a particular focus on storage and distribution. A key initiative in this regard was the launch of the first green hydrogen factory in the Netherlands in March 2022. Read more about the Sinnewetterstof project on page 67.

"The Sinnewetterstof project with Alliander is an example of how diverse parties can collaborate in the energy transition. We each have our own goals, and we approach the project from our own area of expertise. But our overall objective is the same – hydrogen production in the Netherlands."

Ewoud Helmholt
Chief Financial Officer

LOOKING AHEAD

The year ahead for GroenLeven is filled with opportunities.

Our employees are our most important asset. In addition to recruiting others who share our passion for doing good, we will continue to invest in our employees, explore and implement their ideas, and give them the opportunity to help preserve our beautiful planet.

In addition to continuing our research on hydrogen through the Sinnewetterstof project, we aim to investigate the development of battery energy storage systems (BESS) as a means to alleviate grid congestion.

This will require relationships with new suppliers, research on financing mechanisms, and an innovative approach to sustainability – especially in terms of battery reuse, recycling and/or disposal.

Even though hydrogen and BESS were not considered in our materiality assessment, they are part of our future drive to diversify our operations beyond solar to large and complex energy landscapes that combine multiple generation and storage technologies, as well as wind energy. We recognise that both hydrogen and BESS come with their own ESG challenges relating to safety, sound disruption and human rights. However, we believe that they hold the potential to enhance our contribution to a cleaner, better world for future generations.

GROENLEVEN SUSTAINABILITY-RELATED PRIORITY PROJECTS 2023

1. CIRCULARITY

Project description
Set up a formal circularity strategy with one responsible person at management level. This strategy should have clear short-, medium-, and long-term goals and provide more structure to the current ad hoc initiatives and pilot projects.

2. SUPPLY CHAIN TRANSPARENCY

Project description
Continue our efforts to enhance supply chain transparency and fully adopt our supplier code of conduct at all our suppliers. To help the industry to move the needle we will share lessons learned via platforms such as the International Business Conduct Agreement for the Renewable Energy Sector.

3. HEALTH AND SAFETY

Project description
Maintain our ‘zero incidents status’ at all our offices and project sites. To achieve that, we will launch new health and safety programmes, increase the responsibility and tasks of internal stakeholders with regard to health and safety, and implement a standardised problem-solving sheet to foster continuous improvement and actively address health and safety issues during the project design phase.

Message from BayWa r.e.

The year 2022 saw Russia's invasion of Ukraine and we all witnessed the acute and excruciating human suffering that followed, and the global response it initiated. Unprecedented disruption was caused to energy supply and across Europe, governments and societies grappled with the consequences of a lack of gas for heating and electricity, and spiralling energy costs. The dilemmas of competing priorities and the reality that short-term supply fixes will not be the most sustainable solution in the long-term became acutely apparent.

The energy crisis has made it evident that the growth of renewable energy must be accelerated as a matter of urgency. In 2022, we saw proof that challenges that are necessary and urgent to address, can be overcome in a comparatively short time. Relationships between many EU countries were strengthened and there is widespread agreement that renewable energy is our best option to secure a reliable, affordable energy mix and a sustainable future for our planet.

2022 was also a very strong year for BayWa r.e. as we were able to deliver a record amount of new renewable capacity around the world and continue to play an ever-increasing role in helping to advance the transition to green energy. GroenLeven made an important contribution to our success, and continues to set an example in making our group more resilient and sustainable. Thank you for your hard work and motivation.

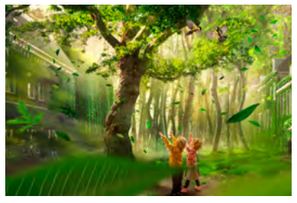
Moving forward, we know that our supply chain is our most important focus area over the next few years. Our dependency on China and the associated risks related to supply chain disruptions, as well as the lack of transparency in the supply chain, will drive us to both work with our Asian partners to improve transparency, and to accelerate the development of European suppliers, for example, for solar panels. We believe the EU Green Deal and the Recovery Package will provide further momentum to re-establish more production capacities for key technologies in Europe.

We look forward to another year of growth and progress in the group. Opportunities abound, and we are fully committed to our strategic objective to accelerate the growth of renewable energy - all around the world. Integral to achieving this will be the passion and commitment of our people as we all work together towards our shared purpose to safeguard a sustainable future for our planet.

Matthias Taft
BayWa r.e. Chief Executive Officer

The year of GroenLeven 2022

Arcadia & Bosk!



GroenLeven becomes an official partner and main sponsor of Arcadia and Bosk! to highlight the urgency of improving the relationship between humanity and nature.

Solar park Daalkampen

We completed the construction of Daalkampen solar park, which will generate approximately 19.6 MWh of sustainable electricity per year and was funded in part through crowdfunding.

10th birthday!

We celebrate our 10th birthday.

Solar Innovation and Experience Centre

The Solar Innovation and Experience Centre - a practical research and experimentation centre focussing on sustainable energy generation and new forms of energy storage - was officially opened.

Study Natuur & Milieu

A study by environmental organisation Natuur & Milieu reveals that communities who live close to our solar parks are generally satisfied with the results.

Solar park Dokkum

We open the first solar park in Dokkum, which provides green electricity for more than 5,000 households and includes a section of solar panels that have been earmarked for local ownership.

MORRENsolar

We acquire MORRENsolar to accelerate the rollout of solar carports.

Fifth-largest investor

Research reveals that GroenLeven is the fifth-largest investor in the Dutch energy transition.

JANUARY FEBRUARY MARCH APRIL MAY JUNE JULY AUGUST SEPTEMBER OCTOBER NOVEMBER DECEMBER

Mussels, Beilen

The floating solar park on the Mussels in Beilen is handed over to new local owners.

Hydrogen factory

Together with Alliander, we open the first hydrogen factory in the Netherlands, where electricity generated by solar panels is converted into green hydrogen.

Lippe Gabriëlsplas

The Lippe Gabriëlsplas project has been completed. The project has over 25,000 solar panels and is one of four solar projects we are realising in the municipality of Opsterland.

Goodman Alblasserdam

We unveil a 7 MWp solar roof on the Goodman Alblasserdam Logistics Centre – the largest solar roof we have built to date.

CEO: Peter Paul Weeda

The new management board is installed with Peter Paul Weeda as CEO of GroenLeven.

Solar park Lemsterhoek

We open a solar park in Lemsterhoek near Lemmer – the first solar park for which the De Fryske Marren municipality has issued a permit since 2018.

Ecomunitypark Oosterwolde

The Ecomunitypark in Oosterwolde – which includes our solar park, Biosintrum and hydrogen plant – is named the most Climate-Adaptive and Nature-Inclusive Business Park in the Netherlands in 2022.

Jubilee edition: Groendoen magazine

The jubilee edition of our Groendoen magazine – which reflects the current state of affairs of the energy transition, and includes interviews with key role players in the sector – is handed over to Kees Vendrik, the new chairman of the National Climate Platform. **www.groenleven.nl/kennisbank**

Our profile

ABOUT GROENLEVEN

GroenLeven delivers a substantial contribution to the energy transition in the Netherlands, and to a cleaner and better world for future generations.

GroenLeven is a renewable energy solutions provider in the Netherlands, with our head office in Leeuwarden. Since our establishment in 2012 we have become a market leader in the development, realisation and operation of large-scale green energy projects.

GroenLeven is the fifth-largest investor in the energy transition in the Netherlands (following major oil and gas companies Shell, Vattenfall, RWE and Eneco), and the largest in the field of solar energy. We therefore make an essential contribution to Dutch climate objectives.
Our renewable energy pipeline consists of approximately 1,5 gigawatt-peak (GWp) defined and undefined projects, and is one of the most significant in the Netherlands.

OUR VISION

At GroenLeven, we envision a world where the global demand for energy is met with a 100% sustainable energy system, free from harmful carbon dioxide (CO_2) emissions. By replacing fossil fuels with energy produced from renewable sources, we are taking crucial steps towards creating a cleaner and more sustainable future.

Our commitment to sustainability extends beyond just energy production from renewable sources. We understand the importance of circularity, and give preference to material design that considers waste reduction, reuse and recycling.

Renewable energy projects must coexist with the protection and restoration of biodiversity. Our approach integrates biodiversity into our renewable energy projects, contributing to the preservation of our planet's precious ecosystems.

Substantial changes are imperative in the energy system as well as in urban and rural development. While the challenges are significant and timelines may be short, technological advancements offer equally vast opportunities. By working together, policymakers, businesses and citizens can create a world where sustainable energy for everyone is not just a goal, but a reality.

By thinking big, doing good and being decisive, we want to contribute to a better and cleaner world – now and in the future.

OUR MISSION

Our mission is to decarbonise the energy system in the Benelux while ensuring reliable supply through 100% renewable sources. We do this in pursuit of our goal, which is to combat global warming and preserve long-term habitability for all life on Earth, both now and in the future.

OUR VALUES

Sincere
GroenLeven works to do the right thing, with integrity, in order to pass on a beautiful, green world to future generations

Resourceful
GroenLeven's energy solutions are innovative and solve real problems

Decisive
By thinking big, GroenLeven has become the market leader in clean energy

OUR STRATEGY

We strive to accelerate the energy transition by realising projects that generate sustainable energy, create flexible capacity, and convert renewable energy in a manner that appeases all stakeholders and fosters a sense of pride in our organisation.

Our ambitious targets include generating the following by 2030

Solar energy	Battery Energy Storage Systems	Hydrogen
4 GW	1 GW	250 MW

In addition to financial goals, we are strongly committed to our non-financial objectives in the environmental, social and governance (ESG) domain. We strive to eliminate or mitigate the negative impact of our activities and operations, and maximise positive contributions.

Furthermore, as an engaged employer, GroenLeven provides an inspiring and safe work environment, and fosters a culture that is both informal and professional.

OUR SOLUTIONS AND PROJECT DELIVERY

GroenLeven's core business is to design, construct, operate and maintain large renewable energy solutions. We work with public authorities, grid operators, the commercial sector, educational institutions, local stakeholders and entrepreneurs to deliver projects and overcome challenges.

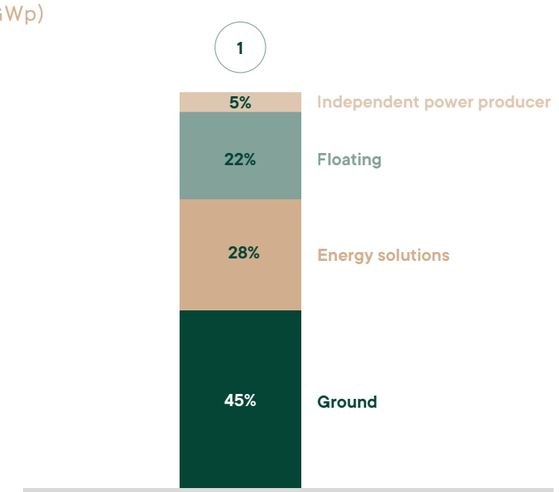
Our turnkey approach extends from site identification, local community engagement and permit applications, through to subsidies, grid connection, site management and maintenance.

Our sustainable energy solutions are typically deployed on five site types, as described below.

On land	GroenLeven is the leading solar project developer in the Netherlands. Since our establishment we have installed more than 2 million solar panels, and by the end of 2022 we have installed 7% of all solar panels in the Netherlands. Our land-based solar solutions take into account the type of agricultural activities (where relevant) as well as soil characteristics. We deliver traditional solar parks with a regular south orientation, solar parks with a water storage arrangement (which ensures that groundwater can be replenished), and solar parks that accommodate tractors and other small-scale agricultural machines.
On water	GroenLeven has installed nearly half a million floating solar panels in the Netherlands, making us the European market leader. We specialise in dual-function solutions for industrial water such as sand extraction lakes, dredging depots and large water basins, allowing customers to generate solar energy and save on electricity costs while continuing their usual business activities. GroenLeven uses its own unique system for floating solar panels that reduces the impact on natural habitats and has no negative impact on water quality.
On rooftops	GroenLeven has realised more than 850 solar roofs. Rooftops make an ideal place for the installation of solar panels as this space is generally unused. We offer customers the choice of buying or leasing their solar panels, and we also facilitate renting out their roofs to other organisations. Solar rooftops allow customers to save on energy costs, take advantage of attractive government subsidies, increase income by feeding power into the grid, and boost their own sustainability efforts.
In parking lots	The Netherlands has an estimated 16 million parking lots that offer an ideal space for the installation of solar panels. By investing in solar carports, our customers are able to generate their own energy, reduce their environmental impact and increase the value of their property. GroenLeven customises solar carports to the needs of our customers, and we consider all bottlenecks and opportunities such as lighting, water collection and reuse, electric vehicle charging and energy storage. Our installations meet all the requirements for a 100% financeable and insurable product.
Above fruit	GroenLeven has realised more than 3.5 megawatt peak (MWp) of agri-photovoltaic (PV) projects, making us the market leader in Europe. Agri-PV is a combination of agriculture and the generation of solar energy. The plastic arches above fruit are replaced with solar panels, which protect crops against weather conditions while at the same time generating green energy. Agri-PV provides a stable and predictable environment for fruit, and is suitable for strawberries, apples, blueberries, blackberries, raspberries, pears, cherries and red currants.

REALISED PROJECTS

2012 - 2022 (GWp)



"GroenLeven is a diverse group of people but we share a common goal: accelerate the energy transition and contribute to a more sustainable world. This is why we come to work each day."

Bram Klein Kranenberg
Strategy and New Business Manager

OUR PROJECT MANAGEMENT MODEL

GroenLeven develops and executes renewable energy projects in five phases, as described below. The key role players in this process are the project developer and project manager, and they are supported by a multidisciplinary team with skills in construction, technical matters, maintenance, operations, commercial matters, legal matters and asset management.

Phase 1: Origination	Opportunities for new projects are identified by customers, GroenLeven or BayWa r.e. and an internal feasibility study is conducted.
Phase 2: Pre-development	The project developer scouts project locations and makes contact with landowners to negotiate a lease agreement and secure access rights to the property. Once received, an environmental impact assessment is performed (see more information on page 55). The project developer is responsible for the permitting process and is the main contact person with the municipality. The project developer also requests the grid connection and reserves grid capacity. In this phase, the project developer also prepares a first site layout in collaboration with the engineering team, which might involve several technical site visits and assessments. The development of an investment model also forms part of this phase. The project developer evaluates economic and rent payment feasibility, and determines which other stakeholders to involve. Where relevant, a special-purpose vehicle (SPV) is then set up and tax structuring is done.
Phase 3: Development/ transition	Project development can begin once all permits are obtained, the grid connection had been secured and defined, and the cable route is available. At this stage the project developer does a detailed handover to the project manager, including all documentation.
Phase 4: Project execution	The project manager coordinates the engineering process with a technical team member who is responsible for construction according to the approved layout. In this phase, an external yield study may be requested. The project manager is responsible for the full procurement process, including materials, labour and energy. The latter is generated onsite according to the project requirements.
Phase 5: Closing	Once project development is complete (and in cases where GroenLeven is not the project owner), the project manager initiates the sale and project financing process. Read more about innovative ownership models on page 93. Where possible, we remain involved through operations and maintenance, and commercial management.

OUR FOOTPRINT

GroenLeven contributes to climate change mitigation by generating clean energy across the Netherlands.

OUR SUPPLY CHAIN

1. Raw material sourcing

Raw materials such as silicon (converted into polysilicon), aluminium, stainless steel, glass, copper, plastic, and a variety of electrical and electronic components are sourced by manufacturers.

2. Manufacturing

Our parent company, BayWa r.e., contracts with manufacturers who predominantly operate in China and who are the main suppliers of solar panels to GroenLeven. The manufacturing process includes purifying silicon from quartz sand, making wafers and coating these with a thin anti-reflective coating. Metal conductors are added to the wafer surface to create solar cells, which are combined in a matrix-like structure to form panels. We have limited visibility of this part of our supply chain, which makes this a potential risk area from a sustainability perspective.

3. Transport

Solar panels and inverters are transported primarily by ocean from China to Europe, and then by truck from the harbour to a storage location or directly to the project site.

4. Design and construction

For each project, GroenLeven designs the most sustainable and efficient energy conversion solution. This involves a combination of solar panels, inverters and racking structures that are connected to the grid. Construction includes infrastructure preparation for access and services on site. We have significant control over this part of the value chain and ensure, for example, that we use renewable energy, and that our employees and contractors follow health and safety procedures and do quality inspections.

5. Maintenance

Solar parks require regular maintenance. Solar panels must be cleaned to ensure their effectiveness, and inverters must be serviced. Electrical cabling must be checked, and the structure as a whole must be evaluated to ensure adequate protection from external elements. GroenLeven has an in-house maintenance team that operates in cooperation with BayWa r.e.

6. Waste and recycling

Solar panels and inverters have an expected lifespan of over 35 years. All GroenLeven's e-waste is collected and recycled by the Organization for Producer Responsibility for E-waste in the Netherlands (Organisatie Producentenverantwoordelijkheid E-waste Nederland, OPEN), and GroenLeven pays the required waste management fees in this regard.

OUR STAKEHOLDERS

Stakeholder engagement is a key success factor for GroenLeven, and not straightforward, as our complete universe of stakeholders is extensive. GroenLeven's most recent stakeholder analysis, approved in December 2021, contains 31 internal and external stakeholders, setting out their expectations and how GroenLeven aims to respond to different agendas and priorities. The table below includes a summary of key stakeholders: who they are and the focus of our engagement in the past year.

Contractors	We use between five and 10 contractors to execute projects on sites. They work according to a contract, and their success relies on good planning and efficient operations. Contractors are expected to follow GroenLeven's health and safety rules and applicable regulations, including ensuring that their equipment is in good condition and fit for purpose. For them, it is important that GroenLeven pays invoices on time and drives the Dutch energy transition to create future contract opportunities.
Customers	Our customers range from farmers and business owners, to companies, pension funds and investors looking to invest in renewable energy. These stakeholders expect GroenLeven to execute projects according to agreements, applicable standards and timelines.
Employees	We have 131 employees (2021: 121) and this number excludes the on-site teams who construct our renewable energy projects. • 24% of our employees are deployed on a flexible basis (2021: 49%) • 27% of our employees are female (2021: 33%) • 55% of our employees are aged under 40 (2021: 60%) • 94% of our employees have been employed for five years or less due to our rapid growth in the past few years (2021: 98%) Our employees come from all over the Netherlands and constitute a range of nationalities, including German, Jordanian, Iranian, Indian and Polish.
Funders	In addition to BayWa r.e., which finances most of our current projects, we have two major funders: • DZ Bank, a corporate German bank that supports sustainable, capital-intensive large-scale projects • Triodos Bank, a bank in the Netherlands that specialises in financing entrepreneurs who work towards sustainable and positive social, environmental and cultural change They expect GroenLeven to deliver on our mission by decarbonising the energy system in the Benelux while ensuring uninterrupted supply through 100% renewable sources.

Grid operators	TenneT is responsible for managing the national high-voltage grid, while seven network operators own the regional energy grids. GroenLeven relies on the grid operators for connections to substations, transport capacity and infrastructure. It is important for GroenLeven and the grid operators that projects are executed according to agreed requirements.
Local communities	Local communities are directly impacted by renewable energy projects in their area, and it is GroenLeven's responsibility to ensure that this impact is positive. Community members expect us to properly integrate projects into the natural landscape, and ensure that there are no negative consequences for people, fauna or flora.
Local and national authorities and regulators	This includes the Dutch government, regional authorities such as Stadskanaal in the northeast of the Netherlands, and local municipalities. It is important for them to have a clear understanding of our long-term plans, and they require frequent visits and open communication.
Shareholder	As of 31 December 2021, BayWa r.e. is a 100% shareholder in GroenLeven. They expect a return on their investment, which includes meeting financial targets and protecting GroenLeven's reputation.
Society and the environment	With high population density and intense economic activity, society in the Netherlands puts significant pressure on the environment. Therefore, environmental protection and the shift to renewable energy in general, are matters of grave public concern. GroenLeven's reputation and legitimacy depend on public opinion and are influenced by nimbyism.
Suppliers	Our suppliers include: • Lianyungang Shenzhou New Energy Co/Trina Solar, which specialises in the manufacturing of PV products • Zimmerman PV-Stahlbau GmbH & Co. and KG & PV-Floating B.V., which design and manufacture substructure for solar PV installations • Siemens which provides transformer stations and switchgears • Digital Power Technologies B.V., Solar Projects GmbH and Sungrow Deutschland GmbH which provide inverters • FEAG St. Ingbert GmbH and Electro Sistem Deutschland GmbH, which provide transformer stations For these stakeholders, it is important that our suppliers adhere to our supplier code of conduct.
Trade and industry organisations	Organisations such as Rijksdienst voor Ondernemend Nederland, Holland Solar and Alliantie Zon facilitate grants and influence policy. We participate and share knowledge with them to ensure industry feasibility and sustainability.

OUR PEOPLE AND COMPANY CULTURE

"We regard ourselves as pioneers, always looking for new opportunities to contribute to the development of renewable energy sources. Employees have a lot of room for personal development in an organisation that is learning and growing every day. We are given an opportunity to make our mark not just on the organisation, but on the Dutch energy transition as a whole."

Esther Hoogsteen
HC Manager

The renewable energy sector is relatively young, and as such it is dynamic and ever-changing. As technology, energy systems and consumer requirements change, GroenLeven must adapt and respond to these changes.

GroenLeven was started by entrepreneurs, and innovation remains a core part of our DNA. Innovation is also what sets us apart in a labour market where technology jobs are plenty and suitably skilled candidates are few. Our employees come from diverse backgrounds but they share two things in common: a passion for solving problems, and a hunger to contribute to a cleaner and greener world.

Our commitment to sustainability is reflected in our job advertisements as we aim to recruit people who share our core values. All employees are offered hybrid working and flexible working hours to promote (among others) the use of public transport. Electrical vehicles are provided to those who are entitled to a company vehicle.

GroenLeven employees receive a range of additional benefits that reflect our commitment to people, nature and society. These include a non-contributory pension, access to (mental) health services, a fitness subscription, free fruit or vegetables during the week, and an allowance for setting up a home office. We promote a healthy work-life balance and encourage an open, transparent and supportive work environment.

We offer traineeships and give opportunities to students to work part-time in a role that is related to their studies. In this way, students are able to discover their interests in the work field, and GroenLeven have the opportunity to present ourselves as a possible future employer.

Training and development opportunities are offered to all employees, both to meet existing skills gaps and to grow employees into new positions. These consist of external training, as well as on-the-job training and internal internships. The leadership team takes part in our leadership development programme that covers personal development as well as practical leadership skills.

A company cannot thrive without human capital, and GroenLeven aims to be recognised as an employer of choice, not only because of what we offer our employees but also because of our contribution to the energy transition.

Looking ahead, we will be formalising our approach to employee goals and development opportunities. GroenLeven's business goals are broken down into departmental, and then individual goals. These will be regularly discussed between employees and their managers to monitor progress and identify development opportunities.

OUR OPERATING CONTEXT

The primary legislation governing the Dutch energy sector is the Electricity Act of 1998. The Act was an important basis for the transition to renewable energy, as it allows energy producers and suppliers to offer electricity to the market. However, the energy transition in the Netherlands is progressing faster than the legislative landscape, and the legislation in its current form often hinders rather than supports the transition to renewable energy.

The amendment of existing legislation, and the passing of new legislation, is in progress but is often hampered by a lack of understanding of the complexities of renewable energy, as well as difficulties among legislators and regulators to reach consensus on the optimal way forward.

GroenLeven is committed to contributing to a fit-for-purpose and future-proof legislative framework for renewable energy in the Netherlands. As such, we share best practices and lessons learnt with the Ministry of Economic Affairs and Climate Policy, both independently and as a member of Holland Solar and Alliantie Zon.

- Holland Solar is the industry association of the Dutch solar energy sector. Among others, it aims to influence relevant decision-making and steer the agenda regarding legislation, regulations and subsidies.

- Alliantie Zon is a coalition of frontrunners in the Dutch solar PV market. Its purpose is to share knowledge and insights from the market, supported by research agencies, in order to support policymakers in effecting the energy transition and Dutch climate goals.

PERMIT PROCESS RELATING TO SOLAR PV PARKS

Of particular relevance to GroenLeven is the Dutch process regarding the issuing of permits for the construction and operation of solar PV parks, which can take a number of years. The length of this process has a significant impact on the way GroenLeven plans and budgets for solar PV parks.

1. Consultation

Prior to applying for the permit, the applicant is required to consult with both the relevant municipality and local community, and obtain consensus on the impact, benefits and risks of the project.

2. Application assessment

The applicant then applies to the relevant municipality for a permit to construct the solar PV park. The municipality assesses compliance with the zoning plan, construction regulations, and rules regarding the external appearance of structures. Since construction of a renewable energy project is seldom included in the zoning plan, this process generally takes many weeks as it requires approval of a deviation from the zoning plan.

3. Publication and inspection of draft permit

If approved, the permit is published in draft format, and individuals are allowed a number of weeks to inspect the permit and raise objections to the municipality. The municipality must take these views into account when preparing the final permit. If the municipality dismisses an objection, an appeal can be filed with the court of first instance, and after that with the Dutch administrative high court.

4. Publication of final permit

Once the municipality is satisfied that all views have been taken into account and that the permit may be awarded, and/or the relevant court has issued its judgment, the final permit is published.

Depending on the project, intended location and environmental impact, additional consents, permits or agreements may be required.

"We recognise our responsibility to share our knowledge with policymakers, and to gain a deeper understanding of their needs and concerns. We engage with local municipalities and communities during each project, and regularly invite members of Parliament, local government and communities to our project sites."

Maarten de Groot
Marketing and Communications Manager

Sustainability strategy and governance

Sustainability initiatives at GroenLeven are aligned to BayWa r.e.'s Sustainability Framework 2025, which intends to go "beyond carbon" by addressing a wide range of sustainability aspects for society, the economy and the environment. GroenLeven has four sustainability pillars that focus our efforts to achieve our vision. These four pillars contribute to specific SDGs which we identified in 2021 as the most relevant to GroenLeven.

GroenLeven's sustainability pillars			
Contribution to the Dutch energy transition and to a cleaner and better world ("sincere")	Ethical way of working, considering (local) environment, society, people and nature ("inventive")	Construction of innovative solar parks with dual function	Market leader in renewable energy ("decisive")
7 AFFORDABLE AND CLEAN ENERGY, 13 CLIMATE ACTION	11 SUSTAINABLE CITIES AND COMMUNITIES, 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE, 15 LIFE ON LAND	8 DECENT WORK AND ECONOMIC GROWTH, 7 AFFORDABLE AND CLEAN ENERGY

When measuring our contribution, we consider specific SDG targets:

Goal	Target	Find more information in this report
Goal 7: Ensure access to affordable, reliable, sustainable, and modern energy for all	Target 7.2: By 2030, increase substantially the share of renewable energy in the global energy mix	Page 70 [Efficient energy supply from renewable sources]
Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	Target 8.7: Take immediate and effective measures to secure the prohibition and elimination of the worst forms of child labour, eradicate forced labour, and by 2025 end child labour in all its forms including recruitment and use of child soldiers	Page 44 [Upstream human rights impact]
	Target 8.8: Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular, women migrants, and those in precarious employment	Page 78 [Occupational health and safety]
Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	Target 9.4: By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities	Page 60 [Innovative solutions for clean energy technology]
Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable		Page 60 [Innovative solutions for clean energy technology]
		Page 86 [Local community engagement]
Goal 13: Take urgent action to combat climate change and its impacts	Target 13.2: Integrate climate change measures into national policies, strategies and planning	Page 60 [Innovative solutions for clean energy technology] Page 70 [Efficient energy supply from renewable sources] Page 98 [Our carbon footprint and climate change]
Goal 15: Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss	Target 15.1: By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements Target 15.3: By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world Target 15.5: Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species	Page 52 [Ecological impact and conservation of natural habitats]

Sustainability governance

Through our relationship with BayWa r.e., GroenLeven enjoys governance support from a global player in the energy sector and contributes to positive group impacts in 30 countries.

We have formal governance structures with clear mandates and defined levels of authority. We ensure that these bodies are informed at regular intervals about progress and issues.

GroenLeven is managed by a Management Board consisting of the following:

- A Chief Executive Officer (CEO) who provides leadership and is accountable for the effective implementation of the sustainability strategy.
- A Chief Financial officer (CFO) who is responsible for treasury, control, tax and administration, project finance, project sales, power purchase agreements and guarantees of origin, information technology, legal, risk and insurance.

At the end of 2021, then-CEO Roland Pechtold announced his resignation from GroenLeven, and then Chief Operating Officer (COO) Paul Peter Weeda was promoted to the position of CEO. From January to June 2022, Roland and Paul Peter acted as co-CEOs, and Paul Peter took over the reigns as sole CEO on 1 July 2022.

In March 2023, GroenLeven appointed a dedicated Sustainability Manager, responsible for refining and/or developing GroenLeven's sustainability policies and statements, monitoring GroenLeven's sustainability initiatives, and ensuring alignment with BayWa r.e.'s strategic sustainability priorities. The Sustainability Manager reports to the Strategy and New Business Manager.

As a subsidiary of BayWa r.e., GroenLeven uses or has adapted relevant BayWa r.e. policies, guidelines and procedures, including those related to sustainability and ESG.

We report annual sustainability-related data to BayWa r.e. as part of their external reporting on sustainability. Read more in the BayWa r.e. sustainability report available online.

As per the BayWa r.e. ESG policy requirements, GroenLeven complies with the following standards:

Environment	Social	Governance
GroenLeven complies with all applicable laws relating to the environment and climate change. GroenLeven takes appropriate steps to avoid or mitigate the environmental impact of our operations. GroenLeven complies with BayWa r.e.'s internal standards, which go beyond regulatory requirements and consider additional environmental aspects such as increasing biodiversity in project design.	GroenLeven adheres to all applicable laws and protocols related to employment, health and safety, and human rights. GroenLeven strives to actively engage and involve local communities. GroenLeven recognises worldwide regulations for the protection of human rights as fundamental, universally applicable requirements. GroenLeven upholds a firm commitment to creating safe, welcoming, inclusive and healthy workplaces where all employees feel appreciated.	GroenLeven ensures that our corporate governance arrangements comply with mandatory statutory standards. GroenLeven operates in accordance with all regulatory bodies with jurisdiction over our business and assets. GroenLeven operates in accordance with BayWa r.e. policies relating to anti-corruption, anti-money laundering and conflicts of interest.

Employees, business partners, customers and other third parties can report any instances of misconduct or non-compliant behaviour through an anonymous whistle-blowing system that can be accessed at **www.baywa-re.compcor.de**.

Sustainability risks and opportunities[7]

We identified key risks and opportunities related to sustainability that may impact GroenLeven's business operations and long-term growth.

Risk	Risk description
Climate change – physical risks	While renewable energy companies like GroenLeven aim to mitigate climate risk, they can still be impacted by the physical effects of climate change, such as extreme weather events that damage solar panels or infrastructure.
Supply chain	GroenLeven relies on suppliers for materials and equipment, and any issues with their sustainability practices could reflect poorly on GroenLeven. GroenLeven may face supply chain risks related to the sourcing of solar panels or other equipment used in its projects, such as labour rights abuses or environmental impacts associated with the production of these materials.
Regulation changes	Changes in regulations related to renewable energy, such as subsidies or taxes, could impact GroenLeven's profitability. Changes in government policies or regulations could impact GroenLeven's ability to operate or the profitability of our projects.
Reputation	As a company that positions itself as a leader in sustainability, any actions that contradict this image could damage GroenLeven's reputation and impact our ability to attract customers or investors.

Opportunities	Opportunity description
Economic transition due to climate change	Meeting the increasing demand for renewable energy: As more individuals and companies seek to reduce their carbon footprint, the demand for renewable energy sources like solar power is expected to increase. GroenLeven can leverage this opportunity by expanding our operations and developing new projects to meet this growing demand.
Technology innovation for renewable energy	There are opportunities for GroenLeven to innovate in areas such as energy storage, which could increase the efficiency and reliability of our operations.
Finance access due to contribution to climate change mitigation	By providing clean and renewable energy, GroenLeven can contribute to mitigate climate change and reduce greenhouse gas emissions. This provides us with opportunities to access green finance and investment from big corporations more easily.
Talent attraction	A sustainable business proposition has become increasingly influential in attracting top talent. Companies that prioritise sustainability and environmental responsibility are more likely to attract and retain employees who are passionate about making a positive impact on the world. It helps companies stand out in a competitive market, attracts employees who are passionate about environmental responsibility and ethical business practices, and fosters a sense of purpose and meaning that can improve engagement and productivity.

EU Taxonomy

The EU taxonomy is a classification system aimed at upscaling sustainable investments and implement the European Green Deal. GroenLeven supports efforts to meet the EU's climate and energy targets for 2030.

EU states have committed to more climate protection measures to combat global warming. To be the first climate neutral continent by 2050, the European Commission has put together a package of measures as part of its Sustainable Finance Action Plan. This plan seeks to direct capital flows into environmentally sustainable activities. With the EU Taxonomy Regulation, the EU has set out criteria for classifying economic activities as environmentally sustainable. It defines what can be labelled as environmentally sustainable economic activities as well as financial products, which include environmental topics that are assessed. The associated new reporting requirements for companies aim to increase the informative value of non-financial objective reporting.

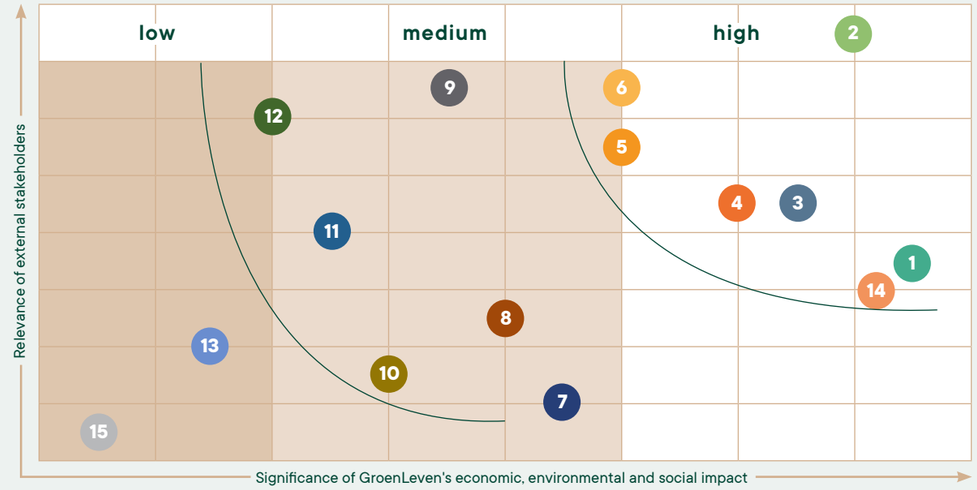
On BayWa r.e. and BayWa AG level, a thorough analysis is performed on the EU Taxonomy alignment of the group, based on data of all local entities – including GroenLeven. The taxonomy-eligible economic activities presented by BayWa AG in their 2022 sustainability report relate to renewable energy in particular, including the deployment of onshore wind and solar PV projects. For GroenLeven this means that for 2022 all of the company's revenues are considered eligible under the economic activities that are reported on page 34 of BayWa AG's 2022 sustainability report.

Read more in the BayWa AG sustainability report at **https://www.baywa.com/en/responsibility/at-a-glance** and the BayWa r.e. sustainability report **https://www.baywa-re.com/en/corporate-responsibility/sustainability**.

Our materiality journey

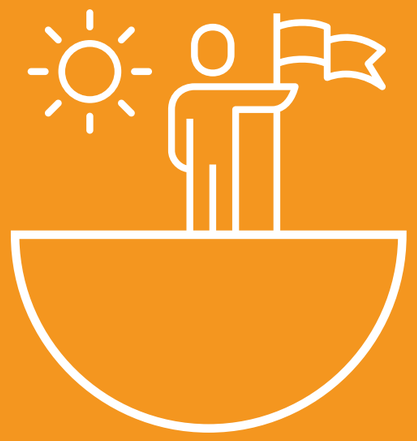
To contribute to a successful energy transition, GroenLeven needs to focus on those matters that will create a positive impact during the transition process. Our most material sustainability topics and their related indicators guide our sustainability efforts.

MATERIALITY MATRIX



1. Innovative solutions for clean energy technology
2. Ecological impact and conservation of natural habitats
3. Efficient energy supply from renewable sources
4. Occupational health and safety
5. Upstream human rights impact
6. Local community engagement
7. Employee development
8. Inclusion & diversity
9. Circular economy
10. Availability of skilled workforce
11. (Critical) materials sourcing
12. Compliance with laws and regulation
13. Managing risks, opportunities and investments to strengthen resistance to climate change impacts
14. Reduce energy consumption and GHG-emissions (including scope 3)
15. Anti-corruption

The seven most material sustainability topics identified by GroenLeven are presented below. These topics will be reviewed in 2023 during the next ESG materiality assessment which will consider the upcoming CSRD requirements. This will include a double materiality assessment with both a financial materiality/risk perspective and a perspective focusing on GroenLeven's impact on society and the environment.



Upstream human rights impact[7]

Respect for human rights is a primary concern for GroenLeven. We aim to be a responsible, inclusive corporate citizen that respects human rights, and continue working towards eliminating any human rights violations in our global supply chain.

DESCRIPTION AND CONTEXT

A coordinated response – one that spans regions and continents, and includes both businesses and regulators – is required to increase visibility and accountability in the solar supply chain.

The responsibility to protect human rights is a particularly pressing topic for GroenLeven. Unethical working practices are a global issue and have been linked to the supply and manufacturing of numerous goods and services. In the case of solar supply chains and human rights, abuses were brought to light in particular in 2021, when reports emerged of forced labour in Xinjiang, a region in China that plays a key role in the sourcing of raw materials for the production of solar panels.

We acknowledge that there are restrictions to supply chain visibility and transparency in the solar sector, and that manufacturing is unlikely to shift away from China in a meaningful way within the next five years. However, we are committed to combatting human rights abuses and increasing supply chain transparency as set out on page 50 under our global response. In order to achieve this, GroenLeven employees work closely together with colleagues from BayWa r.e. Germany to expand our influence in the solar sector and drive positive change.

Through collaboration with the BayWa r.e. dedicated Human Rights Task Force, we have been able to put pressure on Chinese module suppliers to obtain statements pledging their commitment to transparency and their commitment to ensure that no forced labour exists within their solar supply chains.

We negotiated contract clauses which require compliance to international standards and started actively evaluating new module suppliers. Our intent is to create understanding for the commercial and market imperatives related to clean supply chains and promote the competitive advantage for suppliers who are first to be fully compliant.

We are also working closely with and are fully supportive of trade associations, including SolarPower Europe (SPE) and the Solar Energy Industries Association (SEIA) in the United States, in their efforts to establish transparency in the supply chain. This includes taking meaningful and sector-wide steps such as audits to ensure compliance. We are also collaborating with the European solar industry, under the leadership of SPE, on a project to define and implement a transparency mechanism in the solar supply chain. This “Solar Stewardship Initiative” aims to develop industry standards for improved traceability and full disclosure of social aspects, and includes participants representing Chinese suppliers and European importers.

FORCED LABOUR AT XINJIANG

Xinjiang is an autonomous region in China that plays a major role in the global solar supply chain due to its production of polysilicon – a key raw material in solar PV systems. In early 2021, Sheffield University reported about forced labour at Xinjiang-based solar companies, which at the time were supplying more than one-third of the world’s polysilicon. This number increased to more than 42% by the end of 2022.

Although the Chinese government denied the allegations, the claims of human rights abuses have mounted with subsequent investigations (among others) by Sheffield Hallam University, the Breakthrough Institute and, in August 2022, a long-awaited and damning report from the UN: "OHCHR Assessment of human rights concerns in the Xinjiang Uyghur Autonomous Region, People’s Republic of China."

CHINA’S DOMINANCE IN THE SOLAR PV SUPPLY CHAIN

In 2022 the International Energy Agency published a Special Report on Solar PV Global Supply Chains that provides insight into China’s dominance in this sector – and the world’s continued reliance on China for solar products.

- Since 2011, China has invested over $50 billion in new PV supply capacity – 10 times more than Europe. Its share in all the manufacturing stages of solar panels (see image below) exceeds 80%, and the country is home to the world’s 10 top suppliers of solar PV manufacturing equipment.
- China has been instrumental in bringing down costs worldwide for solar PV. The government’s industrial polices have contributed to a cost decline of more than 80%, helping solar PV to become the most affordable electricity generation technology in many parts of the world.
- Continuous innovation led by China has halved the emissions intensity of solar PV manufacturing since 2011. This is the result of the more efficient use of materials and energy, and greater low-carbon electricity production. Despite these improvements, absolute CO_2 emissions from solar PV manufacturing have almost quadrupled worldwide since 2011 as production in China has expanded, but solar PV manufacturing represented only 0.15% of energy-related global CO_2 emissions in 2021.
- The world will almost completely rely on China for the supply of key building blocks for solar panel production through to at least 2025. Based on manufacturing capacity under construction, China’s share of global polysilicon, ingot and wafer production will soon reach almost 95%.

GROENLEVEN’S APPROACH TO HUMAN RIGHTS

GroenLeven has zero tolerance for human rights abuses, and unequivocally supports local and international human rights treaties, constitutions and laws, including the Universal Declaration of Human Rights and the International Bill of Human Rights.

We acknowledge the current limitations on full transparency and balance in our supply chain, and are committed to increasing supply chain visibility, and supporting suppliers that respect and promote human rights.

We contribute to Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

In particular contributing to target:

- 8.7: Take immediate and effective measures to secure the prohibition and elimination of the worst forms of child labour, eradicate forced labour, and by 2025 end child labour in all its forms including recruitment and use of child soldiers

PROGRESS IN 2022

"BayWa r.e. is an active member of SolarPower Europe, the European solar sector association. There, we co-sponsor the Solar Stewardship Initiative, which is developing an auditing approach to increase transparency in the solar supply chain with regard to social and environmental performance of suppliers along the entire solar value chain."

Jochen Hauff
Director of Corporate Strategy, Energy Policy and Sustainability at BayWa r.e. and Vice President of SolarPower Europe

PROCUREMENT AND SCREENING

In order to benefit from the cost savings inherent in economies of scale, GroenLeven procures most of our material and components for large-scale renewable energy projects through the BayWa r.e. procurement department. These suppliers are subject to the BayWa r.e. Supplier Code of Conduct, and many of them have longstanding relationships with the BayWa Group that allow for open and frank discussions on supply chain transparency.

Key suppliers of solar equipment and components undergo a dedicated supplier evaluation process that includes assessment of a comprehensive range of ethics and sustainability criteria, and ongoing product lifecycle analysis.

GroenLeven conducts screening on local suppliers that includes a Chamber of Commerce check, a review of the supplier's financial statements and a Dutch jurisprudence assessment. The latter includes any legal findings against landowners.

Before doing business with a new supplier, GroenLeven screens the supplier to identify possible risks. Elements that may be included in the screening include the supplier's business license, product test reports or certificates, quality management system certifications (e.g. ISO 9001) and social compliance audit reports (e.g. BSCI).

BAYWA R.E. SUPPLY CHAIN MANAGEMENT

BayWa r.e. takes a centralised approach to purchasing procedures so that local entities may benefit from the resulting synergies. They follow five steps towards achieving sustainability in supply chains.

Increase transparency in the upstream supply chains, and determine and evaluate risks that may negatively impact the environment or society.

Define initiatives, targets and KPIs to address challenges and measure progress.

Deepen dialogue with suppliers and engage for optimisations.

Use leverage and enhance partnerships with engagement in associations.

Enhance broader collaboration with both internal and external partners, and communicate progress.

BayWa r.e. has a dedicated Human Rights Task Force to ensure appropriate due diligence in supply chains. The Task Force comprises participants from the BayWa r.e. Management Board, together with representatives from management teams across procurement, risk, legal, communications, strategy and corporate sustainability functions.

GOVERNANCE AND COMPLIANCE

GroenLeven continues to implement control measures to maximise our commitment to zero tolerance for human rights violations.

- We adhere to the BayWa r.e. codes and policies regarding the protection of human rights. This includes a new Supplier Code of Conduct, launched in 2022, that sets out human rights standards as required by the German Supply Chain Due Diligence Act (Lieferkettensorgfaltspflichtengesetz, LkSG). The Code requires suppliers to provide written and signed assurances regarding respect for human rights and their commitment to conduct business in an ethical and responsible way.
- We continuously strive to mitigate the risks related to labour within our supply chain. Our contractor agreements include compliance provisions that set standards relating to employment, living conditions, and social security payments to government.
- We have a formal escalation process if a human rights violation incident is reported or discovered. Such a process would start with the affected employee and would then be escalated to the relevant line manager. From there, it has to be reported and will be discussed at the weekly Management Board meeting. Any such incident would also form part of the quarterly health, safety, environment and quality (HSEQ) report to the BayWa r.e. Advisory Board. Actions to address a human rights violation include a controls assessment, disciplinary action and supplier sanction.
- Any incidents of human rights violations or abuse can be reported via an anonymous digital whistle-blower system at **https://baywa-re.compcor.de**.

GLOBAL RESPONSE

To maximise its impact on human rights in the solar supply chain, BayWa r.e. plays an active role in a number of European and international human rights task forces. The resulting policy statements, actions and strategies are communicated to local entities such as GroenLeven.

One of these task forces is SPE's Solar Stewardship Initiative (SSI), which was launched in 2022. The SSI aims to ensure the integrity of solar supply chains and improve ESG performance by establishing mechanisms to create supply chain transparency. Among others, the SSI is creating a detailed map of the solar supply chain, and is working to ensure that supply chain transparency is an accepted standard when importing solar goods into Europe. For more information, visit **www.solarpowereurope.org** or **https://solarstewardshipinitiative.org**.

FUTURE PRIORITIES

All local entities, including GroenLeven, report to BayWa r.e. every quarter on human rights risks (among others), and BayWa r.e. is working towards improving the consolidation of this data in order to identify trends and formulate local, regional and global responses.

BayWa r.e. is preparing for The German Supply Chain Due Diligence Act (Lieferkettensorgfaltspflichtengesetz, or LkSG), which will become effective on 1 January 2024 and requires companies to prohibit human rights violations both domestically and internationally. Among others, the Act requires BayWa r.e. to implement a company-wide risk management system related to human rights violations, and conduct regular risk analysis of direct suppliers. BayWa r.e. is paying particular attention to the solar supply chain in this regard.

BayWa r.e. and GroenLeven continue to support Dutch and European manufacturers of solar products and components in an effort to strengthen the regional solar supply chain. Although Chinese suppliers are likely to continue dominating the sector for the next five years, a credible European solar supply chain will enhance regional bargaining power, especially with regard to human rights.

GroenLeven signed the International Business Conduct Agreement for the Renewable Energy Sector in March 2023. We joined a broad coalition of solar and wind energy companies, industry associations, the Dutch government, knowledge institutions, NGOs and trade unions to collaborate in solving some of the challenges in our complex supply chain. By applying international responsible business conduct standards, we can help limit actual or potential negative impacts on people and the environment.

Ecological impact and conservation of natural habitats[7]

We want our renewable energy solutions to benefit people, nature and society. To achieve this goal, we must understand the impact of our projects on their natural surroundings, and mitigate or eliminate potential negative impacts.

DESCRIPTION AND CONTEXT

GroenLeven is committed to managing the effect of our operations on the ecology and natural habitats, and protecting biodiversity in all our projects and activities.

Our planet is experiencing a dangerous decline in nature as a result of human activity, with the United Nations estimating that one million plant and animal species are now threatened with extinction, many within decades.

Biodiversity – the variety and variability of life on Earth – is essential in mitigating the effects of climate change as it contributes to healthy oceans and forests that capture carbon emissions. However, our ecosystem is delicate and can be disrupted when even a single species dies out. We therefore risk the total collapse of our ecosystem, and GroenLeven maintains that all businesses and individuals should evaluate and minimise their ecological impact as a matter of urgency.

Although it is undeniable that the use of renewable energy as opposed to fossil fuels has a positive impact on the environment, we recognise that the renewable energy sector is relatively young, and that much research remains to be done to understand the long-term environmental impact of these technologies. In this regard, GroenLeven performs regular environmental research projects with customers, environmental organisations, universities and others.

OUR APPROACH TO ENVIRONMENTAL IMPACT ASSESSMENTS

GroenLeven conducts a through environmental impact assessment before commencing with any renewable energy project. This assessment consists of three steps.

Identify possible protected species

An external ecologist evaluates the proposed project site (using Quickscan Flora and Fauna) to test the feasibility of the project against the Dutch Nature Conservation Act. The ecologist:

- Assesses the presence of protected species as defined in the Act, both within the proposed project site and in the broader influence area.
- Identifies the likely effect of the project on these species.
- If the impact is negative, identifies the extent to which this impact can be prevented or mitigated, and makes recommendations in this regard. This may include a recommendation for extensive environmental impact research.

Conduct environmental impact research (where relevant)

If recommended by the ecologist, environmental impact research is conducted and is shared with the landscape designer and ecologist.

Design the project plan

The landscape designer designs the project plan, taking into account the local ecology and natural habitats, as well as any recommendations emanating from the ecologist and environmental impact research. The ecologist reviews the plan before it is finalised.

HOW WE DEFINE AND MEASURE OUR ECOLOGICAL IMPACT AND THE CONSERVATION OF NATURAL HABITATS

This material topic is about GroenLeven's efforts to manage and protect the natural habitat of species and measures to mitigate our impact. This includes preserving biodiversity in solar parks and preventing deforestation.

KEY 2022 PERFORMANCE INDICATOR

> 15 ecological research projects performed in 2022 with (among others) Royal Haskoning, Deltares and Ecocean

We contribute to Goal 15: Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss

We focus on these targets:

- 15.1: By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements
- 15.3: By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world
- 15.5: Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species

PROGRESS IN 2022

Contributing to a greener and sustainable world I want to live in by applying opportunities in ecology and biodiversity, and clever cooperation with nature.

PERCEPTION SURVEY ON IMPACT OF SOLAR PARKS

In 2022, GroenLeven and environmental organisation Natuur & Milieu conducted research into how local residents view the development of a solar park in their area. Four communities (surrounding the Flierbelten, Bomhofsplas, Sekdoornseplas and Kloosterhaar solar parks) were surveyed, and a total of 172 local residents responded.

The majority of respondents are positive about the arrival of a solar park in their area. In addition to providing feedback on the importance of communication and participation when developing renewable energy projects, the survey highlighted the importance of considering the impact of solar parks on the environment – particularly the effects on local fauna and flora, and 'visual pollution' (horizonvervuiling or landschapvervuiling).

Natuur & Milieu's report confirmed that local communities place a high value on the proper integration of solar parks with the natural environment, innovative approaches to enhancing local biodiversity, and the multi-functional use of land. For more on this topic, see the discussion on local community engagement on page 86.

ECOLOGICALLY SENSITIVE PROJECT APPROACH

GroenLeven's renewable energy projects demonstrate sensitivity towards the environment and natural habitats. Examples of recent innovations in this regard are as follows:

- In May 2022 we opened the floating solar park on Lippe Gabriëlsplas near Ureterp. In addition to planting two small-scale fruit orchards, bat boxes were installed at various locations near the lake, and weeds were planted on the east bank of the lake to support the fish and amphibian population. Children from three primary schools in Ureterp built 140 bird nesting boxes and placed them around the lake.
- In Zonnepark Dokkum, which opened in October 2022, the water level on the project site was raised to create marshes that attract wetland birds. The fencing around the site has been dug deep into the ground to prevent predators from reaching the birds that nest on the site. Together with local birdwatchers, we monitor the bird population in the solar park in the hope that our approach will increase the number and diversity of local birds. NEF, a local social work and training company, supplies bee hotels to the solar park to contribute to biodiversity.
- We continue our research into the effects of floating solar parks on water, particularly at the Bomhofsplas sand extraction lake in Zwolle. Results thus far reveal that the water quality has remained the same, and that there is sufficient oxygen in the water.

More detail on current and completed projects is available on **www.groenleven.nl/projecten**.

UNIQUE SYSTEM FOR FLOATING SOLAR PARKS

GroenLeven designs and develops our floating solar parks to allow both light and air to reach the water. We install skylights between the solar panels, and the panels themselves allow light to pass through – all of which supports the local ecology.

The panels are anchored in the bottom of the lake instead of the banks, which promotes biodiversity in the water and along the banks.

ECO-CERTIFIED SOLAR PARKS

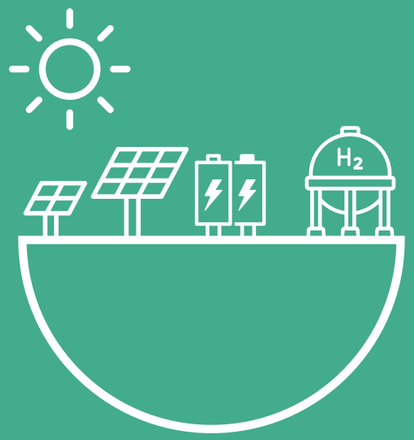
We continue our participation in Dutch solar sector research to investigate the added value of solar parks for biodiversity and their effect on soil carbon balance. The intention is that the research will result in guidelines for the design and management of solar parks that promote biodiversity and preserve soil quality. Adherence to these guidelines will be evident in the award of an EcoCertified Solar Label, which will be effective as of 2025.

The EcoCertified Solar Label project investigates 20 solar parks spread across the Netherlands, and involves Holland Solar, Wageningen University & Research, TNO, Eelerwoude and NL Greenlabel. Topics that are being investigated include:

- The use of solar parks by mammals and birds
- The importance of vegetation for insects and other invertebrates
- Soil quality, especially vegetation growth, organic matter content and carbon storage
- The impact of mowing and grazing
- The use of space and inclusion of natural elements such as herb-rich edges, pools and natural hedges

FUTURE PRIORITIES

Biodiversity is becoming increasingly important in the development of solar PV on land in the Netherlands. For GroenLeven, biodiversity is both a strategic pillar as well as a topic for which we are intrinsically motivated. In the upcoming years, we will further integrate biodiversity into our operations and intensify initiatives such as environmental research projects to gain a better understanding and improve the biodiversity integration of our projects.



Innovative solutions for clean energy technology

As a company that supplies renewable energy solutions, GroenLeven's success is dependent on our ability to innovate when it comes to clean energy technology. This means investing and deploying the right technology at the right time, and exploring how we can combine technologies in innovative ways to enhance their contribution to the Dutch electricity grid.

DESCRIPTION AND CONTEXT

When electricity supply is intermittent, renewable energy solutions need to address three components: generation, storage and conversion. We also need innovation and flexibility when addressing problems.

Although the Netherlands lags other European countries when it comes to the production of energy from renewable sources, the share of solar power in its electricity mix (40%) was higher in 2022 than in any other country in the EU. This is partly due to the fact that solar is more suitable for dual-function deployment than other types of clean energy technology.

The Netherlands is a densely populated country in which land is a precious commodity. Renewable energy technology that requires large expanses of land (without dual use) is unlikely to gain popular adoption, and the focus is therefore on dual-function deployment where an existing function is extended with a renewable energy function.

GroenLeven has developed a reputation for successful dual-function deployment, particularly with regard to solar power. However, considering the capacity constraints in the Dutch electricity grid, we recognise that the energy transition requires innovative solutions not only for energy generation, but also for energy storage and conversion.

We believe that we are well placed to drive this innovation for the following reasons:

- As the fifth-largest investor in the Dutch energy transition – and the largest in the field of solar energy – GroenLeven has a proven track record in the implementation of renewable energy projects.
- GroenLeven is well positioned in a growing market for renewable energy. We have in-depth technical knowledge, a solid customer base and a stable supplier network.
- Innovation is an important part of GroenLeven's value propositions to both our customers and employees. Employees are attracted to a workplace that encourages creativity and critical thinking, and customers require innovate solutions on their journey to renewable energy.
- GroenLeven has traditionally acted as an innovation hub for BayWa r.e., particularly regarding floating PV projects, agri-PV and hydrogen. This relationship ensures that best practices and lessons learnt by GroenLeven are shared with BayWa r.e.'s other associates, which further drives the global energy transition.
- New approaches and business models are required to ensure that renewable energy companies such as GroenLeven remain future-proof and sustainable, especially since government subsidies are playing less of a role in revenue models.

HOW WE DEFINE AND MEASURE OUR INNOVATIVE SOLUTIONS FOR CLEAN ENERGY TECHNOLOGY

GroenLeven is committed to researching, developing and implementing innovative renewable energy solutions that prevent climate change. As the sector grows and matures, we too need to adapt in order to continue making a significant contribution to the Dutch energy transition.

We contribute to Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

In particular contributing to target:

- 9.4: By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities

We contribute to Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable

And Goal 13: Take urgent action to combat climate change and its impacts

In particular, contributing to target:

- 13.2: Integrate climate change measures into national policies, strategies and planning

PROGRESS IN 2022

"Many of our solutions have progressed successfully through the research, pilot and commercial implementation phases. We now want to take the next step, which is to implement these solutions at scale."

Joep Sparidaens
Head of New Business and Improvement Projects

A FORMALISED APPROACH TO INNOVATION

In October 2022, GroenLeven established a dedicated department for New Business and Improvement Projects. The purpose of the department is to strengthen our value propositions and future-proof the organisation.

This is done by identifying relevant projects, developing innovative solutions, and then standardising these solutions so that they can be implemented at scale.

A formalised process is followed to ensure optimal project selection and execution.

1. Idea

Each project begins with an idea put forward by an existing or potential customer, or by an employee. Ideas can span any business activity – from energy generation and storage, through to energy conversion and management – and can include both new solutions and improvements to existing solutions.

2. Assessment

Each idea is evaluated against the following criteria:

- **Market attractiveness:** Especially the anticipated size, growth potential and profitability of the market, as well as existing and potential competition
- **Technological maturity:** Projects can involve relatively new technology (such as green hydrogen), or innovative combinations of tried-and-tested technology
- **Effort:** The time required, cost, and anticipated project complexity
- **Alignment with strategy:** The project is evaluated in terms of its alignment to GroenLeven's strategy, and capacity constraints and opportunities are considered
- **Time to profitability:** Renewable energy projects usually take several years to reach profitability
- **Project sponsorship and support base:** The likely support from both internal and external stakeholders is taken into account

Ideas are scored and ranked based on the above criteria, and the contribution of the project to the overall project portfolio is considered.

3. Proposal and approval

The department compiles a project proposal that outlines the business case for the project. It includes a description of the project idea, objectives, benefits, time and cost estimates, other resources required, and possible risks and opportunities. The proposal is submitted to the Management Board for approval.

4. Execution

If approved, the department conducts detailed planning, budgeting and resource allocation. The project is executed, and progress is monitored and reported on.

In addition to providing dedicated and focused attention to innovation, the work done by the New Business and Improvement Projects department helps GroenLeven manage the inherent risks involved in technology-based innovation – risks that often come down to timing.

Our focus is shifting to innovative combinations of existing technologies – such as solar or wind combined with hydrogen or other storage systems – and successful deployment requires a certain minimum level of renewable energy availability. For example, there is general consensus that hydrogen will play a significant role in the energy system of the future, but this technology is dependent on the availability of renewable electricity. If we wait until then to invest and innovate, it will be too late; but if we do it too early, we risk expending our efforts on a solution for which the market does not yet have an appetite.

By following our formalised process for project selection and execution, these risks and potential opportunities are considered early on. Once a project is selected, speed is critical. We follow an agile method in project execution where we continually test, learn and adapt. We also carefully consider project ideas that are proposed by existing customers, since we then have a partner who is willing to innovate and test with us.

SPEEDING UP THE ROLLOUT OF SOLAR CARPORTS

Solar carports are a relatively simple and easy way to generate renewable electricity and reduce dependence on the Dutch electricity grid – especially if erecting solar panels on a roof is a challenge due to capacity or insurance.

In November 2022, GroenLeven acquired MORRENsolar to accelerate the rollout of solar carports. MORRENsolar specialises in the design and construction of solar projects, with a particular focus on carports. The acquisition combines MORRENsolar's specialist knowledge and experience with GroenLeven's development and execution power.

GroenLeven estimates that there are approximately 16 million parking spaces in the Netherlands. Installing solar panels on carports means that no extra space is required for the generation of sustainable energy. Furthermore, when combined with charging points for electric cars, solar carports facilitate the transition to electric transport and relieve pressure on the electricity grid. This is particularly relevant in the Netherlands, which is a European leader in electric driving. Data indicates that approximately 30% of new vehicles sold in the Netherlands have a plug.

SINNEWETTERSTOF: GREEN HYDROGEN PROJECT WITH ALLIANDER

In March 2022, GroenLeven and Alliander opened the first domestic hydrogen factory in Oosterwolde, Friesland. Through this project, we are investigating the role that green hydrogen can play in the future energy system.

At certain times, more surplus electricity is generated than can be fed into the Dutch grid, and this "excess" electricity is then lost. In the Sinnewetterstof project, electricity from GroenLeven's solar park is converted into 100% green hydrogen through an electrolyser. The hydrogen is then compressed, loaded into large cylindrical storage tanks, and then transported by truck to hydrogen filling stations across the Netherlands. The project has the capacity to produce over 200,000 kg of hydrogen annually.

The first green hydrogen flowed through the pipes at Sinnewetterstof in 2023. Research into the use of hydrogen in the Dutch energy system is still in its infancy, and much work remains to be done in terms of testing, business models and legislation. However, GroenLeven is confident that this technology will offer feasible solutions to some of the grid congestion challenges in the Netherlands, and lessons learnt through this project will be shared with regulators and legislators, audit and quality bodies, investors, customers and BayWa r.e.

WHAT IS GREEN HYDROGEN?

Hydrogen can be produced from a range of resources including fossil fuels, nuclear energy, biomass and renewable energy sources. The environmental impact and energy efficiency of hydrogen depend on how it is produced.

Green hydrogen is made by using electricity from renewable energy sources to split water into its component parts of hydrogen and oxygen, emitting zero CO_2 in the process. Green hydrogen is therefore produced with almost no GHG emissions.

The International Energy Agency estimates that less than 1% of global hydrogen production is green.

LARGEST ROOFTOP SOLAR PROJECT

In December 2021, GroenLeven unveiled the new solar roofs on the GETEC Park, Emmen. Nine rooftops were covered, leading to one of the largest collections of solar roofs we have built to date, and one of the largest in the Netherlands. The roofs span 35,000 m^2 (about six football fields) and contain more than 21,000 solar panels that produce an annual 7.9 MWp of green electricity. Since GETEC operates a closed distribution system, all energy will be supplied and used by companies located at the GETEC Park.

It is estimated that the solar roof will prevent 2.5 megaton of CO_2 emissions, which is equivalent to the emissions produced annually by approximately 2,400 households.

FUTURE PRIORITIES

The New Business and Improvement Projects department is working on a number of projects involving innovations in solar panel deployment, the charging of electric vehicles, energy storage mechanisms, and solutions that take into consideration variations in supply and demand. Some of these projects allow for the generation, storage and use of electricity completely independently of the grid.

In the past, most of GroenLeven's projects were Development, Engineering, Procurement and Construction (DEPC) projects that were deployed by GroenLeven for our own balance sheet, and were then sold to investors. However, customers are increasingly approaching us to develop large-scale floating and land-based solar PV solutions. We will therefore be investigating possible updates to our internal processes and procedures to make sure that we are able to offer a tailored approach to customer-specific projects.

"In the future we are likely to have a surplus of renewable energy in the summer, and then too little energy in the winter. Role players in the Dutch energy transition must therefore investigate and invest in energy storage systems. Hydrogen offers potential in this regard, as it allows us to store huge amounts of energy for several months."

Han Slootweg
Director of Asset Management at Enexis

Efficient energy supply from renewable sources

Our core business is to contribute to the renewable energy transition in the Netherlands. As the sector matures, this requires us to test and implement more efficient solutions that address energy challenges in both the short and long term.

DESCRIPTION AND CONTEXT

To keep pace with developments in the renewable energy sector, we focus on incorporating the most effective and efficient components in our projects, improving project layout and construction based on lessons learned, and working towards reducing grid congestion.

Our sector changes regularly as new technology improves our ability to generate energy from renewable sources. Manufacturers continue working towards increasing the efficiency of solar panels, which are now able to convert over 20% of sunlight to energy, compared to around 10–15% in the 1990s.

As a subsidiary of BayWa r.e. we have access to some of the top renewable energy suppliers in the world, and this helps GroenLeven stay abreast of the latest developments in the sector. These developments extend beyond solar panel efficiency to inverters, which now have only minor energy loss.

New technology also requires changes to engineering processes so that the latest improvements are integrated into project design and execution.

In addition to using improved technology in our projects, we remotely monitor the efficiency of our solar parks to ensure that they function optimally. Through this system we are able to identify and replace defective or degraded components, and gather data across projects to identify best practices and increase future project efficiency.

"Technological developments are helping to extend the lifespan of large solar projects. Our earlier projects had an estimated lifespan of 15 to 25 years, but we are now able to increase this to 35 years. This fundamentally changes the business case and reduces the time required to see a return on investment."

Rik Terpstra
Business Control Manager

HOW WE DEFINE AND MEASURE EFFICIENT ENERGY SUPPLY FROM RENEWABLE SOURCES

This material topic is about ensuring reliable supply while improving energy efficiency. This includes minimising network losses and managing the risks associated with integration into existing energy infrastructure.

KEY 2022 PERFORMANCE INDICATORS

- *61.4 MWp installed (2021: 294.3)*
- *27 solar projects constructed in 2022 (2021: 79) of which 3 are large-scale projects (2021: 10) and 24 are rooftop projects (2021: 69)*
- *147,265 solar panels installed* (2021: 621,227)*
- *21,105 households can be provided with solar energy from GroenLeven*** (2021: 96,000)*

** The decrease in the number of solar panels installed from 2021 to 2022 is due to the fact that many solar projects that had been in development for some time were deployed in 2021*

*** Based on the Dutch average electricity consumption of 2,750 kWh per household per year*

We contribute to Goal 7: Ensure access to affordable, reliable, sustainable, and modern energy for all

In particular contributing to target:

- 7.2: By 2030, increase substantially the share of renewable energy in the global energy mix

And Goal 13: Take urgent action to combat climate change and its impacts

In particular contributing to target:

- 13.2: Integrate climate change measures into national policies, strategies and planning

PROGRESS IN 2022

IMPROVED EFFICIENCY AND EFFECTIVENESS

In 2022 we continued to improve the efficiency and effectiveness of our renewable energy projects.

- New approaches to the design and construction of floating solar parks mean that these parks can now be deployed faster and more cost effectively.
- We have begun incorporating bifacial solar panels in some of our projects, allowing for energy to be produced from both sides of the panel instead of just one. These panels increase efficiency by an estimated 8%, and they are often also more durable.
- We have changed our business model to focus on obtaining financing before project construction, rather than during or after construction. This reduces GroenLeven's capital outlay and puts us in a position to finance additional projects in our large project pipeline.
- The supply of products and components was a significant challenge in 2022 due to the growth in the demand for renewable energy technologies in Europe. We therefore increased our supplier base in an effort to stabilise supply.

BESS

The development of BESS received special attention in 2022. The demand for battery solutions has seen a steep increase over the past few years, and we regard these solutions as an important next step in the ongoing energy transition.

Three battery solution sites have been designed, and our intention is to finance, sell and construct them in 2023–2024. These sites are located next to existing solar parks and will use the same grid connections, but they are completely independent, standalone projects.

GroenLeven expects BESS to make a significant contribution to easing grid congestion in the Netherlands. The rapid growth in solar power in 2022 has had the unfortunate consequence of worsening grid congestion, and battery storage offers a practical solution to balancing demand and supply on the grid.

BOOSTING RESEARCH AND DEVELOPMENT IN THE RENEWABLE ENERGY SECTOR

In September 2022, GroenLeven opened the doors to the Solar Innovation and Experience Centre (SEIC) located between Emmen and Klazienaveen. This futuristic and fully circular building functions as a practical research and experimentation centre focusing on sustainable energy generation and new forms of energy storage. Teaching and other facilities will also be made available to technical education institutions in the region.

A number of parties were involved in realising this project, including GroenLeven, Ondernemend Emmen, the municipality of Emmen, Dutch TechZone and the province of Drenthe. The SEIC is located next to the Oranjepoort solar park, which was developed by GroenLeven.

It is anticipated that the SEIC will improve collaboration between the education and business community, encourage more young people to enter the field of technology, and contribute to training professionals in the sustainable energy sector.

INVESTIGATING THE POTENTIAL OF AGRI-PV

In 2022, GroenLeven launched an agri-PV pilot project with horticultural company royalpride. GroenLeven constructed a greenhouse-type installation containing solar panels instead of glass. These solar panels are specially manufactured to increase the amount of sunlight that reaches the crops underneath, and they are also placed further apart than in a traditional solar park. A variety of crops – primarily those that do not require copious amounts of sunlight – will be planted in the greenhouse to help test the viability of the solution.

Agri-PV holds much potential for the renewable energy transition. If correctly constructed, agri-PV installations protect soft fruit against extreme weather conditions, and assist in maintaining a stable temperature. They are also more durable than traditional plastic arches.

The Netherlands is a frontrunner in agri-PV, but much remains to be done to truly understand and capitalise on this solution. Design and construction are fundamentally different than for other solar solutions, and panels are less efficient as sunlight needs to reach the crops beneath. In the absence of subsidies or other forms of financial support, it therefore takes longer to obtain a return on investment.

Nonetheless, as a pioneer in the renewable energy sector, GroenLeven continues to explore the potential of agri-PV to contribute to the renewable energy transition.

FUTURE PRIORITIES

A financially optimised solar project would cover as much land with solar panels as possible. However, other perspectives, such as biodiversity and aesthetic aspects for local residents, play a part as well. GroenLeven continues to work towards obtaining the right balance between engineering and yield efficiency, and sustainability requirements.

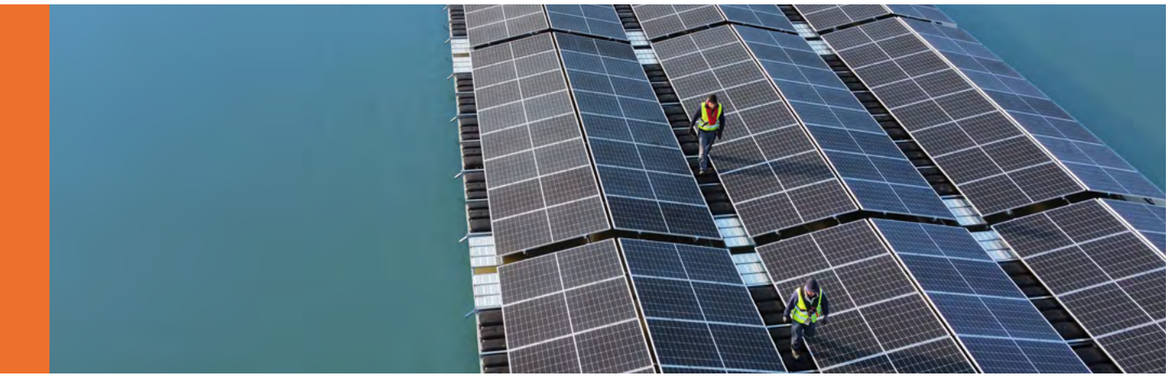
This necessitates the use of the latest proven technologies, a new approach to project design, updated construction methods, and continuous engagement with regulators and other affected stakeholders.

Occupational health and safety

We are committed to our people, and recognise that our technical and construction teams work in environments that are prone to health and safety hazards. Occupational health and safety is therefore a key focus area for GroenLeven.

DESCRIPTION AND CONTEXT

Due to the nature of our business, many of our employees and contractors work on rooftops, on water and in other potentially dangerous situations, and handle hazardous equipment and machinery. We have a duty of care and legislative requirement to keep people safe.



GroenLeven has a zero accident and incident philosophy, and achieving this goal requires continual identification and monitoring of health and safety risks and incidents, and a swift and far-reaching response. Our employees and contractors are required to adhere to our HSEQ policy, which is founded on the health and safety requirements of a number of local and international standards bodies.

OUR POLICY STATEMENT

Our HSEQ policy sets out our commitment to and accountability for HSEQ standards. This policy applies to all employees and contractors, and includes the following principles:

- Maintaining and strengthening stakeholder relationships, understanding and meeting their needs and expectations, and creating value for all.
- Reducing CO_2 emissions through the use of environmentally friendly machinery and materials.
- Actively developing methods to protect fauna and flora.
- Taking care of our people in all work-related activities through risk identification, assessment and process management.
- Being a leader in our industry through high-quality operational equipment, competent employees and the highest possible standards.
- Continuous improvement of our integrated management system through the Plan-Do-Check-Act cycle.

CERTIFICATION

GroenLeven is certified according to the following standards:

- ISO 9001 (quality assurance).
- ISO 14001 (environmental management).
- VCA-P standard for creating a healthy and safe working environment.
- InstallQ standard for electrical and PV installations.

To support the implementation of our HSEQ policy, GroenLeven has an integrated management system that fulfils the requirements of the above certifications.

INCIDENT REPORTING AND INVESTIGATION

GroenLeven continually gathers health and safety data through a centralised system. Using this system, the HSEQ team tracks a set of indicators and reports on these to the Management Board on a quarterly basis. Indicators include:

- The number of non-compliances (unsafe acts and unsafe conditions) among GroenLeven employees and per contractor organisation.
- The type of non-compliance. Employees and contractors are required to comply with regulations such as using personal protective equipment (PPE), erecting safety barricades and signs, storing materials safely, and keeping walking paths free from hazards. A first aid responder and first aid kit must also be available at every project site.
- The type of project site involved in a non-compliance, such as a large-scale solar park installation, a rooftop installation or a floating solar park.
- Any incident resulting in personal injury.

INCIDENT LEVELS

GroenLeven follows a formal process for employee and contractor incident reporting that classifies incidents into three levels:

LEVEL 1 – UNSAFE SITUATION

An unsafe situation has the potential to become an incident.

LEVEL 2 – INCIDENT WITHOUT ABSENCE

The affected person can proceed with his or her work on the same day. In most cases, first-aid treatment is sufficient.

LEVEL 3 – INCIDENT WITH ABSENCE

The affected person cannot continue work as of the moment of injury. This type of incident can turn into a lost time injury (LTI).

Incident notification consists of an initial (often verbal) notification, followed by written notification to company management. The project manager is responsible for investigating and compiling an initial report within 6–24 hours (depending on the incident level), and members of the HSEQ team are responsible for monitoring remedial actions.

For major incidents, the head of department leads the investigation team, supported by (if required) the project manager, members of the HSEQ team, other senior managers and a subject-matter expert. In all cases, the head of department shares lessons learned with GroenLeven employees and contractors.

A root-cause analysis is conducted on all incidents to ensure the effectiveness of remedial action. Depending on the cause of the unsafe act or condition, remedial action may include the following:

- Additional education and awareness initiatives, such as adding information to the health and safety ‘toolbox’ and scheduling ‘toolbox talks’.
- In the case of unsafe conditions caused by site layout, these are immediately addressed through additional monitoring, security and safety measures, and are then taken into account in future project design.
- In the case of repeat offences by an employee or contractor, disciplinary action may be taken against the relevant GroenLeven employee, and the agreement with the relevant contractor may be terminated.
- Where relevant, additional safety regulations or conditions are added to the GroenLeven HSEQ policy or to contractor agreements.

HOW WE DEFINE AND MEASURE OCCUPATIONAL HEALTH AND SAFETY

This material topic is about ensuring healthy and safe working conditions for people. Such conditions are recognised as a human right and are addressed in authoritative intergovernmental instruments such as the International Labor Organization (ILO) and Organisation for Economic Co-operation and Development (OECD).

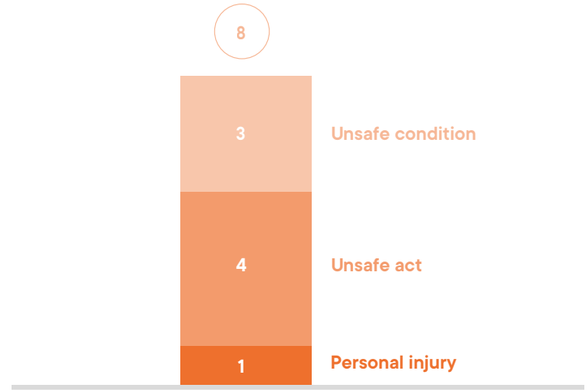
KEY 2022 PERFORMANCE INDICATORS

- *0 lost time injury frequency rate (LTIFR)*
- *8 registered incidents related to health and safety**
- *70 workplace inspections***

** Four unsafe acts, three unsafe conditions and one personal injury*

*** A workplace inspection is an inspection of a project site, installation or workplace in which the focus is on identifying situations that are unsafe or impose a risk of becoming unsafe over time. In addition, the inspection focuses on whether the people present work in accordance with the agreements made in the health and safety plan, and in accordance with legal requirements.*

NUMBER AND TYPE OF INCIDENTS IN 2022



We contribute to Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

In particular contributing to target:

- 8.8: Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular, women migrants, and those in precarious employment

PROGRESS IN 2022

GroenLeven is pleased to report that the number of findings emanating from workplace inspections has decreased by 25%, from an average of 3,375 findings per inspection in 2021 to 2,527 in 2022. We believe that this is due to ongoing health and safety awareness initiatives, as well as the fact that we have extended the responsibility for executing workplace inspections beyond the site safety coach to include the project manager.

Health and safety adherence among our contractors remains an area of concern. In 2022, contractors were involved in 100% of incidents, non-conformities and near-miss incidents. Prior to project commencement, we meet with contractors to review potential hazards and risks, and explain the safety requirements described in our HSEQ policy and other guidelines.

In 2022 we also conducted training for contractors and employees on topics including the use of PPE, good housekeeping, managing the effects of sun and heat, and last-minute risk analysis – a short assessment performed immediately before the start of work to identify and exclude all potential safety, health and environmental hazards.

We also re-assessed the GroenLeven Risk Inventory and Evaluation. Due to a high workload, this is postponed to 2023.

FUTURE PRIORITIES

Our goal remains to achieve zero incidents at all our offices and project sites, and health and safety awareness is our key tool in this regard. In 2023 our focus will be on:

- Launching new health and safety programmes
- Increasing the responsibility and tasks of internal stakeholders with regard to health and safety
- Implementing a standardised problem-solving sheet to foster continuous improvement and actively address health and safety issues during the project design phase

Local community engagement

GroenLeven continues to identify new ways to engage local communities in renewable energy projects – not just because of legislative and best-practice requirements, but also as part of our drive for an inclusive transition to renewable energy.

DESCRIPTION AND CONTEXT

GroenLeven aims to increase acceptance of renewable energy technologies, and ensure that local communities benefit from renewable energy projects. We follow a number of key principles when engaging with local communities:

- Identify unique opportunities for engaging with the local community
- Involve the community early in the project planning process through transparent communication and project information
- Incorporate the interests and concerns of the local community during project planning, construction and operation
- Where possible, establish or promote local sustainability initiatives associated with the project
- Ensure environmental protection and the conservation of natural habitats
- Contribute to the municipal energy transition in a way that goes beyond regulatory requirements

"The transition to renewable energy requires a shift in mindset among individuals, businesses, regulators and legislators. GroenLeven aims to understand and address the concerns around renewable energy technologies in order to facilitate the green transition."

Willem Biesheuvel
Head of Project Management

WE HAVE DEFINED THREE KEY STAKEHOLDERS IN TERMS OF LOCAL COMMUNITY ENGAGEMENT

LOCAL COMMUNITY CONCERNS

Despite general acceptance in the Netherlands that renewable energy is the way of the future, it remains challenging to obtain widespread consensus on and acceptance of renewable energy projects. Although the transition to renewable energy benefits society as a whole, individuals and municipalities who are directly impacted by renewable energy projects often have a number of concerns.

GroenLeven has identified three common concerns expressed by local communities. These concerns, and our response, are outlined in the table that follows.

Local community concern	GroenLeven response
Landscape and ecological impact, especially 'visual pollution' (horizonvervuiling or landschapvervuiling)	GroenLeven designs renewable energy projects in such a way that they integrate with the local environment as seamlessly as possible. Where possible (and if allowed by the relevant local council): • Trees or hedges are planted to 'hide' solar parks from view • Green areas, orchards and recreational areas (such as walkways) are developed around solar parks for the enjoyment of the local community • The layout of the park is optimised for integration with the local ecology, such as by increasing the space between panel rows GroenLeven works with universities, research bodies and environmental groups to anticipate, monitor and manage the impact of our operations on local fauna and flora. See more information on page 52.
Health and safety, such as fire risk or toxic fumes	Health and safety concerns are generally the result of a lack of understanding of renewable energy technologies, and can therefore be easily allayed through education and awareness campaigns. Members of the local community are also invited to the project site during construction, and on the official opening of the project, to tour the site and raise any questions or concerns.
Ownership	From a financial perspective, renewable energy projects usually benefit the local community only indirectly. The energy generated is contributed to the Dutch electricity grid, so while the price of electricity overall may decrease as a result of the project, the local community does not receive specific financial benefit. GroenLeven continues to investigate ways in which local communities can derive more specific benefits from renewable energy projects, such as through crowdfunding campaigns that increase local ownership, and prioritising work funded by local investors.

HOW WE DEFINE AND MEASURE LOCAL COMMUNITY ENGAGEMENT

This material topic is about GroenLeven's economic impacts and the broader societal benefits we can offer local communities. It also relates to respecting the rights of broader society and mitigating any negative economic impacts.

KEY 2022 PERFORMANCE INDICATOR

*At all large-scale projects, local businesses were involved in the construction in 2022.**

** We define local businesses as those within 30 km of a project.*

GroenLeven successfully reached the indicator for this material topic in 2022. Local businesses were involved in four large-scale projects finalised in the 2022 reporting year, and were responsible for activities such as site preparation, construction support, waste management and security.

We contribute to Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable

PROGRESS IN 2022

"Members of the local community want to be heard. We involve them in project planning and regularly show them around the construction site. This makes a big difference when it comes to shifting mindsets towards renewable energy."

Wiebren Santema
Head of Development

MONITORING ENGAGEMENT

GroenLeven uses a variety of communication tools to educate and inform the local community on planned or existing renewable energy projects. Traditional local media (such as newspapers and radio) are used, together with social media.

Social media is emerging as a popular and powerful communication tool as it allows members of the local community to engage directly with GroenLeven. Questions or concerns posted on social media are addressed promptly, and concerned members of the community are often invited to the site for a tour and in-person discussions.

GroenLeven uses a media monitoring service to track media activity and measure online engagement. Typical indicators that are investigated include:

- The customer type (e.g. nature lovers, people with an interest in renewable energy, etc.)
- The most popular keywords searched
- The number of likes and mentions of GroenLeven and/or specific projects
- The average time spent reading GroenLeven articles
- Trends in commentary, both positive and negative
- Typical local community concerns regarding renewable energy projects

On completion of a project, specific stakeholders – such as local councils and businesses involved in the project – are requested to complete a questionnaire in which they rate their experience working with GroenLeven, and specifically the level of collaboration. This feedback is discussed internally in order to identify best practices and areas for improvement.

INNOVATIVE LOCAL OWNERSHIP MODELS

Local ownership has become an important part of the discussion around renewable energy projects, and often plays a key role in the permitting process and general community acceptance. GroenLeven supports local ownership and has implemented a number of innovative ways for local communities to share in project ownership or enjoy more direct financial benefits.

- In some cases, projects are sold to local owners (often the local energy corporation) after construction has been completed. The local owner then acquires some of or all the shares in the SPV from GroenLeven. An example is the floating solar park on the Mussels near Beilen, which was acquired by a Mussels cooperative (Coöperatie Project de Mussels UA) and the local water board (Water Board Drents Overijsselse Delta) in February 2022.
- In other cases, a component of the project is earmarked for local sale – such as a small solar park next to a larger solar park.
- The project owner – such as GroenLeven or the local energy corporation – may contribute to a local fund aimed at supporting local energy-efficiency initiatives, such as installing solar panels on the roofs of houses or sports clubs in the community.
- Crowdfunding has become a popular way for members of the local community to share in project ownership. These campaigns are advertised in local and social media, and have proven popular due to the fact that investment returns are quite attractive when compared to traditional investment options.

CROWDFUNDING FOR THE SOLAR PARK IN DAALKAMPEN

In April 2022, a solar park with more than 40.000 solar panels was opened in Daalkampen. The solar park was built by GroenLeven and De Jong Energie B.V. and is expected to generate approximately 21.7 MWh of sustainable electricity per year – enough to meet the needs of approximately 7,200 households annually.

The project was financed in part through a crowdfunding campaign in which members of the local community were invited to invest a minimum amount of € 1,000 for a term of four years and eight months, at a guaranteed interest rate of 5%. The campaign reached its target of €500,000 in less than two weeks.

SUPPORTING LOCAL BUSINESSES AND COMMUNITY MEMBERS IN DOKKUM

In October 2022, GroenLeven opened the first solar park in Dokkum, where 32,000 solar panels provide green electricity for more than 5,000 households, which is approximately 80% of Dokkum.

The park borders the industrial area of Dokkum, and GroenLeven has planted a significant amount of greenery around the park to ensure that it is well integrated into the landscape. The solar plant is next to a waterway and is rich in greenery, and a 3 km green walkway and apple orchard have been added for the local community to enjoy.

Approximately 1,200 of the solar panels in the park have been split off for local ownership, and GroenLeven hopes to finalise this transfer in 2023. Many local parties were involved in the realisation of the solar park, including the Dokkum entrepreneurs' association, and local businesses providing services such as steel provisioning, construction, transport and bee hotels (to promote biodiversity). Local entrepreneurs remain involved in the park to clean the panels and maintain the surrounding greenery.

DRIVING THE RENEWABLE ENERGY TRANSITION IN LEMSTERHOEK

In October 2022, GroenLeven opened a solar park in Lemsterhoek near Lemmer. The park contains 58,000 solar panels and generates green energy for about 11,500 households (about two-thirds of Lemmer). This is the first solar park for which the De Fryske Marren municipality has issued a permit since 2018.

The solar park is connected to the Lemsterhoek industrial estate and was built on a site that does not offer sufficient agricultural prospects. In consultation with the municipality, GroenLeven added a number of additional natural features to the park to ensure that it fits into the landscape, such as reed beds on the north side. The park is visually completely separated from the outside world through landscape integration.

GroenLeven concluded a participation agreement with the municipality to ensure that the surrounding area benefits from the solar park. We make an annual financial contribution to the local sustainability fund, which the municipality uses for social projects and to make the region more sustainable. Local residents within a radius of 350 m can purchase solar panels and an inverter at an affordable price, thanks to a discount campaign from GroenLeven.

Energy cooperative Gaasterland purchases local green electricity from the park, and it also has its own installation in the solar park that it uses to generate green electricity for its own members, in accordance with the Subsidy Scheme for Cooperative Energy Generation (Subsidieregeling coöperatieve energieopwekking, SCE).

BECOMING GOOD ANCESTORS

GroenLeven was an official partner and main sponsor of Arcadia and Bosk!, a triennial arts and community event held in Friesland. For 100 summer days between May and August 2022, a slow-moving art exhibition of over 1,000 trees travelled through the streets of Leeuwarden. The purpose of this 'walking forest' was to give a voice to the natural world, and challenge people to consider how they would like to leave the world for future generations.

FUTURE PRIORITIES

GroenLeven continues to aim for increased local ownership in 2023 – whether this be ownership by the local community, cooperatives or investors. For solar parks, the aim is to have at least 50% local ownership in the short term.

We have also determined that it will be beneficial to all parties to formally document our approach to local community engagement, the potential positive and negative impacts of renewable energy projects on local communities, and processes for raising concerns and remediation.

"Implementing renewable energy technologies is one thing; bringing people with you is another. To address climate change and solve social problems, we need collaboration and systemic change. One of GroenLeven's primary contributions is their ability to be radically innovative while also building social capital for the energy transition. They continuously question the status quo and work with local communities in the green energy journey."

Werner Schouten
Director of the Impact Economy Foundation

SHIFTING ATTITUDES TOWARDS THE GREEN TRANSITION

Research shows that support for sustainable energy projects has increased as a result of the war in Ukraine.

The 2022–2023 EIB Climate Survey, conducted in August 2022 and published by the European Investment Bank (the lending arm of the EU), found as follows:

- Nearly six in 10 Dutch people say they are feeling the impact of climate change in their daily lives
- 74% think that if we do not drastically reduce our consumption of energy and goods in the coming years, we will be heading for a global catastrophe
- 79% feel that the government is reacting too slowly, and only 29% believe the Netherlands will succeed in substantially reducing its carbon emissions by 2030
- Dutch people expect the government to prioritise the development of renewable energies (42%) before focusing on energy supply diversification to avoid being overly reliant on a single energy provider (33%)

According to research conducted by the Dutch Association for Renewable Energy (Nederlandse Vereniging Duurzame Energie, NVDE), almost 80% of Dutch people find investing in clean energy very important, and more than one-third say they would like to see more solar parks (37%) and wind turbines (36%) in their municipality.

Our carbon footprint and climate change

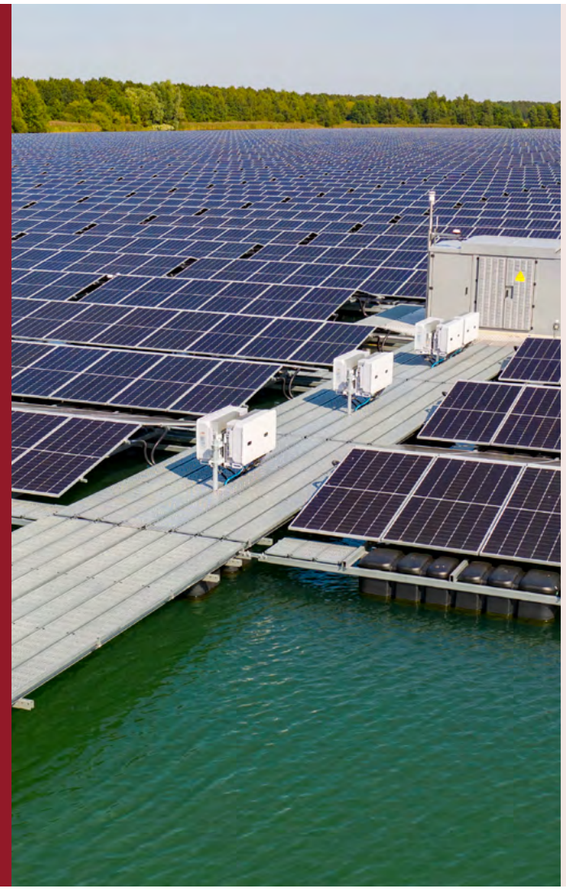
GroenLeven's core business is to reduce the use of fossil fuels through innovative renewable energy solutions. However, we recognise that our business operations and activities cause greenhouse gas (GHG) emissions, and we aim to mitigate or eliminate these emissions to contribute to climate change goals.

DESCRIPTION AND CONTEXT

GroenLeven aims to contribute to a better and cleaner world through the development and implementation of sustainable energy solutions. However, we are also consumers of electricity, fuel and other resources at our offices and project sites, and along our global supply chain – and this causes GHG emissions.

In our efforts to reduce our negative impact on the environment, we are guided by local and international legislation, particularly the following:

- The 2015 Paris Agreement on climate change, which aims to limit the increase in the global average temperature to well below 2 °C above pre-industrial levels, and preferably limit the increase to 1.5 °C. To reach this goal, GHG emissions must peak before 2025 at the latest, and decline 43% by 2030.
- The 2019 EU agreement to cut GHG emissions by at least 55% by 2030, with the ultimate aim of making the EU climate neutral by 2050.
- The 2019 Dutch National Climate Agreement, which aims to achieve a 49% reduction in national GHG emissions by 2030 compared to 1990 levels. This was expanded by the 2021–2025 Dutch cabinet to a hard target of 55% reduction, and even aiming for 60%.



SCOPE 1, 2 AND 3 GHG EMISSIONS

GroenLeven and the BayWa Group use the accounting standards published by the GHG Protocol to report on emissions. This Protocol contains the world's most widely used GHG accounting standards for companies, and it classifies GHG emissions into three scopes:

SCOPE 1
Direct emissions from owned or controlled sources, such as company facilities and vehicles.

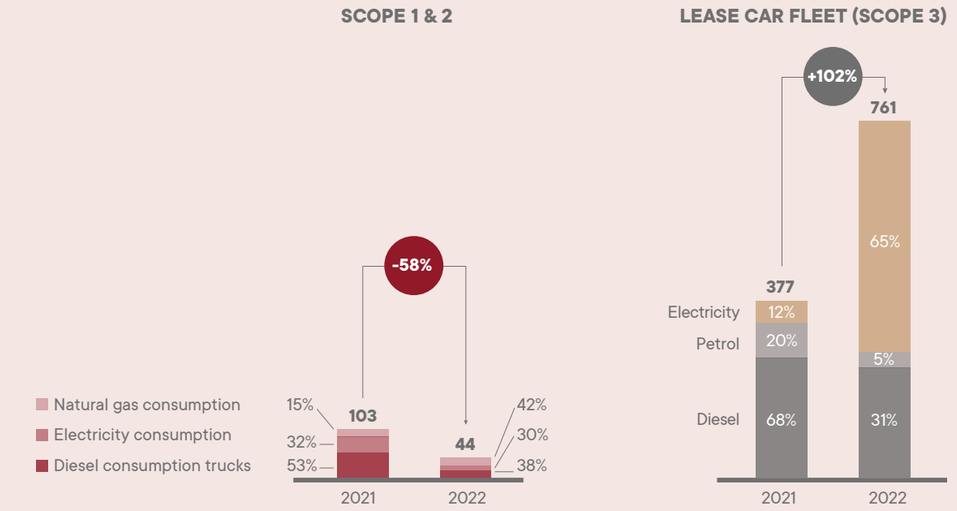
SCOPE 2
Indirect emissions from the generation of purchased electricity, steam, heating and cooling consumed.

SCOPE 3
All other indirect emissions that occur in a company's supply chain, such as through purchased goods and services, fuel and energy-related emissions, transportation and distribution, business travel and employee commuting.

The CSRD requires companies to report on their emissions according to the GHG Protocol. Although GroenLeven as an individual entity is not subject to the CSRD, we report on our emissions through BayWa r.e.

ENERGY CONSUMPTION GROENLEVEN

2021–2022 (MWh)



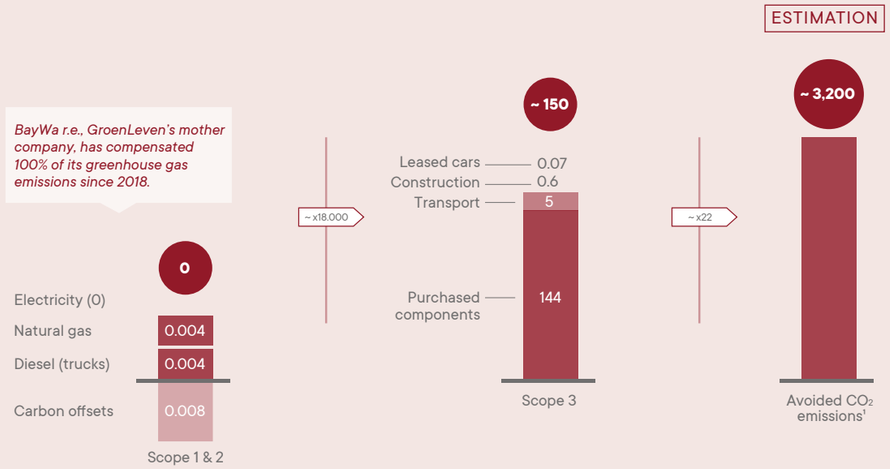
DESCRIPTION

- Natural gas and electricity consumption are based on the energy use of GroenLeven's office and warehouse in Heerenveen. There is currently no insight into the energy use of the Leeuwarden office as it is rented including energy use. However, GroenLeven has realised a rooftop solar system at the Leeuwarden office, heat (and cooling) is provided by electric heatpumps, and the landlord procures green electricity.
- The main decline in scope 1 and 2 energy consumption is caused by the reduction of fuel use for transport. In 2021 we constructed more solar projects which required more transport movements.
- The decline in fossil fuel consumption in our lease car fleet is caused by the transition to a 100% electric car fleet. In 2022, 66% of our car fleet consists of electric cars.
- Petrol and diesel consumption of passenger cars include private use by our employees.

CARBON IMPACT REALISED PROJECTS 2022

GROENLEVEN 2022 (kT CO_2 EQUIVALENTS)

Please note: Graphs are not on the same scale for representability purposes.



Scope 1 are all direct greenhouse gas (GHG) emissions taking place at the company, or caused by its activities. Scope 2 are all indirect GHG emissions from consumption of purchased electricity, heat or steam.

Scope 3 are all other indirect emissions, such as the extraction and production of purchased materials and fuels, transport-related activities in vehicles not owned or controlled by the reporting entity, outsourced activities, waste disposal, etc.

The renewable energy projects GroenLeven realises replace fossil fuelled energy production assets, such as coal power plants. Therefore, emissions are avoided once our renewable energy projects are connected to the grid.

DESCRIPTION

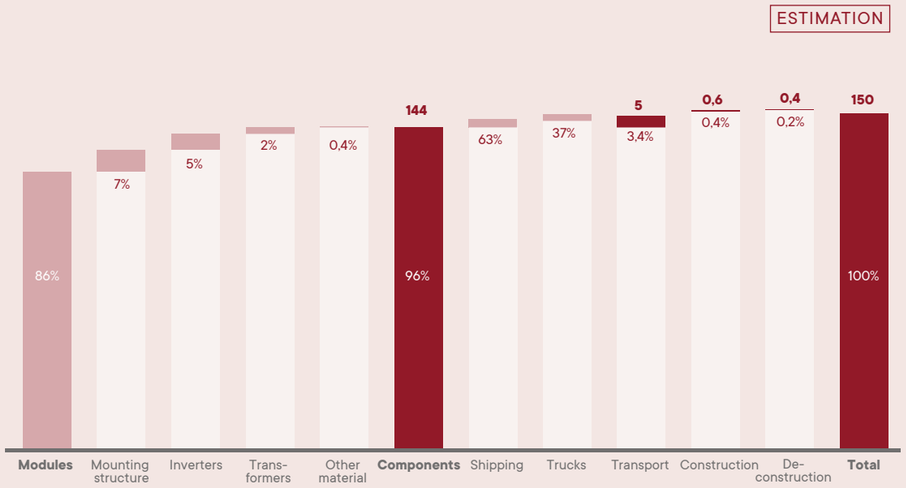
- At GroenLeven we strive to reduce our carbon footprint to the bare minimum. All remaining scope 1 and 2 emissions are offsett via compensation projects, such as solar home systems in rural Lesotho and forest protection in Cambodia (more information via: **https://benelux.baywa-re.com/en/about-us/about-baywa-re/sustainability#projects-initiatives**)
- The carbon impact of GroenLeven's projects connected to the grid in 2022 is ~150 kiloton of CO_2 equivalents, including (upstream) scope 3 emissions.
- The (upstream and downstream) scope 3 emissions are a factor 18.000 larger compared to the scope 1 and 2 emissions (direct emissions from GroenLeven).
- Lease car emissions are only caused by the petrol and diesel consumption of (hybrid) fuel cars. The electricity for the electric car fleet is procured from renewable sources.
- The lifetime avoided emissions by the realised projects in 2022 are approximately 3,200 kilotons, or 3.2 megatons[1].

[1] *Based on the lifetime avoided emissions of the projects realised in 2022; Assumed project lifetime: 30 years; Dutch national grid factor is applied to calculate the replaced amount of the average emissions within the electricity grid; For rooftop projects, we assumed 50% self-consumption; For land- and water-based projects we assumed 100% grid supply; Assumed module degradation per year: 0.3%; Assumed grid factor is 0.507 tCO_2e/MWh (combined European Energy Agency & Woodmac) for the full 30 years project lifespan.*

***Sources**: European Energy Agency and Woodmac*

SCOPE 3: CARBON FOOTPRINT OF ALL GROENLEVEN PROJECTS CONNECTED TO THE GRID IN 2022

2022-2052 (kT CO_2E)



GENERAL COMMENTS

- We chose to measure our 2022 carbon impact on the basis of the data of the projects that were connected to the grid in 2022, which was 223 MWp. A project only starts to avoid CO_2 emissions once the produced electricity can be used by the end consumer. Please note that this is a different number than the MWp constructed number.
- The total carbon footprint needed to produce, transport, construct and deconstruct these projects amounts to 150.2 kiloton CO_2 equivalents.
  - Sourcing raw materials and producing the components amounts to 96% of the carbon footprint
  - Transport, shipment and road is responsible for 3.4% of the total scope 3 emissions
  - Construction is 0.4% of the total carbon footprint
  - Deconstruction amounts to 0.2% of the total carbon footprint

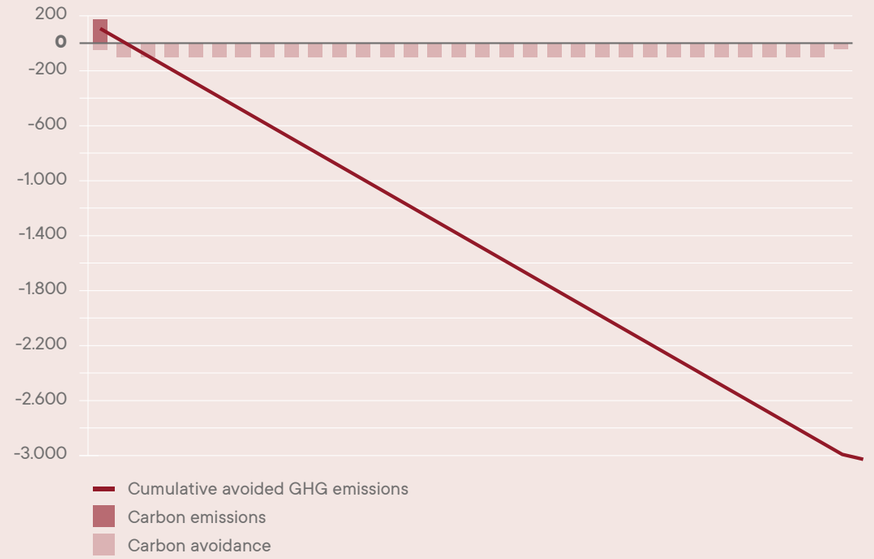
• Includes only projects realised by GroenLeven and connected to the grid in 2022.
• Assumed project lifetime: 30 years.
• Dutch national grid factor is applied to calculate the replaced amount of the average emissions within the electricity grid.
• For rooftop projects, we assumed 50% self-consumption. For land- and water-based projects we assumed 100% grid supply.
• Assumed module degradation per year: 0.3%. Assumed CO_2 avoidance factor 0.507 tCO_2e/MWh (combined European Energy Agency & Woodmac).

***Sources**: European Energy Agency and Woodmac.*

After ~1.5 years of operations, the projects' lifetime greenhouse gas emissions have been compensated by its avoided emissions – still 28.5 years of avoiding GHG emissions remain.

GROENLEVEN'S 2022 SOLAR PV PROJECTS GHG EMISSIONS IMPACT OVER TIME[1]

2022-2052 (kT CO_2E)



GENERAL COMMENTS

- In 2022, GroenLeven connected 223 MWp projects to the grid. We assumed that the completion of these projects is linearly distributed over the year.
- The total carbon emissions of the projects, including upstream emissions and emissions caused by decommissioning, equal approximately 150 kilotons CO_2 equivalents of GHG emissions.
- The projects avoid ~100 kilotons CO_2 equivalents of GHG emissions per annum.
- The cumulative total avoided emissions add up to ~ 3.2 megaton of CO_2e[1].

[1] Based on the lifetime avoided emissions of the projects realised in 2022; Assumed project lifetime: 30 years; Dutch national grid factor is applied to calculate the replaced amount of the average emissions within the electricity grid; For rooftop projects, we assumed 50% self-consumption; For land- and water-based projects we assumed 100% grid supply; Assumed module degradation per year: 0.3%; Assumed grid factor is 0.507 tCO_2e/MWh (combined European Energy Agency & Woodmac) for the full 30 years project lifespan.

***Sources**: European Energy Agency and Woodmac*

SUSTAINABILITY INITIATIVES

GroenLeven looks for innovative ways to reduce our emissions. Some of our recent projects include:

BUSINESS PREMISES

- GroenLeven's offices are furnished with sustainable and/or renewable material.
- Solar panels have been installed on the roofs at all sites to enable us to supply our own energy needs as much as possible. Our head office in Leeuwarden is gas-independent, and all heating and cooling are provided by solar panels.
- The Ecomunitypark in Oosterwolde – which includes our solar park, Biosintrum and Sinnewetterstof hydrogen plant – was named the most Climate-Adaptive and Nature-Inclusive Business Park in the Netherlands in 2022 by the Centre for Local Entrepreneurs Circles (Centrum voor Lokale Ondernemers Kringen, CLOK).

PROJECT SITES

- We have InfraSolar mobile solar units at all project sites that provide energy and access to the Internet. The unit is emission-free and can be used to charge everything from mobile devices through to electric tools and vehicles.
- We are moving from dependence on fossil fuels to renewable energy sources with intermittent production profiles. Our storage solutions contribute to creating a reliable renewable energy system.
- We rented fully electric machines from Sijperda Verhuur for our floating solar projects in Oudehaske, Beilen and Uivermeertjies. Across the three sites, this reduced CO_2 emissions significantly.

TRANSPORT

- GroenLeven aims to ensure that components and materials are loaded and transported in the most efficient way possible. Our long-haul heavy-load trucks, supplied by logistics company Van der Wal, use less CO_2 per pallet transported than the standard 13,6 metre trucks.
- The percentage of our employees who use hybrid or electric cars increased from 43% in 2020, to 55% in 2021 and 66% in 2022. All our office sites are equipped with charging stations.
- On our large renewable energy projects, we use shipping containers to store spare parts and other equipment, which reduces transport emissions.

KEY INDICATORS

- *223 MWp projects connected to the grid in 2022*
- *Carbon amortisation period ~1.5 years*
- *Lifetime greenhouse gas emission savings: 3,2 megaton CO_2e*

FUTURE PRIORITIES

- Applying our ambitious green business philosophy by continuing to reduce our energy consumption, procure green energy and minimise our operational footprint.
- Consistently reporting on carbon footprint and greenhouse gas emissions including scope 3.
- Undertaking efforts to reduce our scope 3 carbon footprint.
- Continuing to phase out our fossil fuel car fleet.

We contribute to Goal 13: Take urgent action to combat climate change and its impacts

In particular, contributing to target:

- 13.2: Integrate climate change measures into national policies, strategies and planning
- 13.3: Build knowledge and capacity to meet climate change

Key acronyms, abbreviations, definitions and calculations[7]

BESS	Battery energy storage systems are devices that enable renewable energy to be stored and then released when required.
BSCI	The Business Social Compliance Initiative (amfori BSCI) is an industry-driven movement that aims to improve social performance in supply chains through its Code of Conduct.
CEO	Chief Executive Officer
CFO	Chief Financial Officer
CLOK	Centre for Local Entrepreneurs Circles (Centrum voor Lokale Ondernemers Kringen)
CO_2	Carbon dioxide emissions are the gases released in the atmosphere from burning fossil fuels: coal, oil and natural gas.
Constructed projects	Projects that are constructed during the reporting year.
CSRD	The Corporate Sustainability Reporting Directive establishes a network of reporting and disclosure requirements on a range of sustainability issues, and aims to create a common reporting framework for sustainability data. The CSRD has been approved by the European Commission and came into effect in January 2023.
DEPC	Development, Engineering, Procurement and Construction
Dual-function approach	The combination of an existing function with a renewable energy function.
Dutch National Climate Agreement	**https://www.klimaatakkoord.nl/documenten/publicaties/2019/06/28/national-climate-agreement-the-netherlands**
Ecological impact	Any extraction, removal, withdrawal, elimination or subtraction from, insertion, deposition, discharge, emission, release or other addition to, onto or into, or other activity resulting in a change to, of, or in any ecological system or any feature, function or component of an ecological system.
Ecological research	The process in which a development site is assessed and analysed over time to gain insight into the ecological impact of the project on the project area.
EIB	The European Investment Bank is the lending arm of the EU.
Energy transition	The global energy sector's shift from fossil-based systems of energy production and consumption – including oil, natural gas and coal – to renewable energy sources like wind and solar, as well as lithium-ion batteries.
ESG	Environmental, social and governance
ESRS	The draft European Sustainability Reporting Standards, which are associated with the CSRD.
EU	European Union
EU Taxonomy	The EU Taxonomy Regulation is a reporting regulation that introduces a classification method under which subjects must report their contribution to one of six environmental objectives.
Floating solar farm	A formation of solar panels that floats on a body of water, in most cases an artificial basin or lake.
GHG	Greenhouse gas emissions from human activities strengthen the greenhouse effect, causing climate change. The most contributing gas is carbon dioxide from burning fossil fuels: coal, oil and natural gas.
GRI	The Global Reporting Initiative is an international independent standards organisation that helps businesses, governments and other organisations understand and communicate their impact on issues such as climate change, human rights and corruption.
GW	Gigawatt. 1 GW = 1,000 MW
GWp	Gigawatt peak. The "peak" refers to how much renewable energy can be generated in optimal conditions (e.g. wind or sunshine).
HSEQ	Health, safety, environment and quality
ILO	International Labor Organization
InstallQ	InstallQ is a quality organisation for the Dutch installation sector that has been appointed by the government to manage a number of mandatory certifications.
Integrated reporting	Integrated reporting is a complete report of components involved in the creation of a company's value over the short, medium and long term. Integrated reporting comprises communication of financial and non-financial capital (such as human capital skills, intellectual capital and social reputation) that contributes to the creation of organisational value.

ISO	The International Organization for Standardization is an international standard-setting body composed of representatives from various national standards organisations. For example, the ISO 9000 family of quality management systems (including ISO 9001) is a set of standards that helps organisations ensure that they meet customer and other stakeholder needs within statutory and regulatory requirements related to a product or service.
KPI	Key performance indicator
kWh	A kilowatt-hour is the amount of energy it takes to run a 1 kW appliance for one hour.
Large-scale projects	PV systems with an average size of more than 10 MWp.
LkSG	The German Supply Chain Due Diligence Act (Lieferkettensorgfaltspflichtengesetz) establishes corporate due diligence obligations relating to human rights and environmental risks and violations, and came into effect in January 2023.
Local community	Persons or groups of persons living and/or working in any areas that are economically, socially or environmentally impacted (positively or negatively) by an organisation's operations.
Local ownership	The transfer of shares in the operating SPV to an established entity managed by or for local residents.
LTI	A lost time injury results in an employee's inability to work.
LTIFR	The lost time injury frequency rate is the number of workplace injuries that resulted in an employee's inability to work, relative to the total number of worked hours in the accounting period.
Materiality assessment	A tool used to identify and prioritise potential ESG issues that are critical to an organisation's success, and that link to the organisation's ESG strategy. GRI defines material topics as "topics that represent the organization's most significant impacts on the economy, environment, and people, including impacts on their human rights".
MW	Megawatt. 1,000 MW = 1 GW
MWh	A megawatt-hour is the amount of energy it takes to run a 1 MW appliance for one hour.
MWp	Megawatt peak. The "peak" refers to how much renewable energy can be generated in optimal conditions (e.g. wind or sunshine).
NVDE	Dutch Association for Renewable Energy (Nederlandse Vereniging Duurzame Energie)
OECD	Organisation for Economic Co-operation and Development
OPEN	Organization for Producer Responsibility for E-waste in the Netherlands (Organisatie Producentenverantwoordelijkheid E-waste Nederland)
Plan-Do-Check-Act cycle	A step-by-step method to improve performance.
PPE	Personal protective equipment on a project site could include eye protection, helmets and gloves.
PV	Photovoltaic technologies convert thermal energy into electricity, while solar panels convert solar radiation into heat.
SASB	The Sustainability Accounting Standards Board is a non-profit organisation that develops standards for sustainability accounting.
SCE	The Subsidy Scheme for Cooperative Energy Generation (Subsidieregeling coöperatieve energieopwekking) is a government subsidy for energy cooperatives and owners' associations.
SDGs	The Sustainable Development Goals are a collection of 17 interlinked global goals designed to be a "blueprint to achieve a better and more sustainable future for all". The SDGs were set up in 2015 by the United Nations General Assembly and are intended to be achieved by 2030.
SEIA	The Solar Energy Industries Association (SEIA) in the United States.
SEIC	The Solar Innovation and Experience Centre, located between Emmen and Klazienaveen, is a practical research and experimentation centre focusing on sustainable energy generation and new forms of energy storage.
SPE	SolarPower Europe.
SPV	A special-purpose vehicle is a legal entity created to fulfil narrow, specific or temporary objectives. SPVs are typically used by companies to isolate them from financial risk.
SSI	The Solar Stewardship Initiative was launched in 2022 by SolarPower Europe and aims to ensure the integrity of solar supply chains and improve ESG performance. See https://solarstewardshipinitiative.org.
VCA-P	The Dutch Safety, Health and Environment Checklist for Contractors (Veiligheids Checklist Aannemers) investigates a company on critical points for safety, health and environmentally friendly working practices.
Workplace inspection	An inspection of a project site, installation or workplace in which the focus is on identifying situations that are unsafe or impose a risk of becoming unsafe over time. In addition, the inspection focuses on whether the people present work in accordance with the agreements made in the health and safety plan, and in accordance with legal requirements.

2022

COLOPHON GROENLEVEN SUSTAINABILITY REPORT 2022

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