startup solutions

energy transition

StartupDelta

in partnership with
Postcode Lottery
Green Challenge

We need startup solutions to reduce the CO_2 emissions by 49%

A bid book by StartupDelta in partnership with Postcode Lottery Green Challenge

The reduction of CO_2 emissions by 49% by 2030 is an important but challenging goal for the Netherlands. Current technology, business models, consumer behavior and regulation will not suffice. Deep investments in new technology and innovative solutions are needed.

Through the climate agreement and climate sector bodies, the Dutch Government is working towards a masterplan for CO_2-reduction and the energy transition. The masterplan will be the ambitious framework in which others should be able to deliver the transition and make change happen.

An important role should be reserved for startups. Startups are the creative, driving force behind the technological revolution. Startups turn new technologies into scalable products and build future companies that have a global impact on the climate and economy.

With the support of the chairman of the climate board, Mr. Nijpels, and in partnership with the Postcode Lottery Green Challenge we are proud to show you a broad selection of Dutch Startup Solutions for CO_2-reduction. In this book you will find over 280 startups that can help address the challenges that the Climate Board is facing. Of course, their potential will only materialize when they get sufficient investments and paying customers. Government support is needed, whether as an early stage investor, potential customer connector or giving maximum (legal) room for experimentation and acceleration. Any support provided can help bridge the 'valley of death' between proven technology and commercially viable product.

We would love to connect you with these highly-impactful entrepreneurs and be pleased to hear from you what contributions you could make to helping these startups succeed, so we can work together to achieve our ambitious goal!

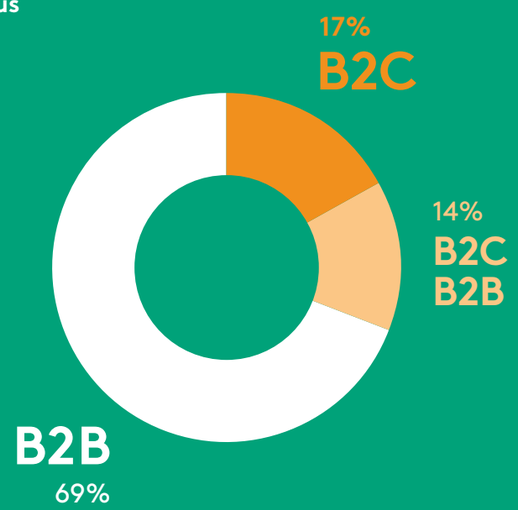
Let's join forces and nail this.

Constantijn van Oranje
Special Envoy — StartupDelta

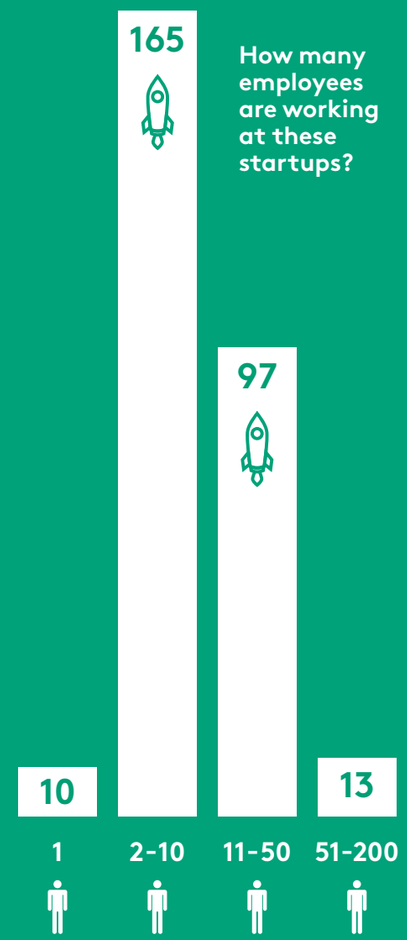
285 startup solutions to fuel the energy transition

Where are these startups located?

Startups per client focus



How many employees are working at these startups?



Startup Solutions are the driving force behind the technological revolution and future economy

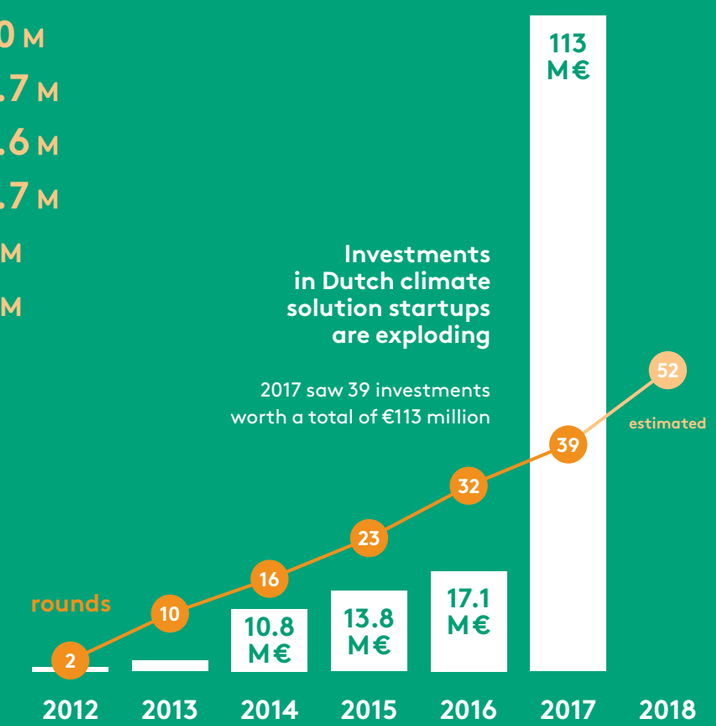
Top 10 largest investments

Proftix	€ 45 M
Solynta	€ 16 M
Fastned	€ 12.3 M
Greenflux	€ 11 M
Snappcar	€ 10 M
Fastned	€ 7.7 M
Mosa Meat	€ 7.6 M
Solarus	€ 6.7 M
Lightyear	€ 5 M
Parkbee	€ 5 M

Together these startups have raised €205 million in venture capital

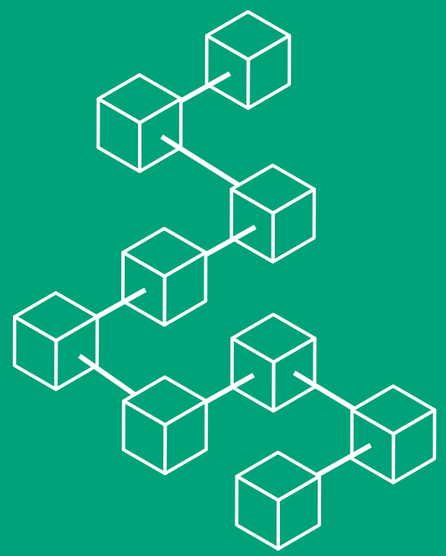
Investments in Dutch climate solution startups are exploding

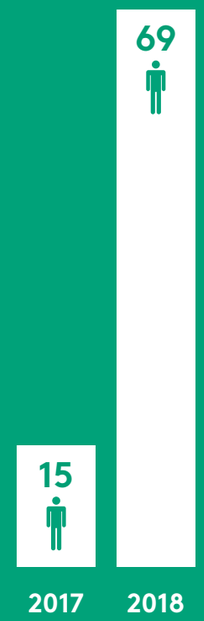
2017 saw 39 investments worth a total of €113 million



6
of these startups develop blockchain solutions

Excess Materials Exchange is one of them
P112

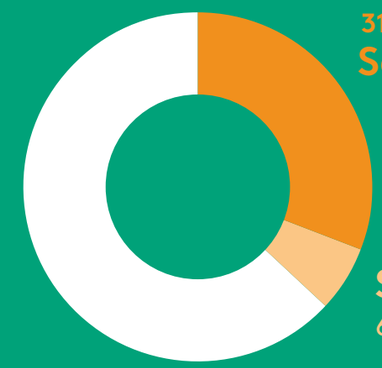




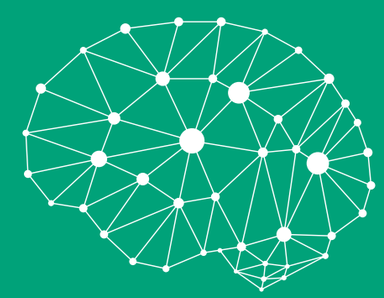
Lightyear is amongst the fastest growing companies in the Netherlands: it grew from 15 employees in July 2017 to 69 at present, a 460% increase

P154

Companies per investment stage



On average the startups are 4 years old with outliers of less than 1 year and over 30 years old



18
of these startups develop artificial intelligence solutions

Connecterra is one of them
P134

defining
the symbols

climate sector bodies

electricity

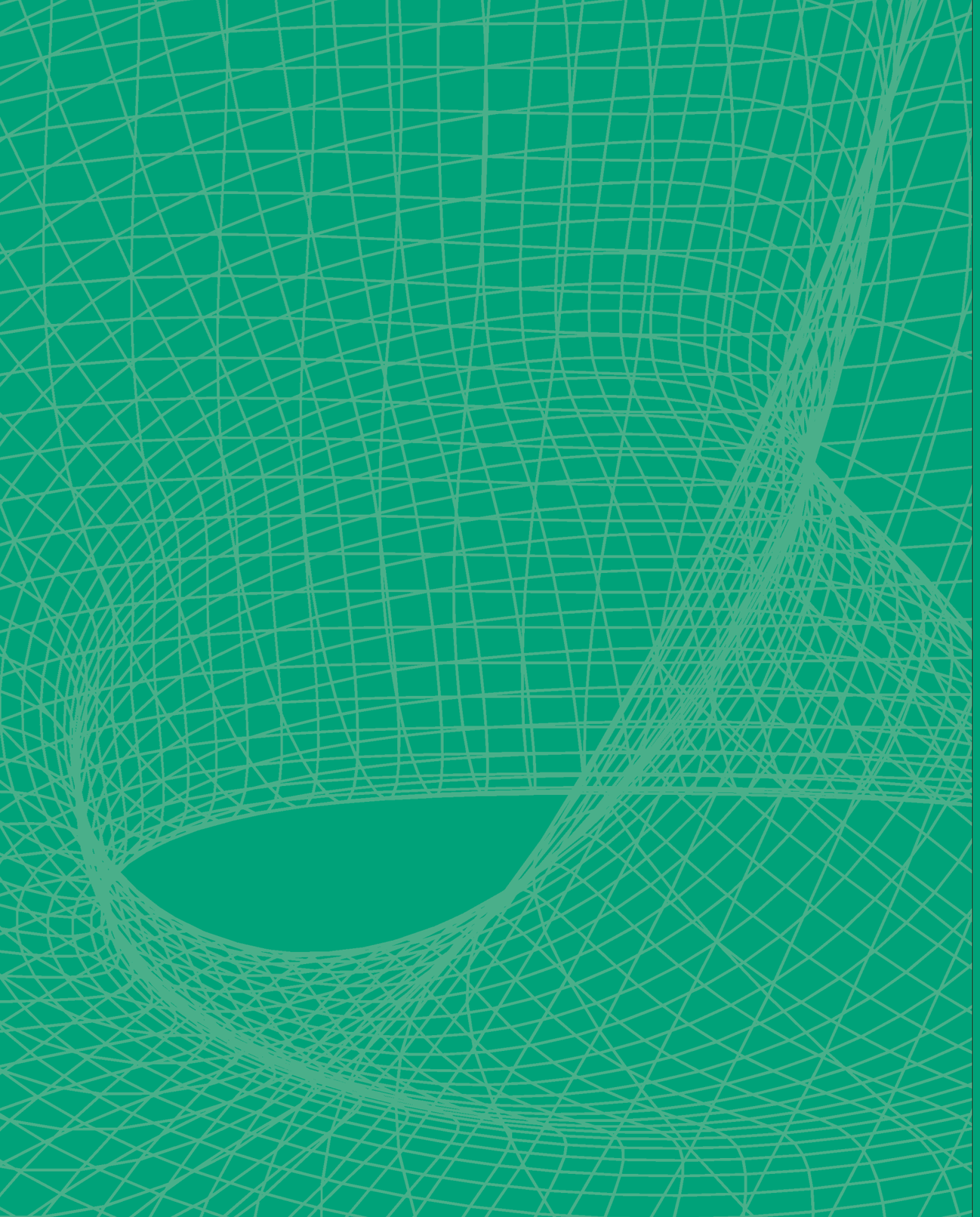
industry

built
environment

agriculture
& land use

mobility

contents



renewable energy

startup solutions

AERspire

solar energy can be beautiful

AERspire wants to contribute to a more elegant appearance of solar in the building environment. AER is a modular roofing solution with the unique ability to fully replace the conventional roofing on buildings. The AERspire roof supplies electricity and hot water. With a freedom in design, they provide a solution for every tilted roof, fully based on a consumers capacity needs and wishes.

CO_2 reduction
The aesthetic solar energy roof generates green and renewable electricity contributing to CO2 emission reduction.

organization
seed stage · 2–10 employees

www.aerspire.com

Solartechno

Solartechno provides competitive solutions for residential and commercial PV systems, both in terms of distribution and installation. Products include solar modules, inverters, support structures and lithium batteries.

CO_2 reduction
Plug and play flat batteries directly mounted on solar panels, are an alternative to diesel genset.

organization
seed stage · 2–10 employees

www.solartechno.com

HRsolar

HRsolar develops solar heating systems in such a way that they can be used seamlessly in any household. A solar water heater heats water through sunlight using solar collectors on the roof. The hot water is stored in a storage tank. Is the container empty or not yet at temperature? Then the central heating boiler will start so that there is always hot water.

CO_2 reduction
Manufacturer of complete solar thermal systems with focus on integration with other sustainable solutions for maximum CO2 reduction.

organization
early growth stage · 11–50 employees

www.hrsolar.nl

Solarus Sunpower

three times more power

Solarus develops and produces hybrid solar PowerCollectors, combining the generation of thermal energy with the photovoltaic generation of electricity. The revolutionary 70% energy yield means 700W per square meter, 1500W per panel. The Solarus PowerCollector is a concentrating, hybrid solar photovoltaic and solar thermal panel. Concentrating means that it has a curved mirror to collect and reflect more sunlight throughout the day. Hybrid means that it combines solar photovoltaic generation of electricity with solar thermal generation heat.

CO_2 reduction
By providing 3x more energy than regular solar products, Solarus' PowerCollectors ensure a reduction of CO2 emissions.

organization
early growth stage · 11–50 employees

www.solarus.com

Solfence

Solfence is a solar energy technology company with two marquee products. Firstly the Sofence Smart Dish, an energy system which delivers both electricity and heat with a very high efficiency. The Smart Dish can withstand extreme weather conditions by adopting a safe mode. Secondly the Fasolar Facade which prevents the infiltration of solar energy. Reducing the cooling load of the building and additionally collects sustainable energy which can be applied to fulfill the energy requirements of the building.

CO_2 reduction
Converts surplus solar energy, into sustainable useful energy for CO2 neutral buildings. Energy yield of 980 MJ / m² lens surface per year, or 55kg CO2 / m² per year.

organization
seed stage · 2–10 employees

www.solfence.nl

Rural Spark

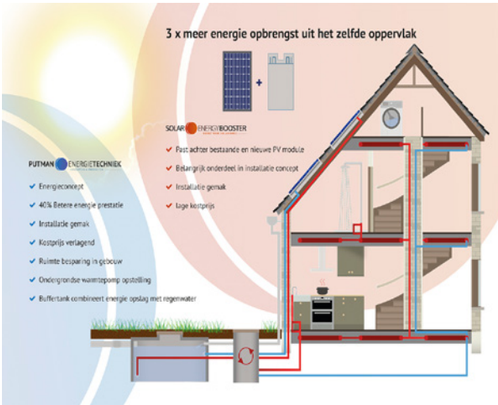
plug & play smart grid

Rural Spark is developing smart energy solutions based on the ideas behind Smart Grids. These smart grids allow for the easy sharing of sustainable energy by a town through group ownership or an individual setting up their own business. They present a solution that is easier to implement than a micro-grid, yet giving the same functionality in a distributed way with local ownership, local viable businesses & livelihood creation. Part of the company is providing kits for rural areas to allow them to watch TV or for local to set up their own business providing electricity to other people in their town through solar energy.

CO_2 reduction
Empowering local entrepreneurship to emerge, generating and sharing clean energy.

organization
early growth stage · 11–50 employees

www.ruralspark.com



Solar Energy Booster

Solar Energy Booster develops the so-called Booster panel. This Booster can be placed behind standard PV solar panels, giving the panel the same functionality as a PVT panel. At the back of each PV panel there is a free space in which the Booster can be placed. The Booster thus disappears completely out of sight and gives the PV roof a uniform appearance, the thermal energy is collected invisibly. The Booster works by circulating coolant that extracts the heat from the panel.

CO_2 reduction
100% CO2 neutral.

organization
seed stage · 2–10 employees

www.solarenergybooster.nl

Sunbeam

A new approach to mounting PV-panels on flat rooftops.

organization
seed stage · 1 employee

www.sunbeam-pv.com

Supersola

The plug and play solar panel of Supersola is installed within 15 minutes, and easy to move and expand due to the modular design.

organization
seed stage · 2–10 employees

www.supersola.com

Use All Energy

UseAllEnergy specializes in solar energy systems for both private and business customers

organization
seed stage · 2–10 employees

www.useallenergy.nl

ZigZagSolar

energy-harvesting architectural facade

Zigzagsolar is the next generation energy-harvesting architectural facade - with all the pros of both a PV-system and an architectural facade. Harvest energy in a future-proof and aesthetically pleasing design maintaining maximum freedom of design for architects. By using a combination of a hidden PV system tilted towards the sun and decorative panels facing the urban surroundings you gain far more design freedom than other traditional options.

CO_2 reduction
Every square meter ZigZagSolar reduces over 5 kg of CO2 the emission per year.

organization
seed stage · 2–10 employees

www.zigzagsolar.com

FlexSol Solutions

curved PV-panels

FlexSol Solutions is a Dutch high-tech company with unique expertise in solar technology. The company was founded around a unique technology for curving highly efficient mono-crystalline silicon solar cells and the electronics and integration around it. This innovative technology is applied in products such as ceramic roof tiles and the cylindrical solar modules of the Soluxio solar street light and the NxT solar outdoor lighting. This results in products that are not only very practical but also aesthetically pleasing.

CO_2 reduction
Streetlights and roof tiles with curved PV-panels increase the possible applications of solar, with high aesthetical and functional quality.

organization
early growth stage · 11–50 employees

www.flexsolsolutions.com

Solinso

mystiek solar roof tiles

Solinso's marquee product is the Mystiek solar roof tiles which fit perfectly between standard roof tiles. The horizontal lines of the roof remain unaffected, as a result of which the austere appearance remains. The Mystiek solar roof tile has a high efficiency. The revenue is as high as from a standard black solar panel which is attached on top of the roof. Due to the design, the Mystiek product is considerably cheaper than comparable building integrated products. The simple and quick assembly makes the Mystiek solar roof tile ideal for new construction and renovation projects.

CO_2 reduction
Enhance the adaptation of solar energy by a wider public.

organization
seed stage · 2–10 employees

www.solinso.nl

Zero Emission Fuels

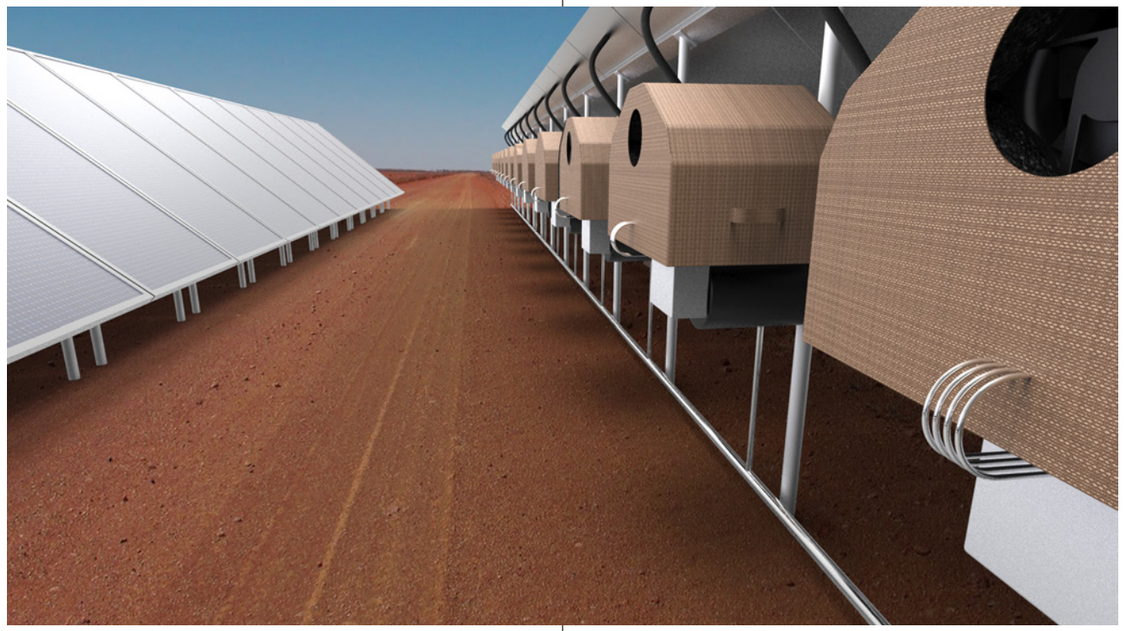
solar methanol farms

ZEF is developing a fully automated, modular, air to methanol micro-plant which will be connected directly to a solar panel. The system is directly coupled to a solar panel and is thus highly dynamic. The system size allows for discontinuous operation (fast heating & cooling possible). Scaling the project will involve building solar methanol farms: methanol production facilities consisting of large numbers of micro-plants and solar panels. To illustrate: a 12 MW solar-methanol farm will consist of 40.000 solar panels and 40.000 micro-plants. Because of the modularity, solar methanol farms can easily be scaled to any size: numbering up!

CO_2 reduction
The solar panel add-on captures CO2 and produces methanol using solar energy only.

organization
seed stage · 11–50 employees

www.zeroemissionfuels.com



Wellsun

transparent solar facades

Wellsun has developed the Lumiduct which makes livable, transparent, and energy producing buildings become reality. The Lumiduct enables full glass facades which generate more energy than closed walls completely covered with traditional solar panels. The Lumiduct saves energy and creates an ideal indoor climate by selectively shielding the intense, direct light which is responsible for glare and heating up of the building, and turns it into electricity. At the same time, the Lumiduct is transparent for the soft, diffused light which is then experienced as pleasant daylight. During the day the building facade is activated by the transparent solar panels, enabling the building to generate and save energy. At night, the facade is activated by the integrated LEDs making it possible to create an atmosphere and communicate with the community.

CO_2 reduction
With 1000 m^2 electricity generating Lumiduct facade, glass buildings will save 100 tons CO2 per year.

organization
seed stage · 2–10 employees

www.wellsun.nl

PHYSEE

smart Power–Windows

PHYSEE creates PowerWindows, a patented and transparent double-paned windows that convert light into electricity. In Europe governmental regulations have dictated that every commercial and governmental building construction or renovation has to be energy neutral by 2020. Given the fact average lead-time of such projects is 3-4 years, this is something commercial real estate developers are confronted with today. Conventional solar panels are limited to the roof or have to be installed off-site. Alternatives are either too intrusive or too costly. PHYSEE's PowerWindow is the first scalable and cost-efficient solution using the world's glass to help make these buildings energy neutral.

CO_2 reduction
Reduce 20% CO2 emission of the built environment.

organization
early growth stage · 11–50 employees

www.physee.eu

Exasun

aesthetic solar panels

Exasun is the first solar manufacturer in the world who is able to combine high-end cell technology – back contact cells – with the best durable module technology – glass-glass. Their others product include modules with special dimensions for building-integrated applications. The next product that Exasun is working on are solar cell tiles, these tiles can be placed directly between black or colored tiles. They also connect to various types of roof tiles making installation fast and the design in line with the aesthetic of the building they are on.

CO_2 reduction
Highest energy yield; saving roof tiles and lasting twice as long as.

organization
early growth stage · 51–200 employees

www.exasun.com

Oceans of Energy

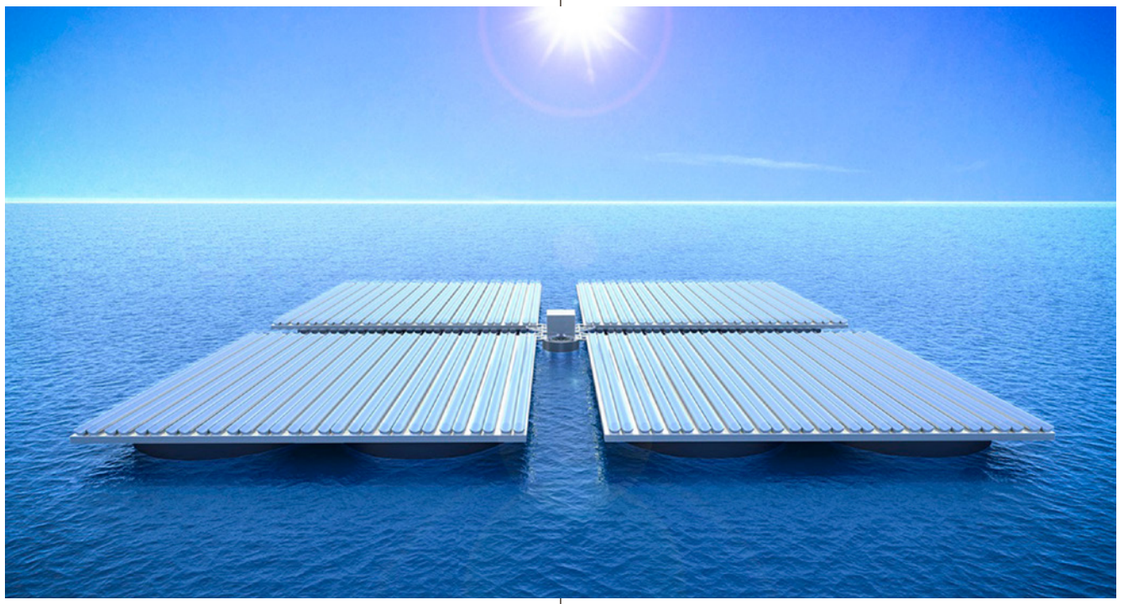
floating solar farm

Space on the oceans is endless. That is why Oceans of Energy decided to take solar panels offshore and are building the first floating solar farm in the world. The first offshore floating solar farm will be in operation before 2020 off the coast of Scheveningen, the Netherlands. And there will be more to come. Because Oceans of Energy believes that the future lies at sea.

CO_2 reduction
World's first offshore solar company.

organization
early growth stage · 11–50 employees

www.oceansofenergy.blue



Volta Energie

Off-grid energy solutions using solar power.

organization
seed stage · 2–10 employees

www.volta-energy.nl

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SKEIRON

Small wind energy made competitive. Skeiron developed flying wind turbines that operate at sufficient height changes.

organization
seed stage · 2–10 employees

www.skeironsystems.com

WindChallange

A dutch designed light-weight wind turbine for the built environment. At a good wind location average speed of 6m/s can be achieved. The Windleaf will approximately generate the following peak power and yearly energy return: 0,7 kWh in 1 hour, 900 kWh in 1 year.

organization
seed stage · 2–10 employees

www.windchallenge.com

Aenarete

Aenarete offers simulations of airborne wind energy systems that are capable of calculating the expected energy yields, peak power and even peak loads in a turbulent wind field. One can, based on this data, calculate the lifetime of components, modify the design for optimal performance at low costs and build an economical model.

CO_2 reduction
The 840 small wind drones can save 2500 t CO2 per year.

organization
seed stage · 2–10 employees

www.aenarete.eu

IBIS Power

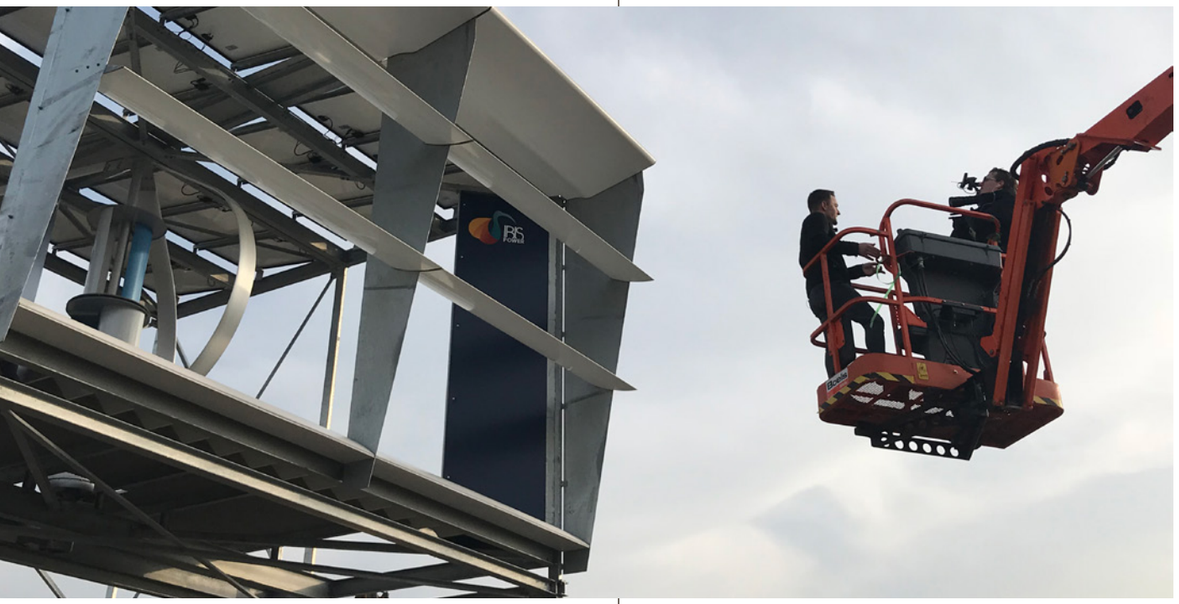
redesigning renewable energy

IBIS Power provides effective, innovative renewable energy solutions with the highest impact to society. They have developed two products which are market ready. Firstly the PowerNest meets important customer's demands by differentiating itself through aesthetic integration and customization possibilities; making it an attractive solution. The second product is the Remote Wind Energy System (PowerRESPONSE) which is a reliable, resilient and decentralized energy solution for areas with zero-access to power. By being a mobile, self-deployable and controlling installation and generating power from wind and sun, PowerRESPONSE is the solution to the emerging demand for emergency generators in development, remote, post-disaster, post-conflict or refugee areas, where human health, safety and development is at highest stake.

CO_2 reduction
Generates 6 times more energy from wind and sun on high-rises saving 200 megaTonCO2/year.

organization
seed stage · 2–10 employees

www.ibispower.eu



Kitepower

Kitepower is developing innovative and cost-effective alternatives to existing wind turbines by using kites to generate electricity. Its patented technology is a game-changer in the wind energy sector; it uses 90% less material while being twice as efficient as existing technology. Unlike conventional wind turbines, the Kitepower system does not require resource intensive towers or heavy foundations and is thus easy to transport and deploy. The system is able to harness stronger and more persistent winds at higher altitudes, allowing for capacity factors greater than 0.5 and in return cost-effective electricity generation. This opens us new geographical markets for the generation of wind energy. The 100kW system currently in development is ideally suited to replace diesel generator sets in remote locations to save costs and mitigate dependency on diesel supply.

CO_2 reduction
Taking less material to produce more energy and save up to 400T CO2/year.

organization
early growth stage · 11–50 employees

www.kitepower.nl

90% less material, twice as efficient

Although the government always has the intention to help ambitious green startups to grow quickly, sometimes 'unconsciously' they can work against them. In this interview, Max ter Horst, co-founder of e-kite, shares his challenges and thoughts on what governmental help is needed.

Max ter Horst
co-founder E-kite

'We need clarity about the aviation regulations that apply to our e-kite, which is crucial for commercialization'

SOMETIMES a technology seems too cool to be realistic, until it's proven not to be. E-kite is the perfect example of this. "E-Kite is all about wind energy taking a flight", explains Max. "We do that by flying an 'e-kite' in the wind. In doing so, the wing is pulling the cables causing an wheel to turn. This generates energy at a 50% lower cost than wind turbines due to the elimination of the tower and rotor. And there are higher yields as wind energy is harvested at higher altitudes."

E-kite's ambition is to build and launch the first commercial economically viable kite power system, but unfortunately some procedural obstacles still stand in the way of the success. "The regulation on cable flyers in the aviation regulations for example imposes an altitude limit of 100 m. But we would like this to be extended to 300 m because the higher the kite goes, the more power it generates."

But then a new problem arises, because when kites go so high, are they then airplanes, wind turbines, drones or something else altogether? "Different air-legislations apply to all these types. As a result, finding a test site is for example difficult for us. An exception is often made for one year, but our customers want 15-20 years of permit security before they invest in a kite power project. So as long as this uncertainty remains, we will not be able to close any e-kite sales orders."

E-kite's search for clarity is now in full swing, including talks with ministries and aviation authorities, at national and European level, but it remains important, according to Max, to keep up the pressure. "In the end, the Dutch energy transition will also benefit from this."

Want to help or get in contact with Max?
Contact him directly at m.terhorst@e-kite.com

E-Kite

kites capturing wind power

E-Kite is a high-tech start-up company active in designing, manufacturing and marketing of kite power systems. With these systems, wind energy can be generated through ultra-light wings at >50% lower cost of energy compared to wind turbines. This reduction in power needed is due to two things. Firstly, kite power systems do not require heavy, expensive structures such as towers and blades. This results in much lower investment costs. Secondly, wind energy is harvested at higher altitudes where wind speeds and therefore electricity yields are higher. The economic advantage compared to PV solar systems is of the same order of magnitude.

CO_2 reduction
Generate electricity with kites at >50% lower cost than wind turbines.

organization
seed stage · 2–10 employees

www.e-kite.com

E.A.Z Wind

Wind energy is abundant in the Maritime and the electricity rates are significant. E.A.Z. Wind has made it economically profitable to produce your own wind energy through their made in the Netherlands wind turbines. The company started in Groningen, where they have put up over 100 windmills in a 3,000km² area. E.A.Z Wind delivers a turnkey solution for users including a building permit, net-metering agreement with the utility company, cable/ground works and installation.

CO_2 reduction
Provides framers with a viable alternative to fossil fuels by providing sustainable energy true wind power.

organization
seed stage · 2–10 employees

www.eazwind.com

Tulyp Wind

sustainable Dutch design

Arkom Windpower is the founder of Tulyp Wind. A vertical axis 300 kW wind turbine with tulip shaped airfoils. With a tip height of 60 meter, a low noise level and a small risk contour Tulyp Wind is easily integrated into urban, industrial and port areas. Tulyp Wind adds a typical Dutch design to the landscape.

CO_2 reduction
Mid-sized wind turbines (300 kW) fit Dutch landscapes and ease local energy production among companies & communities.

organization
seed stage · 2–10 employees

www.tulypwind.nl

Ampyx Power

The Ampyx Power Airborne Wind Energy System (AWES) with a tethered aircraft accesses the higher and more powerful winds, requiring much smaller foundations and much less material overall. It greatly increases the availability of sites for the cost-effective harvesting of wind energy: off-shore repowering, deep offshore and remote onshore. By developing innovative, elegant and material-reducing solutions, Ampyx Power will help meet tomorrow's energy needs.

CO_2 reduction
Capturing vast wind resource at higher altitudes with 90% less material than used in wind turbines.

organization
late growth stage · 51–200 employees

www.ampyxpower.com

Seawind Ocean Technology

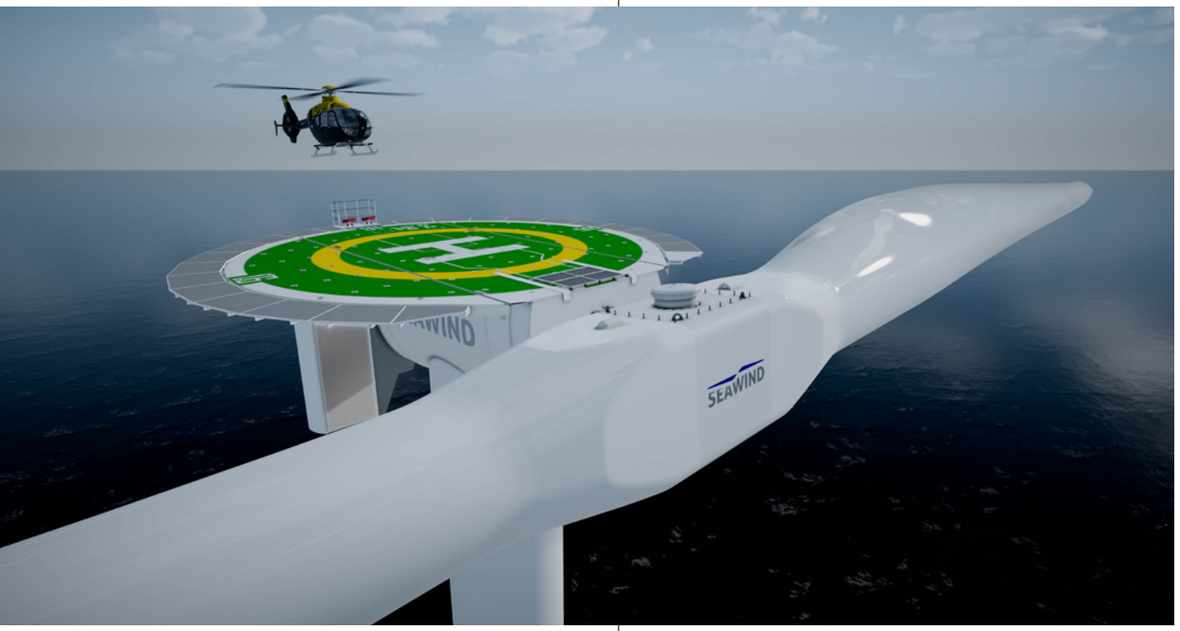
robust lightweight turbine

Seawind Ocean Technology B.V. is an engineering and technology company developing a revolutionary offshore wind energy system that integrates a two-bladed upwind wind turbine with a simple installation and support structure. Both in shallow and deep water locations, this system will dramatically decrease the cost of installing and operating offshore wind energy. Seawind's system is designed with a robust lightweight turbine with a two-bladed rotor. The rotor, which is attached to the shaft by an elastic coupling (teetering hinge) decreases wear and tear. With Strategic Partners Seawind introduced an assembly line process in the offshore wind energy market, which reduces the build-out time for large offshore wind farms to less than one year.

CO_2 reduction
Displacing fossil fuel power at a cost below €0,04/kWh avoiding > 0.70 mt of CO2 emissions for every MWh produced.

organization
seed stage · 11–50 employees

www.seawindtechnology.com



Bluerise

2014 FINALIST POSTCODE LOTTERYE GREEN CHALLENGE

Bluerise generates electricity with its Ocean Thermal Energy Conversion technology. By converting ocean temperature differences into electricity.

organization
early growth stage · 11–50 employees

www.bluerise.nl

aQysta

Hydro-powered irrigation system, a sustainable solution that does not use any fuels and can be operated at virtually zero cost.

organization
early growth stage · 11–50 employees

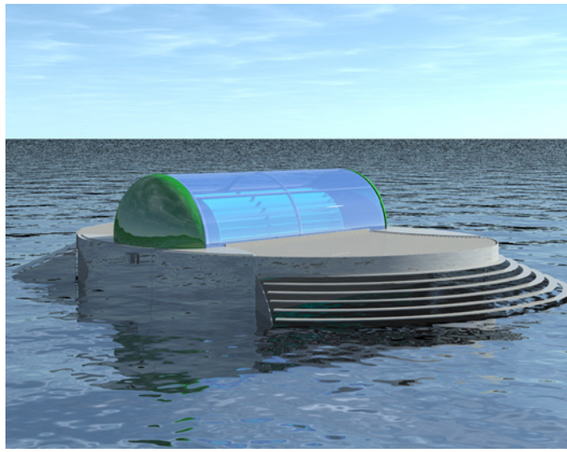
www.aquista.com

Blue Motion Energy

Converts tidal power into hydropower.

organization
seed stage · 2–10 employees

www.bluemotionenergy.com/en



EQA Projects

EQA-Projects strives to return the movement of water as a reliable source of energy for the world in a new modern way. The EQA-Waterwheel utilized in their installations is a free flow installation and has a low rotational speed, thus ensuring the safety of fish living in our waters. Easy to install, reliable, fish safe and providing the economical production of sustainable energy from hydropower. These are the key elements of the EQA-Hydropower installations.

organization
seed stage · 2–10 employees

www.eqaprojects.com

Gratia Hydro

micro hydro-electricity

Gratia Hydro: designer, builder and operator of small hydroelectric power stations. Consultancy for generating sustainable electricity at historical sites. Overseeing a project from the start until a water mill works.

CO_2 reduction
Generating 100% green electricity with natural water flows in a sustainable way.

organization
seed stage · 2–10 employees

www.gratia-hydro.eu

Hillblock B.V.

Innovative dike stone that absorbs wave energy.

organization
seed stage · 2–10 employees

www.hillblock.com

Oryon Watermill

Hydropower plant which generates sustainable energy from running water.

organization
seed stage · 2–10 employees

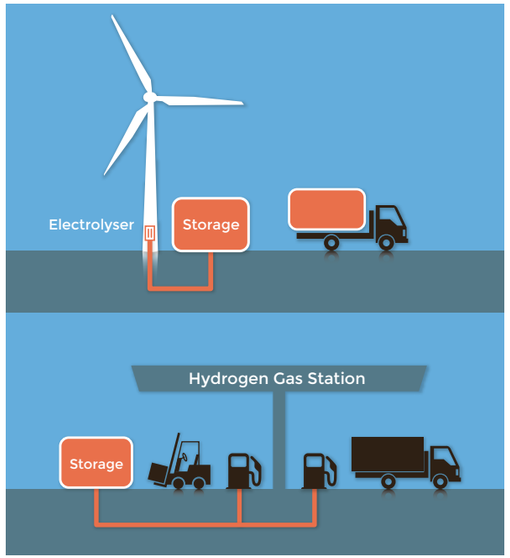
www.oryonwatermill.com

Ronamic

RONAMIC brings you long sought-after solutions in the field of medium, low and ultra-low head Hydro and Ocean Power.

organization
seed stage · 2–10 employees

www.ronamic.com



HYGRO

A producer and supplier of hydro power. Electricity from offshore wind turbines is converted directly into hydrogen via electrolysis water directly in the wind turbine. By organizing and coordinating the sustainable hydrogen chain, HYGRO produces and supplies sustainable hydrogen. The project begins in 2019, the production of sustainable hydrogen in Wieringerwerf starts with delivery in the North Holland region within the Duwaal project. The ambition is to set up a nationwide network of production and sales locations in the coming years.

CO_2 reduction
Green hydrogen in transportation leads to a yearly CO2 reduction of 2,9 Mton in 2030.

organization
seed stage · 11–50 employees

www.hy-gro.net

Slow Mill

wave energy in the North Sea

The Slow Mill is a Wave Energy Converter consisting of a floater with blades variably connected to an anchor on the seabed. Waves push the floater up and the blades away from the anchor. This way not only the up and down movement but also the back and forth movement of the waves is utilized.

CO_2 reduction
The wave energy converter has the same potential for clean energy as solar or wind.

organization
seed stage · 2–10 employees

www.slowmill.nl

H2Fuel-Systems

hydrogen for fossil fuels

H2Fuel-Systems has developed a new technology named H2Fuel, which makes hydrogen a practical, economically viable, safe and preferable substitute for fossil fuels. This Dutch invention binds hydrogen to sodium borohydride (NaBH4) together with ultra-pure water (UPW / H2O). An activator consisting of highly diluted hydrochloric acid or a catalyst or a combination of both triggers a reaction in these substances. During this reaction not only the hydrogen from the sodium borohydride is released (4H) but also the same quantity (4H) from the water, as well as heat. This means a yield of 8H for a production of 4H! The efficiency is 98% of what is theoretically achievable. No alternative has this extremely high efficiency.

CO_2 reduction
Safely and efficiently decarbonize heavy-duty engine market for road transport and maritime.

organization
seed stage · 2–10 employees

www.h2-fuel.nl

SeaQurrent

The Next generation tidal energy plants based on the principle of kiting.

organization
early growth stage · 11–50 employees

www.seaqurrent.com

Hygear

HyGear supplies industrial hydrogen, nitrogen and oxygen gas in small bulk quantities.

organization
early growth stage · 11–50 employees

www.hygear.com

Tocardo

Tidal, river and ocean energy power turbines.

organization
early growth stage · 11–50 employees

www.tocardo.com

Zepp.solutions

Zepp.solutions develops application specific hydrogen fuel cell systems for clean, mobile power generation.

organization
seed stage · 2–10 employees

www.zepp.solutions

Team FAST

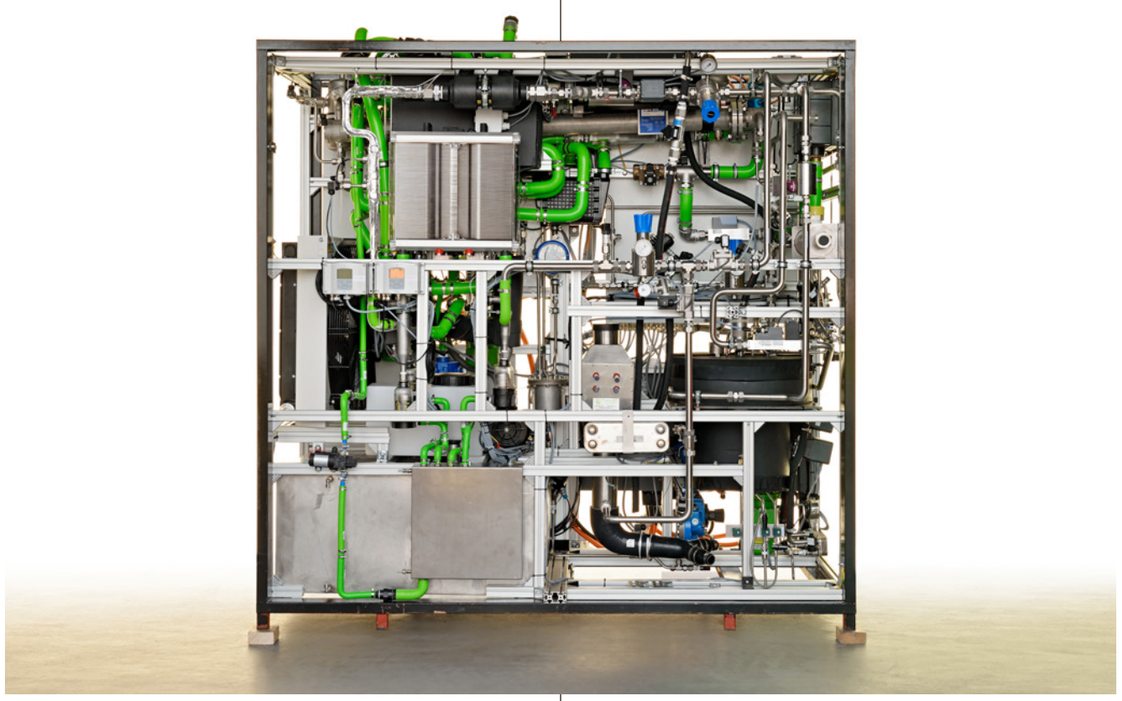
convert hydrozine into electricity

Team FAST, Formic Acid Sustainable Transportation, is a student team of the Eindhoven University of Technology, that is developing a system which converts hydrozine into electricity. Fuel based on formic acid. Energy can be stored inside Hydrozine to be used at any time and the use of Hydrozine is carbon neutral. The system FAST is developing converts Hydrozine into electrical energy at any location. The system relies on a catalytic reaction which transforms the Hydrozine into hydrogen and carbon dioxide. Team Fast also developed REX, a standalone generator for electricity that uses Hydrozine as fuel.

CO_2 reduction
Using Hydrozine one can generate electricity in a circular manner, without exhausting any additional CO2.

organization
early growth stage · 11–50 employees

www.teamfast.nl



SimGas

SimGas biogas systems farm solutions for rural households in developing countries.

organization
early growth stage · 11–50 employees

www.simgas.org

bioDiesel Amsterdam

Generates positive energy by producing clean-burning biodiesel from sustainable local resources.

organization
early growth stage · 11–50 employees

www.biodieselamsterdam.nl

Birds.AI

Cutting edge image analysis SaaS for visual inspections.

organization
seed stage · 2–10 employees

www.birds.ai

Nettenergy

renewable energy from biomass

Nettenergy provides installations that produce renewable energy and material on the basis of plant biomass. They specialize in developing innovative and scalable pyrolysis technology, the manufacturing of installations based on proprietary technologies and finally licensing their technology to third parties.

CO_2 reduction
Using our installations we can remove 1 million ton of CO2 from the atmosphere each year.

organization
seed stage · 1 employee

www.nettenergy.com

Energy Transformers

EnergyTransformers collects agricultural residuals from plantations and uses a (patented) torrefaction technology to transform these into ET Solid BioFuel. The ET Solid BioFuel, which has a high calorific value (22 GJ per metric ton), can be used for co-firing in both biomass boilers and in coal-fired power plants, without any technical modifications to the boilers.

CO_2 reduction
50% CO2 reduction with Solid BioFuel & 0% CO2 with Solid BioFuel Cradle to Cradle application.

organization
mature stage · 2–10 employees

www.energytransformers.asia

GoodFuels

GoodFuels has created a one-stop shop for industry customers by integrating the entire supply chain for sustainable biofuels. From feedstock to tank, GoodFuels proposition covers elements of sourcing feedstock and ensuring its 100% sustainability, the blending of the final product, the global distribution, quality assurance and marketing programs.

CO_2 reduction
Enabling instant Carbon savings up to 90% versus fossil Fuels whilst also significantly reducing local emissions.

organization
early growth stage · 11–50 employees

www.goodfuels.com

SCW Systems

supercritical (water) gasoline

SCW Systems has developed a unique system to produce renewable energy using supercritical water. Supercritical water gasification is an innovative technology that converts wet biomass (waste) flows such as manure, green waste and sewage sludge into renewable energy (hydrogen, methane) and reusable minerals. The technology mimics the natural process of how natural gas is produced where the conversion takes many decades underground, it now takes place in just a few minutes.

organization
seed stage · 2–10 employees

www.scwsystems.com

Plant-e

living plants generate electricity

Plant-e is a young company focused on developing products where electricity is generated with living plants. This innovative method of electricity production is not only very friendly for the environment, it is also unique and can be widely integrated around the world, holding the possibility to contribute to conservation efforts in wetland areas worldwide. Their mission is to do more research and development to bring other sustainable products to the market. They end goal is to make electricity in wetlands worldwide, making plant electricity a common energy source.

CO_2 reduction
Electricity production with living plants is carbon negative and leads to 15-20 tons CO2-reduction per hectare per year.

organization
early growth stage · 11–50 employees

www.plant-e.com

River Basin Energy

Solution for improving the environmental performance of utility power plants.

organization
seed stage · 2–10 employees

www.riverbasinenergy.com

The Waste Transformers

The Waste Transformers create decentralized, nutrient and energy hubs by converting residual waste streams into energy, whilst recovering (on-site) the natural resources and water in the waste.

organization
seed stage · 2–10 employees

www.thewastetransformers.com

Energy Company

Converting locally, automated, hygienically and efficiently kitchen waste into immediately usable energy. Waste is converted into electricity and hot water with a yield of 90%.

organization
early growth stage · 2–10 employees

www.energy-companie.nl

Waste4ME

The WER is a unique device that converts different types of waste into a usable gas.

organization
seed stage · 2–10 employees

www.waste4me.com

Energy Floors

Converts kinetic energy of moving people to electricity.

organization
early growth stage · 11–50 employees

www.energy-floors.com

BMO Offshore

BMO Offshore is a solution strategy company, delivering operational information and on-board measurement systems for the offshore wind industry. Given the risks of the offshore environment, we provide crews and vessel operators with the information they need to work safely, effectively and efficiently.

organization
early growth stage · 2–10 employees

www.bmo-offshore.com

Qlayers

Qlayers is developing hardware that creates microstructures on large surfaces. It enables automated coating of large structures, such as storage tanks, wind turbines and aircraft.

organization
seed stage · 2–10 employees

www.qlayers.com

Solar Monkey

Solar Monkey delivers software that increases the efficiency of designing, installing and monitoring solar systems.

organization
early growth stage · 11–50 employees

www.solarmonkey.nl

Fibersail

shape sensing system

A continuous and automated real-time shape monitoring service for the condition and behavior of wind turbine blades with a simple and efficient way of integration. Fibersail is a shape sensing system based on FBG fiber optic research to monitor and analyze windmill blades in terms of shape, condition and behavior. The real-time information provided will help wind turbine operators to maximize performance and availability while preventing failures and maintenance costs from their windmills.

organization
seed stage · 2–10 employees

www.fibersail.com

the next green thing

Combining the placement of solar panels and vegetation on your roof.

organization
seed stage · 2–10 employees

www.thenextgreenthing.com

VizionZ Engineering

Vizionz offers a patented technology for offshore substructures. Significantly decreasing the capital investment required for construction and extending substructure lifespan.

organization
seed stage · 2–10 employees

www.vizionz.nl

Aqua Smart XL

Develops an information system with a fleet of floating drones that perform a continuous check of water and air in and around ports.

organization
seed stage · 2–10 employees

www.aquasmartxl.com

GBM Works

GBM Works is developing a new method of installing offshore wind turbine foundations. They call it: the GBM Vibro-drill. A method to vibrate foundation piles into the ground. Using patent-pending technology GBM works aims to revolutionize the way that foundations are installed at sea.

organization
seed stage · 2–10 employees

www.gbmworks.com

offshore wind foundations

energy storage

startup solutions

AquaBattery

give power to water

The AquaBattery is the only electrical storage system that is 100% sustainable. The team have developed an innovative product that stores electricity solely using water and table salt. The aim of the project is to stop the use of toxic materials, such as the acids used to build conventional batteries. Those systems are obsolete and extremely damaging to the environment. At the moment the Aquabattery team are building their first pilot on The Green Village in Delft. Here the battery will store the electricity of solar panels and make sure the residents can enjoy renewable electricity day and night!

CO_2 reduction
The battery stores electricity in salt water gradients, which facilitates the growth of renewables to 100%.

organization
early growth stage · 2–10 employees

www.aquabattery.nl

Power Research Electronics

EV charger module solutions. PRE has recently extended its portfolio of uni- and bi-directional Power Modules to deal with the expanding EV Charger Market like home chargers, highway chargers, bi-directional chargers with Solar option to charger parks.

organization
seed stage · 2–10 employees

www.pr-electronics.nl

Tryst Light Energy

Light Energy battery. Operating on just 200 lux of light, (about the same amount of light as you'd find under your desk) this energy-efficient battery lasts a minimum of 50 years and comes with a power management module that anyone can use.

organization
early growth stage · 11–50 employees

www.twtg.io/work/tryst-energy

Delft IMP

Scalable production of nanostructured materials. Molecular protection to extend battery life.

organization
seed stage · 2–10 employees

www.delft-imp.nl

Nowi Energy

Developing climate sensors that are powered by WiFi, 4G and GSM signals.

organization
seed stage · 2–10 employees

www.nowi-energy.com

Wattsun

Wattsun, a portable plug & play battery system.

organization
seed stage · 2–10 employees

www.wattsun.net

Ecovat

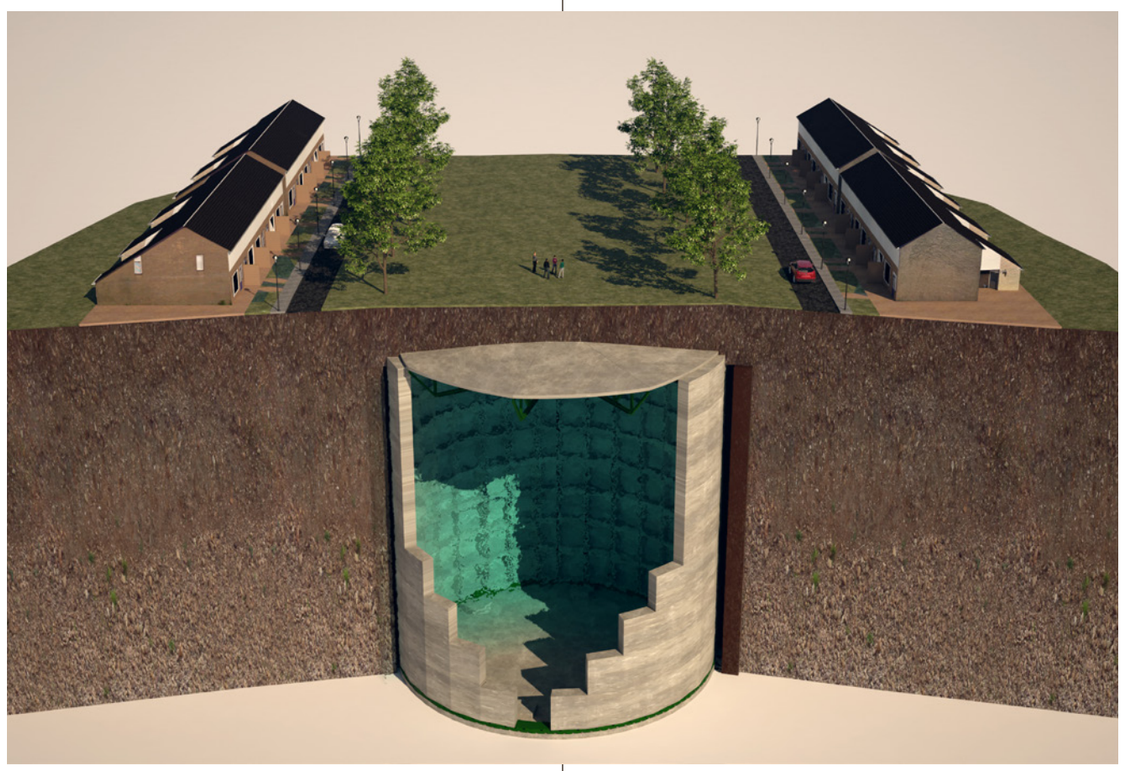
energy storage system

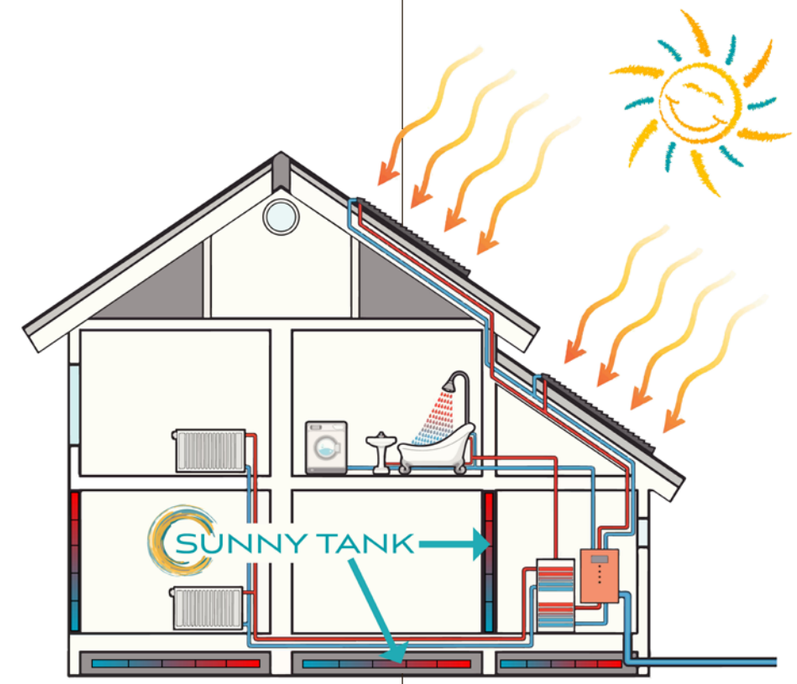
Ecovat is a large subterranean buffer tank filled with water, which is used for storing heat and cold for use later on. By storing the sustainably generated energy surplus and using it in times of scarcity, renewable energy is used in an optimal way. By acting on the electricity markets and anticipating future heat demand, Ecovat offers the possibility of buying energy when the price is low. A software system has been developed for this. This software bases its actions on the weather forecast, current energy prices, the status of the Ecovat and the expected energy demand.

CO_2 reduction
100% CO2 free alternative supply chain for heating and cooling.

organization
early growth stage · 11–50 employees

www.ecovat.eu





E-Wizz

thermal storage system

E-Wizz is a producer and installer of thermal energy storage systems, which can provide homes or business buildings with heat and/or cold and hot water. The Sunny Tank is a thermal storage system that can be built into walls and floors. Sunny Tanks are buffer vessels that can also be used constructively and thus form an integral part of the building. Within the Sunny Vessel you can store thousands of liters of thermal heat and/or cold in a building without any loss of space or heat loss.

CO_2 reduction
Stores all the heat/cold for energy-neutral homes/buildings with a 100% CO2 reduction.

organization
seed stage · 2–10 employees

www.e-wizz.com

Dr Ten

sea salt battery

The sea salt battery is a battery consisting of minerals, carbon, and salt extracted from natural sources. Currently it has an energy density of about 30 Wh/kg and a cost price lower than any existing battery. The battery can be completely discharged of energy and a prototype battery was tested being able to already run more than 7000 recharge and discharge cycles.

organization
seed stage · 1 employee

www.drten.nl

Cleantron

Cleantech batteries.

organization
seed stage · 2–10 employees

www.cleantron.nl

Hydra Storage

Hydra Storage uses excess energy to produce and store hydrogen in portable containers for sustainable solutions.

organization
seed stage · 11–50 employees

www.climate-kic.org/start-ups/hydra-storage

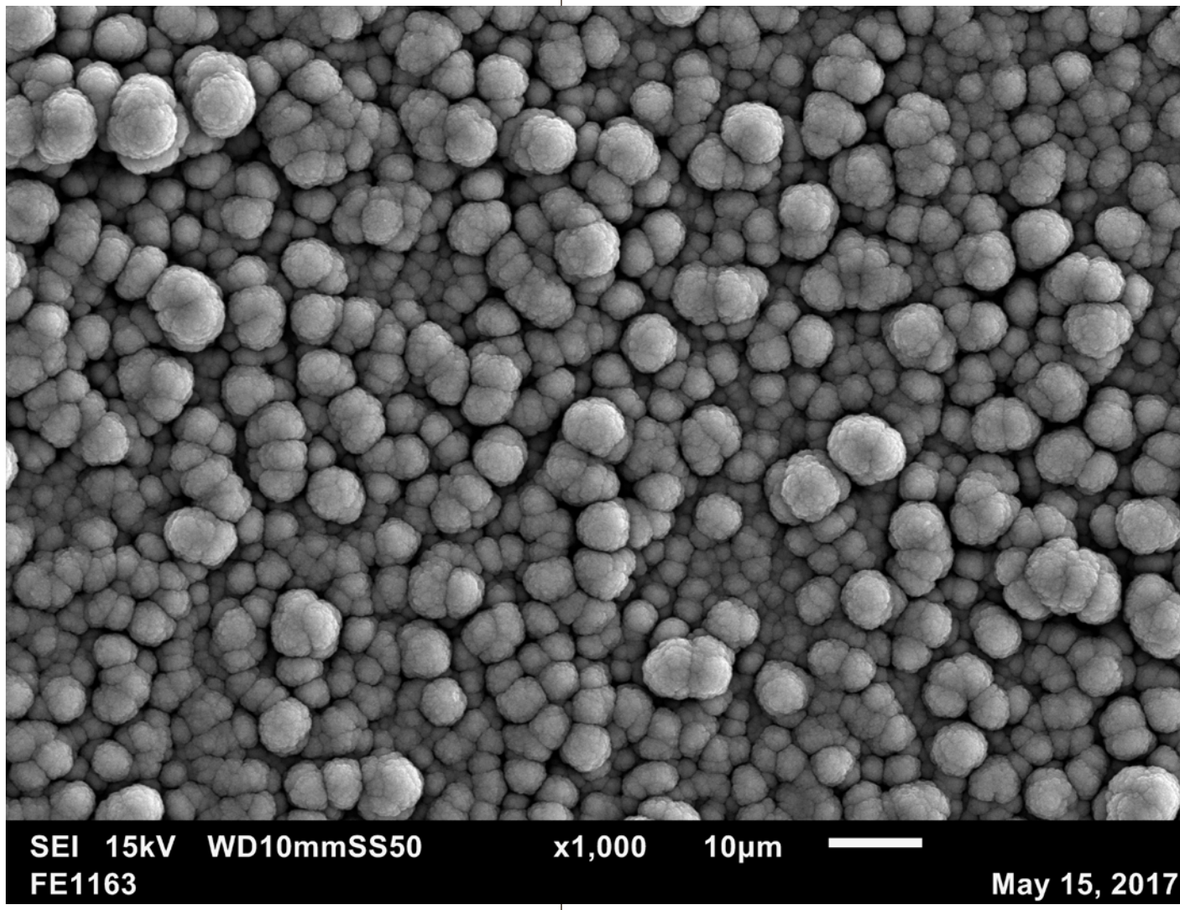
LeydenJar Technologies

Scalable production of nanostructured materials. Molecular protection to extend battery life.

CO_2 reduction
50 % higher capacity batteries enable long-range, low-CO2 e-mobility and small-scale energy storage.

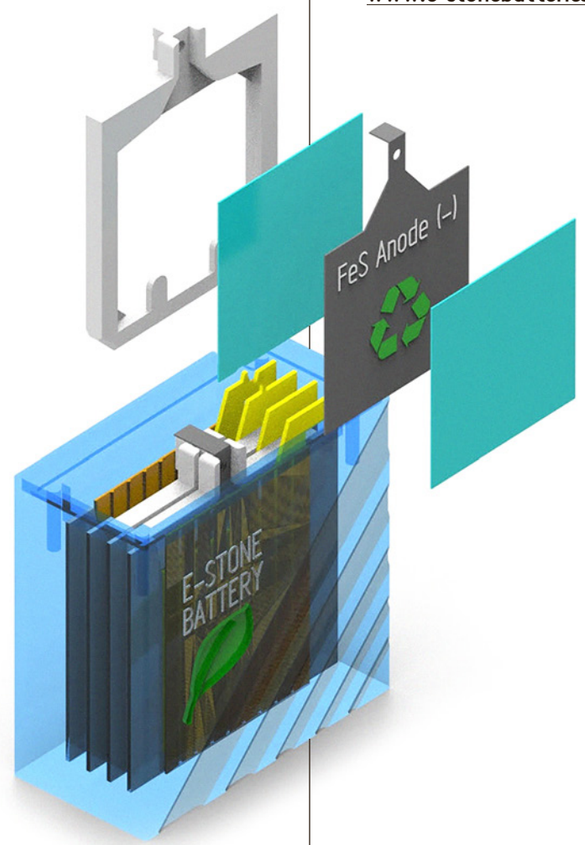
organization
seed stage · 2–10 employees

www.leyden-jar.com



E-Stone Batteries

future proof batteries



E-Stone Batteries combines an easy innovative fabrication method and uses a patented electrode formulation, making it possible to utilize the tremendous potential of iron. There is still nickel in the first nickel-iron batteries. But in terms of cost not more than there is lead in a lead-acid battery. The cycle life is already proven to be several times longer than lead-acid batteries and the energy density is 2-3 times greater. In future, E-Stone aims to replace the nickel for much cheaper variants (e.g. air electrodes).

CO_2 reduction
Iron batteries can store solar/wind energy at lowest possible cost to compete with fossil fuels.

organization
seed stage · 2–10 employees

www.e-stonebatteries.com

I strongly believe that the Netherlands – as we always have done – has the ability to translate social challenges in a sensible way into innovations and translate these innovations into sustainable economic opportunities. We are not only a country with a high level of education, just look at all the wind-innovation labs in our backyard where we hold a considerable market share.

Eric Wiebes —— Minister of Economic Affairs and Climate Policys

Speech by Minister Wiebes during 'De Staat van de Economie', February 2018 (translated from Dutch)

energy efficiency

startup solutions

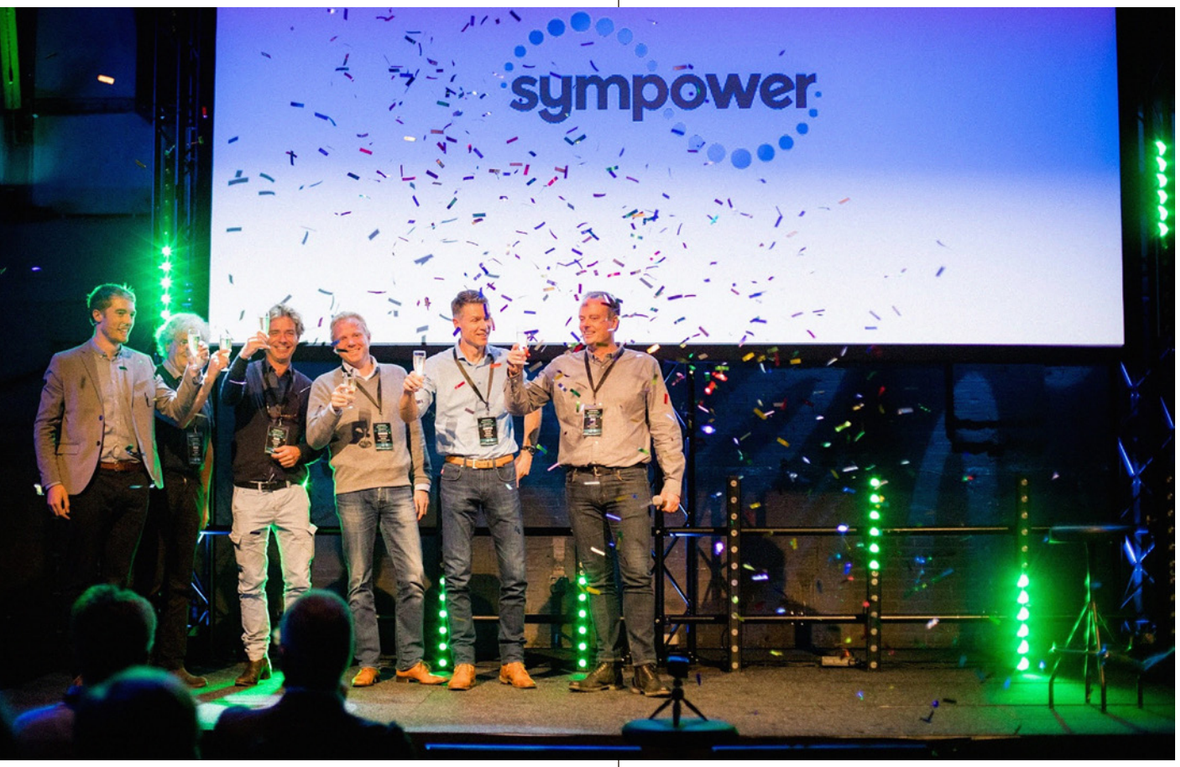
Sympower

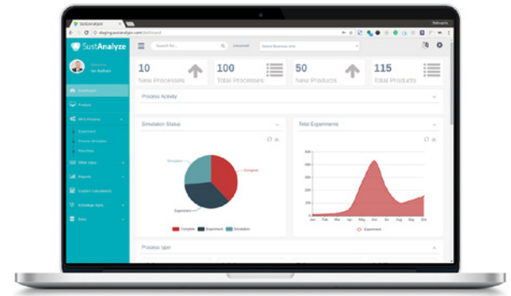
aggregating energy consuming

Sympower is a demand response aggregator that enables smarter energy use for a carbon-free future. They aim to provide a sustainable solution to fluctuations in energy supply and demand, by aggregating energy consuming systems and appliances onto our cloud-based platform. During moments of stress on the grid, their software can temporarily switch on or off your devices locally, without impairing the functionality of the appliances.
The system can work with heating systems, water boilers, ventilation systems, energy storage devices, and more.

organization
early growth stage · 11–50 employees

www.sympower.net





SustAnalyze

SustAnalyze accelerates innovation and transforms supply chains for chemicals/materials that will be profitable, safer and sustainable. This acceleration is driven by an advanced technology platform that delivers high-quality and uniquely public and proprietary data based multi-perspective decision support. By accelerating materials- and process innovation using unique technology, they improve financial performance, reduce environmental impact and brand risk for materials manufacturers and brand owners.

organization
seed stage · 2–10 employees

www.sustanalyze.com

enerGQ

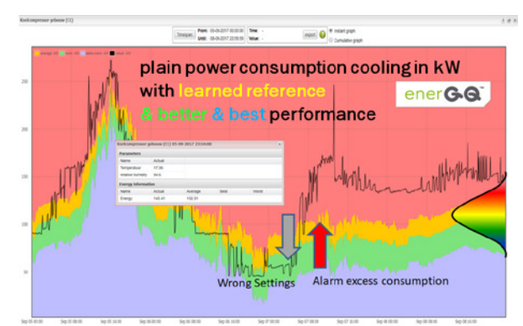
Offer an intelligent solution for asset monitoring through energy consumption analysis. This enables users to ensure continuity of their processes as well as enabling them to minimize the carbon footprint of their industry. The use of big data and machine learning techniques (techniques of artificial intelligence) is key to enerGQ's technology. The software they provide compares the real time energy consumption alongside data from similar situations in the past, providing a clear benchmark.

CO_2 reduction
Up to 30% energy saving with artificial energy intelligence software, plug & play, for all sectors.

organization
seed stage · 2–10 employees

www.energq.com

energy consumption analysis



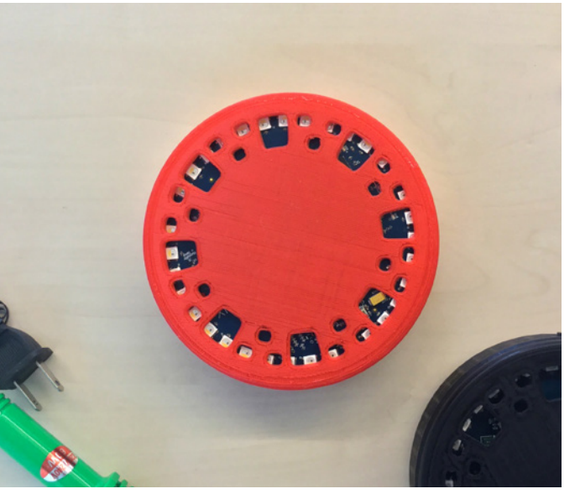
OneWatt

OneWatt is an energy management system company that uses machine learning and arbitrage to take advantage of the fluctuations in the electricity market to save on electricity bills. Industrial motors are expensive and when you have issues that aren't diagnosed properly they can result in massive losses, due to unnecessary repairs, or even worse, unplanned downtime. Using OneWatt's custom non-invasive sensors and machine learning algorithms, their EARS literally listen to your motors to prevent this from happening.

CO_2 reduction
reduce 1.5g of CO2 per motor, which amounts to 735 metric tons by 2022.

organization
seed stage · 2–10 employees

www.onewatt.xyz



Energyworx

With a suite of Energy Data Management and Energy Intelligence Solutions, Energyworx SaaS uncovers and monetizes the hidden value of data, providing you with actionable insights.

organization
early growth stage · 11–50 employees

www.energyworx.com

Envitron

Developing a sensor platform and developing software applications for the sensor platform, to balance all energy supply and demand.

organization
seed stage · 2–10 employees

www.envitron.nl

Dexter Energy

Intelligent energy monitoring which enables clients to get relevant insights, save energy and perform a-b testing to quantify energy savings measures.

organization
early growth stage · 2–10 employees

www.dexterenergy.nl

Seita

monitor power consumption and production

Developing a balancing valorization platform. The platform allows energy companies and asset owners to monitor power consumption and production as well as relevant price data. In addition, the platform uses algorithms for machine learning and control strategies to assist human operators with forecasts and decision-making.

CO_2 reduction
Smart web applications to unlock consumer energy flexibility.

organization
seed stage · 2–10 employees

www.seita.nl

Semiotic Labs

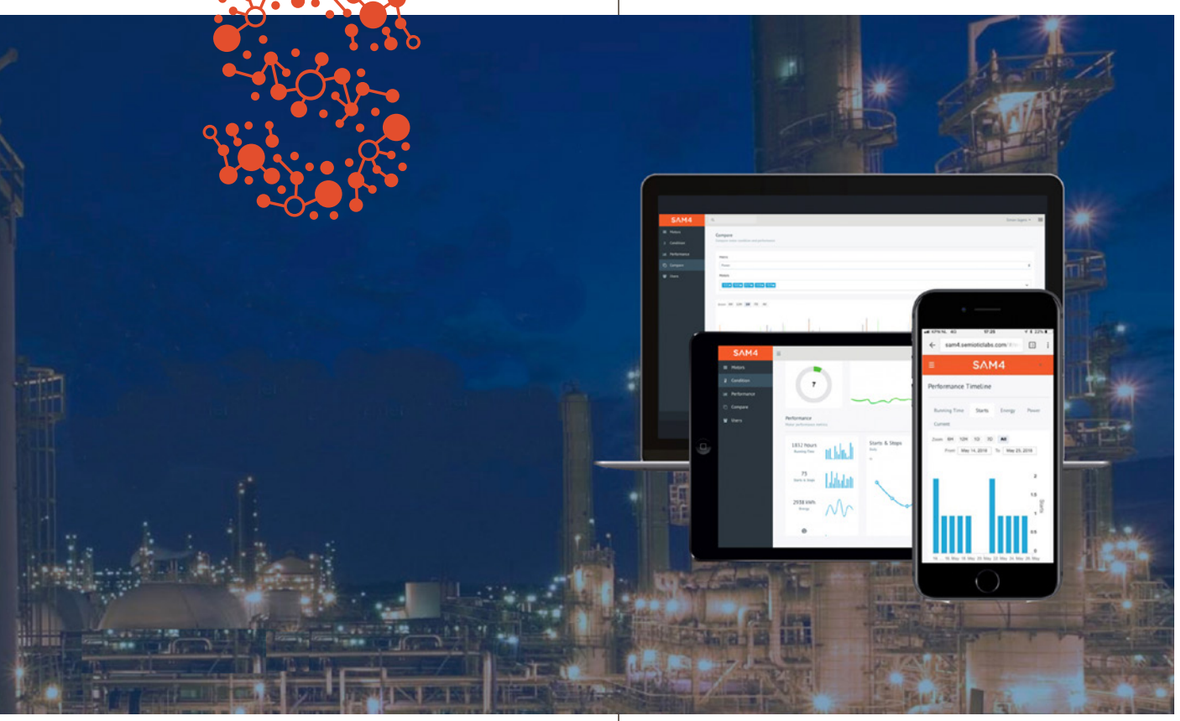
condition monitoring, re-engineered

Semiotic Labs offers SAM4: The plug & play solution for Smart Asset Monitoring that includes sensors, smart algorithms and a dashboard that provides actionable information about AC induction motors and rotating equipment. The SAM4 detects upcoming failures, monitors performance metrics and signals energy savings potential. In real time. It combines artificial intelligence, sensors and a dashboard, offering a plug & play Smart Asset Monitoring solution for maintenance teams with zero tolerance for unplanned downtime.

CO_2 reduction
An estimated 1,5% of global electricity consumption is wasted by ac induction motors. Semiotic labs eliminate that waste.

organization
early growth stage · 11–50 employees

www.semioticlabs.com



Hello Energy

Energy management tool for monitoring, managing and communicating energy.

organization
seed stage · 2–10 employees

www.hello-energy.com

Ipsum Energy

24/7 smart insights into the energy consumption of appliances. Ipsum shows you where to save energy and how, at a single glance.

organization
seed stage · 2–10 employees

www.ipsumenergy.com

Lone Rooftop

Real-time data to optimize the use of space.

organization
early growth stage · 11–50 employees

www.lonerooftop.com

Simaxx

Simaxx is a software platform to improve building for everyone in the future. Profit from more comfort, less maintenance and continuous monitoring. Because day and night, seven days a week Simaxx gives insight in the performance of the buildings installations. Smart meters warn you of discrepancies in data and processes in the building control system and where necessary they make adjustments. Simaxx literally checks and tells you straight away how your building is feeling.

CO_2 reduction
Measure and reduce the co2-emission of buildings by making them energy efficient, 15-30% reduction

organization
early growth stage · 11–50 employees

www.simaxx.com

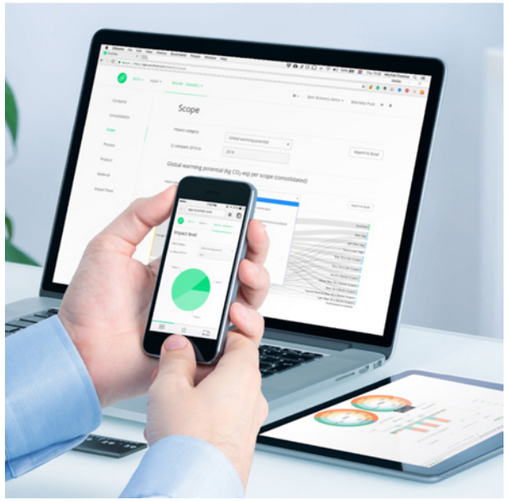
EcoChain energy insights

Revealing the value of sustainability. EcoChain provides insights into the efficiency of energy and resource flows on the company, process, product and material level, providing the industry with valuable knowledge on sustainability, energy, and material performance.

CO_2 reduction
The environmental intelligence platform enables 214 companies to head for a 933,187 Ton CO2-eq reduction in 2026.

organization
early growth stage · 11–50 employees

www.ecochain.com



Sensorfarct

Smart energy savings in the manufacturing industry. Sensofarct is using IoT sensor technology, which measures the energy consumption of industrial machines and gives specific advice on savings options.

organization
early growth stage · 11–50 employees

www.sensorfact.nl

VP instruments

VP Instruments offers compressed air flow meters and industrial energy monitoring solutions.

organization
early growth stage · 11–50 employees

www.vpinstruments.com

Work4Water

Startup Work4water will design an application that helps house owners to assess the need for energy efficiency measures in their homes.

organization
seed stage · 2–10 employees

www.work4water.com

Circular IQ

Making it easy to collect sustainability data throughout supply chains, so performance can be compared objectively across companies, products and suppliers.

organization
seed stage · 2–10 employees

www.circular-iq.com

Circularise

Open, distributed and secure communications protocol for the circular economy.

organization
seed stage · 2–10 employees

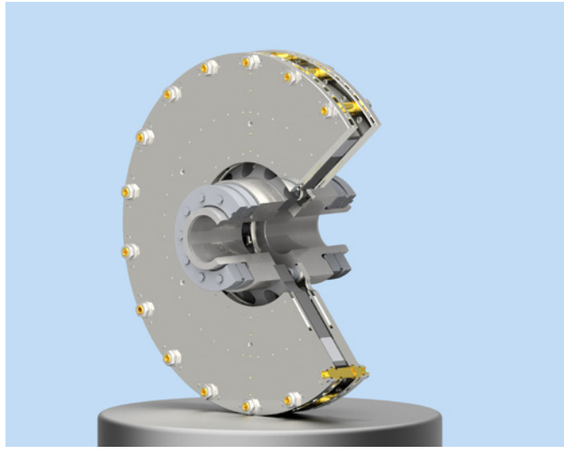
www.circularise.com

Additive Industries

Industrial solutions for metal additive manufacturing.

organization
growth stage · 51–200 employees

www.additiveindustries.com



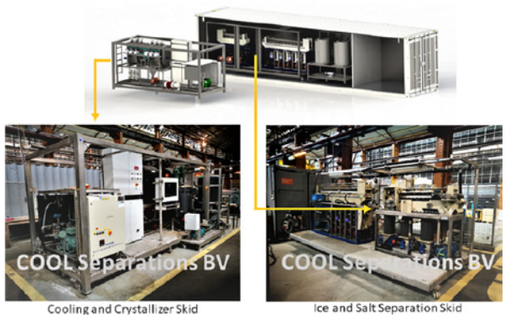
Zytec

The Zytec contact-free magnetic coupling is a Game Changer in rotating equipment, which unlocks hidden energy/CO2 reduction potential and costs. This innovative technology makes it possible to save up to 50% of energy consumption and reduce up to 50% of operating costs. Applications include pumps, fans, generators, compressors and conveyors which are used in sectors such as industry (general), Water and Waste Water, Heating Ventilation Air-Conditioning (HVAC), Chemical Industry, Oil and Gas Industry, Maritime Sector, Pulp and Paper Industry and Mining.

CO_2 reduction
6 Megaton CO2 reduction realized in 2025 with a payback period of less than 3 years.

organization
early growth stage · 11–50 employees

www.zytec.eu



Cooling and Crystallizer Skid
Ice and Salt Separation Skid

COOL Separations

Low-temperature crystallization based solutions for the separation of salt(s) and water or heat sensitive materials and water. Cool Separations bring the Eutectic Freeze Crystallization, Freeze Concentration and Cooling Crystallization processes to the market as energy efficient methods to concentrate aqueous process streams and produce clean water (ice) and pure salt.

CO_2 reduction
The clean-up of saline water saves at least 10-35 kg CO2 per ton of water compared to evaporation technologies.

organization
seed stage · 11–50 employees

www.coolseparations.nl

Beltech

Beltech provides turnkey systems integrator. The robot positioning-systems are able to pick and place a large variety of objects.

organization
early growth stage · 11–50 employees

www.beltech.nl

EFFECT Photonics

EFFECT Photonics develops products for fiber-optic communication systems based on Photonic Integrated Circuit technology.

organization
early growth stage · 11–50 employees

www.effectphotonics.nl

Nonox

Nonox has a patented technology which can be applied to natural gas, diesel and petrol engines. Improvement in engine efficiency by eliminating throttle losses and reducing CO2 and NOX emissions.

organization
early growth stage · 11–50 employees

www.nonox.nl

Sound Energy

convert waste heat into cooling

SoundEnergy introduces technology that brings a fundamental change in cooling buildings without using electricity or gas. SoundEnergy's breakthrough innovation in Thermo Acoustic Technology can convert heat into cold, establishing zero CO2 climate control of buildings. Their marquee product the Thermo Acoustic Energy Converter, THE-AC-25, developed by SoundEnergy will function as a central unit in the installation concept for climate control. Its core function is converting heat into cold by using their thermo acoustic technology.

CO_2 reduction
Converts solar/industrial waste heat directly into cooling. No electric power needed for cooling.

organization
seed stage · 2–10 employees

www.soundenergy.nl

Asperitas

liquid cooling

Asperitas Immersed Computing® is a clean, self-contained, modular and plug and play approach to liquid cooling which enables high density computing while reducing IT and cooling energy (patents pending). Building on existing liquid immersion cooling technologies by adding integration of power and network components, improving cooling physics with a strong focus on design and engineering for usability, Asperitas has come up with a complete and integrated solution which can be effectively utilized in most, if not all situations.

CO_2 reduction
Data centers account for 2% of CO2 emissions, Asperitas halves emissions and makes data centers energy-producing

organization
early growth stage · 11–50 employees

www.asperitas.com

Sit & Heat

Comfortable and energy efficient terrace heating.

organization
seed stage · 2–10 employees

www.sitandheat.com

HeatMatrix Group

Turns waste heat into profit.

organization
seed stage · 2–10 employees

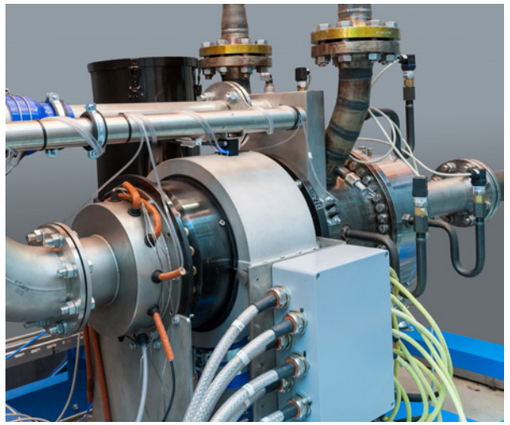
www.heatmatrixgroup.com

Synext

Synext engine is the solution to become more sustainable and energy efficient by reducing emissions and reusing waste heat to generate electricity.

organization
seed stage · 2–10 employees

www.synext-energy.com



Innecs Power Systems

Innecs Power Systems B.V. supplies burners, steam and gas turbines, which increase the energy efficiency with clients and reduce emissions at an acceptable price. In Europe, various clients already rely on their 'BoilerBurner', so that they can comply with the regulations for nitrogen oxide (NOx) emissions. Other products include the 'SteamExpander' and 'PowerBurner' which use innovative technology to help industrial clients with increasing the efficiency of their steam and electricity production.

CO_2 reduction
Combining electricity production with steam expansion and heat applications.

organization
early growth stage · 11–50 employees

www.innecs.nl

Although the government always has the intention to help ambitious green startups to grow quickly, sometimes 'unconsciously' they can work against them. In this interview, Jeroen Burks, CEO of early stage startup Blockheating, shares his challenges and thoughts on what governmental help is needed.

Jeroen Burks
CEO Blockheating

'It's vital for our business and the energy transition that our containers fit into local zoning plans'

ON HIS BEDSIDE TABLE is the bestseller management book Ondernemen is een ABC'tje (Doing business is a small ABC – red.) by Michiel Muller, the unstoppable entrepreneur who made national headlines with Tango, Route Mobiel and Picnic. "I love that book, because it is about daring to leave the safe harbor (A) to try something new. What that is, and how to get there, is precisely the fun of doing business. But even if your trip (B) is temporary, you will suddenly see new goals and new businesses (C)."

It is not surprising that it is precisely this book that appeals to Jeroen Burks in this way. His idea to heat greenhouses all year round by using flexible residual heat from computer servers, is also a real journey, with challenges constantly popping up. For example: How can we cool the servers, and make sure the waste heat is still useful? How can this be done in a cost-effective way? But also: do local land-use plans allow horticulturalists to place servers in mobile containers on their land?

The latter, in particular, is an important issue for the physicist. "Because growers do not want a datacenter in their greenhouse, we aim at creating mobile datacenters inside standard containers. But if horticulturists cannot place these because of local land-use plans, the process of using these containers will be very time-consuming as it requires changing local zoning plans."

One municipality already indicated that it did not know whether it was actually allowed. And even though this is not a definitive rejection, Jeroen would still like to discuss this challenge with the Ministry of Agriculture, Nature & Food Quality or the Ministry of Economic Affairs and Climate. "Knowing that it's possible would really help our business grow."

Want to help or get in contact with Jeroen? Contact him directly at jeroen@blockheating.com

Blockheating

when computing meets agriculture

Blockheating places servers in the greenhouse or building, the heat which is generated from the servers is then transported through the greenhouse or the building by means of (existing) pipes. The servers are delivered in a container and connected to the internal air heating system. The servers are cooled in an innovative manner, so that the heat can be dissipated by means of water at about 60 ° C. The idea behind this is to use the energy created when generating cryptocurrencies instead of wasting it into the atmosphere.

CO_2 reduction
Recycles data center energy into a heating source for greenhouses. A 1 MW data center reduces the co2 emissions with 1.800 ton per year (1.800.000 kg/year)

organization
seed stage · 2–10 employees

www.blockheating.com

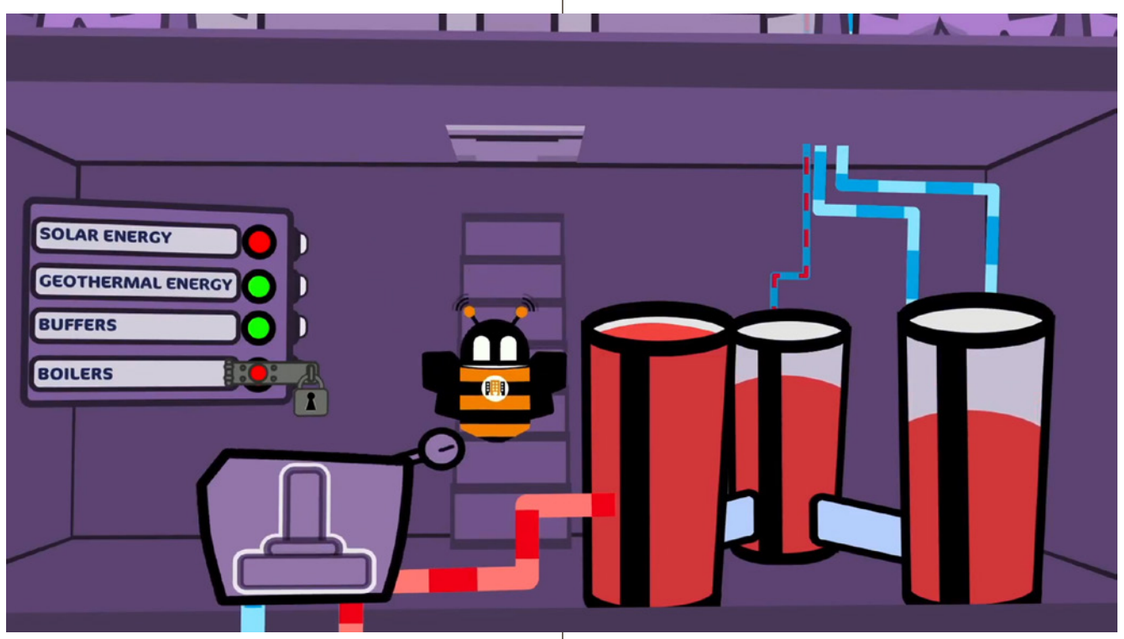
Hero Balancer

match energy demand and supply

Hero Balancer is a digital house manager. It can create an ideal match between energy demand and the supply of renewable energy, thanks to its unique artificial intelligence. It studies weather patterns and forecasts, and the behavior of residents and users. That way, it can know exactly how much heat and warm water needs to be delivered not only today, but also tomorrow. It makes sure that all available renewable sources are in the optimal state, so that they can deliver the exact amount of energy that is required now and later, completing the renewable cycle. Hero Balancer provides a clever deployment of various sources for renewable heat generation, such as solar thermal panels, heat pump, buffers or the regular heating boiler.

organization
seed stage · 2–10 employees

www.herobalancer.nl



Nerdalize

cloud storage providing central heating

Nerdalize is building a sustainable alternative to current cloud solutions. Current data centers are huge energy wasters. Combined, data centers use up more electricity than India and generate more CO_2 emissions than the airline industry. One reason the industry is so energy intensive is that 40% of its total energy consumption on cooling to get rid of this heat. Nerdalize avoids the datacenter entirely by placing these heat-producing servers as aided heating systems in homes. Through this Nerdalize avoid the cost and CO_2 emissions of building a data center this way. This innovative set-up also drastically reduces the household's gas consumption whilst slashing the energy originally needed for server cooling.

CO_2 reduction
Triple win: computing power becomes more affordable, homes obtain free heat and CO_2 emissions are reduced with 2 tons of CO_2 per household per year.

organization
early growth stage · 11–50 employees

www.nerdalize.com

Cooll

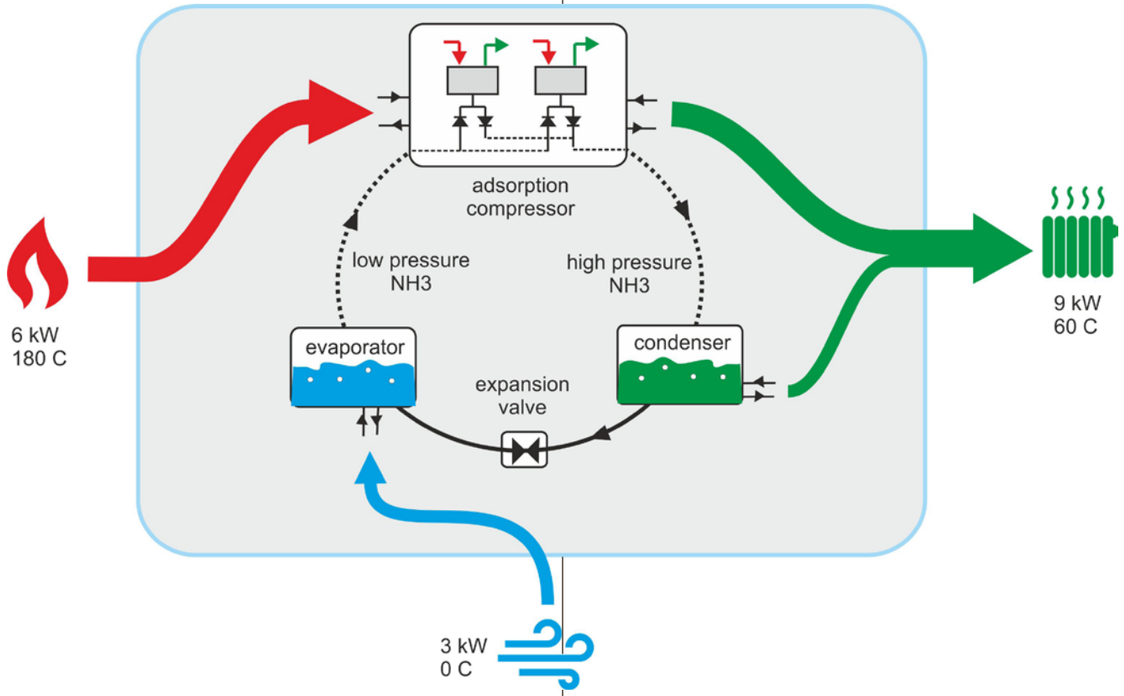
energy and CO_2-saving absorption

Cooll has developed an innovative energy and co2-saving absorption heat pump technology. It is a thermally driven technology that can be used, for example, in situations where electric heat pumps do not perform very well in terms of co2-savings. It is a generic conversion technology that can reduce energy consumption and co2 emissions for heating by 30 – 50%. The technology uses the combustion heat from fossil or renewable fuels in a smarter way than in traditional heating systems. Cooll is working with partners on a first application, a gas-fired heat pump, which can become a successor of the condensing boiler in existing buildings.

CO_2 reduction
The (bio)gas-driven heat pump technology reduces co2 emissions for home heating by 35 - 40%

organization
seed stage · 2–10 employees

www.cooll.eu



Ambergy Industrial

Ambient intelligence for saving energy in warehouses.

organization
seed stage · 1 employee

www.ambergy-industrial.nl

LED driven

Manufacturer of smart lighting solutions.

organization
seed stage · 2–10 employees

www.leddriven.nl

Antecy

Captures and concentrates co2 from Air and/or point sources with cost effective non-amine robust technology.

organization
seed stage · 1 employee

www.antecy.com

Sustainder

Sustainder delivers smart city solutions including smart luminaires (smart lighting systems) that unlock the opportunities offered by outdoor data and services. Using open technology, they support clients in the transition to smart outdoor solutions. All the luminaires are therefore based on a modular design concept and include basic sensor technologies that make it possible to measure temperature, light sensitivity, and energy use, among other things.

CO_2 reduction
30% - 60% fewer co2 emissions thanks to sustainable LED lighting, Saves 50% more with dim schemes and 80% more with motion detection.

organization
early growth stage · 11–50 employees

www.sustainder.com

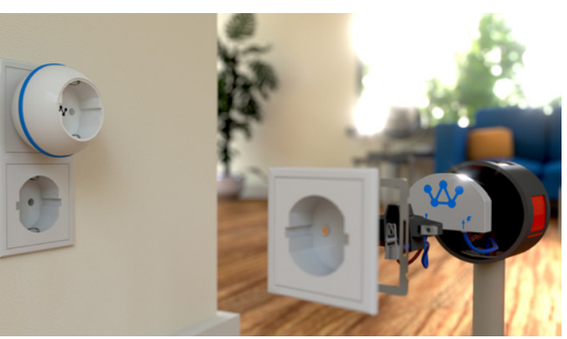
Crownstone

Crownstone uses your mere presence and proximity (indoor localization) to control lights and devices in the home or office environment. Crownstone brings a wide range of apps to the smart home. One of these applications includes the Crownstone Plug which acts like a switch, a dimmer, a presence detector, and a power monitor, all in one. Moreover, it uses AI and is open-source. This means that its functionality improves over time and that its functions can be extended by anyone that shows an interest in the technology.

CO_2 reduction
Artificial intelligence adjusts lights, heating, air-conditioning, music per room.

organization
seed stage · 2–10 employees

www.crownstone.rocks



PSP Lighting

PSPL provides Smart Industrial Light-as- a-Service solutions to demanding industrial environments.

organization
early growth stage · 2–10 employees

www.psplighting.com

Tvlight

Smart control of outdoor lighting.

organization
early growth stage · 11–50 employees

www.tvilight.com

Luminext

Dynamic lighting solutions.

organization
early growth stage · 11–50 employees

www.luminext.eu

Skytree

transforming atmospheric CO_2 into methanol

Skytree units filter CO_2 and remove water from outdoor and indoor air and dispense it in concentrated form. Skytree units have a wide range of applications: from improving plant growth to fuel synthesis and air purification. The core competency of Skytree is the transfer of Direct Air Capture technology to products and applications on the small to medium scale and bringing these to market by establishing licensing partnerships. The CO_2 recapture process was originally developed by ESA to make longer space missions possible by extracting the CO_2 exhaled by astronauts on board of spacecraft. Currently, Skytree owns 2 process patents that were granted in the period 2013-2015 and are based on in-house testing. As of 2016 Skytree has 2 additional patents pending.

CO_2 reduction
Enables indoor air re-circulation which helps reduce HVAC energy usage and improve air quality.

organization
seed stage · 2–10 employees

www.skytree.eu

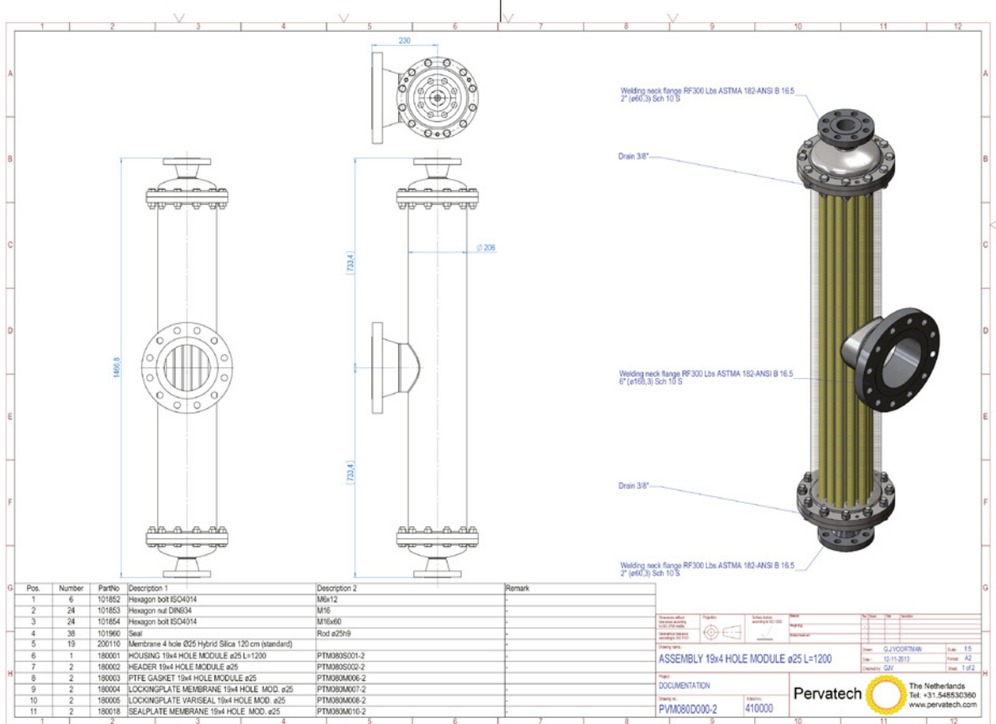
Pervatech

lowering waste streams

Pervatech produces cutting-edge membranes, membrane modules and separation systems for pervaporation and vapor permeation applications. Using Pervatechs expert knowledge they design membrane based solutions for the separation of organic substances. The products and services that Pervatech offer enable customers to innovate their production processes, leading to lower energy consumption, higher efficiency, recycling of valuable resources, lower waste streams and higher product quality.

organization
seed stage · 2–10 employees

www.pervaporation-membranes.com



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1	6	101852	Hexagon bolt ISO4014	M6x12	-
2	24	101853	Hexagon nut DIN934	M16	-
3	24	101854	Hexagon bolt ISO4014	M16x60	-
4	38	101960	Seal	Rod ø25h9	-
5	19	206110	Membrane 4 hole Ø25 Hybrid Silica 120 cm (standard)	-	-
6	1	180001	HOUSING 19x4 HOLE MODULE ø25 L=1200	PTM080S001-2	-
7	2	180002	HEADER 19x4 HOLE MODULE ø25	PTM080S002-2	-
8	2	180003	PTFE GASKET 19x4 HOLE MODULE ø25	PTM080M006-2	-
9	2	180004	LOCKINGPLATE MEMBRANE 19x4 HOLE MOD. ø25	PTM080M007-2	-
10	2	180005	LOCKINGPLATE VARISEAL 19x4 HOLE MOD. ø25	PTM080M008-2	-
11	2	180018	SEALPLATE MEMBRANE 19x4 HOLE MOD. ø25	PTM080M010-2	-

consumer market

startup solutions

De Energie-bespaarders

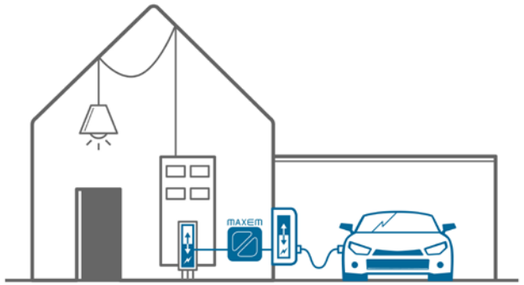
recognition software

De Energiebespaarders offer users a free online insight into the costs and benefits of energy-saving products for their specific situation. They do this through a number of groundbreaking tools to accurately map the energy performance of a home. One of these tools is image recognition software with which facades can be analyzed and measured to create an accurate calculation on energy usage. This information is then turned into actionable advice with the option to move forward with installing the recommended products.

CO_2 reduction
Makes it easy for homeowners to make their homes more sustainable.

organization
early growth stage · 11–50 employees

www.energiebespaarders.nl



Maxem

smart energy monitor

Maxem is an Energy Manager that does two things, firstly it measures the main grid connection, home energy usage and solar panels. Secondly, it steers the power of a charging station, heat pump or stationary battery. Prevent expensive upgrades in the electricity grid and optimally use solar energy with Maxem.

organization
early growth stage · 11–50 employees

www.cohere.eu

Energie in Huis

Energie in Huis is a one-stop shop for a green home including 100% financing.

organization
early growth stage · 11–50 employees

www.energieinhuis.nl

Zonnepaneel-wijzer

Helps consumers to generate solar energy.

organization
seed stage · 2–10 employees

www.zonnepaneelwijzer.com

Zonnepanelen-Delen

Europe largest platform for (community) solar financing.

organization
seed stage · 201–500 employees

www.zonnepanelendelen.nl

Peeeks

Finds, accesses and unlocks flexibility in energy portfolios of electric companies.

organization
early growth stage · 11–50 employees

www.peeekspower.com

Senfal

Senfal is a technology company that uses Artificial Intelligence to align energy use and production with actual market prices. It develops flexibility services for wind farms and industry.

organization
early growth stage · 11–50 employees

www.senfal.com

Solease

Provides solar panels to consumers for a monthly fee.

organization
early growth stage · 11–50 employees

www.solease.nl

Power ToShare

PowerToShare is a blockchain based energy information exchange that will act as the nerve system in transformed energy markets. It is a driver for peer-to-peer energy trade via blockchain, including the identification and certification of energy producers, settlements of bilateral transactions and balancing of the grid.

CO_2 reduction
The potential to reduce 18 percent of CO2 reductions in regions where it is fully implemented.

organization
seed stage · 2–10 employees

www.powertoshare.eu

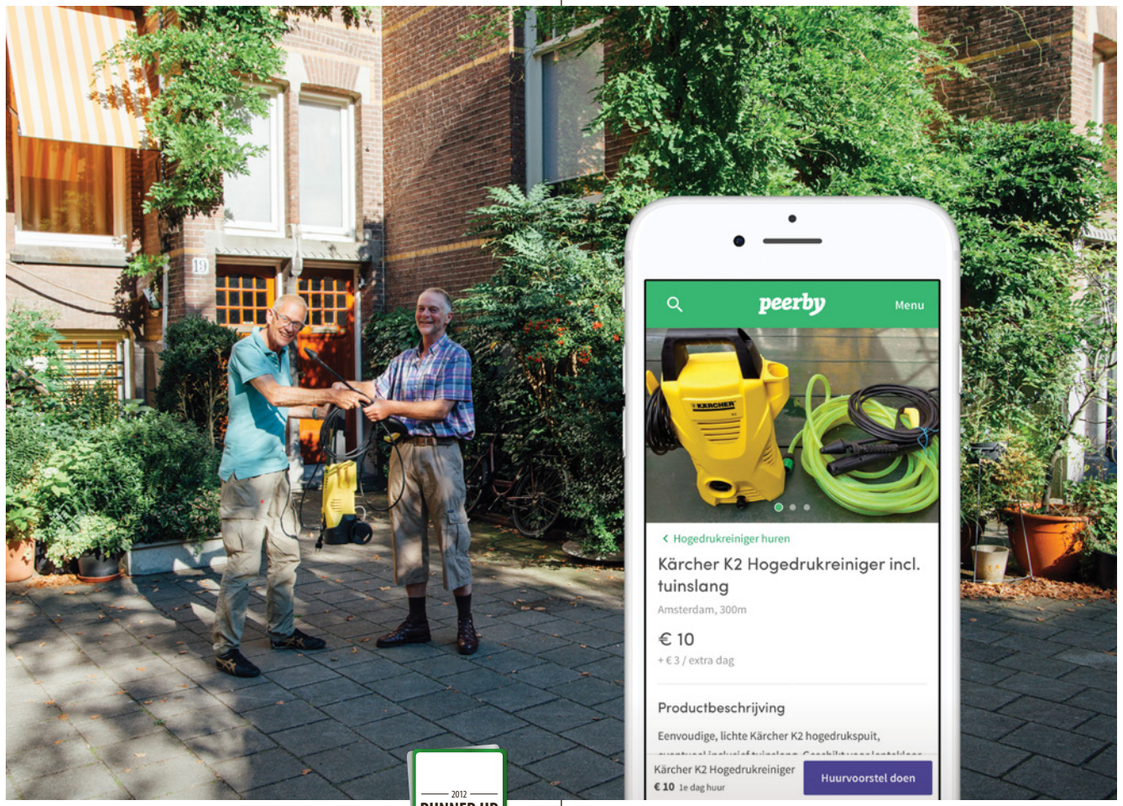
NET2GRID

energy insight platform

NET2GRID is an open, scalable, cloud platform built to maximize the returns of smart energy meters today, but designed for an interconnected future with smart appliances, on-site generation, electric vehicle chargers, and so much more. Real-time data, every 10 seconds, is translated into usage per appliance and leads to detailed insights. Personal advice, challenges and gamification to save energy & cost, preventing the yearly bill shock.

organization
early growth stage · 11–50 employees

www.net2grid.com



2012 RUNNER-UP POSTCODE LOTTERY GREEN CHALLENGE

Peerby

renting from neighbours

Peerby.com is a sharing platform that actively creates supply by asking around through Facebook, push notification and e-mail. Peerby enables you to borrow and rent the things you need from people in your neighborhood.

CO_2 reduction
Share your products—durable goods contribute more to climate change than cars and meat combined.

organization
early growth stage · 2–10 employees

www.peerby.com

GreenHome

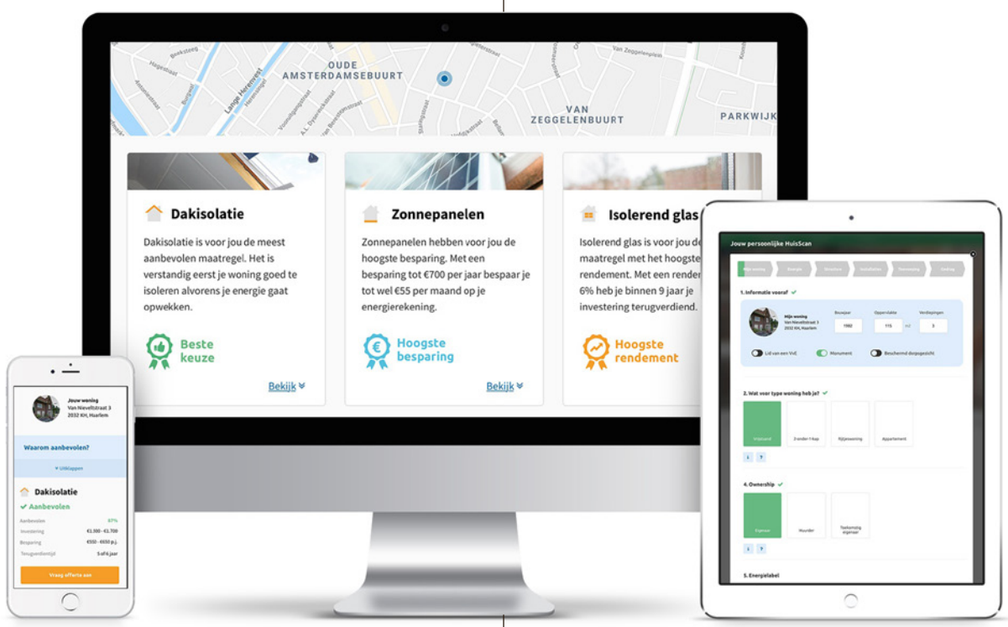
review system for energy neutral homes

GreenHome uses satellite images, open data, user input, and algorithms for making households energy neutral and free of natural gas by advising households what measures to take as an independent marketplace. GreenHome is free to use for users with them taking a fee from the vendor should a deal be made for their services. GreenHome is 100% independent as a platform and provides a customer review system to find the best suppliers to execute their recommendations.

CO_2 reduction
Digital energy savings advice to live gas-free.

organization
early growth stage · 11–50 employees

www.greenhome.nl



NestEgg

NestEgg aims to enable individuals to directly own pieces of sustainable infrastructure that powers their future. This would consist of ownership in green energy assets, houses etc.

organization
seed stage · 2–10 employees

www.nestegg.eu

Powerpeers

The new marketplace for supply and demand for self-generated and local energy.

organization
early growth stage · 11–50 employees

www.powerpeers.nl

HalloStroom

HalloStroom designs customized solar power systems.

organization
early growth stage · 11–50 employees

www.hallostroom.nl

Homie

HOMIE wants to significantly reduce the environmental impact of domestic appliances, by moving from "ownership" to "pay per use". Starting with washing machines, HOMIE will offer free installation and maintenance of a high-quality washing machine, with the cost of water and electricity included in a small fee charged at every washing cycle, thus offering an innovative Pay Per Use service model.

organization
seed stage · 2–10 employees

www.homiepayperuse.com

Involtum

Invoicing temporary usage for electricity, water and other services.

organization
seed stage · 2–10 employees

www.involtum.com

Postcode Lottery Green Challenge

The Dutch Postcode Lottery started the competition in 2007, after being inspired by president Clinton, who visited the Postcode Lottery World Meeting at Soestdijk Royal Palace in the Netherlands.

He spoke about the importance of supporting entrepreneurs in the field of sustainable innovation in the battle against climate change, and to look for those dedicated entrepreneurs with brilliant green business plans. Plans that are ready to speed up the transition towards a low carbon economy. The answers to the issues of our time are already in front of us. And the Postcode Lottery Green Challenge seed was planted in the heads of the people of the Dutch Postcode Lottery.

The Postcode Lottery Green Challenge has expanded to become one of the largest annual sustainability competitions in the world for startups. There is a total of €1 million in combined prize money for the five best startups, €500,000 of which is intended for the winner. With this international competition, the Postcode Lottery is helping startups from around the world to bring their carbon reduction innovations to market.

For the 2018 edition of the Postcode Lottery Green Challenge, 845 sustainable entrepreneurs from 100 countries from all over the world have submitted their green business plan. This is a record number.

EarthEnable Winner 2017
Winning the Postcode Lottery Green Challenge gave EarthEnable a stamp of recognition. Senior Rwandan government officials reached out to EarthEnable to congratulate them and to set up a partnership to help the government to eliminate dirt floors in Rwanda.

The €500,000 of prize money enabled EarthEnable to invest in several things that the startup was previously holding off. For example, building up its capacity in order to give the company the ability to scale faster, including hiring a consultancy firm to turbocharge the sales.

PHYSEE Winner 2016
In 2016, PHYSEE was announced as the winner of the Postcode Lottery Green Challenge. Since this milestone, the company has already installed over 2500 square metres of PowerWindows in the Netherlands, including the new head office of the Dutch Postcode Lottery. In July 2018, PHYSEE was recognised as top-class innovator, receiving a EUR 2 million subsidy grant from the European Innovation Council

Land Life Company Winner 2015
Winning the Postcode Lottery Green Challenge in 2015 gave Land Life Company an incredible boost. The company has evolved from a relatively small Dutch startup into an international company with hubs around the world. For example, Land Life Company is restoring degraded mining lands in Chile, it has collaborated with WWF and the Mexican Ministry of Forestry (Conafor) on a restoration project in the hills of Michoacán, Mexico, and it has partnered with UNHCR to build a Green Refugee Camp in northern Cameroon.

building & housing

startup solutions

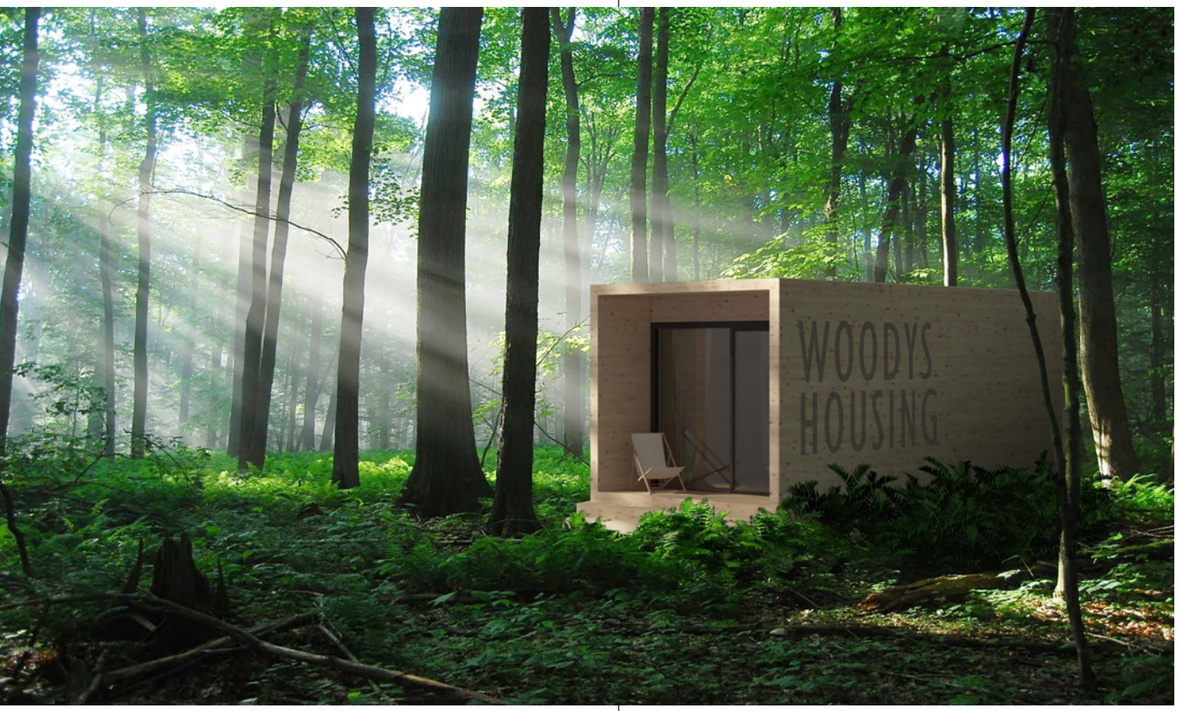
Woodys-Housing

affordable sustainable housing solutions

Woodyshousing offers smart, sustainable, healthy and affordable housing solutions to people and places where and when it is needed. Woodyshousing is a housing solution based on a patented wooden building construction system combined with a scala of sustainable, technical, social and financial innovations. develop, realize and operate high-quality, sustainable and circular real-estate. With their solution Woodyshousing builds small or large, extremely sustainable, affordable, low-energy consumption and healthy buildings in short periods on temporary or permanent locations. Because of it's plug&play concept the buildings are easily user adaptable and fast movable which warrants for high value creation for the user and the investor.

organization
seed stage · 2–10 employees

www.woodyshousing.com



De Dakdokters

transforming roofs

De Dakdokters improve urban health by transforming roofs. They see rooftops as something more than unusable covers to houses instead as a sustainable motor for an urban future. The core of what they do is transforming unutilized roofs into places for nature development, recreation, water storage and food and energy production.

organization
early growth stage · 11–50 employees

www.dakdokters.nl

Urban Deltas

building floating nature

The city is growing and must be made more compact to keep it pleasant for both humans and animals. Urban Deltas has developed a floating modular system to meet this demand. They provide the ideal habitat for fish and macrofauna. The floating islands improve water quality and at the same time focus on the inhabitants of the city. These islands offer various facilities such as catering, sports and games, recreation, urban agriculture and of course a lot of greenery to improve spatial planning.

organization
early growth stage · 11–50 employees

www.urbandeltas.com

Finch Buildings

gasless, circular, CO_2-free housing concepts

Finch Buildings make high-quality wooden buildings. They have developed a construction system consisting of prefabricated modules that are suitable for each target group and application. As a studio, two-or three-room apartment, office, care apartment or hotel. Made from the only building material that can be replanted. They also build gasless, co2 free and fast. The Finch modules meet the new building requirements of the construction decree. The modules conform by default to the EPC requirement of ≤ 0.4 or if desired EPC 0.0. Finch buildings are permanent premises that can be moved if necessary without loss of quality.

CO_2 reduction
Solid timber & modular buildings that store CO2, which are CO2 neutral in operation and are reusable and/or recyclable.

organization
seed stage · 11–50 employees

www.finchbuildings.com

Sustainer homes

Sustainer Homes builds houses and offices based on an innovative wooden module that is easy to make and customise, but built to last.

organization
early growth stage · 11–50 employees

www.sustainerhomes.nl

Polderdak

Creates sustainable & smart water systems on roofs.

organization
seed stage · 2–10 employees

www.polderdak.nl

Studio Roosegaarde

Social design lab for interactive art, fashion, and architecture.

organization
early growth stage · 11–50 employees

www.studioroosegaarde.net

4YEF

energy efficient housing

Houses that are energy efficient from the point that they are built . Features include roof-integrated solar panels that also provide natural ventilation under the solar cells and integrated, energy-efficient air heat pump with high efficiency.

CO_2 reduction
A reduction of > 4,8 ton CO2 per house per year.

organization
seed stage · 2–10 employees

www.plusleven.nl

Hamwells

reusing shower water

Hamwells introduced the world's first e-Shower. The e-Shower offers a choice between FreshCycles and a classic shower. The classic shower uses a low flow showerhead, and works just like a traditional shower: the water is drained after just one use. The FreshCycles filters and purifiers used water for reuse. It provides high pressure, high volume showers, whilst saving up to 70% on energy and 85% on water.

CO_2 reduction
Reusing shower-water results in 70+% savings in both energy and installations, and possible CO2-reduction.

organization
seed stage · 11–50 employees

www.hamwells.com

Beladon

Beladon designs and creates iconic, innovative, sustainable buildings and landscapes on the water.

organization
seed stage · 2–10 employees

www.beladon.com

Space&Matter

Space&Matter designs en develops, with off- and online architectures, community focused environments and processes.

organization
early growth stage · 11–50 employees

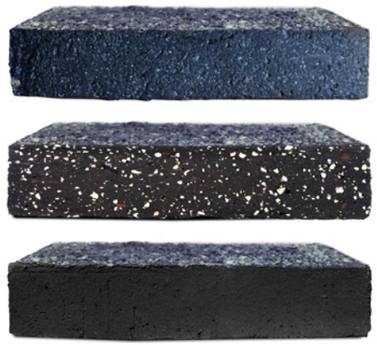
www.spaceandmatter.nl

Blue21

Floating cities with a positive impact on nature.

organization
seed stage · 2–10 employees

www.blue21.nl



StoneCycling

Sustainable building materials from waste being used by innovative architects, construction companies and real estate developers around the world. WasteBasedBricks can be used for the exterior and interior of buildings. Customers can have each individual brick carefully crafted and molded by hand to their specific needs. Or if they want a more standardized product, can choose to have their bricks machine-made. The bricks are made from various waste and can be combined in different ways to create new colors, textures, shapes, and sizes.

CO_2 reduction
Reduce the need for digging up more scarce resources while putting the millions of tonnes of waste to a good use.

organization
seed stage · 2–10 employees

www.stonecycling.com

C2CA technology

C2CA Technology goal is to develop and utilize new, innovative knowledge about concrete recycling to create eco-concrete. To accomplish this, a process using ADR (Advanced Dry Recovery) technology is used in Hoorn. Advanced Dry Recovery (ADR) is a new technology for separating materials. It performs purely mechanically and in the moist state, i.e. without prior drying or wet screening. This choice reduces process complexity and avoids problems with dust or sludge.

CO_2 reduction
Closing the loop on concrete recycling reducing huge amounts of CO2 by creating a circular cement!

organization
seed stage · 2–10 employees

www.c2ca-technology.nl

MyCleanCity

App that helps neighbors to communicate with each other and motivates them to act on their increasing sense of responsibility toward the environment.

organization
seed stage · 2–10 employees

www.mycleancity.nl

Ekotex

Complete glass fabric systems for wall finishing. Paint and wallpaper without softeners, without emission and without fossil raw materials.

organization
early growth stage · 11–50 employees

www.ekotexwandafwerking.nl

CyBe Construction B.V.

3D concrete printers used for the construction industry.

organization
early growth stage · 11–50 employees

www.cybe.eu

Insert

Online marketplace Insert wants to promote the reuse of building materials by connecting parties in the construction chain and supporting them.

organization
early growth stage · 11–50 employees

www.ekotexwandafwerking.nl

Block Materials

Block Materials is applying Blockchain technology to real estate challenges and the circular economy.

organization
seed stage · 2–10 employees

www.blockmaterials.com

Smartcrusher

climate neutral new concrete from concrete waste

SmartCrusher bv has developed a technique for recovering the sand, the gravel and the cement from concrete. SmartCrusher's goal is to reach: Climate neutral circular building in its broadest sense. The SmartCrusher makes it possible to create almost climate neutral new concrete from concrete waste. As the SmartCrusher does not crush sand and gravel, the cement and hydrated cement will not become polluted by fine broken sand and can straight away be reused to produce new cement/paste. The 'Smart Crushing' of concrete rubble does not leave any worthless residual fractions, unlike with traditional processing. In addition to the existing SmartCrusher (crushing/milling) technology, additional technologies are under development that will potentially make concrete completely 100% circular.

CO_2 reduction
Climate neutral circular building in its broadest sense.

organization
seed stage · 2–10 employees

www.slimbreker.nl

recycling

startup solutions

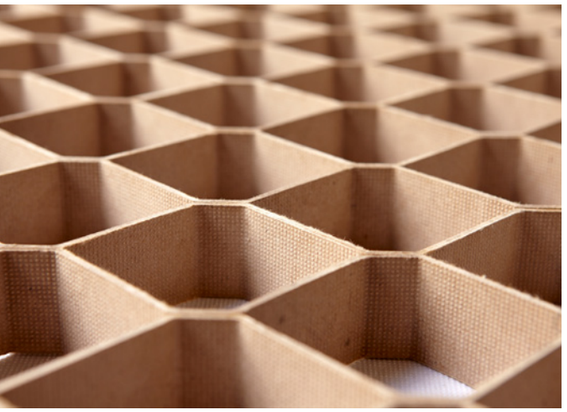
ECOR

green building material

ECOR is the flagship alternative to wood and paper-based materials for a range of applications. ECOR is the foundation for designing sustainable buildings & products that enable a circular economy. ECOR is an Advanced Environmental Composite Panel formed from the conversion of abundant cellulose fiber, pressure, and heat. ECOR is 100% bio-based, 100% comprised of recycled residual materials, 100% recyclable, and is cradle-to-cradle compliant.

organization
early growth stage · 11–50 employees

www.ecorbenelux.com



Black Bear Carbon

Harvesting and upcycling carbon black from end-of-life tires.

organization
early growth stage · 11–50 employees

www.blackbearcarbon.com

Everuse

High performance acoustic and thermal insulation made from waste and guaranteed to have everlasting life.

organization
early growth stage · 11–50 employees

www.everuse.com

Niaga

Niaga redesigns products from scratch. All materials in the redesigned products can easily be recovered, to make the products again, and again.

organization
mature stage · 11–50 employees

www.dsm-niaga.com

Quickpanell

Quickpanell produces circular wall elements based on a lightweight collapsible cardboard core.

organization
early growth stage · 2–10 employees

www.quickpanell.com

Polytential

Automated plastic waste analysis for recycling.

organization
seed stage · 2–10 employees

www.polytential.eu

New Marble

Tiles made from old plastic bottles.

organization
seed stage · 2–10 employees

www.newmarble.nl

ChainCraft

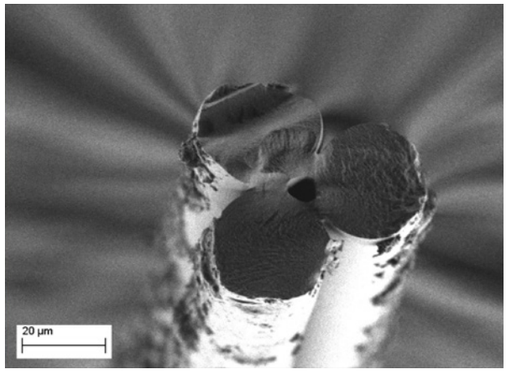
biobased building blocks

ChainCraft has developed a platform technology to produce sustainable biobased building blocks for the chemical industry. ChainCraft makes sure the technology fits the current infrastructure of waste processing and the agro-food industry. The unique biotechnological process robustly converts different types of organics through its chain elongation technology into medium chain fatty acids.

CO_2 reduction
Biochemicals produced from organic residues via fermentation processes are sustainable alternatives for palm-oil or petrochemicals.

organization
early growth stage · 11–50 employees

www.chaincraft.nl



CELLiCON

replacing fossil based materials

CELLiCON is commercialising a proven technology for the cost-effective production of Nano Crystalline Cellulose and clean Lignin from biomass sources, thereby replacing high CO2 emissions fossil based materials. A significant enabling technology to successfully and economically manufacture high end crystalline-cellulose materials and unique clean Lignin products.

CO_2 reduction
A proven process for NanoCrystalline Cellulose and clean Lignin replacing high CO2 fossil-based materials.

organization
seed stage · 2–10 employees

www.cellicon.org

QCP

Provides brand owners and plastics converters with polymers of high and consistent quality, based on used plastics. QCP's products enable them to provide sustainable end products on a large scale.

organization
mature stage · 51–200 employees

www.qcpolymers.com

Alucha

Turn waste into fuels while cleanly separating off the non-organic waste components.

organization
seed stage · 2–10 employees

www.alucha.com

Elemetal

Elemetal is developing processes to up-cycle valuable metals from waste streams.

organization
seed stage · 2–10 employees

www.elemetal.eu

Green Minerals

CO_2 as feedstock

Concrete, plastic, paper: three application examples of Green Minerals in which CO2 is captured and stored in materials by means of mineralization. CO2 is approached as raw material which reacts with olivine: a rock-forming mineral that binds CO2.
A factory can capture its own CO2 and use it to manufacture its own products. A circular manufacturing process with CO2 negative materials as a result.

CO_2 reduction
CO2 as feedstock: CO2 used to manufacture beneficial fillers for concrete, paper and polymer producers.

organization
seed stage · 2–10 employees

www.green-minerals.nl

2016 FINALIST POSTCODE LOTTERY GREEN CHALLENGE

Ioniqa

High tech chemical company developing, customizing, and producing magnetic smart materials & separation processes for multiple applications including a novel infinite circular PET waste recycling process to high-grade PET raw materials. Magnetic smart materials are a novel class of smart materials that reversibly change their properties when a magnetic field is applied.

CO_2 reduction
75% less CO2 emissions, by using PET waste in 100% circular process: upcycled PET products.

organization
early growth stage · 11–50 employees

www.ioniqa.com

Boostani

Plastic monolayer packaging with barrier properties.

organization
seed stage · 1 employee

www.boostani.info

Print your city

Transforming plastic waste of our cities into public space with 3D printing.

organization
seed stage · 2–10 employees

www.printyour.city

Tusti

TUSTI is a high-tech recycling company solving recycling issues and treating waste streams that other recycling companies cannot handle. Invented a cleaning process to remove frying oil from HDPE.

organization
seed stage · 2–10 employees

www.tusti.nl

The Great Bubble Barrier

smart solution to plastic pollution

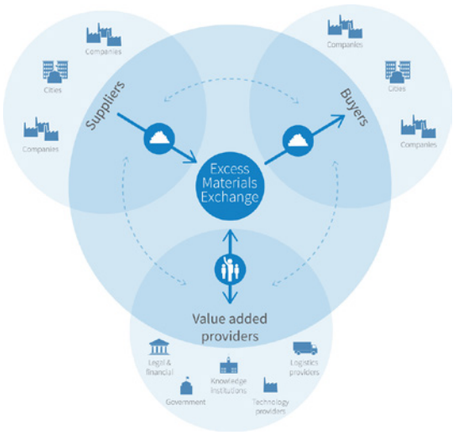
The Great Bubble Barrier: concept to reduce river plastics and an elegant bubbly solution to a worldwide problem. The Great Bubble Barrier helps governments meet changing regulation on waste management in waterways, but also help cities fight plastic problems in their waters and help waterboards to save on their cleanups after high water. The current solutions that stop waste in the rivers have two major drawbacks unfortunately; they block ship traffic and/or hinder fish movement. They searched for an elegant solution that blocks waste in the river, but also allows the passage of fish and ships. The solutions was a very simple idea; a barrier of bubbles.

CO_2 reduction
Removes plastic from rivers, reducing the emission of methane and ethylene that occurs when plastic breaks down in sunlight.

organization
early growth stage · 2–10 employees

www.thegreatbubblebarrier.com

2018 FINALIST POSTCODE LOTTERY GREEN CHALLENGE



Excess Materials Exchange

The Excess Materials Exchange is a digital facilitated marketplace where a company can exchange any excess materials and products. EME speed up the transition to a circular economy and turn waste into wealth! Any material, component or product can be exchanged on the EME. In the future, an AI toolkit will be developed to initially aid and ultimately automate the matchmaking between supply and demand and between materials and their highest value reuse opportunity.

CO_2 reduction
Resource-effectiveness enabling large-scale carbon reduction.

organization
seed stage · 2–10 employees

www.excessmaterialsexchange.com

Fruitleather Rotterdam

Makes leather like material from fruit-waste.

organization
seed stage · 2–10 employees

www.fruitleather.nl

vanPlestik

3D printing for large objects with recycled plastic.

organization
seed stage · 2–10 employees

www.vanplestik.nl

Coffee Based

Develops biochemical methods to turn coffee into bioplastics.

organization
seed stage · 2–10 employees

www.coffeebased.nl

RanMarine Technology

Aqua-drones that fight plastic pollution & gather environmental data.

organization
seed stage · 2–10 employees

www.ranmarine.io

Closing the loop

Promotes mobile phone recycling.

organization
seed stage · 2–10 employees

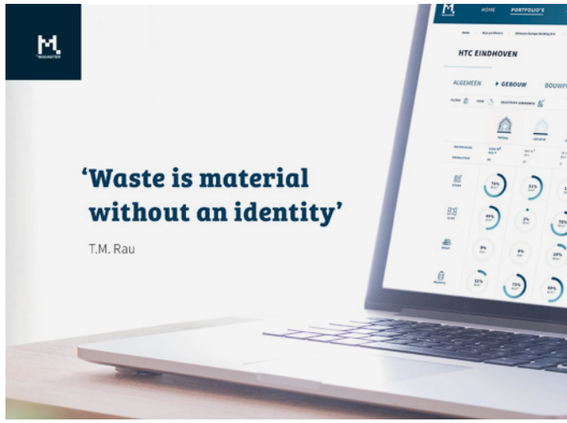
www.closingtheloop.eu

Perpetual Plastic

The Perpetual Plastic Project is an interactive recycling installation for young and old where plastic waste is recycled on the spot into new products by 3D-printers.

organization
early growth stage · 2–10 employees

www.perpetualplasticproject.com



Madaster

barcode for materials

It is Madaster's mission to eliminate waste by providing materials with an identity. The Madaster Platform is designed as a public, online library of materials in the built environment. The Madaster Platform facilitates registration, organization, storage and exchange of data. Madaster carefully focuses on privacy, security and continuity.

CO_2 reduction
Producing construction materials requires CO2, reuse reduces CO2.

organization
seed stage · 11–50 employees

www.madaster.com/nl

food

startup solutions

Isobionics

flavour and fragrance

Isobionics, is an ingredients company in the Netherlands developing, producing and selling a range of natural products in the flavour and fragrance market using its proprietary platform technology. This technology can produce many compounds such as: citrus oils (Lemon, Orange, Grapefruit), compounds like Valencene and Nootkatone, Menthol, Sandalwood oil, Patchouli oil, ... and many other less known basic building blocks for the Flavour & Fragrance industry.

organization
early growth stage · 11–50 employees

www.isobionics.com

PeelPioneers

sustainable peel farm

PeelPioneers is the 'sustainable peeling farmer of the 21st century'. PeelPioneers have a circular solution for citrus peelings that remain after making fresh juice, they extract essential oils processed into cosmetics, food and cleaning products. The pulp leftover from the extraction can be used in cattle feed.

CO_2 reduction
Every 1000 kg pulp, provide cleaning products for 4500 m2 floor space and healthy supplementary feeding 200 cows. Plus it ensures a reduction of 220 kg of CO2, which is comparable to the environmental impact of 500 10-minute showers.

organization
seed stage · 2–10 employees

www.peelpioneers.nl

Instock

Instock is an initiative where chefs create dishes with all the food that usually doesn't reach our plates.

organization
early growth stage · 51–200 employees

www.instock.nl

Sensus

Sensus offers innovative food ingredients Frutafit inulin and Frutalose oligofructose.

organization
late growth stage · 51–200 employees

www.inspiredbyinulin.com

Nutrileads

Developing innovative natural food ingredients, with clinically proven health benefits.

organization
seed stage · 2–10 employees

www.nutrileads.com

Duplaco

Dutch producer of heterotrophically cultured Chlorella microalgae.

organization
seed stage · 2–10 employees

www.duplaco.com

Protix

farming insects

Protix uses black soldier fly (hermetia illucens) larvae to create a variety of products. The insects can turn low-grade food waste into body mass quickly and sustainably. They need very little room to grow, making for a far smaller carbon footprint than alternative sources of protein. One of the flagship products created by Protix is ProteinX which contains high-quality amino acids, lipids and micronutrients to boost an animal's health naturally. It fully replaces conventional protein in many dry and wet pet food and aquaculture applications, while adding functional benefits and superior palatability.

CO_2 reduction
Reduction of CO2 in chicken feed by replacing Soy.

organization
early growth stage · 51–200 employees

www.protix.eu

NGN

New Generation Nutrition is a frontrunner in developing insect-based solutions for feed and food, in both developed and developing country contexts. With over ten years of combined experience, NGN aims to provide sustainable insect applications that have economic, environmental and social value. In the lab of NGN, intermediate insect products can be produced according to client wishes. The produced quantities are small scale, suitable for research and development applications. Intermediate products can include chitin, lipids and soluble or insoluble proteins. NGN can produce feed, with insects, on a smaller or larger scale up to 1000 kilos. The composition and shape of the feed can be discussed and modified according to the needs of the client.

CO_2 reduction
Ideal conversion using organic byproducts, excellent nutritional components, transforming into circular agriculture.

organization
early growth stage · 2–10 employees

www.ngn.co.nl

Burgs Foods

cricket based foods

Burgs Foods wants to make insects part of peoples staple diet through delicious insect based food products. At Burgs Foods they found out that crickets are a sustainable and healthy protein source whilst also tasting great! Consumers, however, are just not used to eating whole insects that is why the team at Burgs Foods focuses on processing crickets into tasty food products that can be used for lunch or dinner tailored towards western diets.

CO_2 reduction
Cricket farming in comparison to livestock production creates only 1% of the methane for the same protein output. This means a drastic reduction in harmful greenhouse gases entering the atmosphere.

organization
seed stage · 2–10 employees

www.burgsfoods.nl

Although the government always has the intention to help ambitious green startups to grow quickly, sometimes 'unconsciously' they can work against them. In this interview, Mark Post, scientist and founder of Mosa Meat, shares his challenges and thoughts on what governmental help is needed.

Mark Post
Mosa Meat-founder

'It would actually be great if someone in the government could stand up and say: 'We will support this breakthrough innovation'

IT MUST HAVE ranked among the most expensive dishes in history: the first hamburger made from lab-grown meat in 2013. A mind-blowing €250,000 ($330,000) – and that was without fries. To bring down the price, the creator of the burger, scientist Mark Post, co-founded Mosa Meat, with an eye on commercializing the process.

Since the much-discussed worldwide press conference in 2013, lab grown burgers have come down in price by almost 97%. "We now aim to open a production location in the Netherlands by 2021 where we can produce patties at a cost of 8.50 euros each, due to a drastic cut in the production and development costs", Post says. Whether this will actually happen largely depends on whether Post's cultured meat will be approved by the European food authorities, as the professor explains. "Cultured meat is a novel food - and so it is necessary to carry out extensive safety tests first."

According to Post, if all goes well, the approval procedure with EFSA (European Food Safety Authority) will take approximately one and a half to two years, after which the EU and the individual Member States will still have to adopt this opinion or not.

That is why it is vital for Mosa Meat not to lobby only in Europe. "For us it's also important that the Dutch government publicly supports the development of lab-grown meat and does not negatively affect the current European approval process." For that, Post will soon be informing a chamber committee about the possibilities and advantages of cultured meat. But even more support - including financial support – is more than welcome, according to the professor. "It would actually be great if someone in the government could stand up and say: 'We want to give research funding for this technology that will not only stop the slaughtering of animals, but also have a huge impact on the reduction of greenhouse gas emissions'."

Want to help or get in contact with Mark?
Contact him at info@mosameat.com

Mosa Meat

the world's first slaughter-free meat

Mosa Meat is the world's first tissue cultured hamburger. Mosa Meat aims to develop tissue engineering into a technology that can mass-produce affordable meat. Cultured Beef is 100% natural beef and grown outside the cow with no unnatural chemicals added. Mosa Meat is now focussed on scaling up the production process, and getting their first products on the market in the next 3-4 years. The process of making cultured meat (also known as clean meat) is similar to making livestock meat, except the cells grow outside the animal's body. The first step is to take some cells from the muscle of an animal, such as a cow if you're making beef, which is done with a small biopsy under anaesthesia.From one sample from a cow, Mosa Meat can produce 800 million strands of muscle tissue (enough to make 80,000 quarter pounders).

CO_2 reduction
Reducing the need for livestock, which globally drives 14% of all greenhouse emissions.

organization
seed stage · 2–10 employees

www.mosameat.eu

Seamore

Seamore is turning seaweed into an everyday food. It is considered the healthiest and most sustainable food on the planet. To make it easy to eat seaweed, Seamore presents it as a healthy, sustainable alternative to foods we already know and love: seaweed pasta, bacon, wraps, and bread. Seamore products bring the fantastic nutrients from the ocean to your plate and help us drastically reduce the footprint of our food. To grow seaweed, you don't need land, fresh water, fertilizer or pesticides. Just the ocean and sunshine!

CO_2 reduction
Seaweed has the lowest CO2 footprint of any food, it absorbs 50% of all the CO2 in the world. The more seaweed we grow for our food, the more CO2 we capture.

organization
early growth stage · 11–50 employees

www.seamorefood.com

Meatable

Meatable aims to grow meat in vitro, without having to harm our planet, our health and our animals.

organization
seed stage · 1 employee

www.meatable.com

Vivera

Brand for conventional and organic meat alternatives.

organization
late growth stage · 51–200 employees

www.vivera.com

Ojah/ Beeter

Producing the next generation meat alternatives/substitutes.

organization
early growth stage · 11–50 employees

www.ojah.nl

The Dutch weedburger

serving guilt-free pleasures

The Dutch Weed Burger is pioneering one of the healthiest burgers on the planet, with seaweed as the key flavor maker. The patty is made of briny soy shreds and Royal Kombu, a healthy winter weed, sustainably cultivated in the Dutch region of Zeeland. The Dutch Weed Burger is entirely palm oil free, vegetarian, and vegan. Seaweed is a sustainable ingredient providing a high-quality source of protein, with its cultivation not taking up any agricultural land, and hardly using any fresh water. The company produces other food products including the dutch weed dog and sea nuggets.

CO_2 reduction
100% plant-based burger, cultivated Dutch seaweed, sustainable and locally sourced.

organization
seed stage · 11–50 employees

www.dutchweedburger.com

The Vegetarian Butcher

plant based gastronomy

World's first Vegetarian Butcher! The Vegetarian Butcher distinguishes itself with a whole new generation of meat- and fish substitutes which chefs and culinary journalists find similar to the real thing. The Vegetarian Butcher's products can be found in independent fruit-vegetable and butcher shops, natural food stores and supermarkets. Products include a wide range of meat substitutes including burgers, sausages, nochicken chunks, mince and meatball to name a few. As an alternative to meat, the Vegetarian Butcher production process has a fraction of the impact compared to traditional farming methods involving livestock.

CO_2 reduction
Mission to free animals from the food chain, which can bring down emissions by 63%.

organization
early growth stage · 11–50 employees

www.thevegetarianbutcher.com

agriculture

startup solutions

PlantLab

grown locally

PlantLab can grow fruits and vegetables on a fraction of the land required for conventional farming. To do this PlantLab has built a completely closed growing environment where they are able to merge and apply their knowledge of technology, mathematics and plant physiology. For every crop they conduct a small scale research which begins by creating a Plant-ID for each crop, which describes and models how that specific crop behaves in a PlantLab controlled environment. From this growing recipes are developed which allows for new insight into sustainable farming.

CO_2 reduction
The proprietary Indoor Growing systems enable fresh vegetable production anywhere in the world and hence eliminates transport and its carbon footprint.

organization
early growth stage · 11–50 employees

www.plantlab.nl

The North Sea Farm Foundation

sustainable seaweed industry

The North Sea Farm Foundation is a non-profit organization aimed at realizing a sustainable seaweed industry in the Netherlands and surrounding EU countries. The growing global population and synchronic demand for food, challenges us to transit from animal proteins to plant-based proteins and to change where we source our food. The urgency for this transition has caused a trend with a growing number of consumers that wishes to eat healthily and sustainably. Seaweed fits perfectly in this new demand as it does not require farmland, fresh water or fertilizer. Seaweed converts the greenhouse gas CO_2 into biomass and oxygen which helps counteract oceanic acidification and climate change. The seaweed farms also create excellent shelters and nurseries for juvenile fish, shellfish and crustaceans. Cultivation of seaweed is feasible in salt marshes, near coastal areas and offshore areas.

CO_2 reduction
When using local seaweeds as a feedadditive for dairy industry more than 1 million tons of CO_2 emissions can be reduced.

organization
seed stage · 2–10 employees

www.noordzeeboerderij.nl

NewFoss

NewFoss guarantees 100% processing of biomass (waste) flows. The NewFoss process processes 100% of the non-woody biomass into re-usable, valuable products. The patented bio refinery process, sometimes called 'mild extraction', presents a breakthrough in the processing of biomass waste flows. Biomass waste flow processing: production of lignocellulosic fibers from natural grass, roadside grass and horticulture foliage for the production of paper, cardboard, insulation material and particleboard and much more. Food & Specialties processing: production of valuable components from fruit and chlorophyll such as sugar from sugar beets and sweetener from Stevia.

CO_2 reduction
Converts biomass(waste)streams into renewable products while keeping the fibers intact, thus storing CO2.

organization
early growth stage • 2–10 employees

www.newfoss.com

Floating Farm

Floating Farm produces and converts fresh milk into healthy dairy products consumable and close to the target group of city residents.

organization
seed stage • 2–10 employees

www.floatingfarm.nl

SOLHO

SOLHO develops off-grid renewable energy systems to power horticultural projects.

organization
seed stage • 2–10 employees

www.solho.eu

Rotterzwam

Rotterzwam is working on total sustainability: local food production on coffee grounds. They use coffee grounds - fresh, clean and local - as raw materials. Using the coffee grounds they grow oyster mushrooms so they can provide local restaurants, markets and consumers with sustainably grown food. Rotterzwam also empowers others to grow their own mushrooms by selling kits and providing educational materials.

CO_2 reduction
Every kilo of coffee grounds used to grow mushrooms reduces absolute CO2-emissions by 95% as compared to burning it.

organization
early growth stage • 2–10 employees

www.rotterzwam.nl

LongBloom

Longbloom produces top-quality Dutch preserved flowers. Through their proces, natural flowers are preserved for 6 months or more. Longbloom has a patented and clean process. Advantages include being able to preserve a much wider range of flowers than usual. The method is 95% cleaner in comparison with other methods.

CO_2 reduction
Fresh flowers last 26 times longer.

organization
seed stage • 2–10 employees

www.longbloom.com

Kipster

animal friendly poultry farm

The most animal-friendly and environmentally-friendly poultry farm in the world. Chicken breeds are chosen which require relatively little feed. In addition, this small amount of food needed also comes exclusively from regional residual streams, as a result, no use of agricultural land for the cultivation. 1,097 solar panels are located on the roof for sustainable energy. Finally, the particulate matter that is released at the farm is collected. This means that there are no emissions at Kipster; the air that comes out of the barn is even cleaner than the air entering the barn.

CO_2 reduction
If one person starts eating Kipster eggs, each year 45 kilo's CO2 is reduced.

organization
seed stage · 11–50 employees

www.kipster.nl

TerraTeq

Wireless sensor systems for environmental and animal monitoring.

organization
seed stage · 10 employee

www.terrateq.net

Whysor

Whysor develops software for agribusiness. The company is currently working on an innovative project whereby farmers remotely control their stables.

organization
seed stage · 2–10 employees

www.whysor.com

software solutions for farming

In Ovo

In Ovo developed gender screening for fertilized chicken eggs, in order to determine the gender of developing chickens and prevent the unnecessary killing of day-old male chicks. Now, we have established proof-of-concept and have shown that it's possible to gender type chicken eggs halfway during incubation. Our technique is much faster than anything that has been developed before. Large scale sorting of fertilized breeding eggs in a hatchery is now within reach.

CO_2 reduction
The automated In Ovo chicken sexing solution results in a 30% lower carbon footprint for hatcheries.

organization
seed stage · 2–10 employees

www.project.inovo.nl

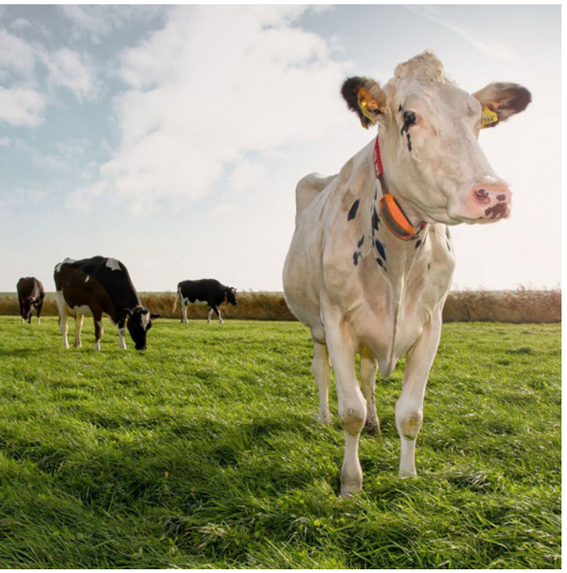
Connecterra

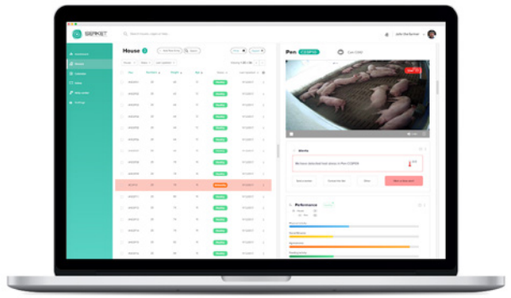
Connectterra ambitions are to grow food sustainably to feed future generations. Their Intelligent Dairy Farmer's Assistant (IDA) is the first step in their journey to making global agriculture more productive, humane and sustainable using sensors and artificial intelligence. Solving inefficiencies in the food system. By learning the behavior of cows and farmers, Ida provides insights that help run a more efficient farm!

CO_2 reduction
Ida is a dairy farmers' assistant helping improve efficiency by 30% or more.

organization
seed stage · 2–10 employees

www.connecterra.io





Serket

control livestock health

Serket helps farmers to monitor and trace their livestock individually and automatically. It uses a readily-available technology also used in other industries to solve the animal health and food safety concerns such as overuse of antibiotics, expensive hardware solutions & high mortality rate. On top of finding potential issues, Serket will also give suggestive steps to solve the problems identified.

CO_2 reduction
Around 160 Million (16%) pigs die during production/year, this equals to 30 Billion kg Co2. Serket can help saving half of the animals, which would reduce with 15 Billion kg Co2 the unnecessarily wasted greenhouse gas emissions.

organization
seed stage · 2–10 employees

www.serket-tech.com

Cerescon

Cerescon is developing a full automatice high tech machinery for asparagus harvesting

organization
early growth stage · 11–50 employees

www.cerescon.com

Dacom Farm

Dacom Farm Intelligence develops and supplies specialized data driven advisory services and sensor equipment to monitor and fine-tune the production process

organization
early growth stage · 11–50 employees

www.dacom.farm

Down2Earth

Down2Earth Sensing focuses on collecting data using sensors linked to Remotely Piloted Aircraft Systems (RPAS) and converting this data into valuable information. By using multiple sensors, data can be collected from the air to the nearest centimeter to give a better picture of the condition of the field, waterway or flood defense.

organization
seed stage · 1 employee

www.down2earth.nu

30MHZ

30MHz provides real-time remote crop monitoring on any device, giving the full context of what it's monitoring including historical insight on what your crops have been experiencing, and live alerts to respond quickly to current conditions. From optimizing irrigation and ventilation to preventing disease or sunscald, improving pest management or predicting shelf life, 30MHz delivers the metrics that matter to agriculture and horticulture, on a single platform that makes sense.

organization
early growth stage · 11–50 employees

www.cerescon.com

Greenbot

The Greenbot is the first driverless machine to be developed especially for professionals working in the green sector who have to carry out repetitive tasks on a regular basis, such as working in fruit cultivation, horticulture, agriculture, or the municipal sector. The Greenbot can also be used in waterside applications.

organization
seed stage · 2–10 employees

www.greenbot.nl

eFarmer

Provides tractor operators with GPS applications that can be used on smartphones.

organization
seed stage · 2–10 employees

www.efarmer.mobi

Hudson River Biotechnology

Specialized in genetically optimizing plants that are used to produce high-value compounds.

organization
seed stage · 2–10 employees

www.hudsonriverbiotechnology.com

SmartFarming

Social enterprise who empower farmers in the global south with app based information about their crops.

organization
seed stage · 2–10 employees

www.smartfarmingtech.com

Land Life Company

The innovative COCOON planting technology enables trees and plants to grow in arid conditions, revitalizing ecosystems and communities. It's low-cost - 10 x cheaper than traditional tree planting. It's 100% biodegradable - COCOON dissolves into an organic substrate for the plant. It's also low maintenance - after planting, NO follow up irrigation or maintenance.

CO_2 reduction
The carbon solution is additional, permanent and effective; building forests at scale on degraded land.

organization
early growth stage · 11–50 employees

www.landlifecompany.com

Grassa

Grassa BV focuses on the valorization of vegetable flows by means of biorefining: high-quality, high protein feed and a good destination for the residual streams. Four products are released after refining: fibers, protein, phosphate and 'whey' (juice). Proteins are used for high-quality cattle feed. The fiber is used as a concentrate or in the paper industry. Phosphate and Whey are good bio-fertilizers.

CO_2 reduction
Grassa improves the use of resources for food & feed, increase local protein production and reduce CO2.

organization
seed stage · 2–10 employees

www.grassa.nl

Squall

Squall is a patented additive to reduce spray drift and improve the deposition on the leaves. Addition of Squall to the tank mix of industrial farming equipment improves the effectiveness of plant protection products. More spray sticks to the crop, less run offs or waste due to drift. Squall reduces spray drift and enhances the rain fastness. 100% biodegradable, so harmless to the environment and a building block for the integrated pest management.

organization
seed stage · 2–10 employees

www.squall.nl

Solynta

Solynta focuses on the development and implementation of diploid hybrid potato breeding and reproduction by true seeds.

organization
early growth stage · 11–50 employees

www.solynta.com

Wingssprayer

The Wingssprayer is an environmentally friendly crop spray system. It prays fine mist directly into the crop.

organization
seed stage · 1 employee

www.wingssprayer.com

Zip drill

Zip Drill makes tools for Conservation Agriculture. It focuses on no-tillage seeding and fertilization.

organization
seed stage · 2–10 employees

www.start-life.nl/startups/agri/zip-drill

GreenSand

olivine to clear up CO_2

GreenSand is olivine, the most abundant mineral on earth. It clears up CO_2, especially when it comes into contact with water. Olivine reacts relatively quickly with the (acidic) CO_2 in the atmosphere compared to other types of stone. The hardness of the olivine is between 6.5 and 7. Olivine can be used as a substitute for granite, basalt and porphyry in construction, construction, roads and agriculture. Ground olivine is particularly suitable for semi-hardening or crushed sand because if you expose Olivine in small fractions to air and water, the capture of CO_2 is optimal.

CO_2 reduction
Clearing CO_2 through natural weathering with certified Olivine

organization
seed stage · 2–10 employees

www.greensand.nl

Photanol

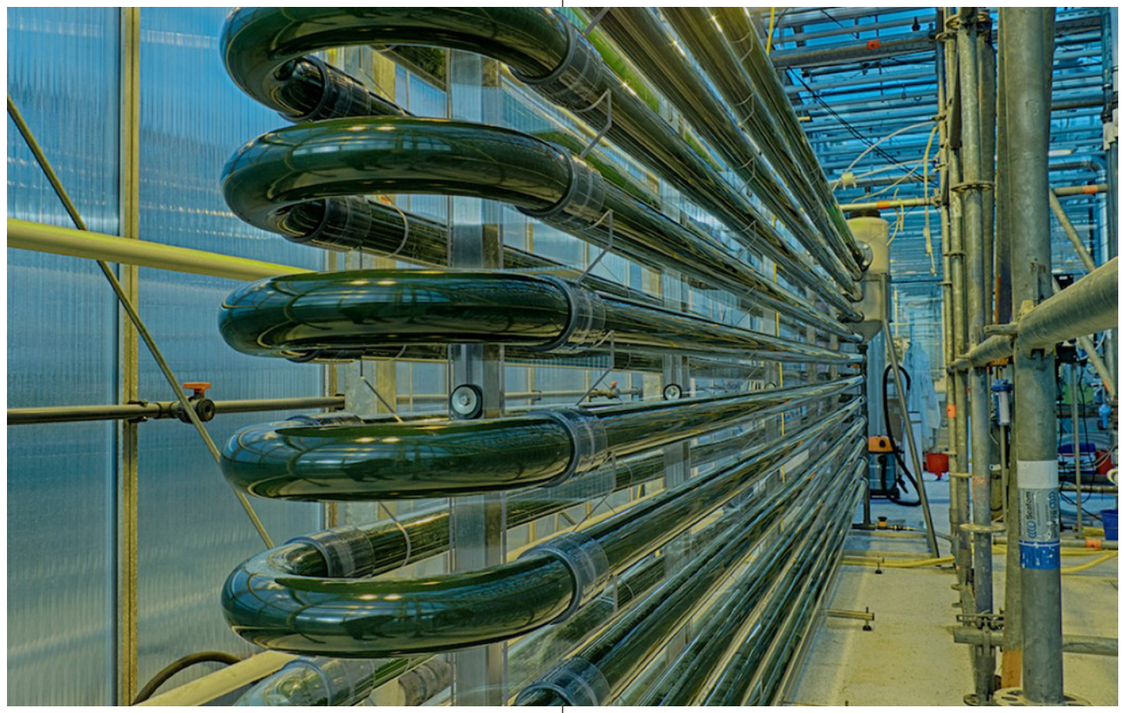
next generation clean-chemicals

Cyanobacteria offer a simple, renewable pathway for chemical production, and has the potential to emerge as the sustainable production platform for next-generation clean chemicals. Photanol aims to create value by producing organic bulk chemicals directly from CO2 and water, by using energy from sunlight and catalyzed by cyanobacteria. Through the genetic adaptation of cyanobacteria, the patented Photanol process enhances the capacity of these bacteria to use sunlight to combine the greenhouse gas carbon dioxide with the capacity of various fermenting bacteria to synthesize products (e.g. acetic acid, lactate, ethanol and butanol), as well as organic acids and biofuels.

CO_2 reduction
Powered by sunlight Photanol utilizes 1.5 kg of CO2 for every 1kg of biodegradable plastic produced.

organization
early growth stage · 11–50 employees

www.photanol.com



Omega Green

Omega Green has developed a sustainable production method to culture aquatic crops on an agricultural scale. The production method is sustainable because flue gases, waste heat and residual nutrient streams are upcycled to fertilize the aquatic crops. These inputs, combined with effective sunlight use, let the photosynthetic process flow.

CO_2 reduction
Algae transform CO2 very efficiently into proteins and healthy fatty acids, so flue gas and sunlight can be the source for the production of food and feed.

organization
seed stage · 2–10 employees

www.algaecom.nl

The Algae Factory

Conceives and co-develops with food industries algae based food products.

organization
seed stage · 2–10 employees

www.thealgaefactory.com

Yellow Pallet

Transforms banana stems into transport pallets.

organization
seed stage · 2–10 employees

www.yellow-pallet.com

ATMOS UAV

Professional drones for mapping & surveying.

organization
seed stage · 2–10 employees

www.atmosuav.com

CropZoomer

Drones give a whole new dimension to crop monitoring. The flexibility, ultra high resolution and multi-sensor payload provide endless options for crop analytics. CropZoomer uses physical and statistical intelligence to transform sensor data into actionable information, used by farmers and agronomists to optimize farming enterprises and ensure profitable agriculture. They also integrate currently-scattered data sources to provide new opportunities for analysis.

organization
seed stage · 2–10 employees

www.cropzoomer.farm

EagleSensing

Specialists in data acquisition and data analysis through machine learning. EagleSensing provides cutting edge aerial data collection and data analysis services which cater to clients' needs by providing vital information that will form the basis for critical management decisions. Their products not only assist in precision agriculture but are used in a range of industries, with data processed by proprietary, state-of-the-art software and algorithms.

organization
seed stage · 2–10 employees

www.eaglesensing.com

Green City Watch

satellite imagery for urban green spaces

Satellite images for the monitoring of green spaces in urban areas worldwide. Unlocking valuable insights about the quality of urban green space by combining machine learning and image processing algorithms on high-resolution satellite imagery.

CO_2 reduction
Monitors CO2 sequestration, amongst other quality parameters of urban green space, from space.

organization
seed stage · 2–10 employees

www.greencitywatch.org

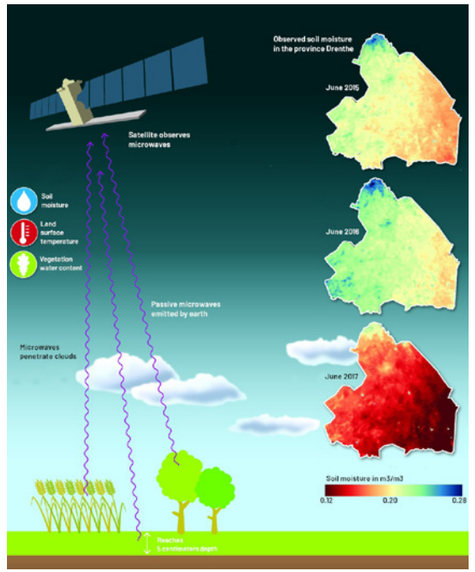
VanderSat

VanderSat observes water and temperature at field scale across the globe using satellites. Every day, everywhere on earth, with unmatched accuracy. Soil moisture, the water content of the vegetation, inundation and land surface temperature. Near real time, globally and daily without cloud interference. Their satellite data can be accessed easily through an API and viewer and is up to 1000 times cheaper than traditional ground sensors.

CO_2 reduction
The satellite data products improve agricultural practices in the tropics which significantly reduce deforestation.

organization
early growth stage · 11–50 employees

www.vandersat.com



Greensoil bag

The Green Soil Bag, environmentally friendly for dike elevation, dike repairs and flood defenses. It is made from a biologically impregnated, specially woven jute bag in which the necessary slope seed mix has already been glued. Once filled with soil, the seeds will germinate depending on the temperature and grow outwards through the jute. The first 1.5 years, the bag will ensure stability in the embankment. Later the bag will be digested and the crops will take over the function by blocking erosion with rooting of the subsoil.

organization
seed stage · 2–10 employees

www.greensoilbag.com

transport

startup solutions

EWB

underground rainwater collection

EWB designs and builds underground rainwater collection and treatment systems as a solution to the negative effects of climate change: heavy rainfall, heat stress, drought and salinisation. Their solutions are aimed not only at preventing flooding, but also at storing and treating contaminated rainwater for safe infiltration and preventing drought and salinisation. Contaminated runoff rainwater can also be made available for reuse as fire extinguishing water, play water, for sprinkling sports fields or the production of beer and thus saving drinking water.

CO_2 reduction
For every m3 shells and minerals we use to buffer and treat rainwater, we bind 0,5 ton CO2.

organization
seed stage · 2–10 employees

www.ewb.solutions

Bufferklinker Nederland

Temporary storage and infiltration of rainwater. The bufferklinker combines rainwater drainage and rainwater buffering without restricting architectural creativity. The rainwater is collected, buffered and infiltrated at the place where it falls, without the presence of sewerage (HWA). The water-resistant type 40 and type 80 bufferklinkers are concrete paving slabs with an integrated cavity under the surface. Lateral channels connect the various cavities and allow for better infiltration and delayed drainage.

organization
seed stage · 2–10 employees

www.bufferklinkernederland.nl

Drainvast

Drainvast offers an alternative to surface-level paving. They created a low-maintenance, sustainable solution to infiltrate rain water through paving. Products include the drainbrick, drain stop and drain joint.

CO_2 reduction
Contribution to CO2-reduction is 5/6 compared to traditional ways of producing needle felt.

organization
seed stage · 2–10 employees

www.drainvast.nl

FieldFactors

Circulair water management.

organization
early growth stage · 2–10 employees

www.fieldfactors.com

EZY Mobility

The wireless charging solution for any type of vehicle.

organization
seed stage · 2–10 employees

www.ezymobility.com

GreenFlux

Delivering charging services via a global charging platform and smart controller.

organization
early growth stage · 11–50 employees

www.greenflux.nl

Heliox

does the production of switched power converters. Cutting-edge charging solutions for public transport and vehicles in the construction, mining and port industries. The integrated charging technologies and full-service approach will keep electric vehicles running smoothly and efficiently.

CO_2 reduction
Automated Fast Charging technology enables large scale deployment of full electric zero emission buses.

organization
early growth stage · 11–50 employees

www.heliox.nl

Fastned

superfast charging

Fastned provides freedom for every electric driver. At Fastned you can quickly charge up an electric car anywhere and continue driving. Charges times can be as fast as 20 minutes making long car journeys possible when using an electric car. Cars capable of using the service include Tesla Model S / X, Nissan Leaf, BMW i3 and Hyundai Ioniq. Fastned also offers an interactive route planner making sure you're never too far away from a Fastned charger on your journey.

CO_2 reduction
Fast charging stations powered by 100% renewable energy.

organization
early growth stage · 11–50 employees

www.fastned.nl

Viriciti

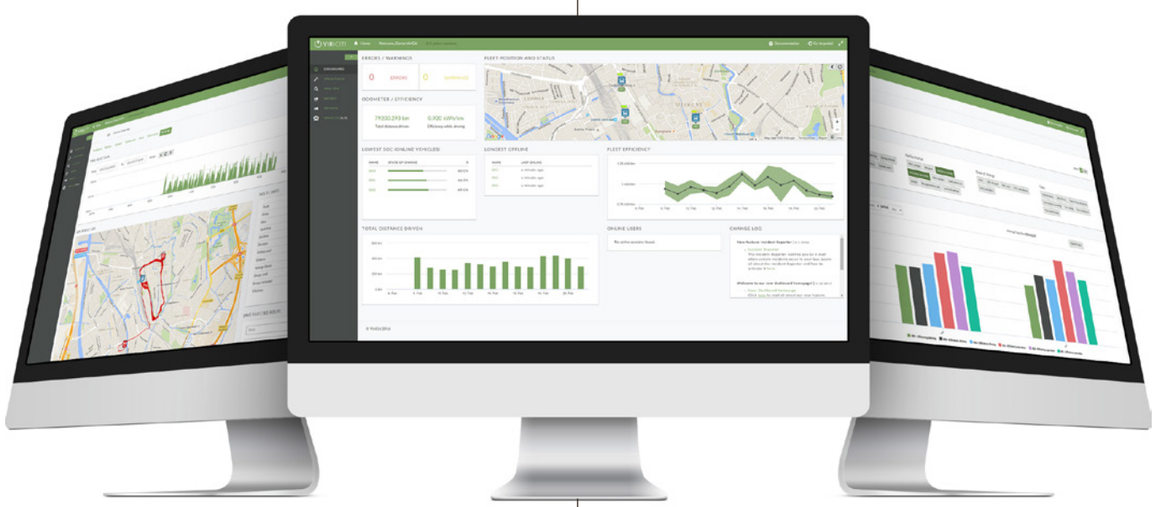
real-time data on electric transport infrastructure

ViriCiti is an independent partner for showcasing data-insights on entire electric transport operations. By connecting vehicles and charge stations, ViriCiti gives insights into energy management, route operations and flexible charging in one platform. ViriCiti works by connecting with any type of vehicle and charge station. Real-time data is then sent to secured servers where it is analyzed and simultaneously stored for reporting purposes. Based on this data is then presented in intuitive dashboards and accessible 24/7, meaning operations can be continually improved.

CO_2 reduction
Every kilometer driven electrically saves the world 0.9247 kg CO2, 1.554 g NOx and 0.03885 grams of Particulate Matter compared to diesel buses euro 6 standard.

organization
early growth stage · 11–50 employees

www.viriciti.com



4Silence

Develops noise reduction solutions.

organization
seed stage · 2–10 employees

www.4silence.nl

SolaRoad

The road that converts sunlight into electricity.

organization
seed stage · 2–10 employees

www.solaroad.nl

PitPoint

Development, investment and operating of infrastructure for alternative fuels.

organization
late growth stage · 51–200 employees

www.pitpoint.nl

Jedlix

Jedlix is an app that lets you charge your electric car easily, using greener and cheaper energy. Using the Jedlix app, you indicate when you want your electric car to be fully charged, and the app then calculates the optimum charging plan. It takes into account your requirements, the available capacity on the power grid, the availability of sustainable energy and energy prices. Based on this information, the app uses smart technology to manage your car's battery. In practice, this means a car can be charged when a specific renewable energy is harvesting its power.

CO_2 reduction
Reduces the emissions of CO2 from charging sessions of electric vehicles up to 10-15%.

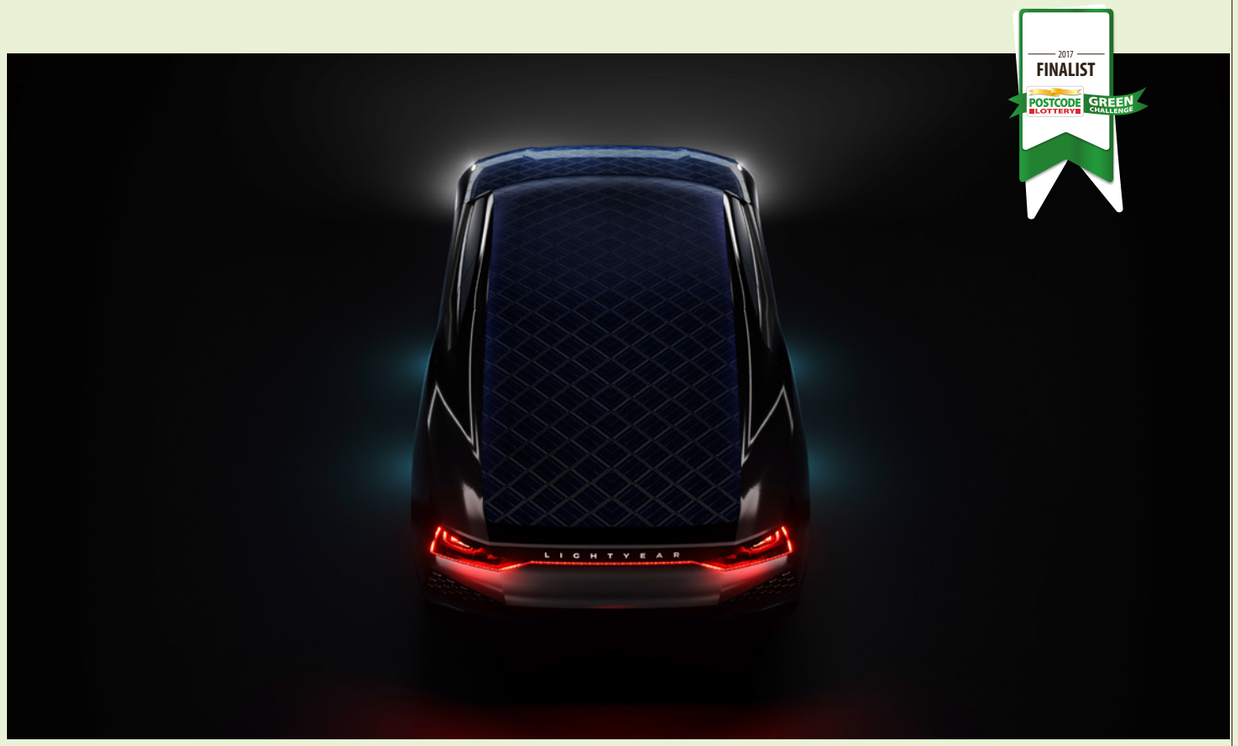
organization
early growth stage · 11–50 employees

www.jedlix.com

Although the government always has the intention to help ambitious green startups to grow quickly, sometimes 'unconsciously' they can work against them. In this interview, Lex Hoefsloot, CEO of Lightyear, shares his challenges and thoughts on what governmental help is needed.

Lex Hoefsloot
CEO Lightyear

'We very much hope that the government will support us in our green dream'



HOW CAN the government support the use of a car that is cleaner than any other in the world? For Lex Hoefsloot it's a no brainer: apply as many fiscal incentives as possible.

Lex is the CEO of Lightyear and the super energy efficient car he and his team are building is the Lightyear One: the first commercial electric car In the world that charges itself with sunlight. The prototype will be presented next year and the car hits the market in 2020. Although the final design is not yet known, there are already buyers queuing up for this spectacular 'Tesla-killer' that drastically reduces our dependency on the electricity grid.

But even though the CO2-footprint of the Lightyear One is five times smaller than that of a normal electric car, the car is in danger of not being able to benefit from tax advantages.

"Electric cars have been well subsidized by our government in recent years, which is great, but now the same government is introducing a new law in which electric cars over 50,000 euros will be subject to extra tax as from 2019. Zero-emission hydrogen-powered cars will continue to benefit from a low addition. We would like to see the same thing happen for the Lightyear One."

In order to create awareness about the (fiscal) changes and other opportunities of the suncar, Hoefsloot is talking to members of the Parliament already and he is more than open to engaging in dialogue with other relevant policy-makers. "We understand that the concept of a solar car is new to a lot of people. So that's why our focus now is on creating awareness and telling our story, whenever, wherever. But that's ok. It's fun to change the world of mobility and see people get excited about something they have never heard of."

Want to help or get in touch with Lex? Contact him directly at lex.hoefsloot@lightyear.one

Lightyear

electric car that charges itself

Lightyear One is charged by solar power. This unique quality allows it to drive without charging. The battery ensures that you can drive anytime, even at night. No need for charging points, the Lightyear One will take you anywhere. Charge using the sun, or any power plug. Depending on your battery configuration you will have a range of 400 or 800 km. Lightyear was founded by 5 Solar Team Eindhoven alumni.

CO_2 reduction
Lightyear's Solarcar saves 1,88 Ton CO2 per car per year based on an average usage of 20.000 km, that's an 94% CO2 reduction per car per year compared to the 100gr/km target.

organization
early growth stage · 51–200 employees

www.lightyear.one

Hardt Hyperloop

emission-free transport system

Hardt Hyperloop is working on solutions for heavily overpopulated cities; inaccessible rural areas; and unhealthy industrial urbanization, all of which inhibits human potential. By developing the hyperloop, they are creating an on-demand, affordable transport system with which people can travel huge distances in a short time – all completely emission-free, safe, and accessible to everyone. People will be able to live and work wherever they choose and, consequently, expand their boundaries.

CO_2 reduction
Without hyperloop as a zero-emission alternative, aviation will absorb the entire co2-budget this century.

organization
early growth stage · 11–50 employees

www.hardt.global

Van.Eko

Biobased electric scooter the Be.e.

organization
seed stage · 2–10 employees

www.vaneko.com

Solar Application Lab

Solar Application Lab develops smarter energy applications, like solar powered bikes (S-bike).

organization
seed stage · 1 employee

www.solarapplab.com

Etergo

Combining connective technology, high quality materials, comfort and safety into a long-range electric scooter.

organization
early growth stage · 11–50 employees

www.boltmobility.com

HyMove

HyMove manufactures top quality hydrogen fuel cell systems for use as range extenders in electric buses, heavy duty vehicles and stationary power modules. The HyMove hydrogen fuel cell range extenders (H2FC-RE) are sizable and can add an extra 100 to 500 km to the range of an electrical (city) bus. HyMove H2FC systems meet industrial standards regarding quality, durability and fitness for purpose. The H2FC systems are automotive certified and can be built into any make of electric bus.

CO_2 reduction
Replacing fossil fuel with environmentally friendly hydrogen.

organization
seed stage · 2–10 employees

www.hymove.nl

Tuk Tuk Factory

100% electric e-Tuks for a maximized turnover (space, passengers, autonomy, appeal) and minimized costs (low-maintenance & fuel cost).

organization
early growth stage · 11–50 employees

www.tuktukfactory.com

Skoon Energy

Skoon Energy will manage the infrastructure of swappable batteries through a digital platform, enabling customers to view, order and track their Skoonboxes in real-time. Providing a safe network of reliable batteries, charged with 100% green energy.

organization
seed stage · 2–10 employees

www.skoon.world

Clean Tech Aviation

Biofuel in Aviation.

organization
seed stage · 2–10 employees

www.clean-tech-aviation.eu

We4Sea

We4Sea provides the easiest, non-Capex Monitoring solution for ships. The data-driven platform can monitor, report and optimize the fuel consumption of (chartered) ships.

organization
seed stage · 2–10 employees

www.we4sea.com

Birò

Easily navigate through traffic, reach places where cars can not.

organization
early growth stage · 2–10 employees

www.biro.nl

Green Sea Guard

Measures and tracks ship emissions from a computer on land or at sea.

organization
seed stage · 2–10 employees

www.greenseaguard.com

Port-Liner

electric propelled inland vessels

Port-liner has developed a shock and vibration free container battery, the 'e-Powerbox', which can be placed in any barge and can be easily recharged or swapped. The first barges with this compltely eletric propulsion will be sailing late 2018. The barges are 110 meters in length with a variable width between 11.45 and 14.2 meters. The large barges can sail for approximately 18 to 35 hours on four e-Powerboxes, each the size of a twenty feet container.

CO_2 reduction
Aims for zero emission inland shipping by introducing vessels with electric propulsion, eliminating all CO2 emission (around 2,100 ton per year per vessel).

organization
seed stage · 2–10 employees

www.portliner.nl

Future Proof Shipping

Future Proof Shipping believes that hydrogen will play a vital role in enabling the use of renewable energy sources to their full potential, and in ushering in a truly zero emissions world. With the first FPS pilot, they will validate, and scale hydrogen-based clean energy technologies that will provide a competitive advantage in shipping, and result in a fossil fuel and emissions free maritime industry. In collaboration with technology innovators, they are developing a propulsion system based on a combination of hydrogen and fuel cells, that will be tested on a vessel owned by FPS.

CO_2 reduction
Technical, financial and commercial services to shipowners, operators, and shippers in their transition to zero emissions.

organization
seed stage • 2–10 employees

www.futureproofshipping.com

SailRouter

Desktop and cloud application that helps ship owners to reduce both fuel consumption and maintenance costs.

organization
seed stage • 2–10 employees

www.sailrouter.com

Mega-Inliner

Mega-Inliner offers shippers and carriers a build to order high-tech in liner to be used in our associated tank container units.

organization
seed stage • 2–10 employees

www.mega-inliner.com

Next Ocean

Next Ocean provides technology to predict actual waves at sea. By predicting the waves, and ship motions, we help to reduce wave related risks and increase the uptime of offshore operations.

organization
seed stage • 2–10 employees

www.nextocean.nl

SnappCar

car sharing marketplace

Providing a fully reliable and user-friendly car sharing marketplace. In other words, a community in which thousands of car owners can easily and safely rent out their cars to other people in their cities and neighborhoods. All vehicles rented through the platform include full insurance. The goal of SnappCar is to have 5 million fewer cars in Europe by 2022. Fewer cars on the road mean a reduction of Co2 and more space to live. The more cars shared, the fewer cars are needed!

CO_2 reduction
With carsharing SnappCar is working towards 5mln fewer cars in Europe in 2022.

organization
late growth stage • 51–200 employees

www.snappcar.nl

Amber

on-demand electric mobility

Amber created an intelligent car-sharing platform with a modular, autonomous, and customizable electric car designed specifically to be shared. Amber gives you the freedom of owning a car, without the cost and hassle. The next step for Amber is developing self-driving cars, with them being launched potentially in late 2018 in Eindhoven.

CO_2 reduction
Full electric car-sharing, which results in zero-emission mobility.

organization
early growth stage · 11–50 employees

www.driveamber.com

Motoshare

Enabling peer2peer motorcycle sharing in a close-knit community.

organization
early growth stage · 11–50 employees

www.motoshare.nl

ParkBee

Sharing parking platform.

organization
early growth stage · 11–50 employees

www.parkbee.nl

MobyPark

Find a place to park.

organization
seed stage · 2–10 employees

www.mobypark.com

Parkeagle

All-in-one Smart Parking system for ambitious smart cities. Powerful smart parking sensor technology to find parking spaces stress free and predictably, wrapped up in an interface that's easy to use and lightweight to manage. Providing both an application for city residents to easily find parking spots paired with an intelligent tool for cities for data processing, number crunching, and collecting traffic insights.

organization
seed stage · 2–10 employees

www.parkeagle.com

Swapfiets

Swapfiets started in the classic startup way. A group of friends having an idea and just seeing if there was a product market fit. For a fixed price a month you get a Swapfiets bicycle. Swapfiets ensures that the bicycle always works. When broken they provide a working bicycle whenever and wherever needed. It turned out to be a great concept. After a period of fixing up bikes themselves, Swapfiets has now arrived at a point where it has designed its own bicycle and started spreading out the service to a growing number of cities.

organization
late growth stage · 201–500 employees

www.swapfiets.nl

ByCycling

ByCycling is an automatic Day-to-Day cycling tracker that inspires users to switch wasted time in traffic for active time when commuting. Employers can incentivize cycling by offering extra cash or extra days off as part of their employer's commuter benefits program. ByCycling recognizes when users are cycling thanks to the sensors on their smartphone. It measures the distance and tracks the route automatically. Hands-free. In turn, Employers can reduce the number of cars on the roads, slashing commute and health-related costs and create a healthier, more engaged workforce.

CO_2 reduction
Help organizations to reduce their carbon footprint by swapping car [commute] trips for bikes.

organization
seed stage · 2–10 employees

www.cashbycycling.com

Radiuz

Radiuz is an innovative integrator of mobility services and has the most extensive network of mobility providers, all coming together on one independent platform.

organization
early growth stage · 11–50 employees

www.radiuz.nl

centralizing mobility services

Charge Trip

Chargetrip is an intuitive software platform for electrical vehicle (EV) drivers and the EV industry. They build white- label trip planning and navigation applications that reduce range anxiety, make charging-time useful and accelerate the mass adoption of EV's. Their Chargetrip platform is built with integration in mind. Whether it's custom applications, in car integration, algorithm API endpoints or access to their station database their powerful backend makes them relevant to the entire EV value chain.

CO_2 reduction
Smart navigation for Electric Mobility makes it easy for people and businesses to drive electric cars.

organization
seed stage · 2–10 employees

www.chargetrip.com

Trunkrs

Trunkrs is a package delivery company who fulfills the rapidly increasing need for 'Same day delivery at affordable rates' through a crowd sourced parcel delivery community.

organization
early growth stage · 11–50 employees

www.trunkrs.nl

PickThisUp

Delivering Anything, Anytime!

organization
seed stage · 2–10 employees

www.pickthisup.nl

One2Go

One2Go is working on a carefree solution, to help people to get home safe, by means of an on-demand taxi service.

organization
seed stage · 2–10 employees

www.one2go.org

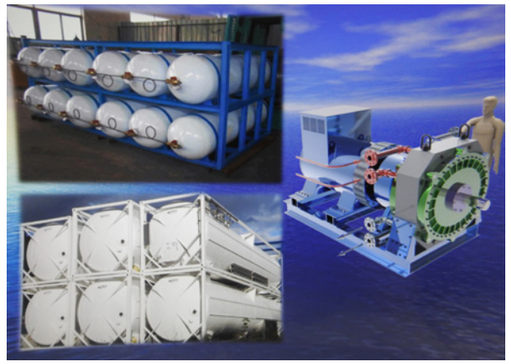
HDM

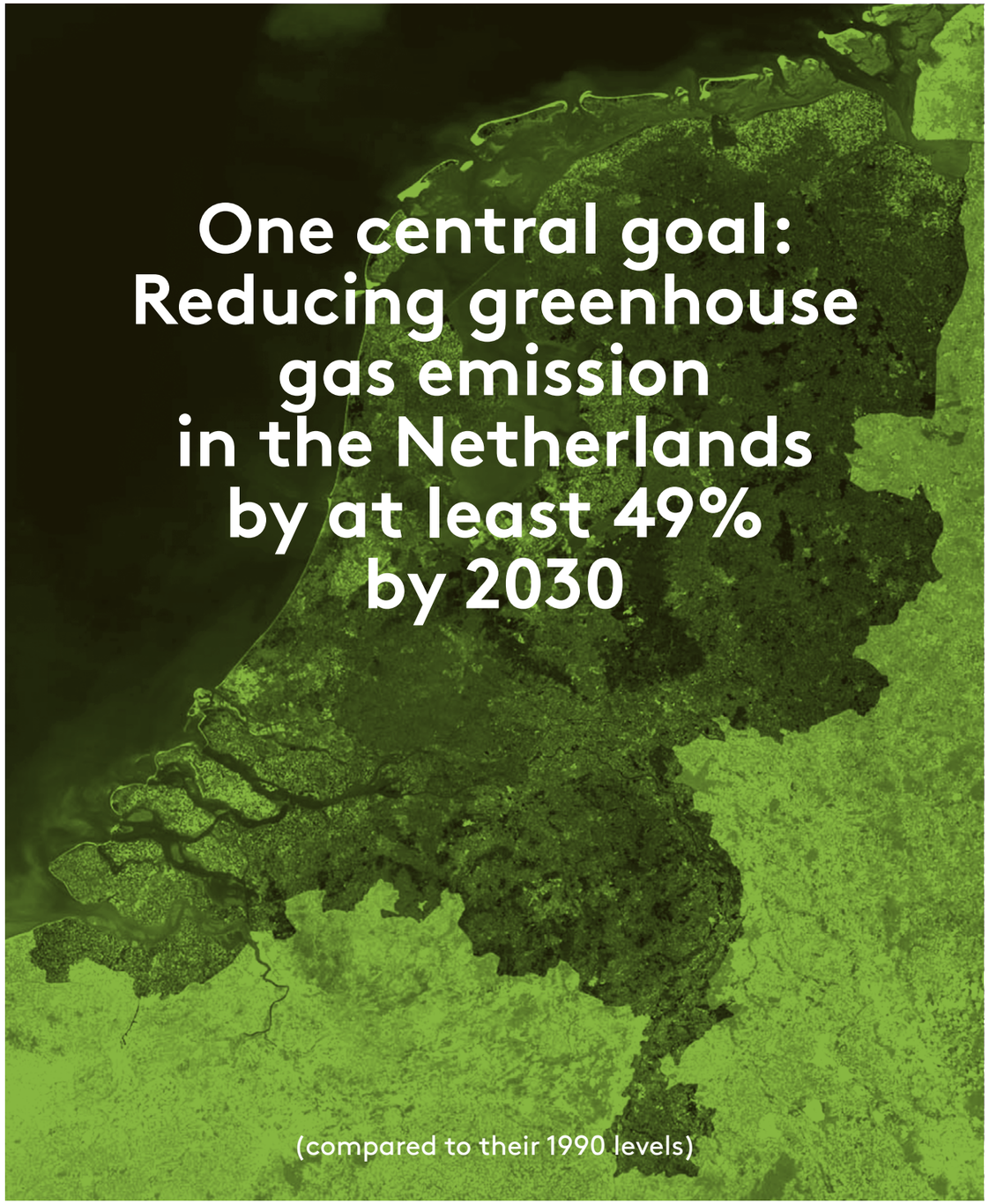
HDM Sustainable Solutions designs air generators in combination with compressor station(s), that will supply the market with stored / demand-driven electricity in capacities of 1-100 MW. In short HDM makes air generators an energy source by using compressed air to store solar and surplus energy. The compressor stations can be custom made as "stand-alone" or connected to a network of network suppliers and can contribute to sustainability and to a reduction of peak loads in local, regional or national electricity demand.

CO_2 reduction
Using compressed air to store "zero emission" solar and surplus energy, with the ability to use it on-demand.

organization
early growth stage · 11–50 employees

www.hollanddiesel.nl





electricity

industry

built environment

agriculture & land use

mobility

partners

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Brightlands Innovation Factory
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Founded in Groningen
Gemeente Rotterdam
Holland Startup
ImpactCity
LIOF
Ministry of Agriculture, Nature and Food Quality
Ministry of Economic Affairs and Climate Policy
Ministry of Education, Culture and Science
Ministry of Infrastructure and Water Management
Ministry of the Interior and Kingdom Relations
Netherlands Enterprise Agency
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