







Breakfast Inspiration Session – Energy Transition

12 October 2023











Program of the Day

1.Welcome and opening: Laure Wessemius-Chibrac

2.Presentation: Adrien Gruson & Eliane Blomen

3. Presentation: Dorien Lobeek

4. Presentation: Altynai Valikhanova

5. Presentation: Coenraad de Vries

6.**Q&A**

7.Closing: Laure Wessemius-Chibrac

NAB

Impact Institute

FMO Investment Management

Triodos Investment Management

StartGreen Capital











NAB

Laure Wessemius-Chibrac

Managing Director











Impact Institute

Adrien Gruson

Senior Associate

Eliane Blomen

Senior Manager



Breakfast Inspiration Workshop -Energy Transition

12 October 2023

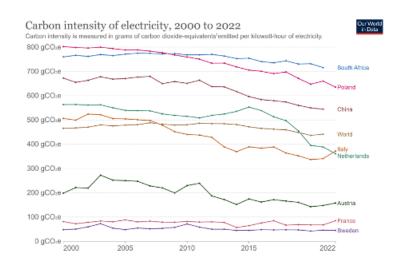
impactinstitute.com



ENERGY WE ARE IN TRANSITION BUT OUTCOME UNCLEAR

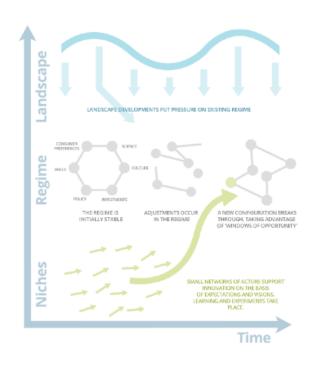
Energy transition is governed by many different actors and interests

The energy transition is unfolding as we speak



Continuous balancing of (conflicting) interests

- Decentralised versus centralized
- · Economy/ businesses vs. households,
- · Financial versus ESG,
- Broad support versus equality,
- Faster versus slower,
- Existing technologies versus new technologies



ENERGY KEEP THE END-GOAL IN MIND

Energy transition is not just about CO₂

Reducing extensive negative externalities

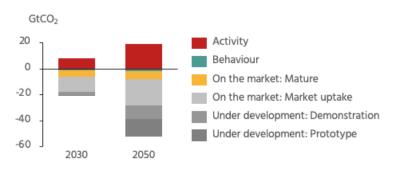
...whilst simultaneously preserving the value of energy to clients & society and addressing inequality.

Natural Capital Social Capital **Human Capital Produced Capital** Consumer value of energy Risk to societal Contribution Underpayment to climate change Gender Air pollution Human-rights Use of scarce Land use and Water pollution

Pre-transition hotspot

Technologies not yet on the market

IEA states that half the emission reductions needed to reach net zero come from technologies not yet on the market.

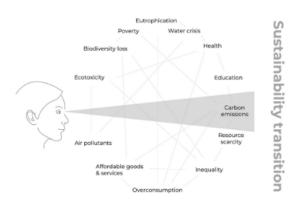


Global CO_2 emissions changes by technology maturity category in the Net Zero Scenario, 2050 compared to 2030 (IEA)

Carbon tunnel vision

This **hyperfocus on carbon emissions** as negative externality

Carbon Tunnel Vision



Graphic by Jan Konietzko



ENERGY SOLVE ONE PROBLEM, CREATE ANOTHER ONE...

Energy transition is not successful if we have moved the problem

Example: move the problem to other areas

Shift from a fuel-intensive to a material-intensive energy system, and that also implies a geographical shift.

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Revenue from production of coal and selected energy transition minerals in the Sustainable Development Scenario, 2020-2040 (IEA)

Example: move the problem to other externalities

Apart from the fact that green hydrogen is as green as its value chain, extensive resources are needed to build the infrastructure.

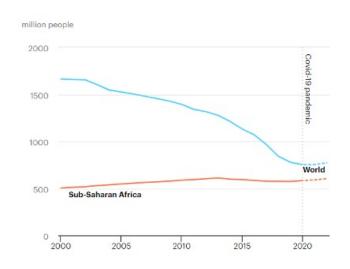
The hydrogen value chain



ECENSION

Example: move the problem to other people

Only 20% of clean energy investment occurs in emerging and developing economies. For the first time in decades, the number of people without access to electricity increased in 2022.



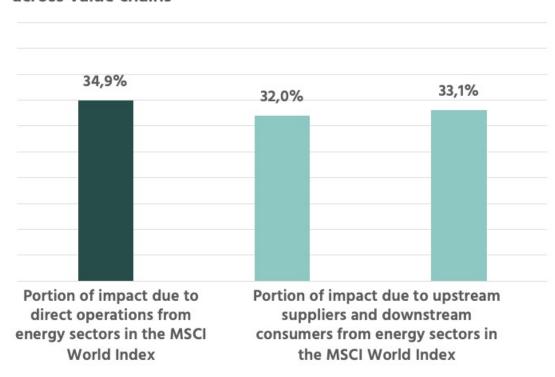
Number of people without access to electricity in sub-Saharan Africa and the world, 2012-2022 (IEA)



ENERGY INVESTING IN ENERGY EXPOSES TO FAR-REACHING VALUE CHAINS

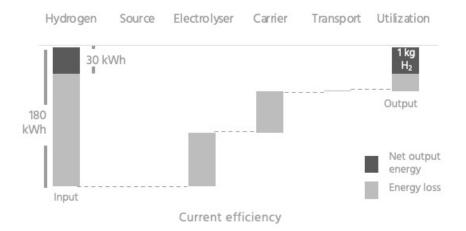
Investments in greener energy are only as green as their value chains are

Split of the energy producers among the MSCI World Index, across value chains



Source: Impact Institute analysis of the environmental, social and human impacts of investing in the MSCI World Index - 2023

Example: Implementing hydrogen into energy flows across developed economies



Source: Impact Institute analysis



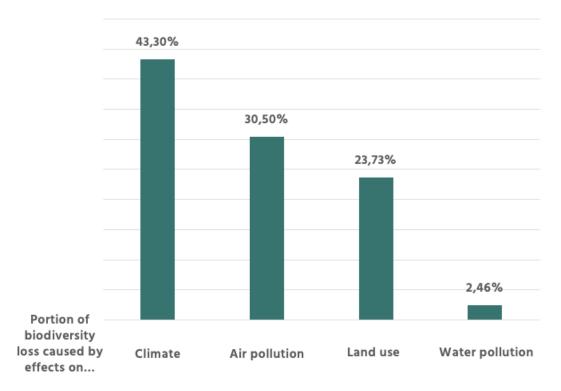
Inside China's 260MW behemoth | How 'green' is the world's biggest green hydrogen project?



ENERGY EXPLORE IMPACTS THAT GO BEYOND CARBON AND CLIMATE

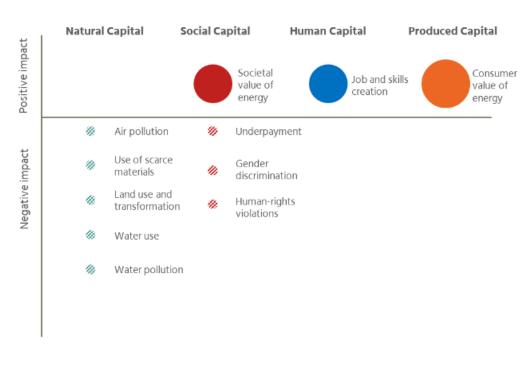
Objective for changes in the system integrate social, human, and broader environmental views

Illustration: Split of key biodiversity impacts across 6 of the biggest oil & gas producers in the MSCI World Index



Source: Impact Institute analysis of the biodiversity impacts of investing in the MSCI World Index - 2023

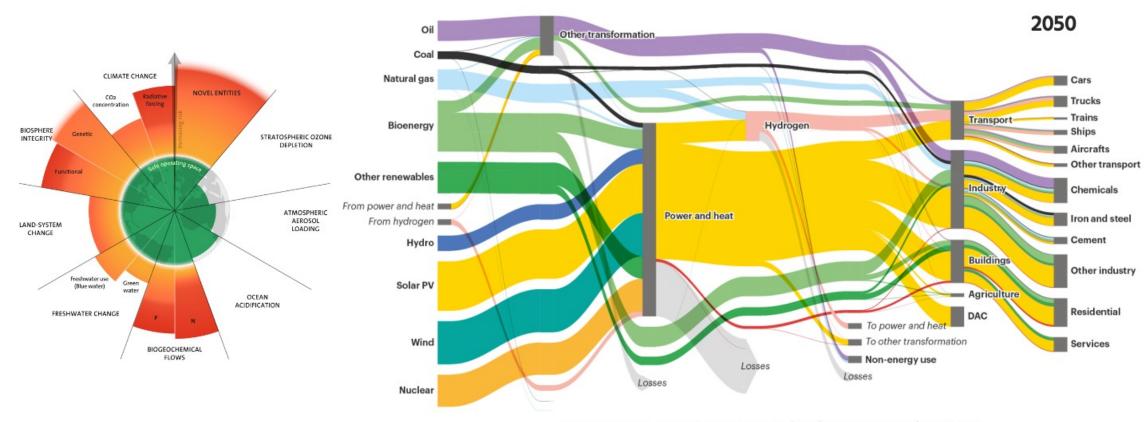
Illustration: Impacts of the desired post-transition energy regime (2050) in a hotspot format



Post-transition hotspot

ENERGY CONNECTION OF ENERGY TRANSITION TO SYSTEMIC LIMITS

Avoid rebound effects, transform the vascular system of the world economy







ENERGY THE RIGHT DIRECTION?

What does go well?

Energy transition gaining speed

The energy transition is gaining speed, which is illustrated by e.g.:

- Annual renewable capacity additions is breaking record after record (IEA)
- Governments have allocated USD 1.2 trillion to clean energy since the pandemic (IEA)
- Clean energy now employs over 50% of total energy workers (IEA)
- Electrification equals increasing energy efficiency due to the second law of thermodynamics. If we electrified the economy to the full potential this would reduce final energy demand by 40%.

Regulation







More and more organisations measure impact





































Crucial: 'impact' point of view' – value chain perspective



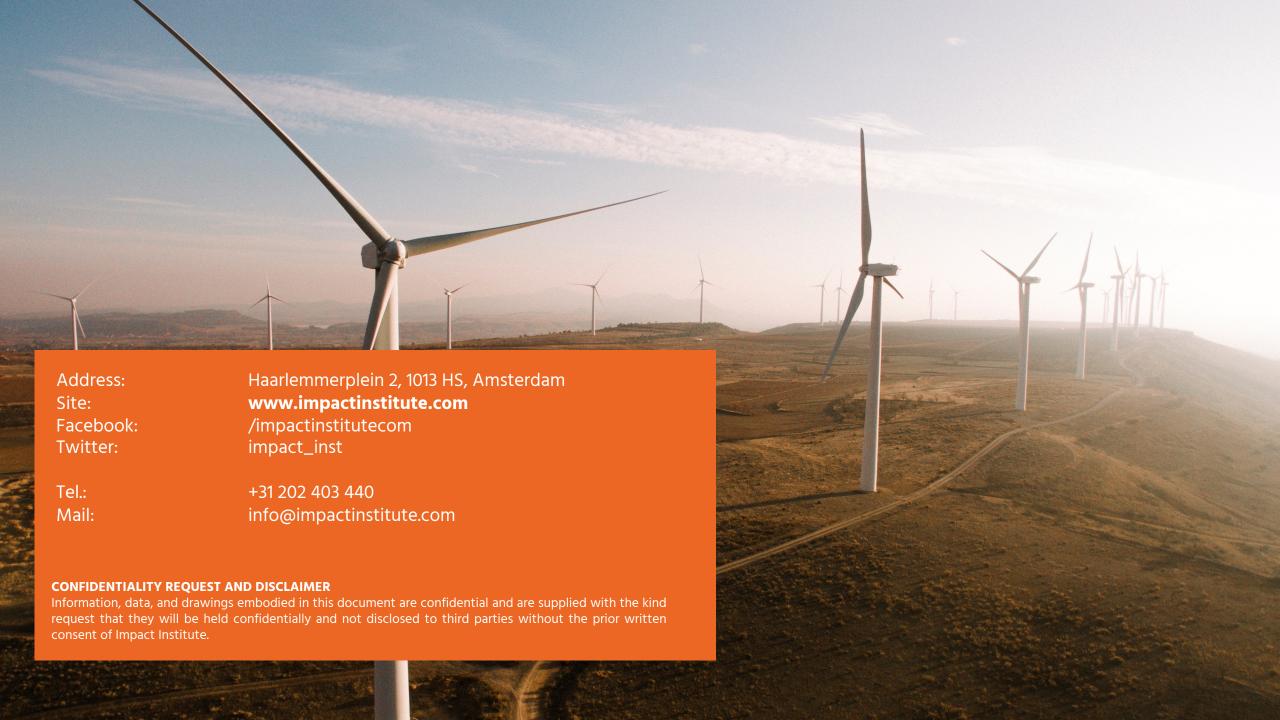
Thank you for your attention



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FMO

Dorien Lobeek

Fund Manager





Entrepreneurial Development Bank

NAB
INSPIRATION BREAKFAST

Energy transition

October 2023

www.fmo.nl









Some figures from IEA / IFC report - September 2023





Mini-grid, North Uganda, Winch Energy

- 775 million people
- 2.4 billion people
- USD 770 billion
- 10 times
- 60%

FMO | the Dutch Entrepreneurial Development Bank



Since 1970 we have been a driving force behind investments empowering

local entrepreneurs in emerging markets



Agribusiness, Food & Water



Financial Institutions



Energy



689 employees total number of employees



63 different nationalities



43%
of senior and
middle
management are
women



Our impact framework



We believe in a world in which, in 2050, more than 9 billion people live well, within planetary boundaries



2030 Strategy

PIONEER- DEVELOP-SCALE

Integrated Reporting

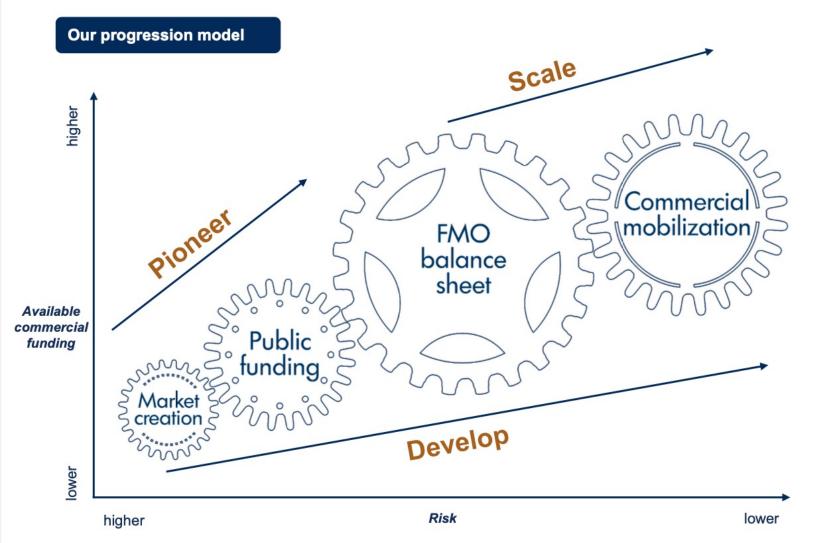
Please find below some links

- Reports
- Strategy 2030
- Policies and Position
 Statements

4

Strategy | Pioneer-Develop-Scale at the heart of our progression model FMO





We start with market creation – developing unbankable opportunities into bankable projects.

We move projects to public funds, developing new products & segments and making higher risk investments.

Through our own balance sheet, we provide financial support and scale investments.

By mobilizing commercial partners, we aim to further scale our impact.

As a change agent on environmental, social and governance topics we support development of our customers' capabilities.

Our impact | Strategy aligned with Sustainable Development Goals



We create impact by focusing our activities on three key SDGs across all our sectors



...and through sector-specific strategies, we also contribute to other SDGs

OUR KEY SDGS

.......



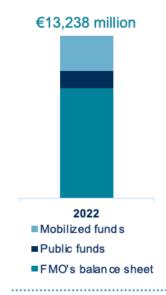
Total Committed Portfolio



Reducing Inequality-labelled
Total Committed Portfolio

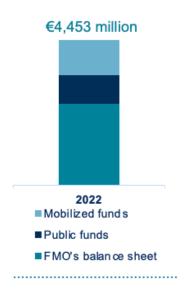


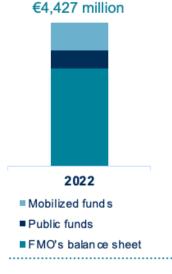
Green-labelled
Total Committed Portfolio





750 thousand jobs supported

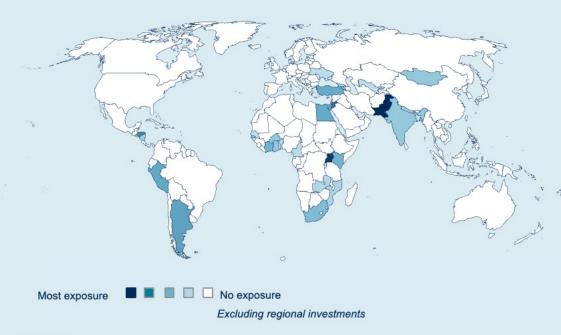






1,439 ktCO₂e
Total financed avoided
greenhouse gas emissions

Country exposure based on total committed portfolio 2022



2022



Energy









We offer a full range of financing solutions - (syndicated) loans and equity investments - for generation and distribution projects:

- Renewable energy projects
- Off-grid energy solutions
- Transmission and distribution
- · Refurbishments and efficiency improvements















Triodos Investment Management

Altynai Valikhanova

Head of Project Debt





13 GLOVET

Energy and Climate

Broad universe - from local private to global listed

Energy Transition Europe Strategy

Equity investments to small and medium-sized clean energy projects in Europe.

€170 mln invested in energy.

estment Management

Emerging Markets Renewable Energy Strategy

Financing the clean energy transition in emerging markets.

€ 33 mln invested in energy.

Green loans strategy

Loans to renewable energy projects across the globe and to green projects in the food and resources transition predominately in the Netherlands.

€457 mln invested in energy (€383 mln in the NL and €74 mln in EM).

Blended Finance

Investing directly in the energy transition

Loans and equity investments in innovative scalable energy projects in Emerging markets.

€19 mln invested in energy.

Listed equities & bonds

Selecting companies at the forefront of sustainable solutions partially invested in the renewable energy sector.

200 solar mini-grids providing more than 45 000 households and businesses with first-time access to clean, affordable and productive energy and light.



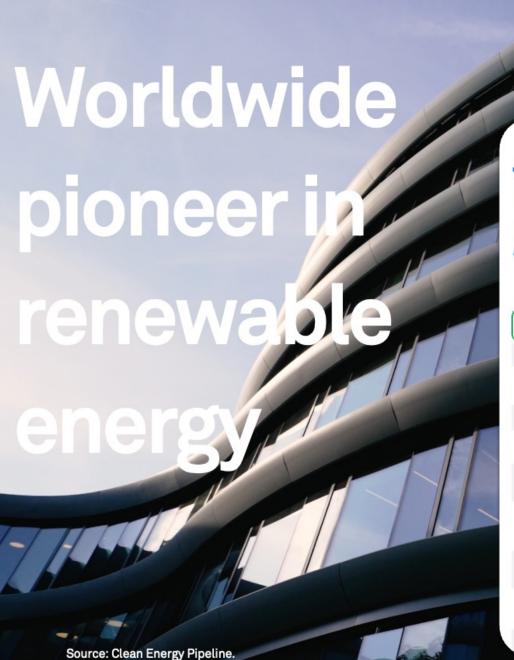
First Solar Inc

United States

Manufactures solar panels and provides operation and maintenance services for system owners that use solar modules.







Top Clean Energy Lead Arrangers 2023

Top Clean Energy Lead Arrangers by Number of Deals

RANK	LEAD ARRANGERS	NUMBER OF DEALS	DEAL VALUE (\$ MILLION)
1	Tridos Bank NV	140	504.57
2	European Investment Bank (EIB)	37	7,142.17
3	Banco Santander SA	32	2,643.16
4	Union Bank (a.k.a. MUFG Union Bank)	26	6,566.88
5	Norddeutsche Landersbank (Nord/LB)	25	3,729.41
6	ING Group NV (incld. ING Bank and ING Capital)	22	3,754.18
7	European Bank for Reconsstruction and Development (EBRD)	21	1,920.54
8	Sumitomo Mitsui Banking Corporation (SMBC)	21	1,731.32
9	Societe Generale	19	2,091.92
10	KfW Group (KfW Bankengruppe)	18	2,217.02





Access to clean, reliable and affordable energy

Financing of off-grid solar solutions for households and SME's

Financing mini-grids for rural electrification



Increase renewable energy capacity

Increase the amount of renewable energy produced in emerging markets,

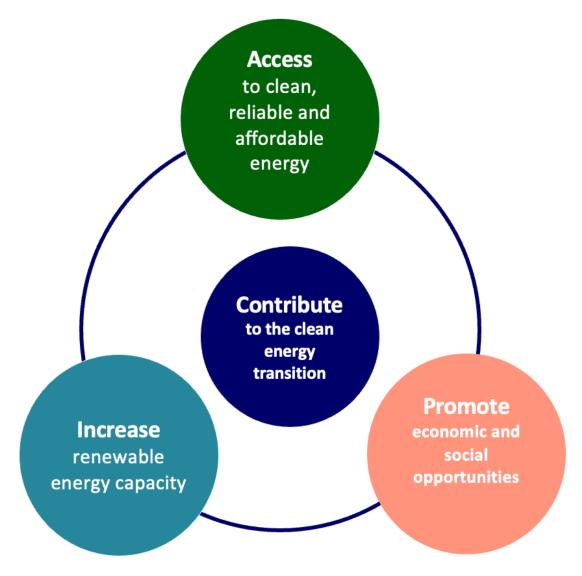
thereby increasing total share of renewable energy in the energy mix



Promote economic and social opportunities

Invest in projects which have a positive impact on the local community, such as economic development and job creation

Example: Impact Objectives of Triodos Emerging Markets Renewable Energy Strategy



The fund contributes to climate change mitigation as environmental objective set out in **Article 9** of the Taxonomy Regulation.



Lotus Wind Power

Vietnam



Instrument	Senior Debt (B-loan)	
Partner	Asian Development Bank & Triodos Groenfonds	
Amount	USD 17m	
Tenor	15 years	
Project phase	Construction & Operational	
Capacity	144 MW	

- With an installed capacity of 144 MW, the Lotus Wind Power Project is the largest of its kind in Vietnam, comprising three separate 48 MW farms, each with 12 Vestas wind turbines.
- Construction of the parks started in 2020 and is operational since November 2021. The project increases Vietnam's wind energy capacity by 30%.
- For more details read the <u>article</u>











Bailyk Finance



Kyrgyzstan

Instrument	Senior debt
Partner	Triodos funds
Amount	KGS 210m (c. USD 2.5m)
Tenor	3 years

- Bailyk Finance provides affordable financial solutions to around 43,000 small businesses and households, predominantly in rural areas of Kyrgyzstan. For the coming three years, the expansion of green loans is one of the institution's strategic pillars.
- Examples are loans for renewable energy sources, for the installation of solar-powered fridges, heaters and dryers and loans for energy efficiency improvements of residential buildings, for example, insulation.
- Watch the investment video here.









Disclaimer

This is a marketing communication. Please refer to the prospectus and the Key Information Document of funds mentioned before making any final investment decisions. A summary of investor rights in English can be found <a href="https://example.com/here.com/

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StartGreen Capital

Coenraad de Vries

Managing Partner



Energy Transition Event NAB

12 October 2023













StartGreen Capital at a glance



STARTGREEN CAPITAL

- Specialist impact investor venture capital & energy projects
- AIFMD & MIFID II 3 regulated, ECSP licensed

- Established in 2006
- StartGreen funds comply with Article 9 of the SFDR

STARTGREEN IN FIGURES

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Funds

€470M Assets under

management

46 **Employees** **462** Loans &

investments

28,000 Crowd investors



MISSION

For StartGreen Capital, a sustainable economy is an economy that does not deplete itself and in which everyone can participate to his or her full potential. We believe that the transition towards this end is being initiated by impact entrepreneurs. They are our change-makers. We aim to be a catalyst for change by financing three major social themes:





Energy transition Diversity & Inclusion





FUNDS & LABELS UNDER MANAGEMENT













Theory of Change & Impact

assessment



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Three pillars of our sustainability policy

StartGreen Capital's sustainability policy consists of three pillars:

Impact Policy:

- Describes the type of positive impact, how to achieve this, and how we quantify and measure the impact.
- Is described in our Theory of Change.
- All our funds aim to achieve a measurable positive effect on the environment and/or society.

ESG Policy:

- How StartGreen identifies relevant ESG risks and opportunities of investments.
- How StartGreen integrates them into the entire investment process to reduce adverse effects of companies and mitigate ESG risks with potential financial implications.

Internal sustainability policy:

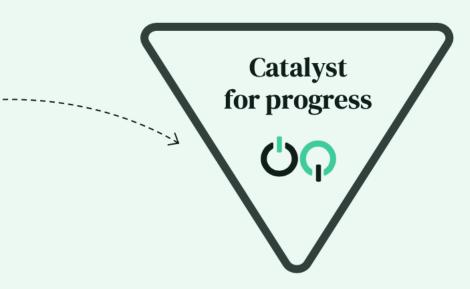
 How to deal with people and planet as consciously as possible with our internal business practices.

Impact Policy

Making a positive change with our investments...

ESG Policy

...while minimizing their potential negative impact & ESG risk exposure ...



Internal Sustainability Policy

... and being a good example company by taking care of planet and people ourselves.

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Theory of change

Activities

Funding

for sustainable

companies to

continue their

mission.

For investors

For impact companies

For the sector

Investment opportunities

for institutional and private investors who want to invest in impact companies.



Results

Double dividend

sound financial returns and positive impact.



Entrepreneurs

Impact

Help them to start the transition to a sustainable





































Accelerated growth

by scaling up sustainable enterprises.



Raising awareness

about the importance, advantages and the possibilities



Developing impact investing

As an experienced older impact investor, we want to establish new funds where we see sustainable market imperfections or new finance instruments

of impact investing.



society for people and the environment.



Sustainable economy

A more circular and inclusive economy in which investors and entrepreneurs can contribute to SDGs.



13 CLEMETE

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Impact assessment

The process for measuring impact is similar for all StartGreen Capital funds:

1. Selection

2. Due diligence

Once per investment

- We start with a qualitative assessment of the type of impact, according to the <u>IMP</u> classification and check if the company aligns with the sustainability objective of a specific fund.
- 2. If so, we continue with a highlevel quantitative analysis to understand the magnitude of the potential impact.

- Multiple impact KPIs are selected together with the company, and a quantitative long-term forecast for these KPIs is drawn up.
- 2. The investment committee verifies the underlying impact assumptions.

3. Reporting

Quarterly/annually

- When applying for financing, entrepreneurs are given tips about how to report on their impact based on a reporting guideline.
- Entrepreneurs report their impact using a reporting format provided by StartGreen Capital.

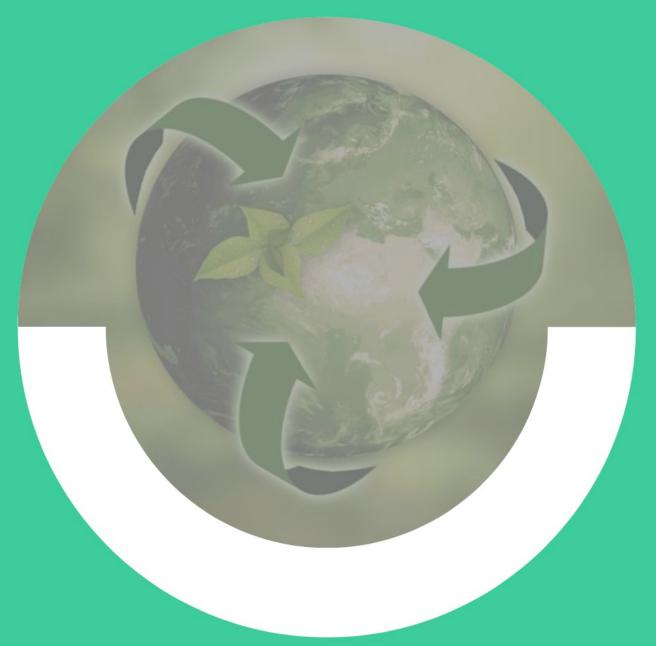
4. Consolidation

Each year

- 1. All impact data is aggregated.
- Checks on the completeness, reliability and accuracy of the data, among other things, are carried out.
- 3. The impact is analysed.
- 4. Findings and insights are shared in an impact report.

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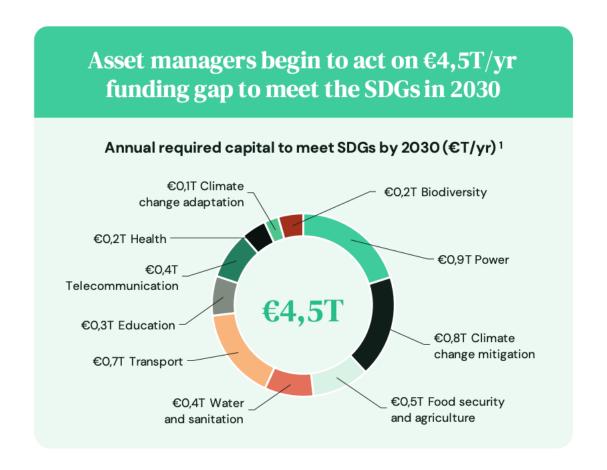
Market for SDG Finance



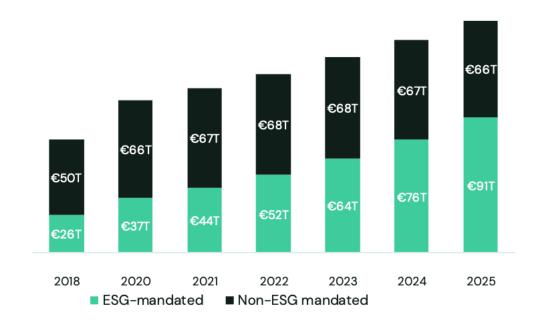
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An annual €4,5 trillion SDG funding gap

requires blended finance solutions to leverage institutional capital streams [1/2]



Annual (forecasted) evolution in global assets under management ($\mbox{\em e}T$) 2



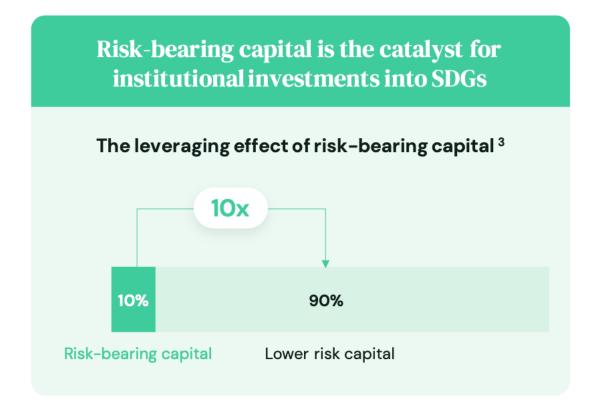
Source [1]: UNSDG, Unlocking SDG Financing: Findings from Early Adopters (July, 2018)

Source [2]: Deloitte Insights, Ingraining sustainability in the next era of ESG investing (April, 2022)

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An annual €4,5 trillion SDG funding gap

requires blended finance solutions to leverage institutional capital streams [2/2]





OECD states that **blended finance** is the key to mobilize large institutional capital streams towards **financing the SDGs** ⁴



With blended finance, risk-bearing capital is structured with lower risk capital to make projects and companies more bankable



The resulting annual need for risk-bearing capital equals €450B/yr to meet the SDGs by 2030 globally and €67B/yr⁵ for the EU

Source [3]: Forbes (October 2021)

Source [4]: OECD How Blended Finance Can Plug The SDG Financing Gap (January 2020)

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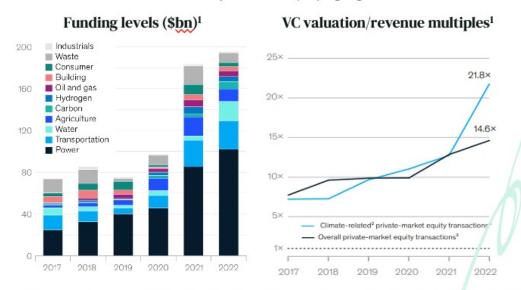
Outlook Forward looking trends in the "risk bearing" capital to finance the Energy Transition



New inventions needed \rightarrow *Venture Capital:*

The unparalleled climate challenge implies massive (attractive) investment opportunities...

• Climate tech investments are defying geopolitical & macroeconomic headwinds: The market is growing faster than most capital markets (+7% vs -24% in 2022) and valuation levels have held up better, displaying higher resilience.



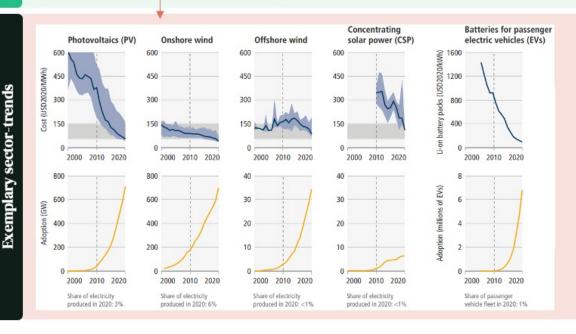
- Although VC's & investments are growing in number, the market is still underserved:
 McKinsey estimates that \$9.2tn in annual investments are needed to achieve net-zero
 by 2050, c. 60% more than is spent today: A total transformation of our economy.
- To keep succeeding in this thriving, yet complex environment, Venture capital will ensure
 that acquisition targets can leverage a wide range of climate tail winds. The dominant
 trend within is that unit costs of renewables & "green premiums" keep dropping fast.
 Particularly in light of the elevated fossil fuel prices and carbon prices, adoption of
 these technologies is expected to keep rising rapidly.

Climate tech VC is **well positioned to continue along its growth trajectory** in this turbulent environment, due to several **persistent tailwinds**.

Clear demand signals from both public & private parties

Tailwinds to be reaped

- Decline in green premiumsPlummeting unit costs of renewables, storage & enablers
- 3 Stronger policies & regulation & better alignment in cap. markets
- Emergence of ecosystems
 Cross-sector collaboration & standard setting



Sources: McKinsey, IPCC

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Rebuilding production & use of Energy — *Energy projects*



ENERGY PROJECT FUND INITIATIVES

- Transition to 55% reduction of greenhouse gases by 2030 and net zero emissions and 100% circular economy in the Netherlands requires over 120bn funding until 2030.
- Relatively small decentralized energy projects are needed to change the energy infrastructure in the Netherlands.
- Local (impact) by local (investors) for local (businesses)



TRENDS & SDG'S

- NET-ZERO TRANSITION
- 2 ENERGY INDEPENDENCE
- 3 CIRCULAR ECONOMY















PROBLEM & SOLUTION

- Market imperfection creates a bottleneck for financing circular and energy transition initiatives in The Netherlands
- SG provides equity and debt solutions to accelerate the transition to a sustainable future



TARGET SECTORS

The transition requires over €120bn funding until 2030

Clean energy generation

Clean grid technology Clean industry & carbon tech

Clean Mobility Built environment











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Example Case study



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2022 highlights



€ 78 mln financing issued



in 69 sustainable loans & investments



53k tonnes in additional carbon reduction

(the equivalent of the annual emission of 11,830 gasoline-powered cars)

Overview of investments by SDG in 2022

Distribution based on financed amount (€)





























'Dexter helps energy companies navigate through the challenges of transitioning from a fossilfired-based electricity system towards a fully renewable one.'

Hubert Penn, CCO Dexter Energy

Dexter Energy:

AI-based trade optimisation

Dexter Energy develops software based on artificial intelligence to balance the power system.

By predicting consumption, generation, shortfalls and excesses, it helps the power system cope with more renewable generation.







Dexter Energy

Impact Management Project dimensions – Dexter Energy		
What	With Al-based forecasting and short-term trade optimization, Dexter facilitates higher penetration rates of renewable generation.	
Who	By predicting the generation and load on the power grid, Dexter offers a unique service to a wide range of large and reputable clients, like power companies and other major suppliers and power grid customers, including Greenchoice, Axpo and Giga Storage.	
How much	Based on predictions, shifts in the energy market are possible: from consumption during 'peak scenarios' (high demand, high marginal costs) to a base scenario' (low demand, low marginal costs). This forces fossil fuels out of the market and replaces them with renewable energy sources, like solar and wind energy. A saving of kg carbon/kWh is calculated as the difference in average carbon emissions at the high price and the low price.	
Contribution	In particular, Dexter Energy has a great deal of experience in using weather data and advanced artificial intelligence. If the power grid is out of balance, Dexter provides the knowledge and software to deploy flexibility to address the imbalance.	
Risk	Market interventions could lead to Dexter's clients being less inclined to invest in renewable generation and storage projects because their business cases are undermined, and consequently the impact may not be achieved.	

The Province of North Holland firmly believes in the power of renewable and innovative energy. Energy that preserves nature, while at the same time boosting the economy. Energy that you invest in together.

Participatiefonds Duurzame Economie Noord-Holland is an important tool for developing a sustainable economy in the province. The fund promotes sustainable operations, employment and innovation. Investing in Dexter Energy contributes to these objectives.







Bomhofsplas:

Acquisition of a floating solar park

A local energy cooperative acquired, with the help of investors, a floating solar park of 27.4 MWp situated on a sand extraction pit nearby Zwolle.







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Bomhofsplas

Summary project

- The floating solar park provides electricity for 7,000 households and, with 72,000 solar panels, is one of the largest floating solar parks in Europe.
- The park was aquired with the assistance of StartGreen Capital from a developer and is now more than 50% owned by the local energy cooperative.



Funding

- StartGreen Capital arranged the financing and provided security by prefinancing the crowdfunding.
- Oneplanetcrowd launched a successful crowdfunding campaign.
- Loans have been partially provided by an in-house fund and partially placed with a bank.

Impact

- With the installation of solar panels, the sand extraction pond will have a dual purpose: sand extraction & production of green electricity.
- 50% Local citizen participation and involvement
- · 220 TJ annual energy generation.

Equity (10%)	Junior Ioan (15%)	Senior Ioan (75%)
Cooperative & Provincial Energy Fund	Provincial Energy Fund & Crowdfunding	Provincial Energy Fund & Dutch Bank
Energie	Energie	Energie .
Overijsset	one planet crowd	Bank Bank



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Questions?











Q&A











Thank you for attending this event!

Please fill out the Evaluation Form. 7 questions and takes only 2 mins



Next Breakfast Inspiration Session: **Circular Economy Transition** On 16 November, at 8 a.m.