



# BOM Climate Neutral Energy Solutions

We aim for innovative impact

Sunday 17 april 23 –  
subsessie 2B.



# Brabant Development Agency (BOM)

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*The Brabant Development Agency (BOM) is a growth accelerator. We work together with innovative entrepreneurs and with people who can solve social issues. We help to make dreams come true, to access new markets and turn groundbreaking concepts into tangible products and services.*

The Brabant Development Agency (BOM) was established in 1983 by the Province of North Brabant and the Ministry of Economic Affairs and Climate Policy, both of which are still shareholders.

We have been excelling as a growth accelerator in the province of Brabant for 35 years, a task that generated €585 million in invested capital in our 297 portfolio companies.



# Together with entrepreneurs the BOM builds a future-proof Brabant



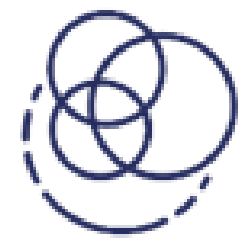
We support firms with the  
*ambition and potential* for  
**high growth**



We *enable* opportunities  
within  
**new ecosystems**



# BOM



## Developing

Together with entrepreneurs, knowledge institutions and public parties, we enable new revenue models by innovation and development. We strengthen the ecosystem with business development and programs focused on innovation, consistent growth and energy projects



## Investing

The BOM focuses on start-ups and scale-ups that have the ambition and the potential to generate a major impact for the Brabant economy. In addition, BOM finances projects that make a positive contribution to energy transition

# ▶ Developing: We enable opportunities within new Solar ecosystems

The new solar PV integration lab in Petten is especially equipped to conduct research on all types, shapes and sizes of **silicon based solar panels**. This location also offers the opportunity to determine the energy yield of various products and examine lifetime, reliability and safety

Highest PV density in Europe

**12%**

The capacity and production increased by

**30%**

Over the previous year (2022)

**More than half** of the solar panels worldwide contain technology of Dutch Science Institute TNO, which have set a world standard for Silicon nitride (SiNx).

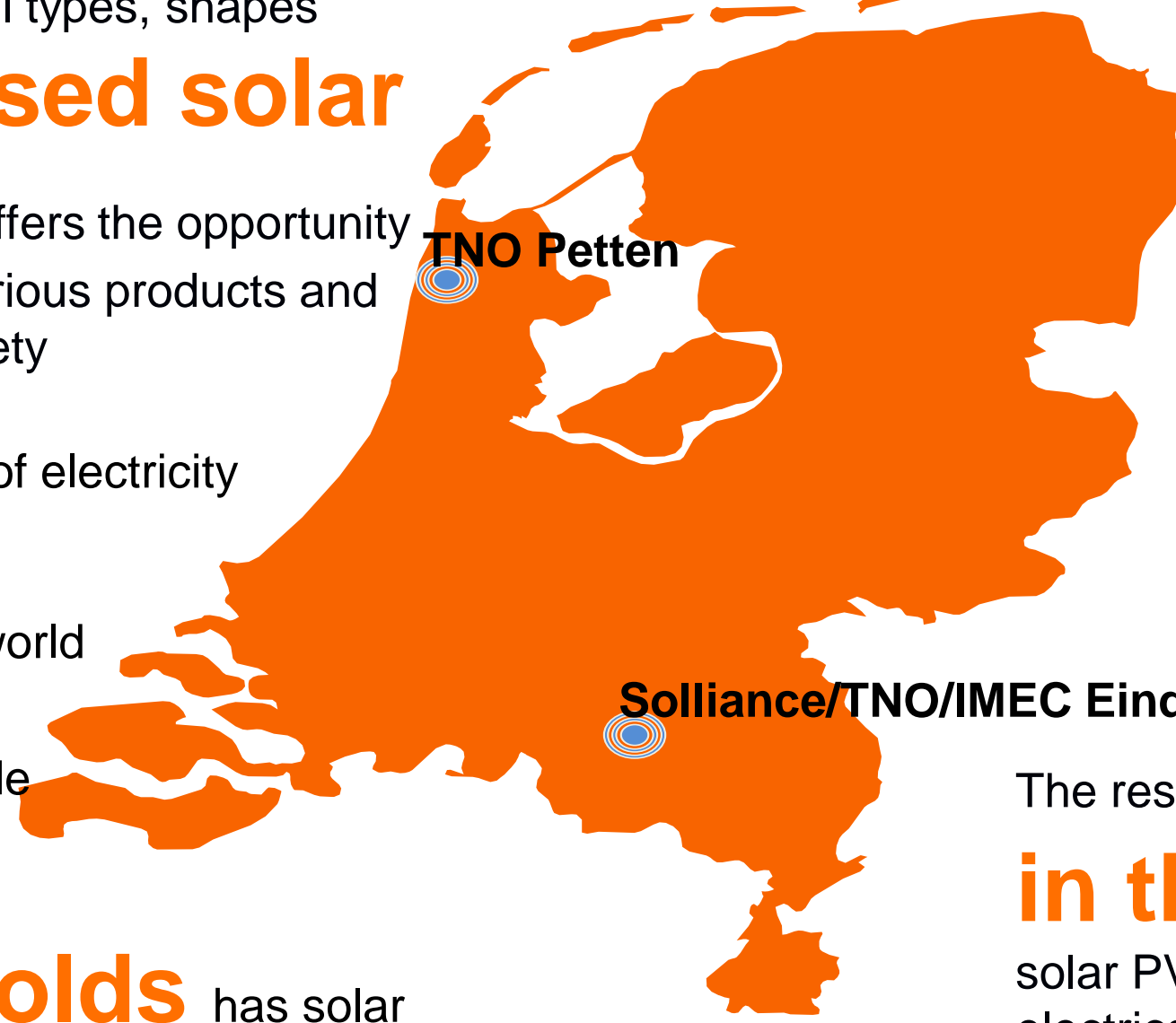
One of the highest percentages of electricity

**10%**

from solar panels in the world

The Netherlands ranks **11th** worldwide by solar power capacity

**1 in 5 households** has solar panels on its roof



Solliance/TNO Eindhoven has **world**

**records** for R2R Perovskite Solar cells and modules efficiency

The research line opened in Eindhoven in 2022 is **unique in the world**: here they will make flexible laminates with solar PV functionality, in all conceivable variations of size, shape and electrical power



## About Solliance/TNO Solar Research Institute Eindhoven



Solliance Solar Research in Eindhoven, founded by TNO, Eindhoven University of Technology and ECN (the Energy research Centre of the Netherlands), later jointed by Belgian IMEC, plays a leading role in the worldwide research and development of thin-film solar technology.

Solliance creates a bridge between knowledge and innovative companies by working together to accelerate innovation and create disruptive new business models. Solliance is currently on top of the league in researching perovskite PV modules by achieving high PCE: [Solliance sets more world records for r2r-perovskite solar cells and modules](#)

### **Solliance's objectives are**

- Enable seamless integration of thin-film solar on every surface
- Working towards massive application of thin film solar in infrastructure, building materials and transport.
- Realizing groundbreaking improvements in production and application designs. Developing technologies for adaptable, flexible and semi-transparent photovoltaic systems on an economically viable level
- Bringing together the value chain in a broad network as shared perspectives reinforce and accelerate developments
- Translating academic research innovations into industrial applications and production methods for thin-film solar applications. In our research programs we bring industry and science together and collaborate in a concerted effort by sharing knowledge and facilities



# BIC solar pilot line Eindhoven

The pilot line at the Brainport Industries Campus shows that the Netherlands and Europe in general is at the forefront of developing new solar technology. The ultimate goal of the ecosystem is to create a standard mass customization PV production line that can be sold to different companies. In collaboration with equipment manufacturers like VDL-ETG, Demcon, and Duflex this could result in a next Original Equipment Manufacturers (OEM's.)

	GEN 1	GEN 2	GEN 3A	GEN 3B
PRODUCTS	CUSTOMISED LAMINATES FOR FACADES, ROOFS, AND INFRA	CUSTOMISED LAMINATES FOR FACADES, ROOFS, AND INFRA	CUSTOMISED LAMINATES FOR FACADES, ROOFS, INFRA, AND 3D CURVED SURFACES	CUSTOMISED LAMINATES FOR FACADES, ROOFS, INFRA, AND 3D CURVED SURFACES
TASK	INLINE PRODUCTION	OPTIMIZED FOR COST AND QUALITY	COMPLEX SURFACES AND HIGH PERFORMANCE	ROLL-BASED CELL MATERIAL FURTHER COST REDUCTION
CHALLENGES	INDUSTRIALIZE PRODUCTION ENCAPSULATION PV SEMI-FABRICATES RELIABILITY	INTERCONNECTION USE OF WAFERS RELIABILITY	ADVANCED P&P LAMINATE STRUCTURE MICRO CELLS	CUSTOMISABLE DIMENSION INTELLIGENCE PV MODULES RELIABILITY
CELLS TECHNOLOGY	FLEXIBLE CIGS –CELLS	FLEX CIGS + c-SI CELLS	Flex CIGS + c-Si CELLS SMALL SIZE BC-CIGS	ROLL BASED CIGS: PEROVSKITE AND TANDEM
ACTIVITIES (EHV/PET)	70/30	60/40	50/50	50/50
PRODUCTION COST	TARGET 0,90 €/Wp	TARGET 0.70 €/Wp	TARGET 0,70 €/Wp	TARGET 0,40 €/Wp



# Overview of partners and value chain in Brabant cooperation

Examples of companies using new PV integrated products







## What are we looking for in Eindhoven?

- Parties that show an interest in integrating flexible PV solutions into their end products (roof, facade, infrastructure, transport);
- Suppliers/developers of the materials (front and back-sheets, encapsulants, diodes, edge seal, tabs and cells);
- The OEM/integrator who soon wants to build and deliver the entire line (or separate front and backend);
- And dedicated developers of equipment that we need for GEN2 and GEN3 of the MC line (ALD equipment, sputter equipment, laser equipment, R2R equipment).



Pilot line at the Brainport Industries Campus Eindhoven



Mass customization research line

# ▶ Investing in companies

- ▶ We invest in startups and scaleups with the potential to generate economic growth, employment and social impact for Brabant

€ 150K–5M

Equity / Debt

- Impact investor
- Strong network
- Long term capital

€ 350M

Assets under management

# ▶ Investments: Philosophy

## Impact investor

- **Market conform** returns
- **Social KPIs**
- **Active** shareholder

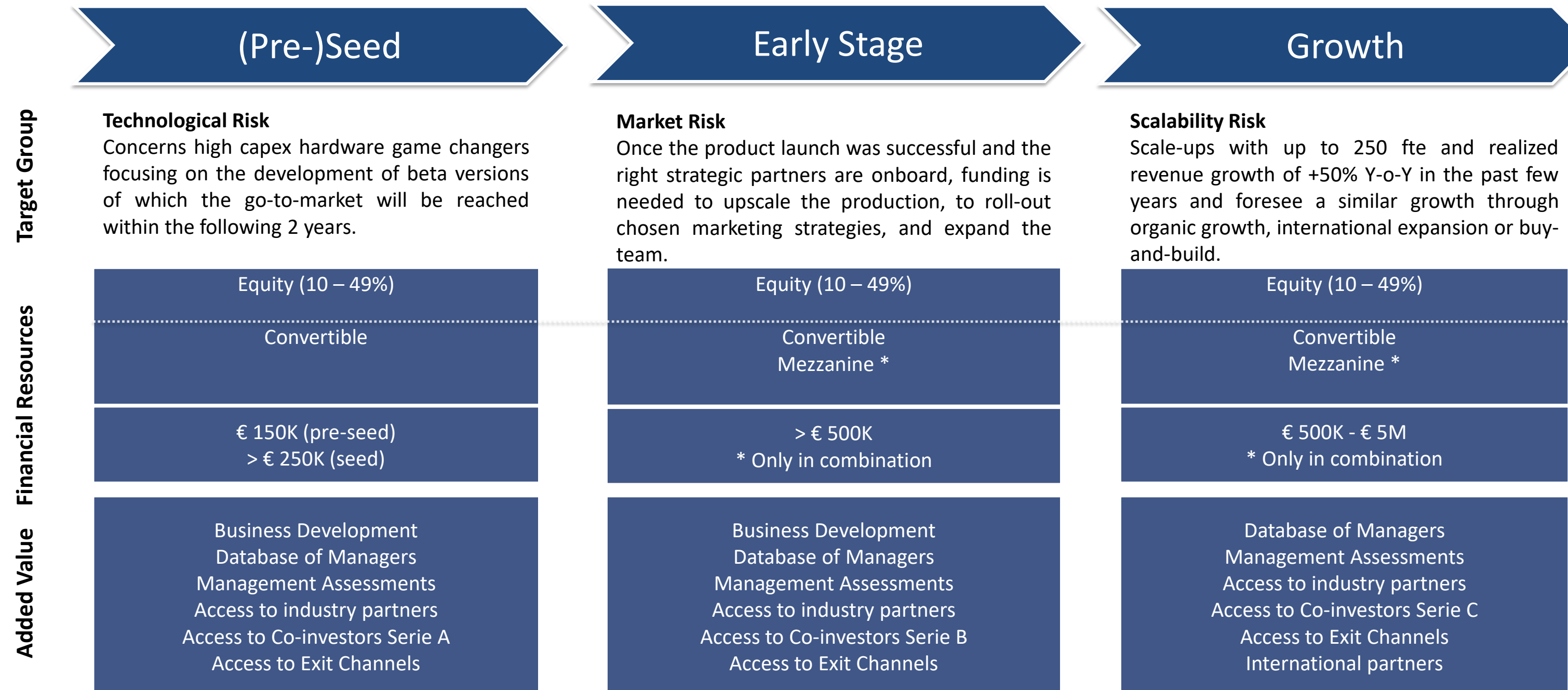
## Strong network

- **National & International**
- Active **partnerships** with **climate tech companies, research institutes** and **government**

## Long term capital

- **5 – 7 years** exit target
- **Minority** shareholder
- **Matching** with **private investors**

# ► Climate - Tech Value Offering



BOM Brabant Ventures is an independent honorable co-investor with long-term investment horizon aiming for both financial return and social impact. BOM Brabant Ventures is known for its large network with extensive relationships in government, industry and university.

# ▶ Investments: Strong Network

Capital



Knowledge



Skills

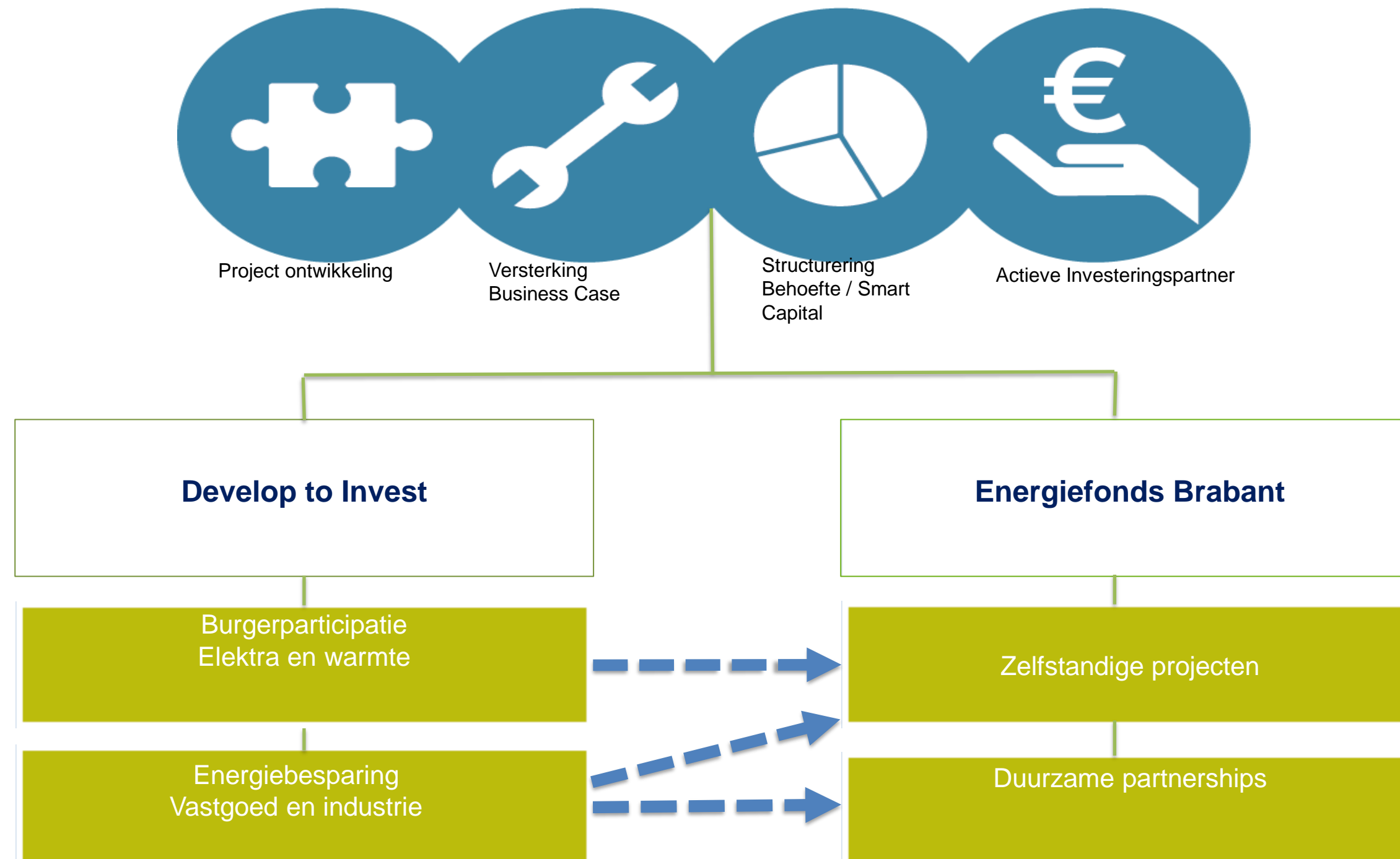


# Selectie van investeringen BOM Climate Tech



# ▶ Investing in projects

- ▶ We invest in projects with the potential to accelerate the energy transition in the region



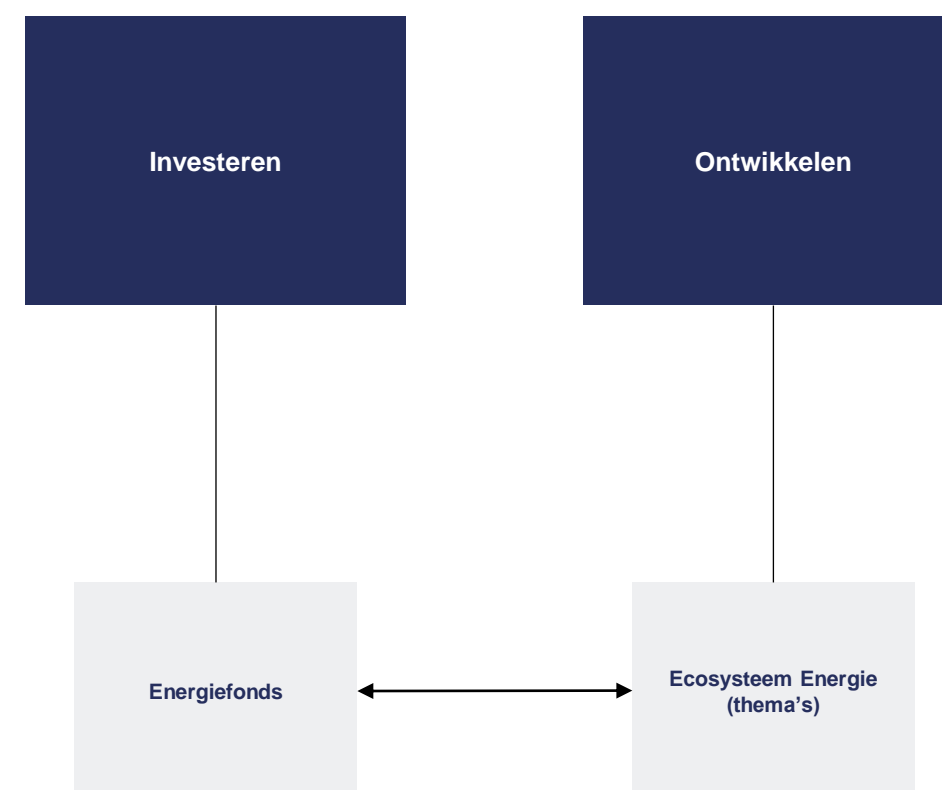
# ▶ Energiefonds Brabant

## Missie

- Versnellen van de energietransitie in Noord-Brabant
- CO2 reductie door ontwikkelen en financieren van rendabele projecten
- Inzet kennis en netwerk
- Revolverende inzet van kapitaal

## Investeringssteam

- Brede technologisch scope
- Projecten > 2 mio en bundeling van kleine projecten.
- Kosten investeringsteam worden terugverdiend uit rendement



## Ontwikkelingsteam

- Ontstaan uit behoefte **in markt** aan capaciteit om ideeën op te werken naar financierbare business cases.
- Inzet op:
  - Duurzame initiatieven in gebouwde omgeving
  - Duurzame warmte
  - Versnelling reductie CO2-uitstoot bij Industrie





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