

# GREEN DOSSIER 2023

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BASS Contribution to ESA's Green Agenda

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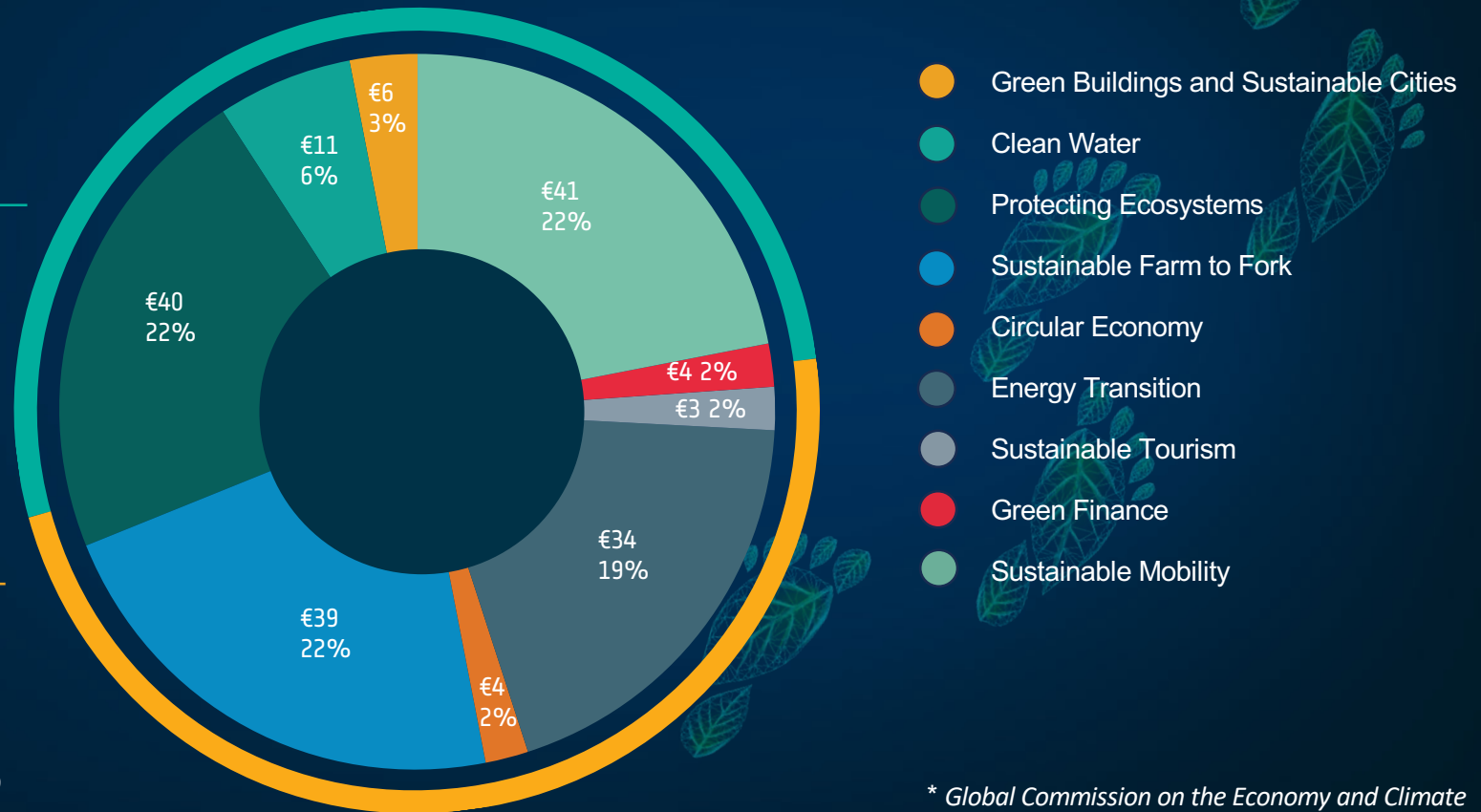
→ THE EUROPEAN SPACE AGENCY

It is estimated that abandoning the current high-carbon pathway in favour of a low-carbon future will bring \$26 trillion in economic benefit\*.

## Investment in BASS Green Activities since 2010

Market demand for green solutions, new regulations, space opportunities awareness and cross-sector collaboration will support future growth in green and sustainable investment

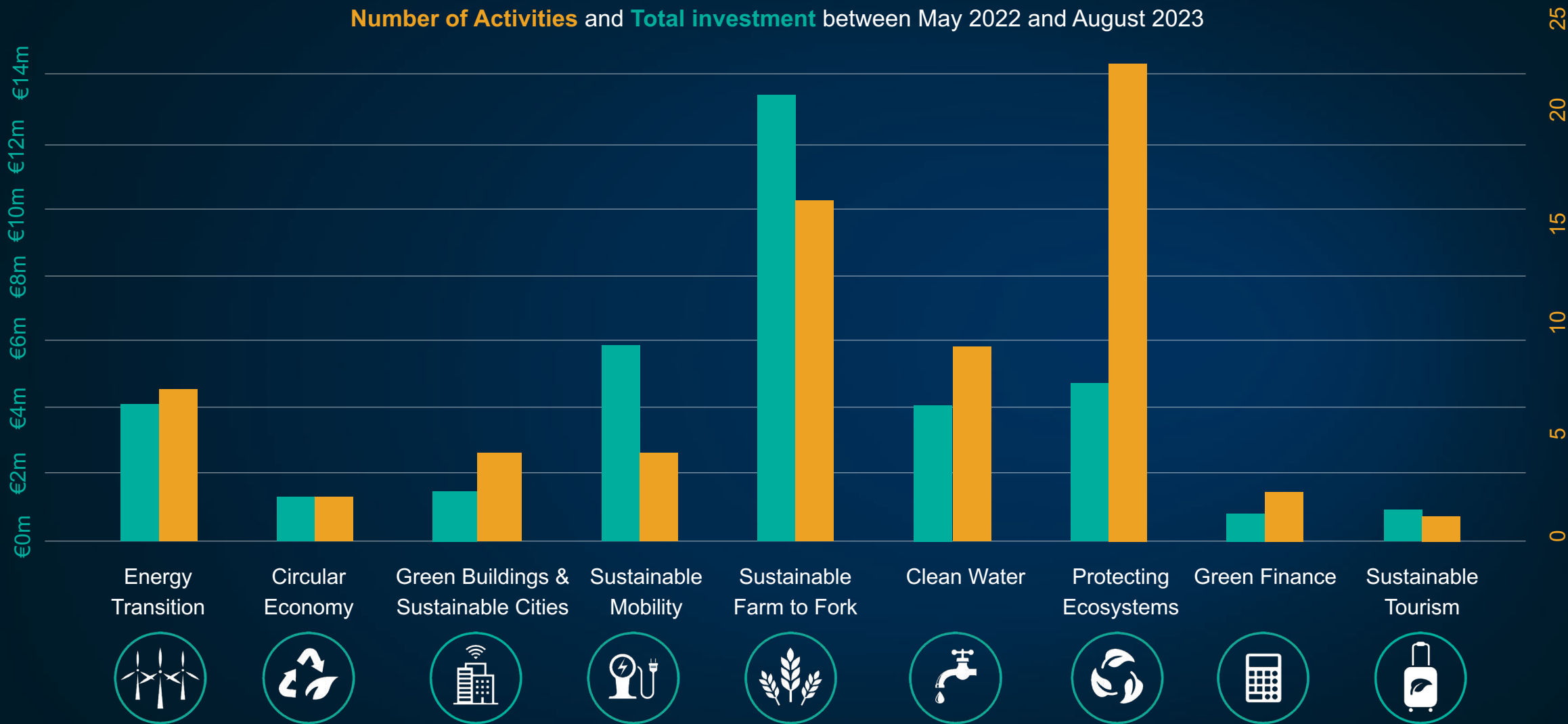
With **€183M** invested into 300 ideas the green transition now drives **48%** of all ESA Space Solutions activities portfolio



\* Global Commission on the Economy and Climate

# ACTIVITIES AND INVESTMENT

Number of Activities and Total investment between May 2022 and August 2023





## ECONOMIC

### Jobs

- Full time employment generated within company resulting from BASS project
- Jobs within home country
- Jobs within other European countries
- Jobs outside Europe

### Sales

- Direct & Indirect Sales
- Countries in which sales have been generated so far
- Total sales proportion within home country
- Total sales proportion in other European countries

### Patent

- Number of patents created

### Partnerships

- Number of partnerships generated within home country
- Number of partnerships generated in other European countries
- Number of partnerships generated outside Europe

### Customers, Products & Services

- Cumulated number of products or services sold to date
- Current customers to date

## GREEN

### Land

- Material waste reduction (tonnes)
- Habitat preserved on land (km<sup>2</sup>)
- Reduction of fertiliser used (%)

### Air

- Reduced energy consumption (kWh)
- Reduction in NO<sub>2</sub>(CO<sub>2</sub>) concentrations
- CO<sub>2</sub> emissions saved

### Water

- Reduction in untreated water flowing into water bodies (litres)
- Water saved (litres)
- Habitat preserved in water (km<sup>2</sup> or km<sup>3</sup>)



34

Activities  
implemented



41m

Euros invested  
20m from Industry



11

Member States

## AITO



- Reducing the cost of transport by **up to 90%**
- TeleRetail GmbH secured more than a dozen partnerships for the provision of AITO
- AITO stands to optimise the autonomous vehicles service for roads and exploit this area of the market

## DPP



- Cloud-based Digital Port Platform (DPP) providing data to achieve **increasing port performance and reducing environmental footprint**
- Predictions of ship arrival time at port, optimal routes of ships, changes in water quality, potential polluting events
- DPP will be piloted in ports in **France** and **Central America**, aiming at a wider deployment in the Northern European market and the Asiatic sector



55

Activities  
implemented



39m

Euros invested  
16m from Industry



15

Member States

## DROMAS



- **Used by the Czech and Slovakian agency SAIF** (State Agricultural Intervention Fund) to manage, deliver, and control the national and EU (CAP) subsidies to farmers - **> 2.5 MEuro revenues**
- **New farm management system** developed in partnership with CleverFarm
- **Field inspections** reduced from 5% to **2%**

## DIGI FARM



- Powering precision agriculture and in-field analytics through neural networks models
- **Reduced input costs by 15% and increase yield by up to 10%**
- **1.5 MEUR signed contracts in 2023**





**82** Activities implemented

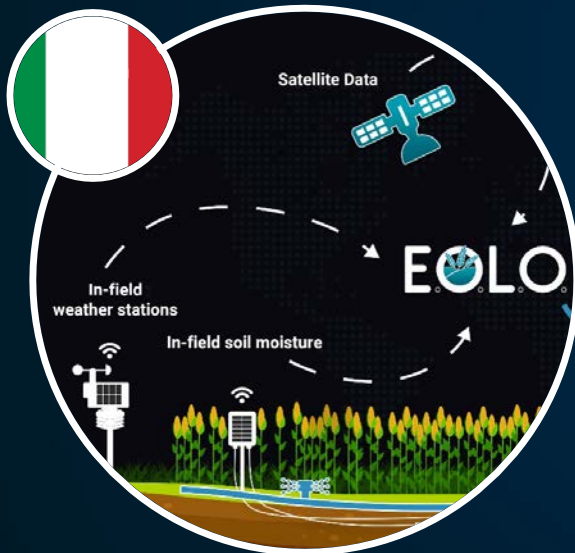


**40m** Euros invested  
19m from Industry



**14** Member States

## EOLO



- EOLO is able to provide a soil moisture map and vegetation indexes maps with a resolution of the order of tens of meters over the user's field
- Results show that EOLO irrigation management has led to **16% average water savings** compared to the traditional irrigation without impacting the yield

## UNDERSEE



- Using **Sentinel-2 & 3 datasets**, UNDERSEE allows environmental agencies and aquaculture producers to access water data and forecasts and set up SMS alerts for thresholds and anticipated risks
- This alert led aquaculture producers to take preventive actions which led **to a reduction in stock losses of their farms up to 270 kEUR a year**



**47** Activities implemented



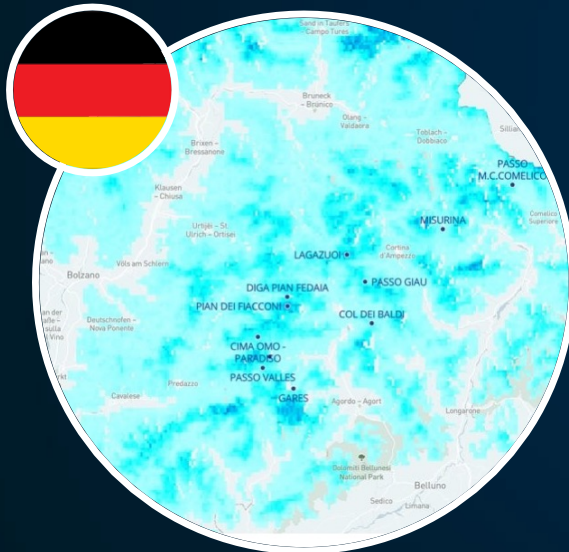
**34m**

Euros invested  
16m from Industry



**15** Member States

## SNOWPOWER



- **SnowPower** is poised to transform the management of hydropower plants in mountainous regions
- The service will contribute to the **decarbonisation of the energy sector** easing the management of hydropower and reducing the carbon footprint through the development of affordable, clean energy
- **20% of improved performance** in terms of estimation of snow related parameters

## VIDA

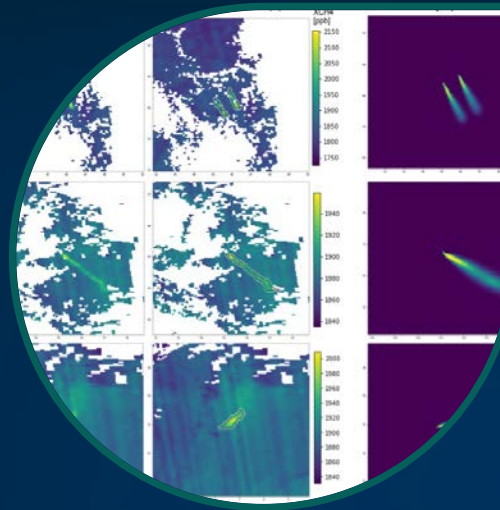


- **VIDA AI solution** enabling off-grid electrification planning at scale
- VIDA exporting to **20 different countries** mainly sub-Saharan but also in Europe and Asia
- VIDA has attracted **€3 million** of investment from Cusp Capital
- The funding will enable VIDA to scale its operations, expand its product offering and build its presence in key markets worldwide





- Kayrros has developed and deployed a **Methane Watch platform** capable of identifying and quantifying the sources of methane to support the detection of leaks. This platform is an important aid to support the **decarbonisation of the energy industry**
- Data from Sentinel 5P, Sentinel 2 and Sentinel 1 plus other satellite data sources are combined to detect and monitor methane emissions



**“The amount of methane is increasing at record rates”**

## Global Methane Pledge by 2030

150 countries have agreed to cut their methane footprint **by at least 30%**. Methane Watch is well placed to accelerate the transition and to attract resources from private and public actors

**2021**

### COP26 (Nov)

Kayrros Contract signed with the International Methane Observatory (IMEO) of UN Environment Programme

**2023**

### Entered into the portfolio of NewSpace Capital (June)

The company has recently signed a contract with **Bloomberg** to support journalism investigation on environmental matters

The impact of the work has led to several awards and widespread media coverage

**2030**

### Global Methane Pledge by 2030

Long-term vision is to deploy a fully-fledged platform on digital monitoring, reporting and verification (MRV)

Bent curve of Methane emission

# FLAGSHIP for WATER



- **150 companies** have the potential to influence **1/3 of global water use**
- WRC: A collection of global companies and their CEOs have joined forces to accelerate investments and adopt solutions related to the water-climate crisis
- With this support, the services will be scaled to **100+ basins by 2030 to multiply the green impact and widen the adoption**



2021

CEO Water Mandate sign an MOI with ESA at COP26

2022

ESA BASS launch the 'Digitising Water Resilience' Call in collaboration with CWM and WRC

2023

Procurement of the contracts  
Press release on the ESA – WRC collaboration at COP28 (Dec)

2024

Water Resilience studies run with involvement from WRC  
ESA workshop with CWM, WRC and activity teams at World Economic Forum spinoff event (Jan)

2025-26

Expanding water resilience solutions across priority basins via ESA Projects

2026-30

Global roll out across 100+ basins with commercial backing from WRC companies



CEO WATER MANDATE



# PARTNERS





# GREEN PARTNERS AND TASK FORCES



Over the past year, ESA BASS has set up and launched a number of Task Forces, which bring together major stakeholders in a market to identify priority areas, increase the impact of space-based services in the sector, and generate positive green and economic results.

## ENERGY TASK FORCE

### Members



## CITIES TASK FORCE

Launched on 26 September with the following members:

**Cities signed:** Amsterdam, Bologna, Essen, Naples, Taranto, Torino, Venice

**City Networks:** ICLEI – International, C40 – International, Covenant of Mayors – Europe



## MARITIME TASK FORCE

Launch 30 January 2024 at Euromaritime, Marseille





## 1 PARTNER AND TASK FORCE

- Raise awareness and identify priorities
- Launch calls
- Facilitate adoption and scaling
- Involve new members



## 2 NEW SEEDS

- Grow new seeds and address all areas of Green Transition
- Promote innovation and transformation through collaboration with non-space accelerators committed to driving sustainable innovation



## 3 KPIs FOR MEASUREMENT

- Measure green impact
- Focus on result-oriented approach



## 4 CONTRIBUTION TO S4GF Accelerator

- 'Seeds' as space-based services for the decarbonisation of society
- 'Sectorial Task Forces' to accelerate the use of space solutions in society and economy