

Overcoming regulatory and structural challenges in climate adaptation finance

Workshop – November 20th, 2024

14:00 – 17:00 (CET)

CLIMATEFIT



The event will begin soon



Overcoming regulatory and structural challenges in climate adaptation finance

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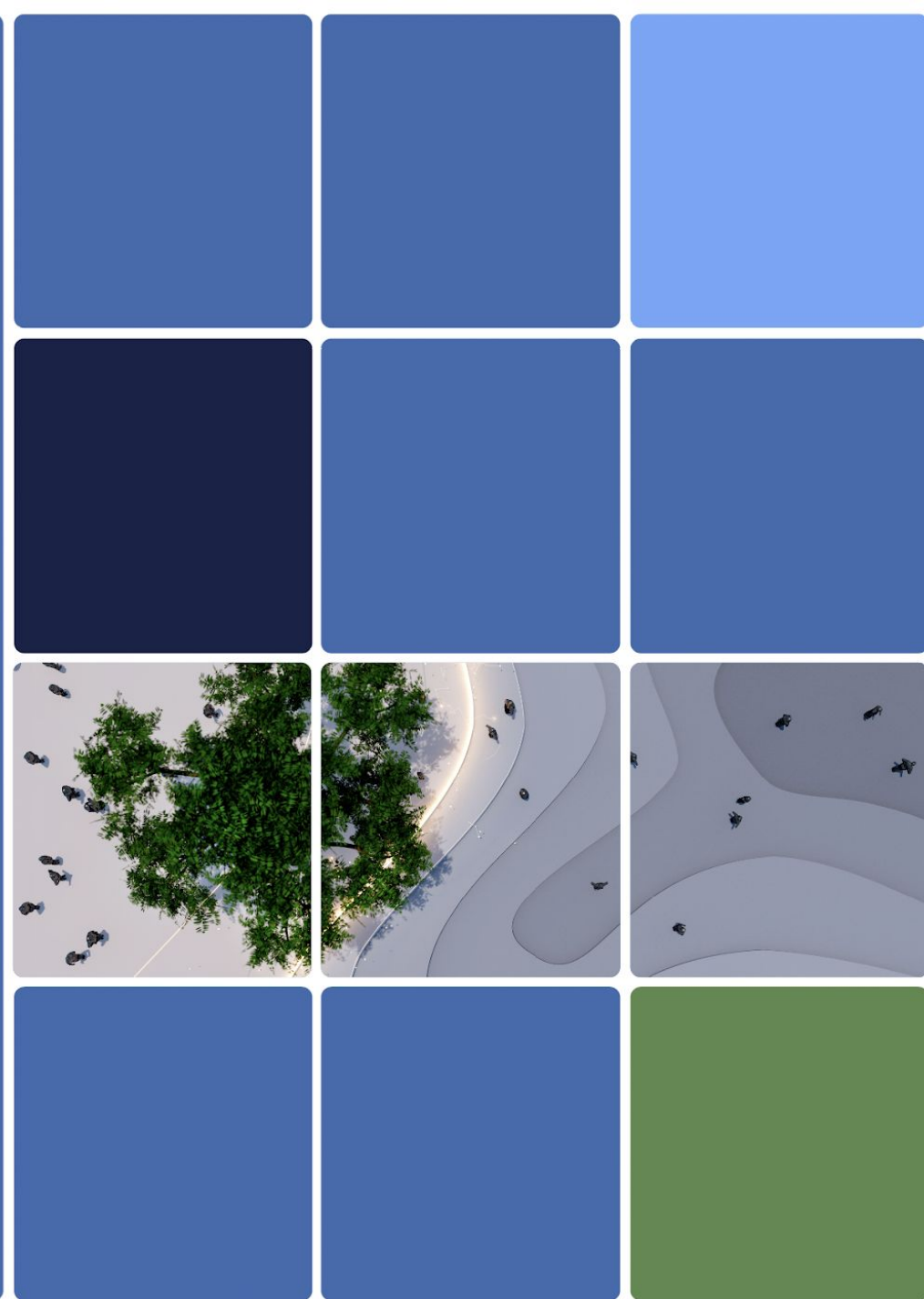
14:00 – 17:00 (CET)

CLIMATEFIT



Davide Chiaramonte & Sara Tari

ItaSIF - Italian Sustainable Investment Forum



Programme – Part I

14:00-14:15	Welcome and introduction Daide Chiaramonte and Sara Tari - <i>Italian Sustainable Investment Forum</i>
14:15-14:25	Latest development from COP29 Swan Senesi - Government Partnerships for Climate at UN World Food Programme
14:25-14:40	EU adaptation finance opportunities Isabel Reuss - Senior Climate and Social Advisor at <i>Italian Sustainable Investment Forum</i>
14:40-15: 40	Scaling climate adaptation: best practices and success stories Panel discussion Moderator: Varnika Srivastava - <i>University of Antwerp</i> Panelists: <ul style="list-style-type: none">• Alexandra Gropp - Head of Placement, Debt Capital Markets at Finint to present Viveracqua Hydrobond case• Greg Cannito - Chairman of the Board at Corvias Infrastructure Solutions to present Clean Water Partnership case

Programme – Part II

Breakout Room 1: **Aligning finance with climate adaptation policy requirements**

Moderator: **Alessandro Asmundo** – ItaSIF (Italian Sustainable Investment Forum)

Discussants:

Giulia Balugani - Sustainability Manager at *UnipolSAI Insurance*

Raffaele Della Croce - Co-Director at *Singapore Green Finance Centre* and Advanced Research Fellow at *Imperial University*

Discussion session with the participants

Breakout Room 2: **Mobilizing private capital for adaptation: the role of PPPs**

Moderator: **Giulia Galluccio** – CMCC Foundation (Euro-Mediterranean Center on Climate Change)

Discussants:

Pablo Nunez - Specialist Associate: *Infrastructure and Finance at Global Infrastructure Basel*

Gisele Saralegui - Global Climate Head for the *International Finance Corporation's PPP Advisory*

Anita Simon - Deputy CEO for Sustainability and Circular Economy of the *ALTEO Group*

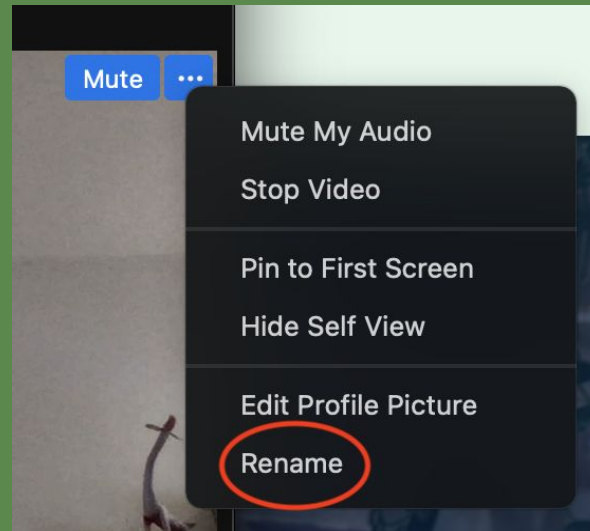
Discussion session with the participants

Ask our speakers

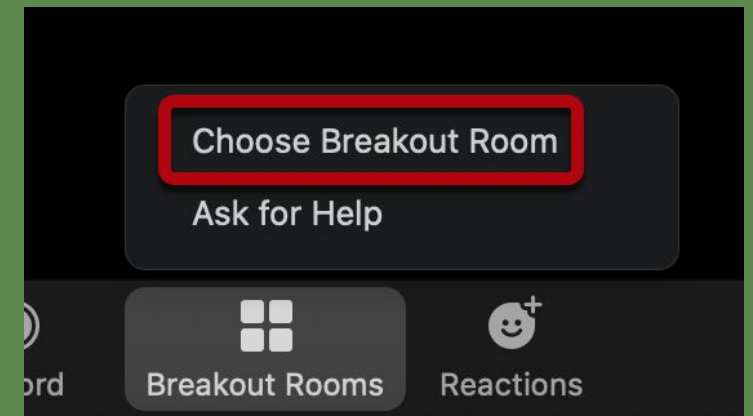
RAISE YOUR HAND for asking questions to the speakers

Use the CHAT to write comments and considerations to share with all participants

Rename yourself



Choose your room



CLIMATEFIT in a nutshell

CLIMATEFIT addresses the lack of finance in climate adaptation. It does so by providing critical insights, building the capacities and facilitating collaboration between governmental and financial stakeholders.

Local and regional governments are supported in attracting and orchestrating public and private funding and financing.

Banks, investors and insurers become equipped to identify and access investment opportunities that contribute to climate adaptation.



Financing adaptation to climate change

CLIMATEFIT aims at supporting innovative financing mechanisms for adaptation to climate change by providing key insight into financing sources and strategies. The project will engage its experts, Public Authorities and Financing & Investment Entities in the co-creation of:

20

Innovative investment
strategies

10

Concrete and scalable
investment plans

4

Bankable transformational
investment cases

European Outreach

By 2026 the 4 leading territories - France, Belgium, Italy and Romania - will demonstrate how innovative financial mechanisms can serve climate adaptation bringing benefits to both governmental and financial stakeholders.



Project's first results



- Adaptation Investment Landscape Report (views of PAs and FIEs)
- International best practices to inspire CLIMATEFIT work



- Capacity building direct to PAs and FIEs
- First webinar online **“Resilient futures: unlocking financial strategies and mechanisms for climate adaptation”**



- Methodology to build investment strategy for PAs that will be soon applied in the CLIMATEFIT territories



- Draft white paper for policy makers and practitioners
- White paper with recommendations to PAs and FIEs on how to unlock public and private financing direct to adaptation (end of the project)

Opportunities for Financing and Investment Entities

Discover resilient investment opportunities

Benefit from the knowledge and experiences of your peers

Shape the project outcomes with your expertise and requirements

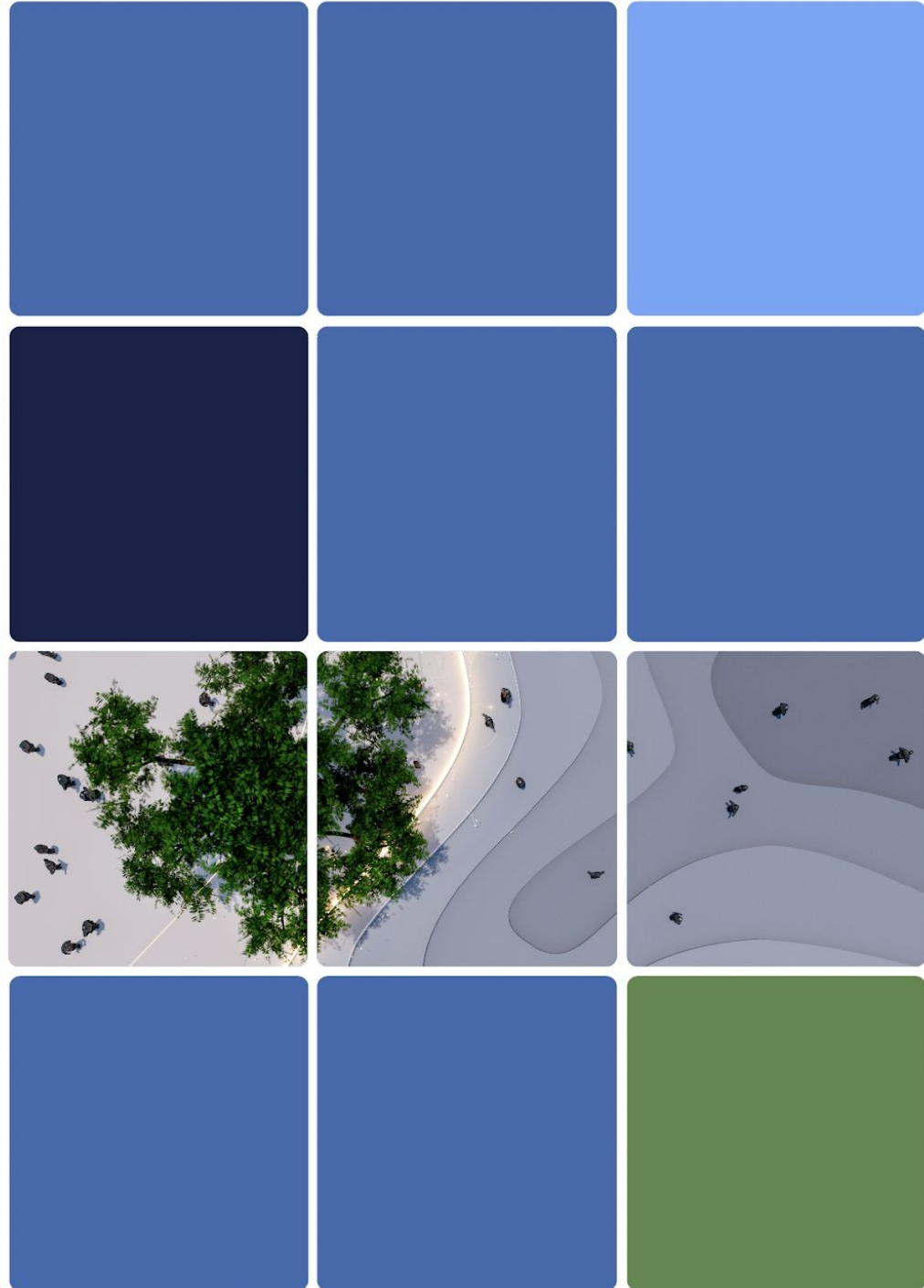
Participate in LRTs to foster the collaboration and knowledge exchange with local stakeholders

Gain exclusive access to leading practices and innovative solutions developed by CLIMATEFIT to align your portfolio with climate change impacts and meet regulatory standards



Swan Senesi

Government Partnerships for Climate at UN
World Food Programme





EU Adaptation finance opportunities

Isabel Reuss

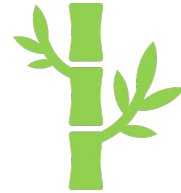
Senior Climate and Social Advisor ItaSIF



ItaSIF Italian Sustainable
Investment Forum

European Investment Bank Survey

Key findings



94% of EU respondents say it is **important for their country to adapt to climate change**, while **50%** say it needs to be **prioritised**.



86% believe that **investing in adaptation can create jobs and boost local economies**.



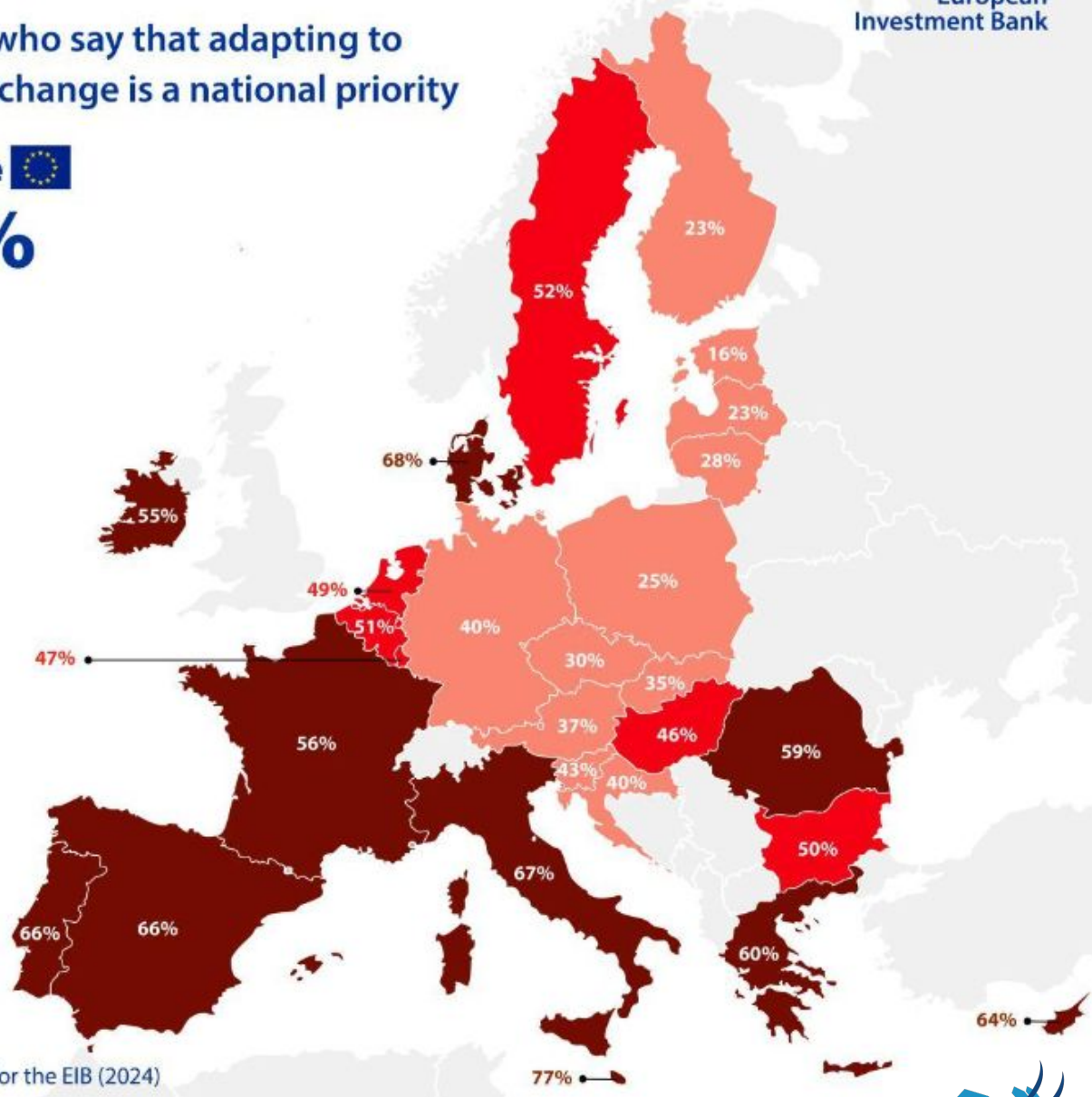
85% agree that **spending on climate adaptation is required urgently to avoid even higher costs in the future**



EIB Climate Survey

People who say that adapting to climate change is a national priority

Average 
50%



Source: BVA for the EIB (2024)

Source: [94% of Europeans support measures to adapt to climate change, according to EIB survey](#)



Is it urgent ?

First-hand experiences of **extreme weather events add to the sense that urgent action is required:**

- **80%** of EU respondents (**89%** in southern European countries) have experienced **at least one extreme weather event** in the last five years.
 - **55%** have suffered from extreme heat and heatwaves (that figure rises to **73%** in Spain and **71%** in Romania).
 - **35%** have experienced droughts (**62%** in Romania and **49%** in Spain)
 - **34%** have seen heavy storms or hail (**62%** in Slovenia and **49%** in Croatia).

Extreme weather events have serious, wide-ranging consequences:

- **68%** of European respondents reported having suffered at least one direct consequence of an extreme weather event.
 - **21%** were impacted by transport disruptions,
 - **20%** by power cuts or energy supply issues
 - **20%** by health problems,
 - **19%** saw forests or natural spaces near their homes destroyed.

Impacts

EIB Climate Survey

People who say they will have to move to a less risky or a cooler place because of climate change

Average 
40%



Source: BVA for the EIB (2024)



Europeans are well aware of the need to adapt:

- **72%** of EU respondents (**81%** in southern European countries) recognise that they will have to adapt their lifestyle due to climate change.
- **35%** think they will have to move to a less climate-vulnerable place (whether locally or abroad) to avoid floods, forest fires or other extreme weather events.
- **28%** say they will have to move to a cooler region or country.

Source: [94% of Europeans support measures to adapt to climate change, according to EIB survey](#)



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Taxonomy as an agent of change!

	Taxonomy-aligned investments			
	# CO's	# CO's	Invest. (€bn)	Invest. (€bn)
	2022	2023	2022	2023
Utilities	62	67	109	132
Cons. Disc.	66	86	35	45
Industrials	207	243	22	27
Energy	26	32	11	23
Real estate	35	41	4	5
Other	212	254	11	16
TOTAL	608	723	191	249

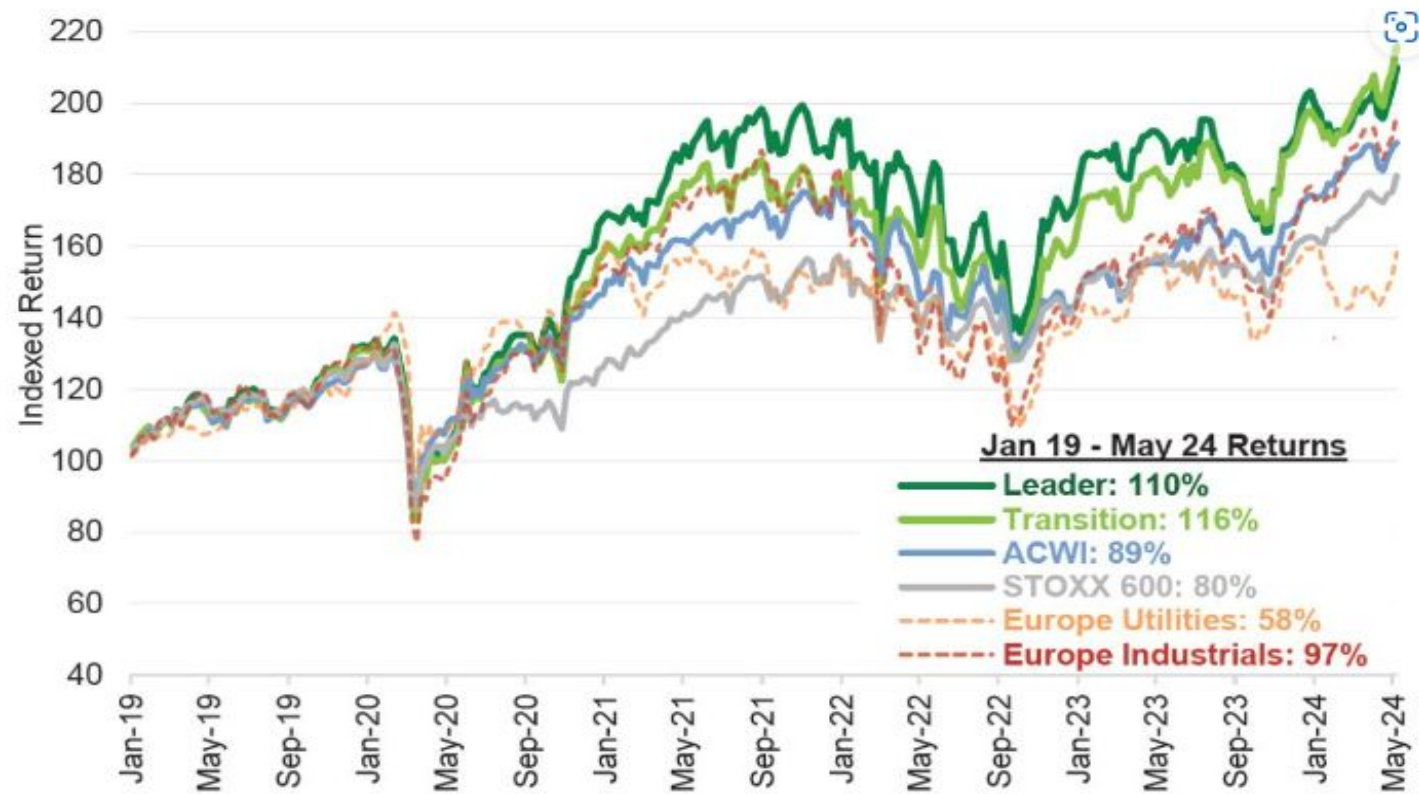
Companies are increasingly using the Taxonomy to guide and showcase their taxonomy-aligned capital investments in key sectors to meet the Green Deal targets

Stock market data indicates that alignment to the Taxonomy correlates with positive market performance as companies disclosing high Taxonomy figures have outperformed the overall market in recent years.

Taxonomy as an indicator of performance?

EU Taxonomy Leader and Transition companies have outperformed the STOXX 600 and MSCI ACWI since 2019

Equal-weighted weekly indexed TSR from 1 January 2019 to 13 May 2024



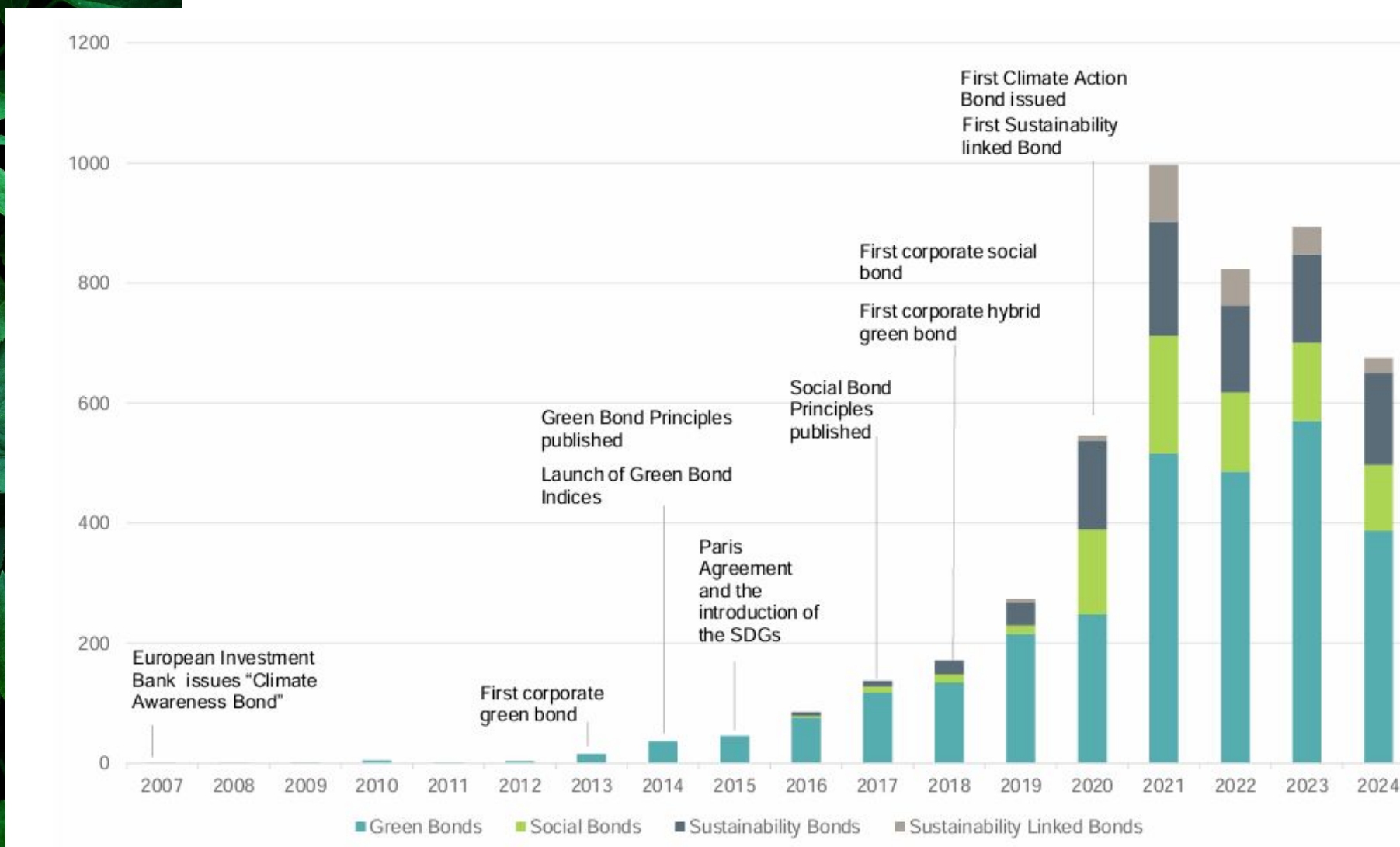
Source: FactSet, LSEG, Goldman Sachs Global investments Research; The EU Taxonomy's uptake on the ground - European Commission



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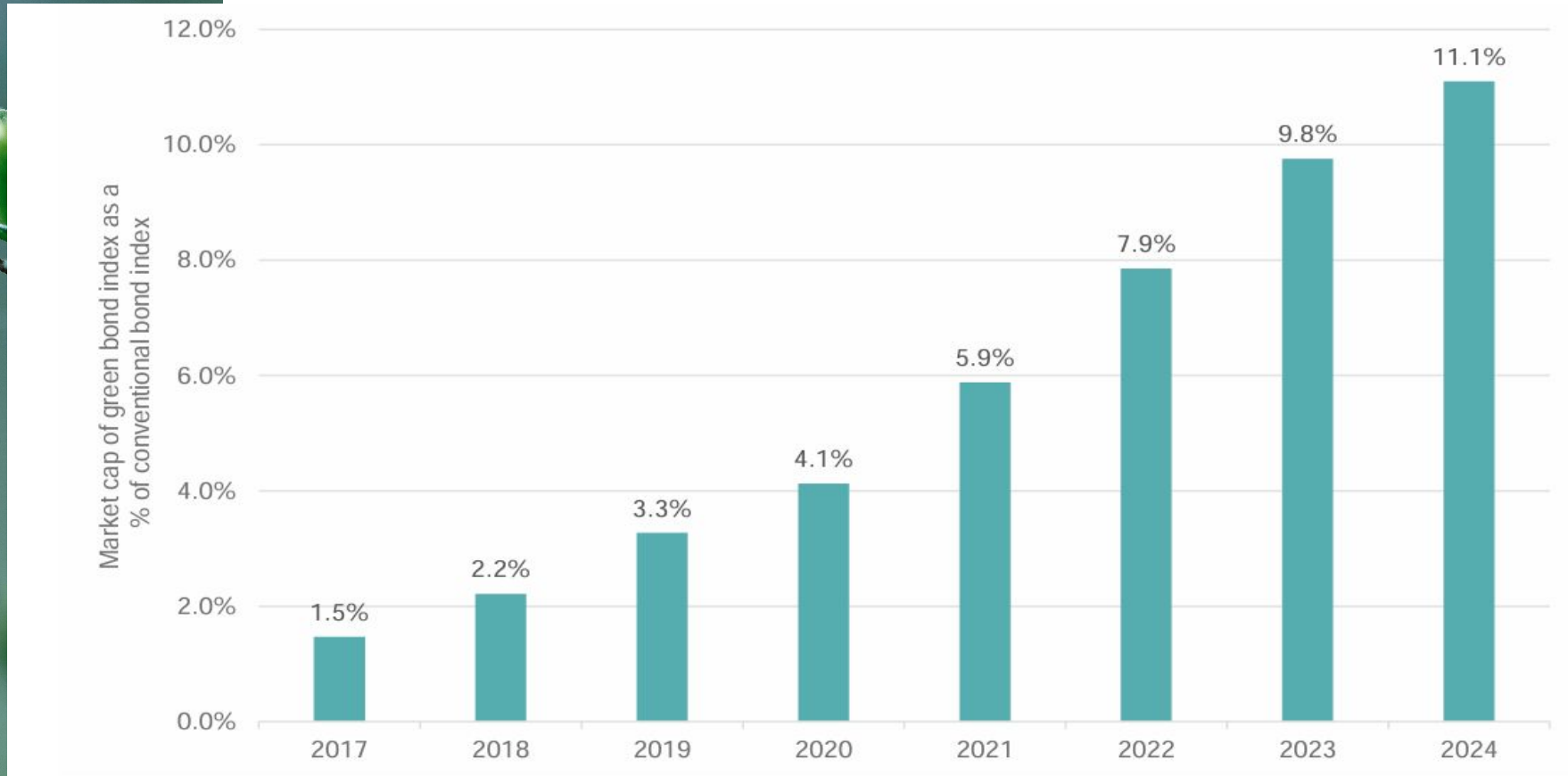
Sustainable bond market issuance volume

(per year in USD bn)



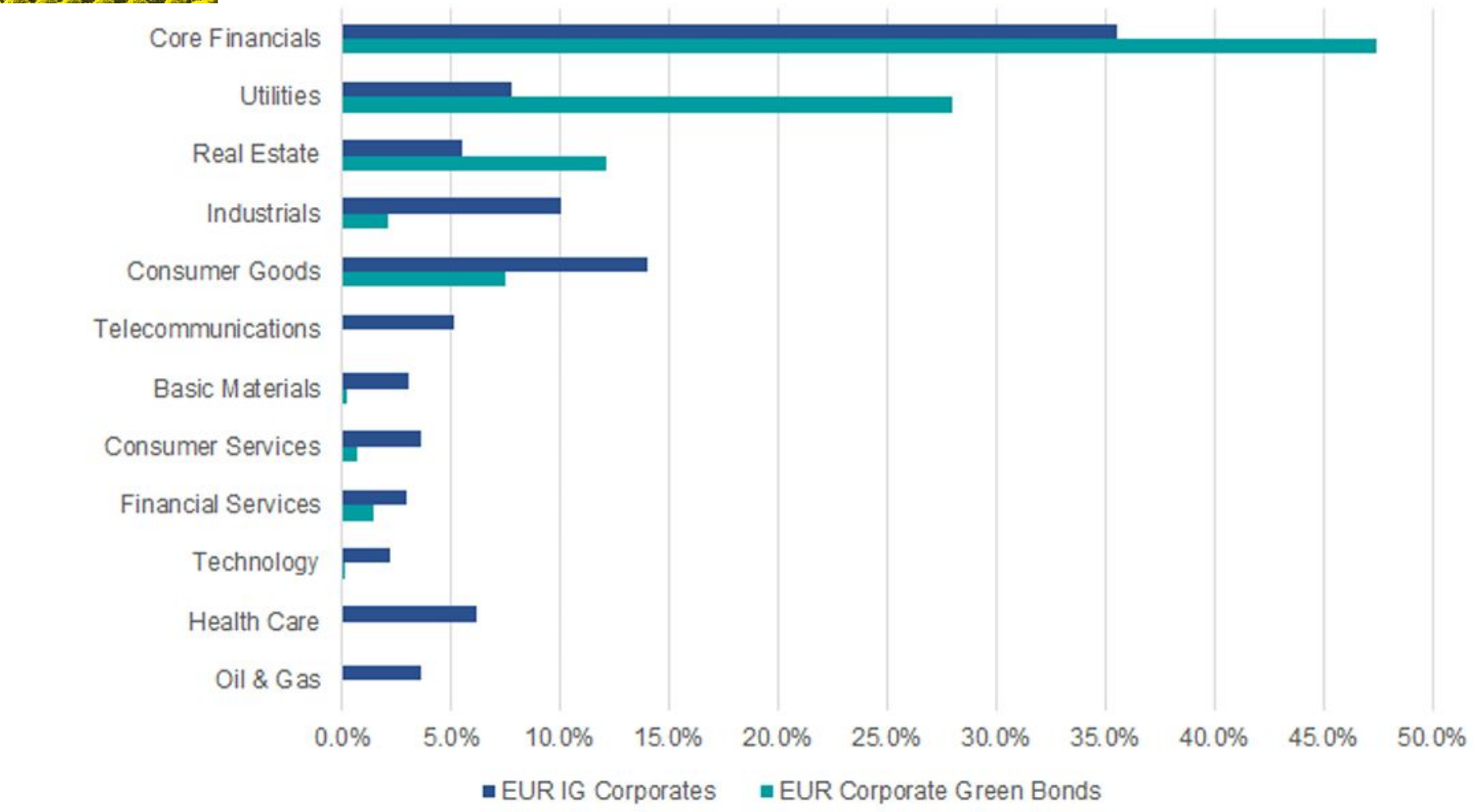
Source: Barclays Research, Bloomberg Finance LP (August 2024). Data up to September 2024 includes estimates from Bloomberg Finance

Market cap of corporate green bonds as percentage of conventional corporate bonds



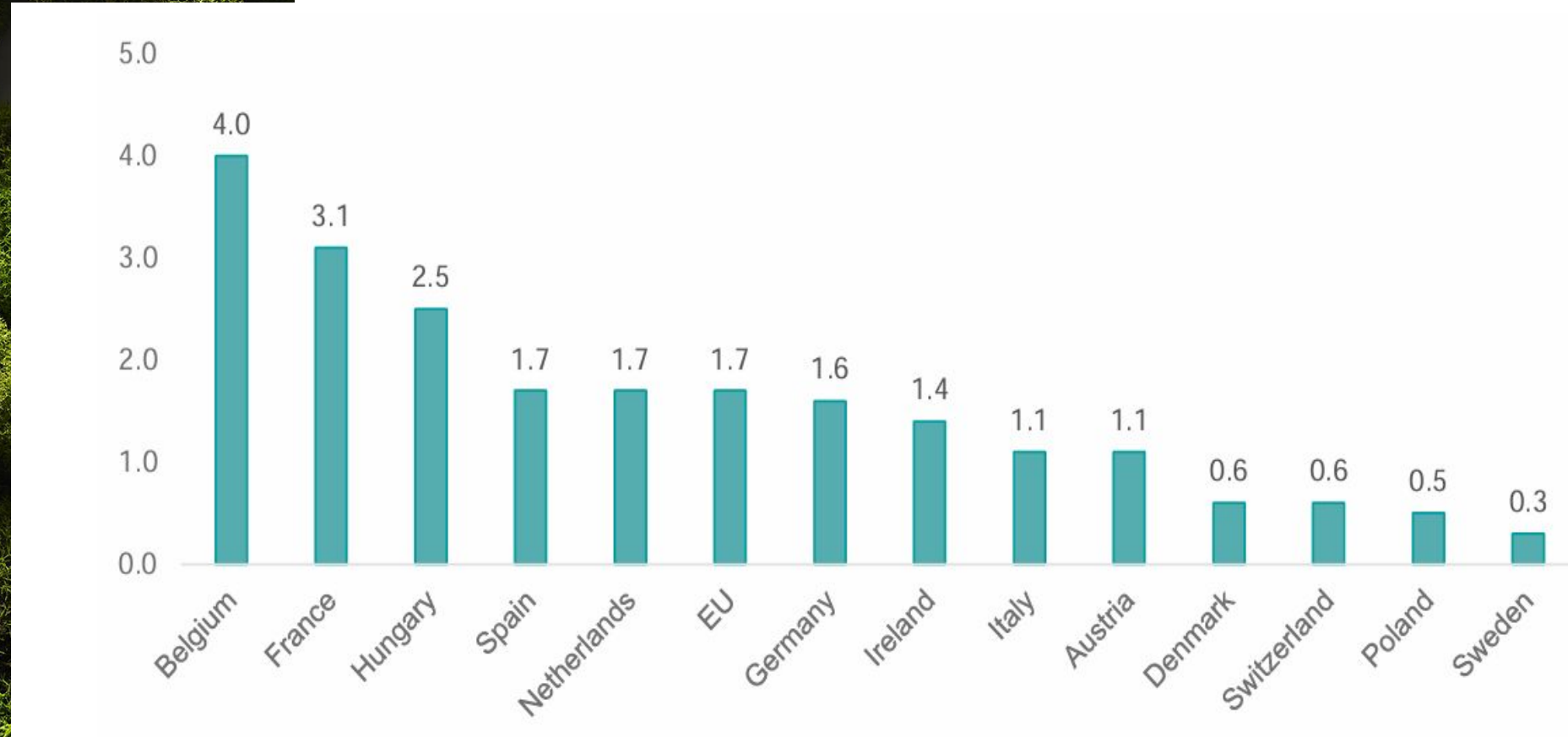
Source: Bloomberg Finance LP (Data refers to August 2024 and previous years relate to end year). Conventional Index: Bloomberg Euro Aggregate Corporate Total Return Index Value Unhedged EU (LECPREU Index). Green bond: Bloomberg MSCI Euro Corporate Green Bond 5% Capped Index (I35197EU Index)

Euro IG Corporates vs Euro Corporate Green Bonds



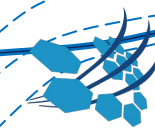
Source: Euro Corporate IG = BBG Euro Aggregate Corporate Index (LEURAGCORP); EUR Corporate Green Bonds = Bloomberg Barclays MSCI Euro Corporate Green Bond 5% Capped Index. As of August 30, 2024

Stocks of green and sustainability general government bonds* across Europe as a percent of national GDP

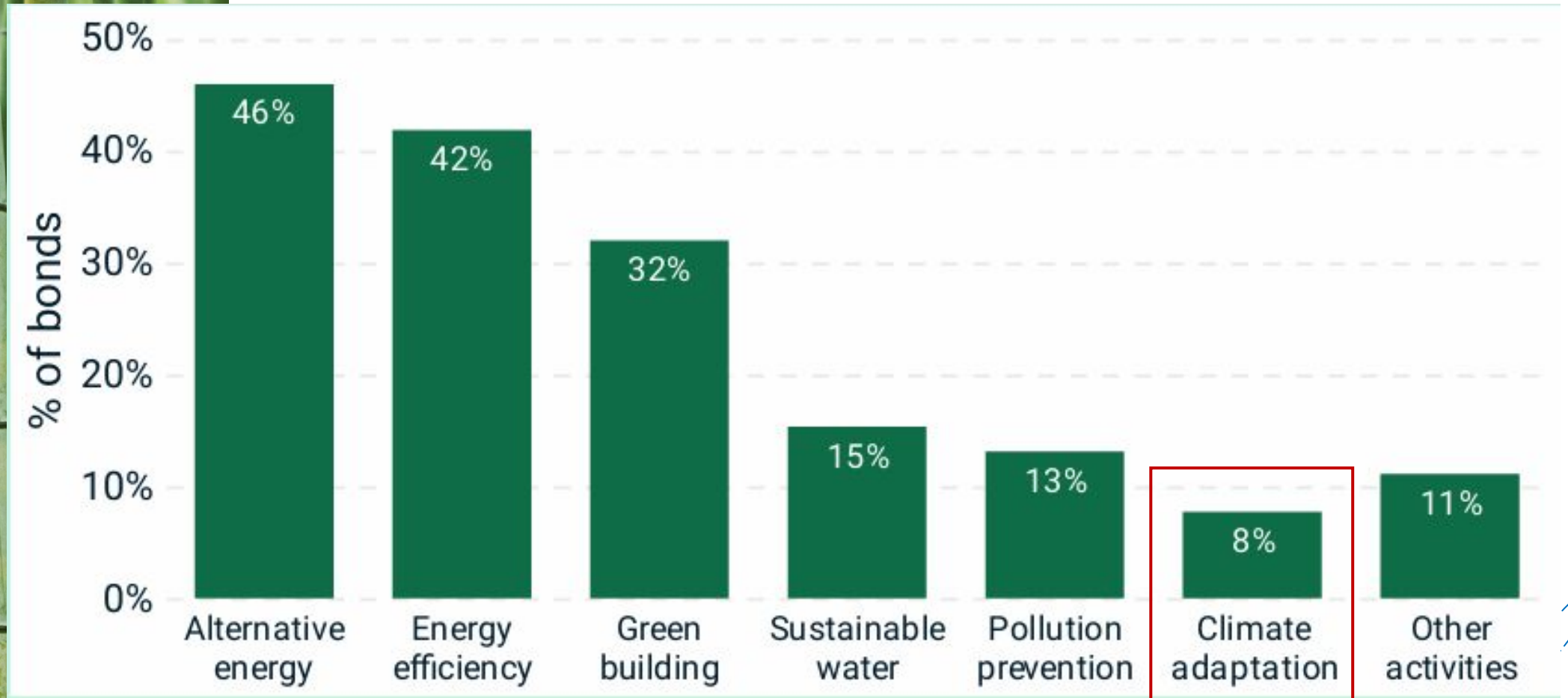


* Sustainability bonds are where the proceeds can be either used for an environmental or social project

Source: Eurostat (2023). As of 2022, some European countries have not issued government green bonds including Finland, Portugal, and Greece



Green Bonds' use of proceeds distribution



Data as of Aug. 26, 2024. Based on green bonds assessed by MSCI ESG Research (n=3,195). Please note that a green bond can be used to finance projects across multiple eligible project categories. Source: MSCI ESG Research





Paper: Investigating bond price reactions to climate-related events

Green Bonds are less exposed to climate risks so investors' preference for Green Bonds should increase after natural disasters and investors' willingness to pay for Green Bonds increases, while the yield on Green Bonds decreases

Main hypothesis:

- Green bond yields decline relative to traditional bond yields after a natural disaster
- The effect is stronger as the severity (impact intensity) of the natural disaster increases



Paper: Investigating bond price reactions to climate-related events

Conclusions

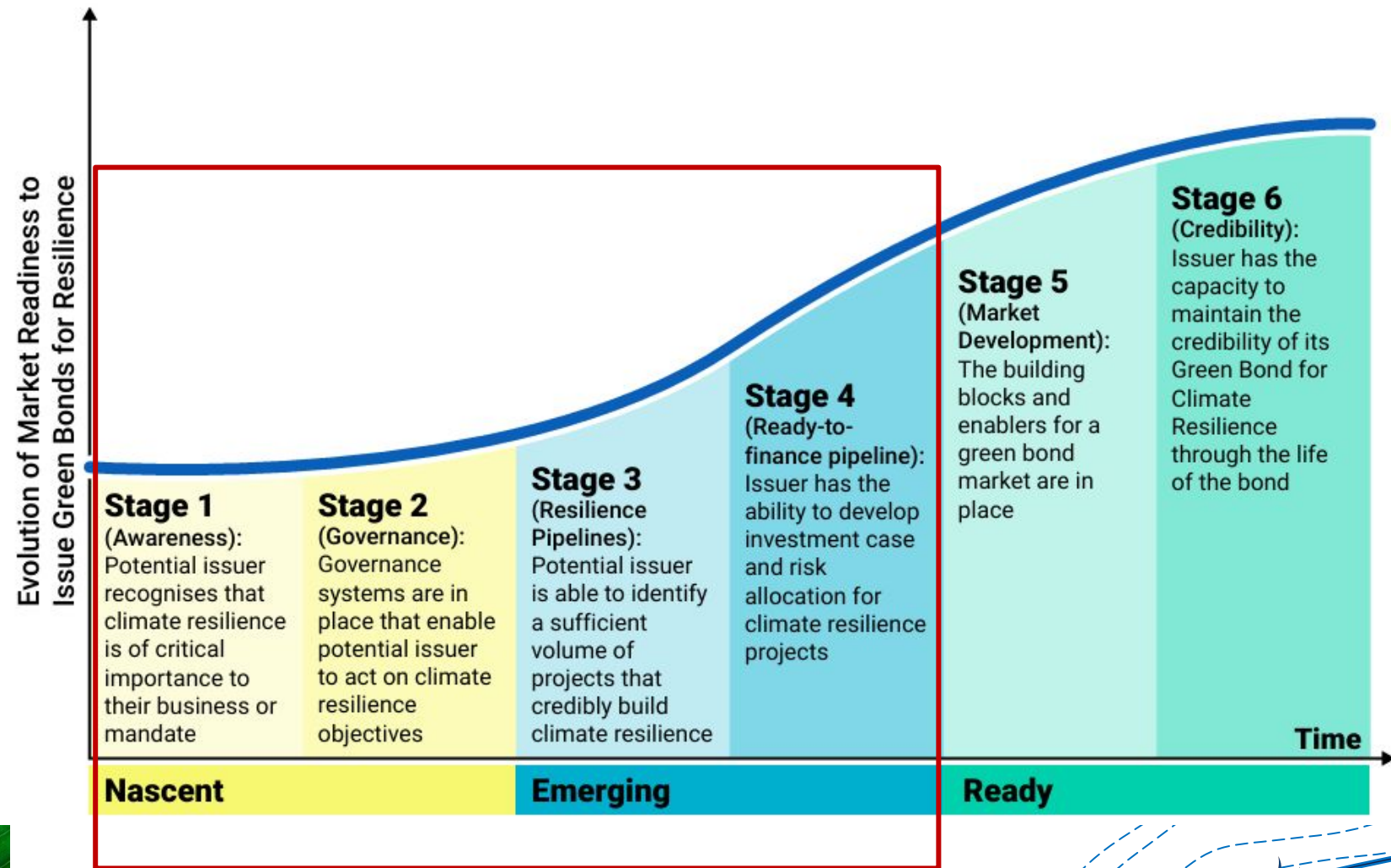
Consequences immediately after a natural disaster

- Green Bonds: decrease in returns compared to traditional bonds
- Magnitude of effect: larger after more severe natural disasters
- Demand for Green Bond: increases immediately after natural disaster

Mechanisms behind price reactions

- Both rational and behavioral mechanisms
- Yield Spread: increase in the spread that does not fully return to pre-disaster levels
- Temporary component: part of the spread decreases after a few months
- Behavioral effect: weaker impact on prices with repeated catastrophes

Capacity Development Stages for Issuing a Green Bond for Climate Resilience



Source : Global Center for Adaptation Green Bonds for Climate Resilience

Consolidate / Aggregate fragmented projects

Mini Bonds Green

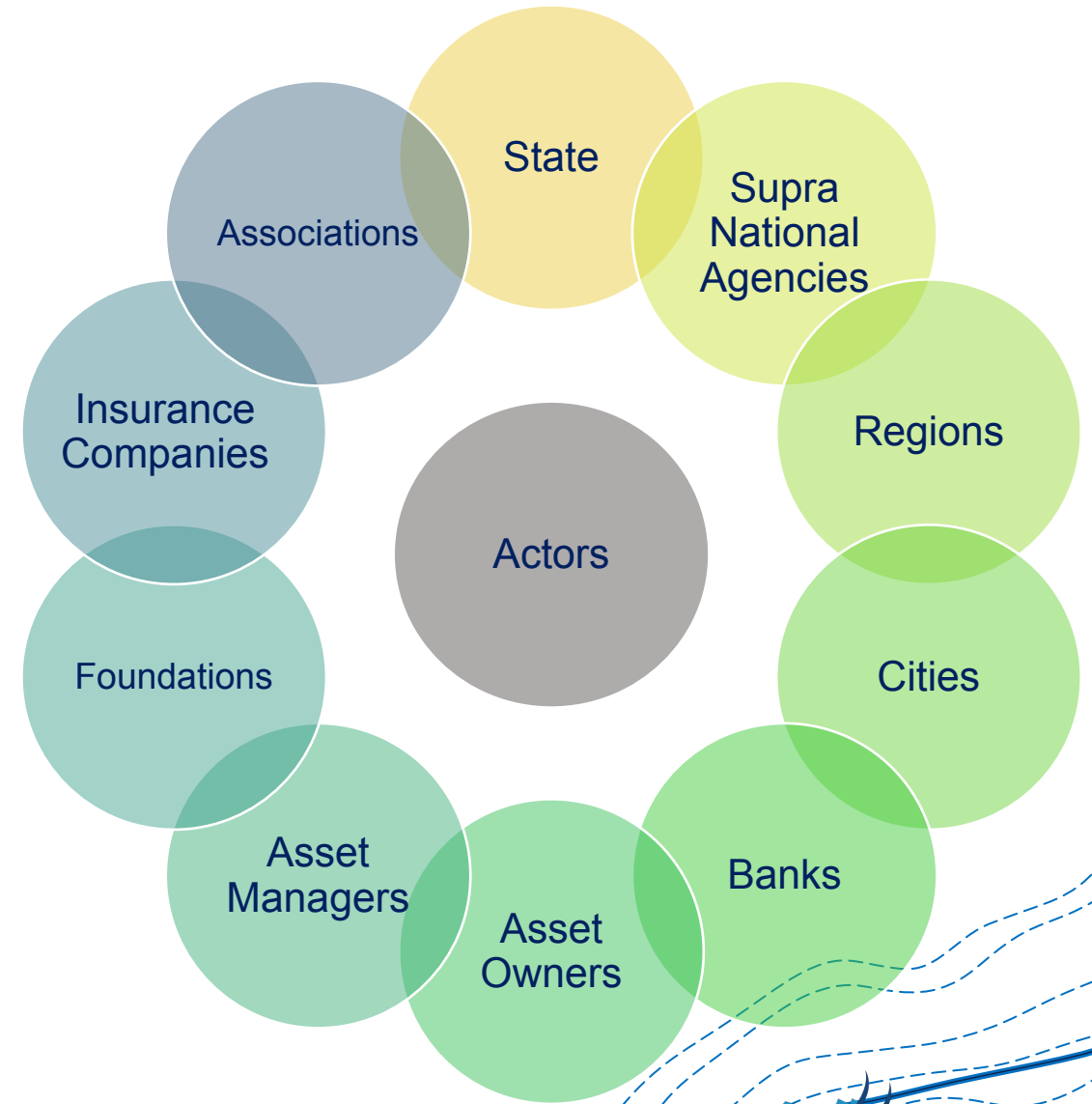
- Medium / long-term bonds or debt securities
- Issued by unlisted entities
- Intended for development plans, extraordinary investment transactions or refinancing
- Turnover must exceed 2Mio / the workforce must consist of at least 10 employees
- Annual reporting

Basket Bonds

- Basket bonds are joint issues of minibonds
- By entities that belong to one specific cluster
- Either on the same subject / project
- Or operating in the same geographical area

Everyone has a role to play !

- Role as Guarantor
- Create Tax Incentives/Credits
- Create access to credit
- Devise targeted tools / instruments
- Direct debt / equity investment
- Connect data and financial instruments
- Create networks, collaborations, alliances
- Help align data requirements
- Educate
 - Simplifying the language
 - Explaining the importance of reporting





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20131 Milano

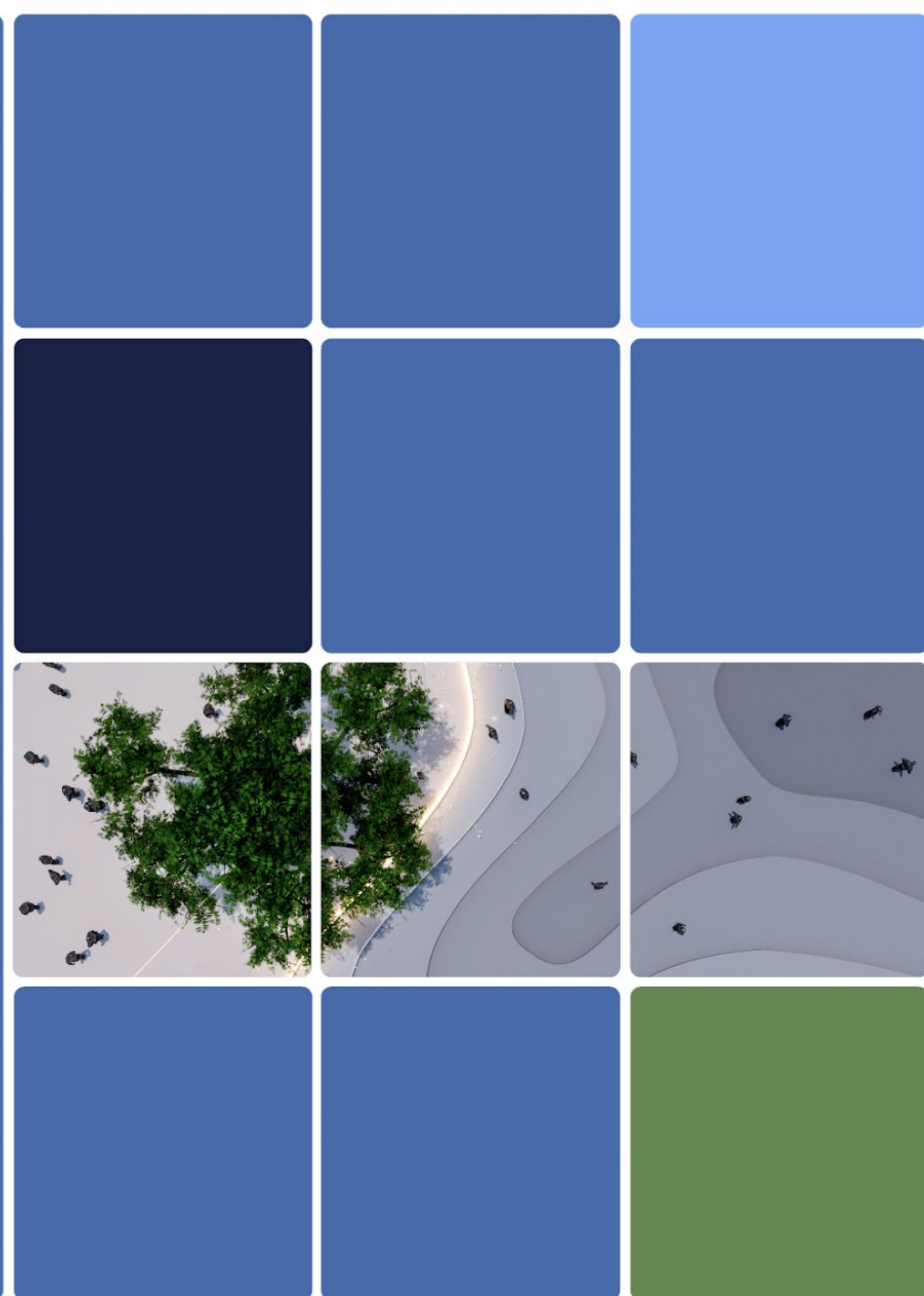
Via Pasquale Stanislao Mancini, 2
00196 Roma

+39 02 30516024
info@finanzasostenibile.it

Panel Discussion

Best practices in adaptation finance

- **Alexandra Gropp**
Head of Placement, Debt Capital Markets at *Finint* to present Viveracqua Hydrobond case
- **Gregg Cannito**
Chairman of the Board at *Corvias Infrastructure Solutions* to present Clean Water Partnership case





Financing Water Infrastructure in Italy

November 2024

1 Innovative Financing Structure for the Water and Sewer Sector

Why Hydrobonds?

The requirement – long term alternative financing sources

- Companies in the water and sewer sector typically have extensive investment plans and require competitive long- term funding solutions to sustain investments in the network
- Lengthening the maturity profile in line with the company's investment plans **The challenge –**

reaching a critical mass

- Companies tend to be smaller in size so attracting multilateral institutions and / or institutional investors in infrastructure is not easy unless there is a critical mass
- Approaching investors outside the traditional banking sector puts companies on an important growth path and requires full commitment to the project on various levels across the institution

The solution – creating a homogeneous pool of assets

- To attract investors Banca Finint put in place a basket bond structure which pools together similar exposures in the sector using the well-known and tested securitisation technique, closing the first Hydrobond transaction in 2014.
- To date Banca Finint has raised debt equal to an amount of nearly EUR 1 bn via the Hydrobond structures, continuously evolving the structure and also the investor base involved in the transactions.

2 Key Transaction Characteristics

The issuer's rationale

Between the 2014 and 2024 Banca Finint S.p.A. has raised nearly EUR 1 bn via the Hydrobond structure for the companies belonging to the Viveracqua Consortium:

- **Duration:** Long term maturities between 16 e 24 years
- **Competitive pricing:** the structure offered attractive funding, also thanks to the involvement of the European Investment Bank as anchor investor;
- **Security:** No pledge on the terminal value;
- **Structure:** Evolving structure, most recently also involving SACE as guarantor; and
- **UOP:** Strictly linked to investments in the water and sewer systems.

VIVERACQUA
GESTORI IDRICI DEL VENETO

 Acque del Chiampo s.p.a.
Servizio Idrico Integrato

 **ETRA**
Energia Territorio Risorse Ambientali

Acque  Veronesi

 **LTA** LIVENZA
TAGLIAMENTO
ACQUE

 acquevenete
SOCIETÀ BENEFIT

 **PIAVE SERVIZI**
La forma dell'acqua

 **ags** | azienda
gardesana
servizi

 **VERITAS**

 **ALTO TREVIGIANO SERVIZI**

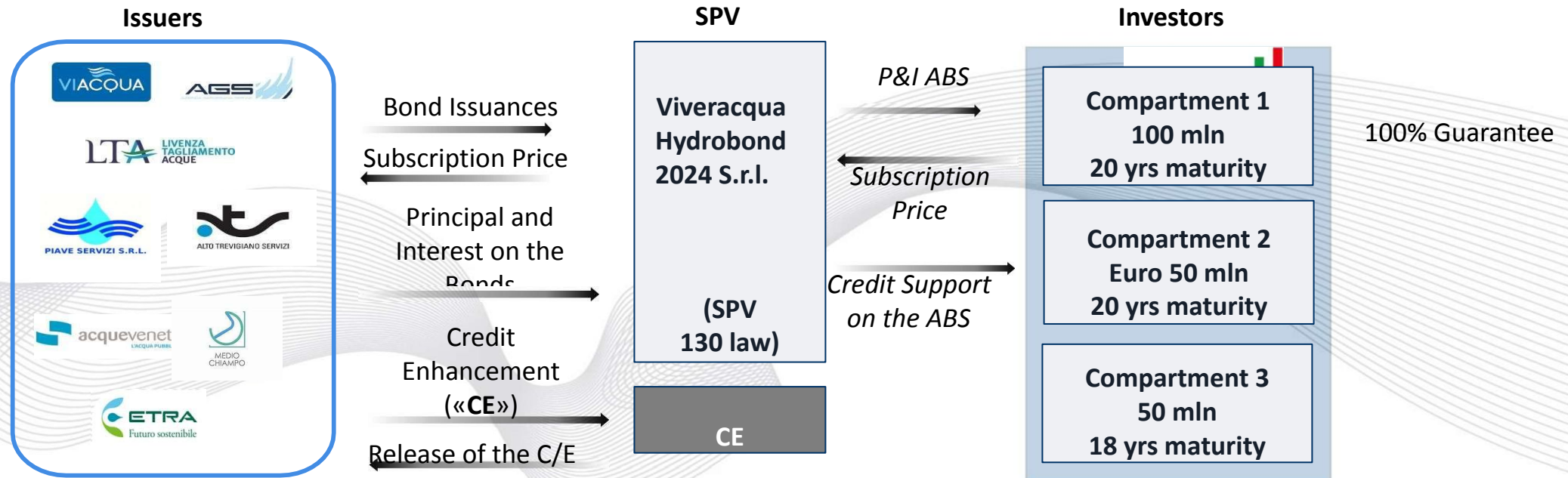
 **VIACQUA**

 **gsp**
gestione
servizi
pubblici

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3 Transaction Structure Diagram



4 Transaction Structure

Key structural features

- The Transaction is structured based on the following legal frameworks:
 - ✓ The bond law for unlisted corporates, (art. 32 Decree 83/2012 converted into law134/2012), and
 - ✓ the securitisation law (Law 130/1999).
- The Transaction represents a securitisation of bonds which are directly subscribed by the issuing entity of the ABS Securities.
- The issuers are part of a consortium, Viveracqua, consisting of corporates active in the water and sewer sector in the Veneto Region.
- The issuers are 100% owned by the municipalities of the territories where services are provided.
- Each issuer releases 15% of the issuance proceeds in favour of the SPV which create credit enhancement in favour of the investors.
- Such credit enhancement can be used by the SPV to cover missed payment of interest and / or principal due.
- The credit enhancement does not amortize until 50% of the bonds issued have been repaid and credit enhancement has reached 30% of the outstanding amount of the ABS.
- Once the target percentage has been reached the credit enhancement remains equal to the higher of i) the principal amounts under the bonds due after the water and sewer concession expiry dates and ii) 20% of the ABS amount outstanding. Any excess credit enhancement is transferred back to the issuers.



5 **Viveracqua Hydrobond** Core Objectives

- Promote a systemic transaction among mid size corporates operating in the water and sewer sector.
- Facilitate the funding of the Issuers' infrastructure investments in the water and sewer sector by creating a transaction that for size can be assessed also by larger international investors.
- Diversify the issuers' financing sources, accompanying the banking channel with a tool that offers different tenors.
- Achieve long term financing via a replicable structure.
- Create value to the communities and households which directly benefit in sustainable investments in the water infrastructure sector.



Disclaimer

Contatti

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Il presente dossier (“**Dossier**”) è stato predisposto da Banca Finint S.p.A. (“**Banca Finint**”) e costituisce una base iniziale di discussione. La natura di questo Dossier (e i nostri commenti orali che devono essere considerati parti integranti di questo documento) è

strettamente confidenziale; la distribuzione e la riproduzione anche parziale, del documento sono vietate senza il previo consenso scritto di Banca Finint. Il destinatario del presente Dossier si impegna a tenere indenne Banca Finint da qualsiasi conseguenza pregiudizievole che alla stessa dovesse derivare dalla mancata osservanza di tale divieto e si obbliga di conseguenza a rimborsare, a semplice richiesta, tutte le somme che, a qualsiasi titolo, Banca Finint sia tenuta a corrispondere a terzi per effetto contabile di tale violazione.

Le opinioni contenute in questo Dossier rappresentano le opinioni di Banca Finint alla data di redazione e sono soggette a modifiche senza preavviso. Il contenuto del Dossier è basato esclusivamente su elementi e fonti pubblicamente disponibili alla data di redazione dello stesso. Banca Finint non ha svolto alcuna attività di verifica, pertanto non può assumere alcuna responsabilità sulla correttezza dei dati riportati, né sulla qualità e completezza delle informazioni e dei dati in esse contenuti. I risultati contenuti in tale Dossier, pertanto, possono essere utilizzati solo a fini conoscitivi e non possono costituire una base adeguata per eventuali operazioni di finanza straordinaria operativa. In tal senso, il Dossier non costituisce, e non dovrà essere interpretato, come proposta o sollecitazione o raccomandazione ad operare alcun investimento ovvero a stipulare qualsiasi contratto con riferimento alle azioni indicate.

Inoltre, essendo in una fase di analisi preliminare, le informazioni utilizzate sono limitate; di conseguenza i risultati dell’analisi potrebbero essere significativamente differenti qualora durante il prosieguo eventuale dell’operazione emergessero altre informazioni o dati.

Banca Finint non è responsabile per le conseguenze derivanti dall’utilizzo delle informazioni o delle opinioni contenute nel Dossier.



Break 



Choose your breakout session!

1

**Aligning finance with
climate adaptation
policy requirements**

2

**Mobilizing private
capital for adaptation:
the role of PPPs**



What is next

Third event of the series

3rd level training focused on project-specific and investment-specific strategies will be held in spring 2025

Scaling the impact

Continue to follow CLIMATEFIT LinkedIn page and website to be updated on our latest work and developments

Participate in the Local Resilience Taskforces

Made up by FIEs, PA, and relevant stakeholder to co-design and implement investment strategies for resilience

Thank you!

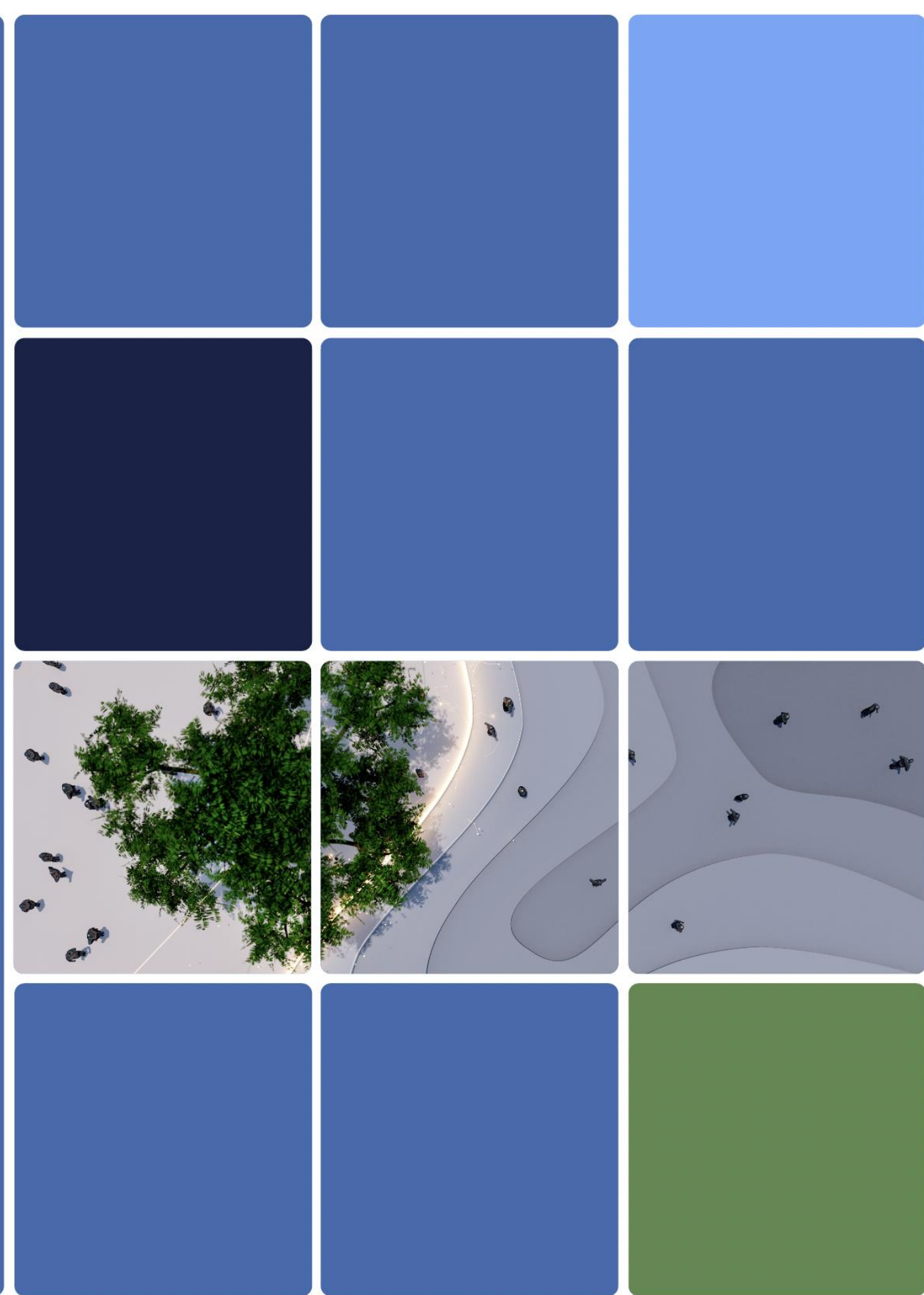
Follow CLIMATEFIT_HEU on LinkedIn to keep in touch with our latest updates!

Visit www.climatefit-heu.eu for all the info about the project!

Breakout Session #1

Aligning finance with climate adaptation policy requirements

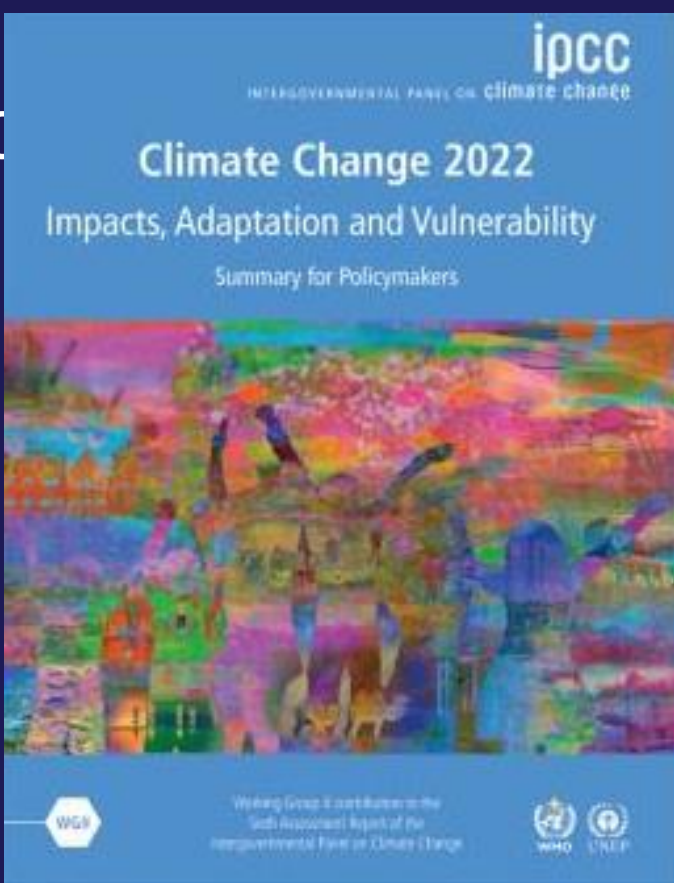
- **Giulia Balugani**
Sustainability Manager, UnipolSAI Insurance
- **Raffaele Della Croce**
*Co-Director, Singapore Green Finance Centre and
Advanced Research Fellow, Imperial University*



From Ambition to Reality: How to Scale Up Adaptation & Resilience Finance

Dr. Raffaele Della Croce, Advanced Research Fellow, Centre for
Climate and Finance Investment and Co-Director Singapore
Green Finance Centre, Imperial College London
r.dellacroce@imperial.ac.uk





CLIMATE PHYSICAL SHOCKS RISK MANAGEMENT: WHO PICKS UP THE BILL?

European Stability Mechanism

ESM

ESG risk management framework for the financial sector – WU Wi

Giovanni Callegari - Head of Economic and Risk Analysis
Wien, 29 May 2024

EUROPEAN CENTRAL BANK
EUROSYSTEM

eiopa
European Insurance and Occupational Pensions Authority

AiIB ASIAN INFRASTRUCTURE INVESTMENT BANK

WHO WE ARE WHAT WE DO HOW

Beijing, May 11, 2023

AiIB Issues First Climate Adaptation Bond Targeting Resilient Infrastructure

Twitter LinkedIn Facebook YouTube

The bigger picture

The \$10 trillion role of insurance in mobilising the climate transition

HOWDEN | BCG

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Home > Press > Press Releases > Current climate scenario analysis exercises may understate climate exposures and vulnerabilities, warn FSB and NGFS

Current climate scenario analysis exercises may understate climate exposures and vulnerabilities, warn FSB and NGFS

15 November 2022

Press enquiries:
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press@fsb.org

Ref: 39/2022

Publication
Climate Scenario 15 November 2022
Analysis by Jurisdictions: Initial findings and lessons

This FSB-NGFS joint report draws lessons for effective scenario analysis and sketches out the global perspective stemming from the various national/regional exercises conducted to date.

Policy options to reduce the climate insurance protection gap

Discussion Paper

April 2023

Goldman Sachs

ADAPTATION

Physical risk, Financial risk, Opportunity

THE NEW CLIMATE

- Climate impacts are already here, and risks will continue to increase in the coming decades and beyond due to the inertia of the climate system, even if ambitious global emission cuts reduce the potential damage.
- Leaving in a 3 degrees warmer environment: the outlook for Europe - European Climate Risk Assessment (EUCRA) by the European Environment Agency.
- Climate resilience is a matter of maintaining societal functions, but also of competitiveness for economies and companies, and thus jobs.

LEGISLATION VS IMPLEMENTATION

- The European Climate Law , 2021 EU adaptation strategy, EU budget have integrated the principle of 'do no significant harm' and established a climate proofing practice.
- The Member States are improving adaptation action and have taken the first steps to include climate resilience in their national energy and climate plans (NECPs).
- Still, the findings of recent Commission assessment : mismatch between the NECPs and the Member States' planned and implemented adaptation policies and measures.

ECONOMIC SECURITY

- Each climate change related disaster will put additional strain on the economy, through loss of productivity and life, direct damage, reduced growth potential and pressure on public budgets
- The EU economic security is also exposed to climate risks in supply chains, notably for pharmaceuticals and semiconductors.
- The insurance coverage of climate exposed assets and property is low in the EU, with significant variation between the Member States and climate-related perils and is likely to shrink further with rising premiums as climate-related events increase in frequency and severity.

the annual cost of climate change adaptation in Europe may range from EUR 15bn to EUR 64 bn per year (0.1-0.4 percent of EU GDP) to 2030, with a median estimate around EUR 21 bn (World Bank (forthcoming, 2024).

- Adaptation & Resilience Investment Gap
- Need for Adaptation Action Now
- The current approach to adaptation investment and financing is not working
- Private sector financing in adaptation and resilience is still limited
- Cities are highly vulnerable to climate change
- Interconnectedness of adaptation with other policy priorities and areas of policy actions such as nature restoration, net zero, infrastructure development and health.

Financing Adaptation and Resilience: recent publications



Adaptation Bonds:

Lessons from the US Municipal Bond Market to Help Close the Adaptation Financing Gap

September 2022



Managed by



White Paper

Are Markets Interested in Adapting to Climate? Insights From Singapore

February 2023

- Focus on drivers and challenges for investing in adaptation and resilience and necessary changes for developing capital market solutions in London and the UK.
- This research has been conducted by the Centre for Climate Finance & Investment (CCFI) at Imperial College Business School and the Singapore Green Finance Centre, following papers focusing on adaptation and nature financing (Buhr, B. (2022); Høltedahl, P., Köberle, A. & Koci I. (2023); Whittaker, S. & Nguyen, T. (2023)).
- The research project, divided into three separate papers:
 - **Part I Case Studies Analysis:** The analysis responds to the following question: *What are the main investment models and financing instruments for private investors in adaptation and resilience?* **PUBLISHED**
 - **Part II - Urban Adaptation Financing** The research question 'To what extent can cities and investors build for innovation in climate adaptation in cities?' aims to inform and promote a better understanding of financing for climate change adaptation actions. **PUBLISHED**
 - **PART III Policy Recommendations** develops policy recommendations all actors: investors, regulators, Government, OFWAT, The Bank of England, standard-setting agencies, corporations, and development companies etc. **TO BE PUBLISHED**
- **Relevance: Practical (focus on implementation & delivery)** practical approach by focusing on the real estate and water sectors, ensuring the findings are directly applicable to the local context.
- **Academic Relevance (journal publications/book)** : multidisciplinary approach, leveraging climate, financing and engineering community

**LAUNCH EVENT OF PART III POLICY RECOMMENDATIONS
ON THE 27TH OF NOVEMBER AT IMPERIAL COLLEGE**

Part I Case Studies Analysis: Key take- aways:



Financing Adaptation and Resilience in London and the UK: Moving from Aspiration to Reality Part I – Case Studies Analysis

June 2024



Stella WHITTAKER
PhD Research Fellow, Climate Finance, Adaptation and Cities, Copenhagen Business School

Claudia HLAVACKOVA
Research Assistant, Centre for Climate Finance and Investment, Imperial College Business School

Raffaele DELLA CROCE
Co-Director Singapore Green Finance Centre and Advanced Research Fellow, Centre for Climate Finance and Investment, Imperial College Business School

1. Existing opportunities to invest in Adaptation and Resilience and Creation of a Market to Value Adaptation and Resilience

- The UK is at a critical juncture where new water physical infrastructure is needed to adapt to a changing climate.
- There are also opportunities to invest in resilience through asset maintenance and renewals
- Nature-based solutions for adaptation have potential but there is a need to create a resilience and adaptation investment market

2. Delivering Adaptation: Ensuring financing and financial sustainability

- Adaptation measures must address short-term urgency and long-term needs
- Investment models and financial instruments for adaptation and resilience present different maturities and implementation challenges, including inflation and fiscal sustainability.
- Governments and public finance are critical in driving private investors to adapt. Leveraging the UK Infrastructure Bank to de-risk projects and attract private investment

3. Mobilising Private Sector Financing

- Physical risk is currently under-estimated, and investors may be subject to hidden contingent liabilities
- More could be done in the area of climate-related financial disclosures
- Institutional investors with a long-term horizon are increasingly engaging in adaptation, and there is potential to mobilise pension savings capital.

Part II Urban Adaptation Financing: Key take-aways:

- London lags behind other cities, such as Singapore and Copenhagen, in its adaptation financing efforts
- The London housing crisis is an opportunity to rethink Urban Planning and better include social and environmental sustainability
- **Investing in nature-positive city infrastructure** remains crucial to addressing biodiversity loss and climate change impacts.
- Urban planning highlights **synergies and trade-offs in policy decisions.**
- **Local Capability and Inclusion.** Capability and financing at a local level are significant barriers to adaptation action.
- **Green tech and role of Insurers.** Artificial intelligence technology and 'big data' can help financial actors manage hazard risks more effectively while offering investment opportunities. Role of Insurers


Singapore Green Finance Centre

Managed by

Imperial College Business School

SMU Lee Kong Chian School of Business

Financing Adaptation and Resilience in London and the UK: Moving from Aspiration to Reality
Part II – Urban Adaptation Financing
August 2024



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Financing Adaptation and Resilience: Part I and II published in June and August 2024. Part III with policy recommendations to be launched on the 27th of November at Imperial college.

Financing Adaptation and Resilience in London and the UK: Moving from Aspiration to Reality Part I – Case Studies Analysis

June 2024



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Financing Adaptation and Resilience in London and the UK: Moving from Aspiration to Reality Part II – Urban Adaptation Financing

August 2024



Stella WHITTAKER
PhD Research Fellow, Climate Finance, Adaptation and Cities, Copenhagen Business School

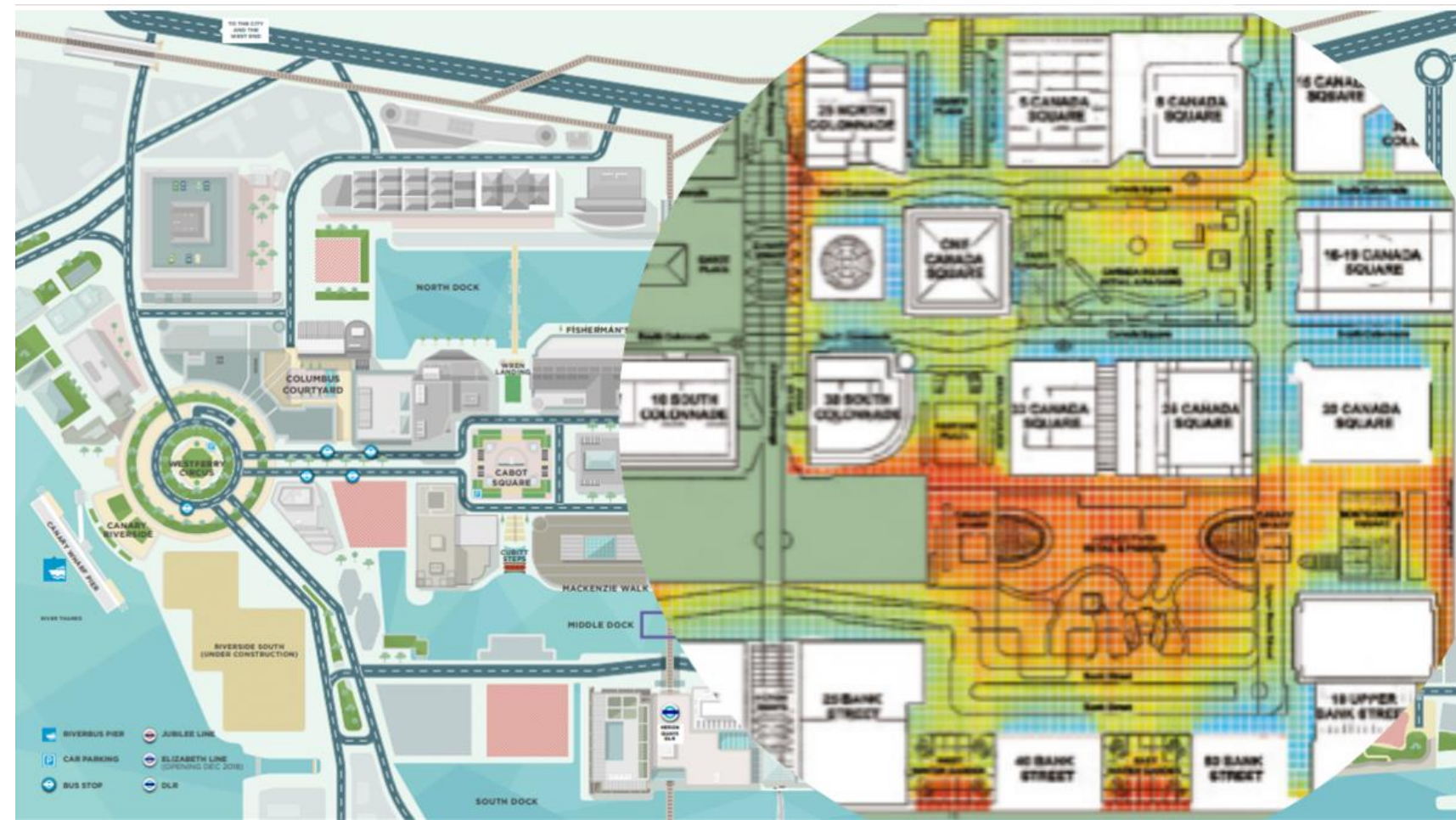
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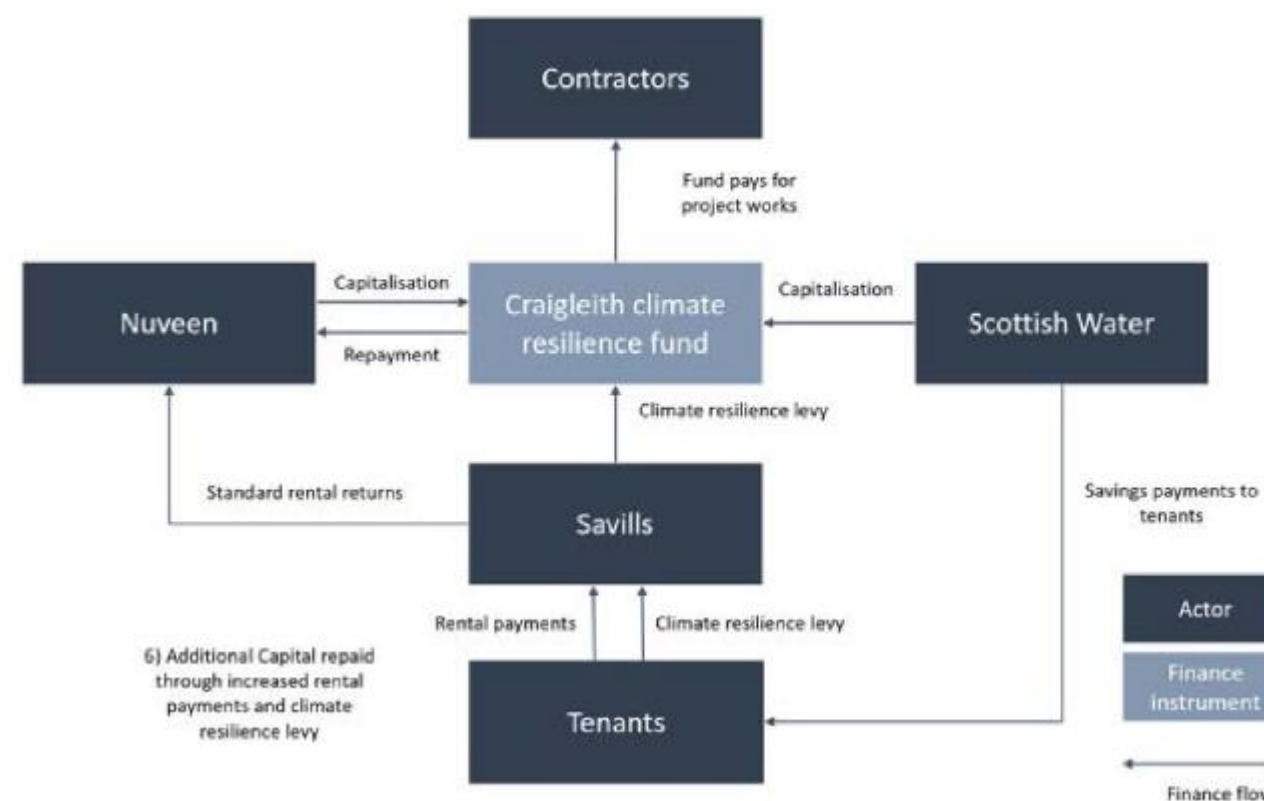
Case study 1: Value capture through property appreciation – using nature in real estate



Urban Heat Island model: Source: Financing Adaptation and Resilience in London and the UK Centre for Climate Finance and Investment, Imperial College

- The largest urban regeneration project ever undertaken in Europe Biodiversity Action Plan 2018-2028'
- Climate change resilience was one of the main objectives of the BAP.
- CWG recognizes the important role that sustainable finance plays to channel investments towards sustainable activities and has issued its inaugural £906.3 million Green Bond in April 2021.

Case Study 2 - Nbs for Climate Adaptation - Craigleith Retail Park Demonstrator



Proposed Business Model: Source: Financing Adaptation and Resilience in London and the UK Centre for Climate Finance and Investment, Imperial College

- Craigleith Retail Park, in northwest Edinburgh, is owned by Nuveen, and managed by Savills
- To explore the retrofit of blue-green infrastructure at the site.
- Business model to finance the work, reducing current and future flood risk (and to an extent, future heat risk) whilst increasing property values, footfall, biodiversity and air quality.

Thank you



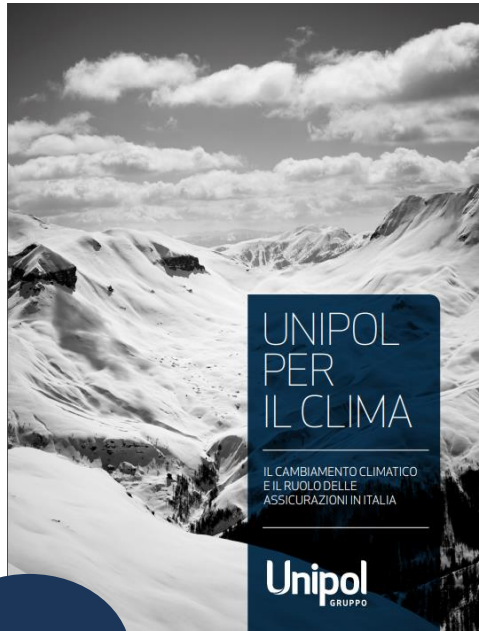
Workshop «Overcoming Challenges in Climate Adaptation Finance»

Breakout Session «Aligning Finance with Climate Adaptation Policy Requirements»

Contribution to the discussion by Unipol Group



20 November 2024



2015

Position paper proposing a reflection on governance mechanisms and partnership models that can be adopted to increase Italy's resilience



2015 - 2018



ADaptation in Agriculture



2020 - 2024



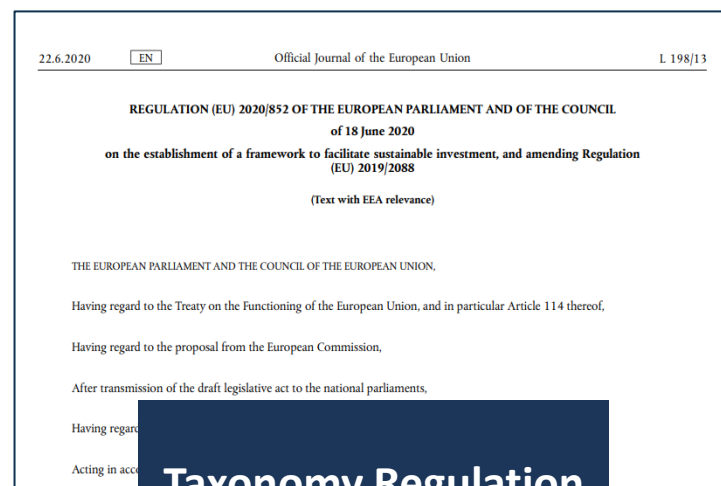
Insurance company

- Raises awareness
- Provides risk assessment tools
- Collects punctual data
- Identifies risk reduction measures that worth discounts



Public administration

- Defines policies to promote adaptation
- Finances the adoption of effective risk prevention measures

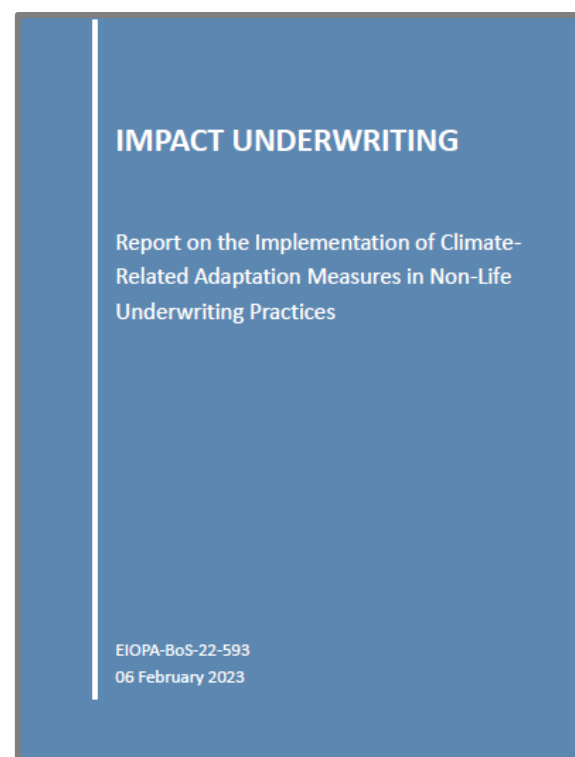


Taxonomy Regulation

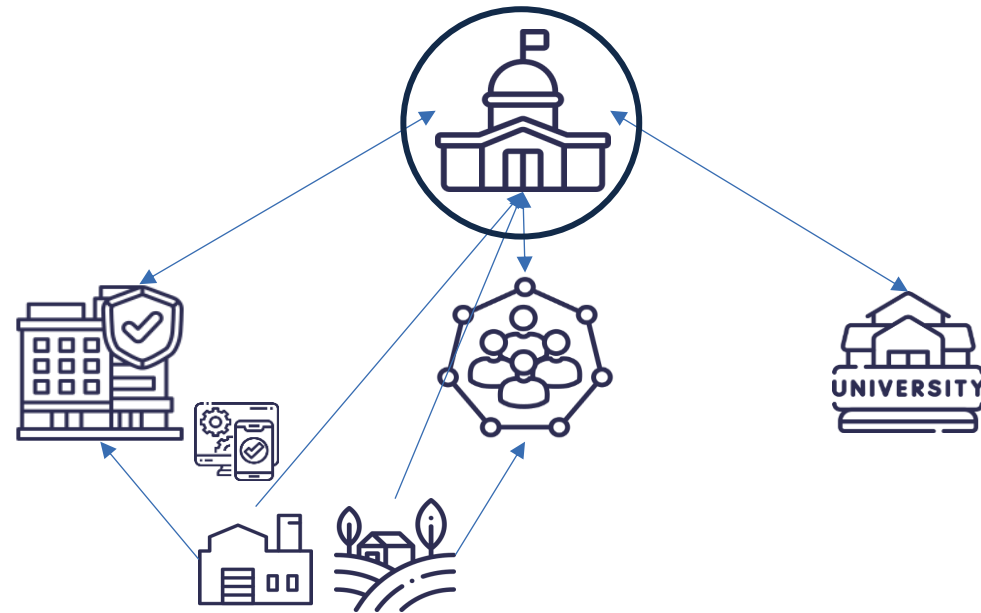


Insurance company

- provides incentives for risk reduction / offer risk-based rewards for preventive actions taken by policyholders
- Ensures that policyholders are informed on the relevance of preventive measures that they could take / provides information or advice to customers on climate risks and preventive measures that customers could take
- Makes available, free of charge a significant share of loss data related to insurer's activity to one or several public authorities for the purpose of analytical research
- *Provides web-based tools, that could be a relatively easy and effective tool to show the potential influence of climate-related adaptation measures on policyholders' physical risk exposures*



▶ DATA

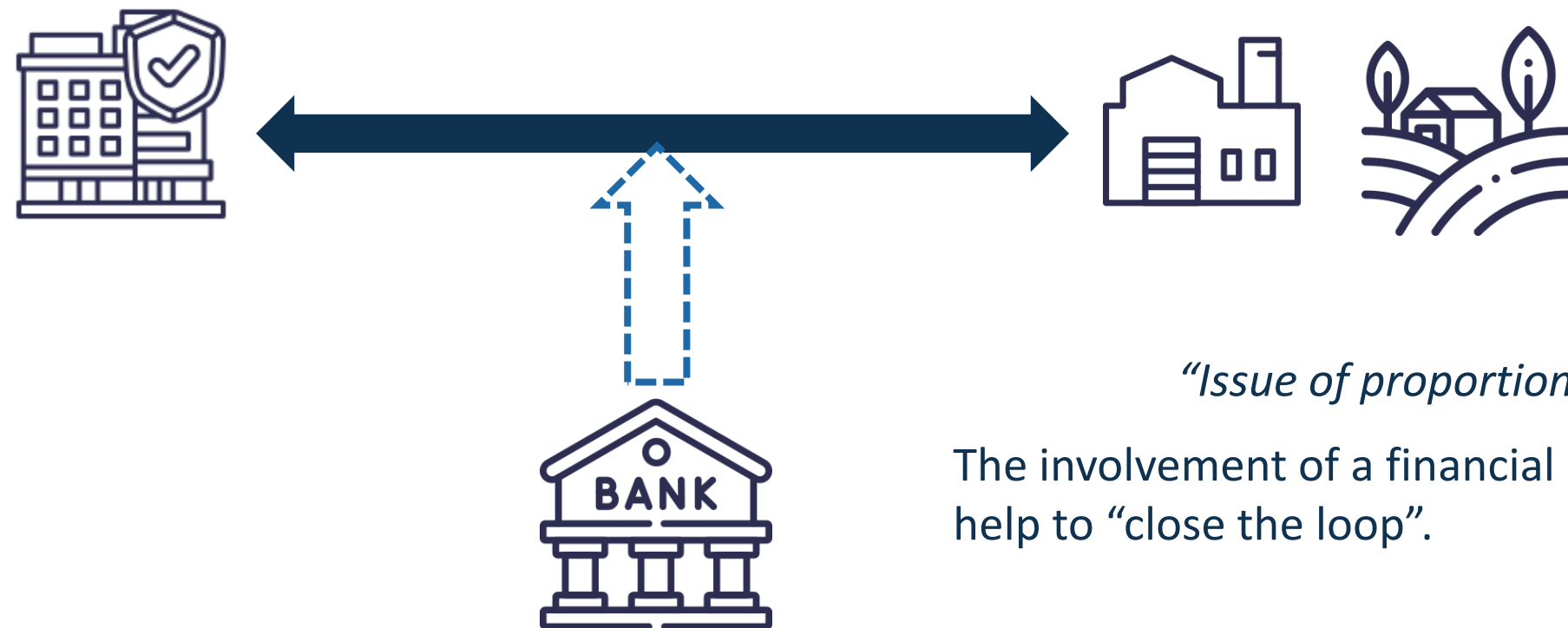


Information infrastructure is a precondition to be able to imagine taking action against climate change and its effects. The public administration (e.g. at regional level) should define through its policies the governance of a cooperative approach, primarily on data.

Collecting data on adaptation measures (needed to build models) is complex; tools may help.



▶ MONEY



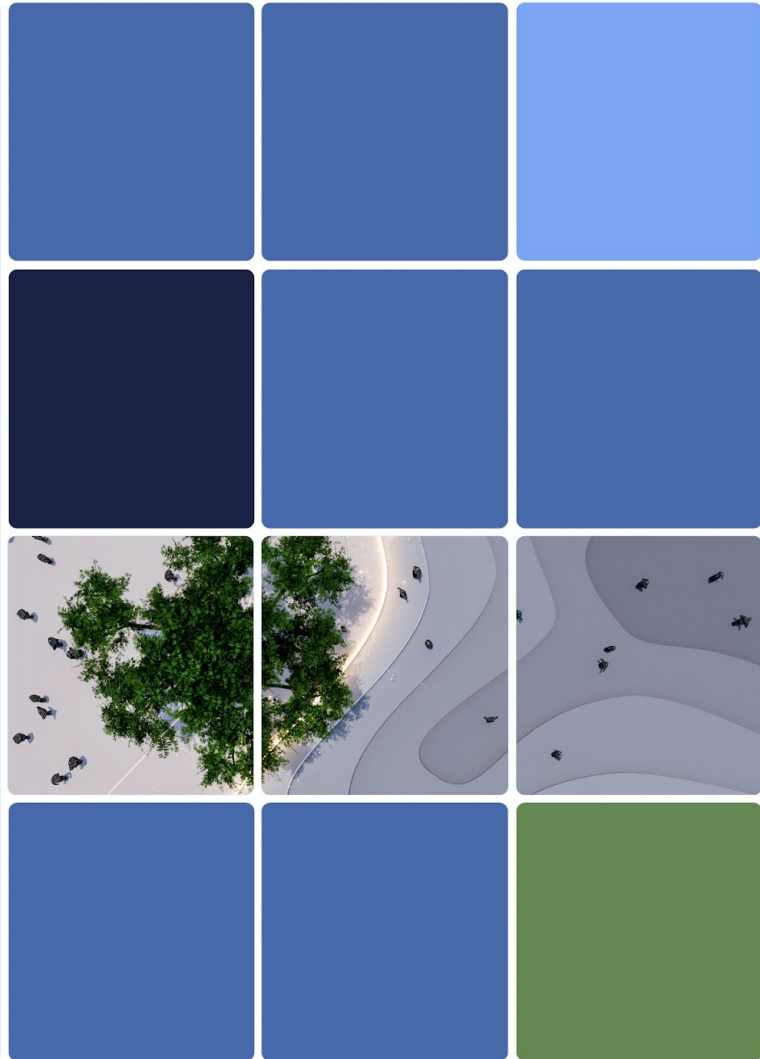
“Issue of proportionality” ⚠

The involvement of a financial partner could help to “close the loop”.

Breakout Session #2

Mobilizing private capital for adaptation: the role of PPPs

- **Pablo Nunez**
Specialist Associate: Infrastructure and Finance at Global Infrastructure Basel
- **Gisele Saralegui**
Global Climate Head for the International Finance Corporation's PPP Advisory
- **Anita Simon**
Deputy CEO for Sustainability and Circular Economy of the ALTEO Group





FAST-Infra

SUSTAINABLE INFRASTRUCTURE

Mobilising Private Capital through standardisation

The market-led label, for a new global sustainable infrastructure asset class

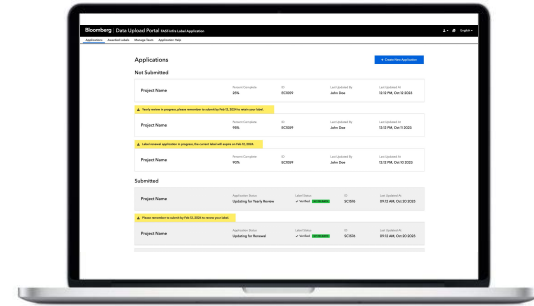
Advantage 1) Market-led, backed by Bloomberg's technology

Adds credibility to the labelling system, endorsed by the leading organisations in the infrastructure ecosystem

Technology developed by Bloomberg, providing the data solution to structure the information of the assets for multi-stakeholders' use, and Global Infrastructure Basel leading the framework and the uptake.

Part of the FAST-Infra initiative, conceived by the World Bank (GIF and IFC), HSBC, OECD, Climate Policy Initiative, under One Planet Summit.

150+ organisations involved in the Label inception and governance: private investors, banks, public bodies, consultants, NGOs and academia.



FAST-Infra initiative: broad- based, open & inclusive

FAST-Infra participants

15+ banks



20+ institutional investors



20+ DFIs and dev. banks



10+ contractors, developers and supply chain



15+ governments



25+ civil society orgs. and others



With a robust governance ensuring independence and impartiality

Steering Committee

Executive Advisory Committee

Supported by



Professional affiliation of the members

Advantage 2) Credible global application

Measures the sustainability and resilience performances of infrastructure assets with the most complete set of indicators

Globally applicable label for all infrastructure sectors, stages, and regions, built on 55+ standards, guidelines, and taxonomies for project finance and investment good practices.

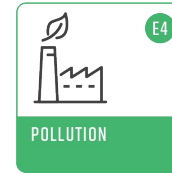
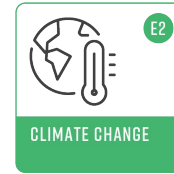
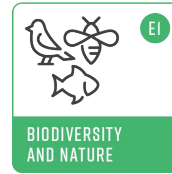
Defines and measures baseline requirements for demonstrating «do-no-harm» aspects and the SDGs alignment for showcasing positive contributions in 14 different criteria.

Avoids greenwashing risks: practice-oriented, robust and transparent evidence-based labelling methodology, verifiable by third-party accredited bodies.



among others...

FAST-Infra Label Dimensions and Criteria



Advantage 3) Designed for funds, MDBs, DFIs

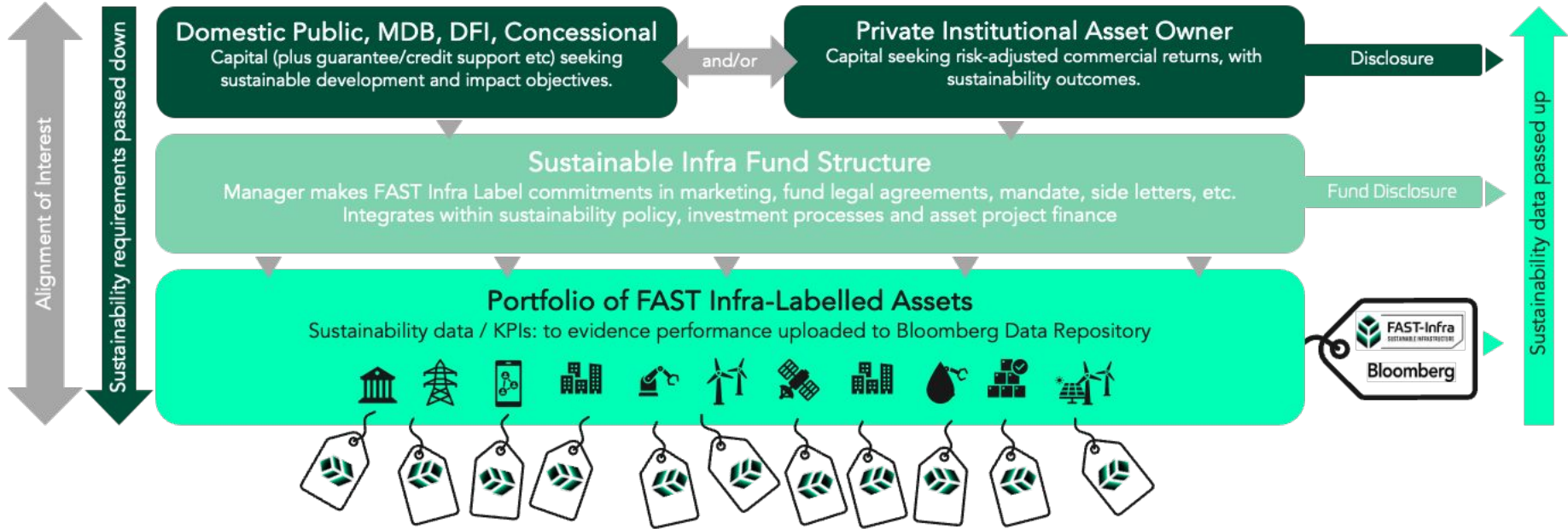
Supports full fund lifecycle, from its formation, origination, to all project finance phases, including disclosure

Supports public and private finance at both fund-level and project finance asset-level, within capital structure.

Allows institutional requirements (harmonised in the Label requirements) to be passed down via fund manager to asset-level and the data to be reported back up, throughout the capital stack.

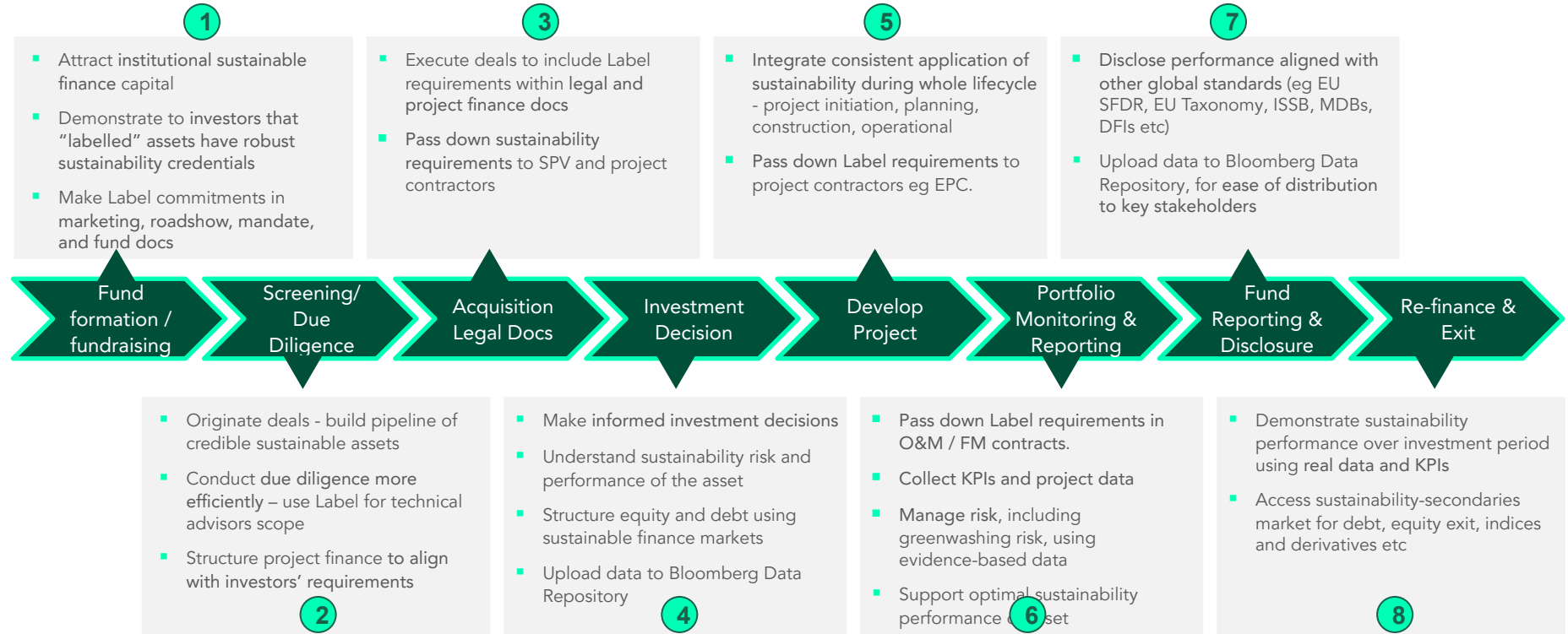
Specially allows for more efficient due diligence, using the label for technical advisors' scope, and simplifies the obtaining of relevant data for reporting.

All parties gain from the alignment of sustainable outcomes within fund structures



Sustainability integration within funds' end-to-end operations

Integration of Label supports sustainability good practices, at all key stages of the investment lifecycle



Advantage 4) All parties benefit from its transparent and flexible use

Future state: attracts capital by demonstrating compliance with sustainable finance and regulations at both fund and asset levels

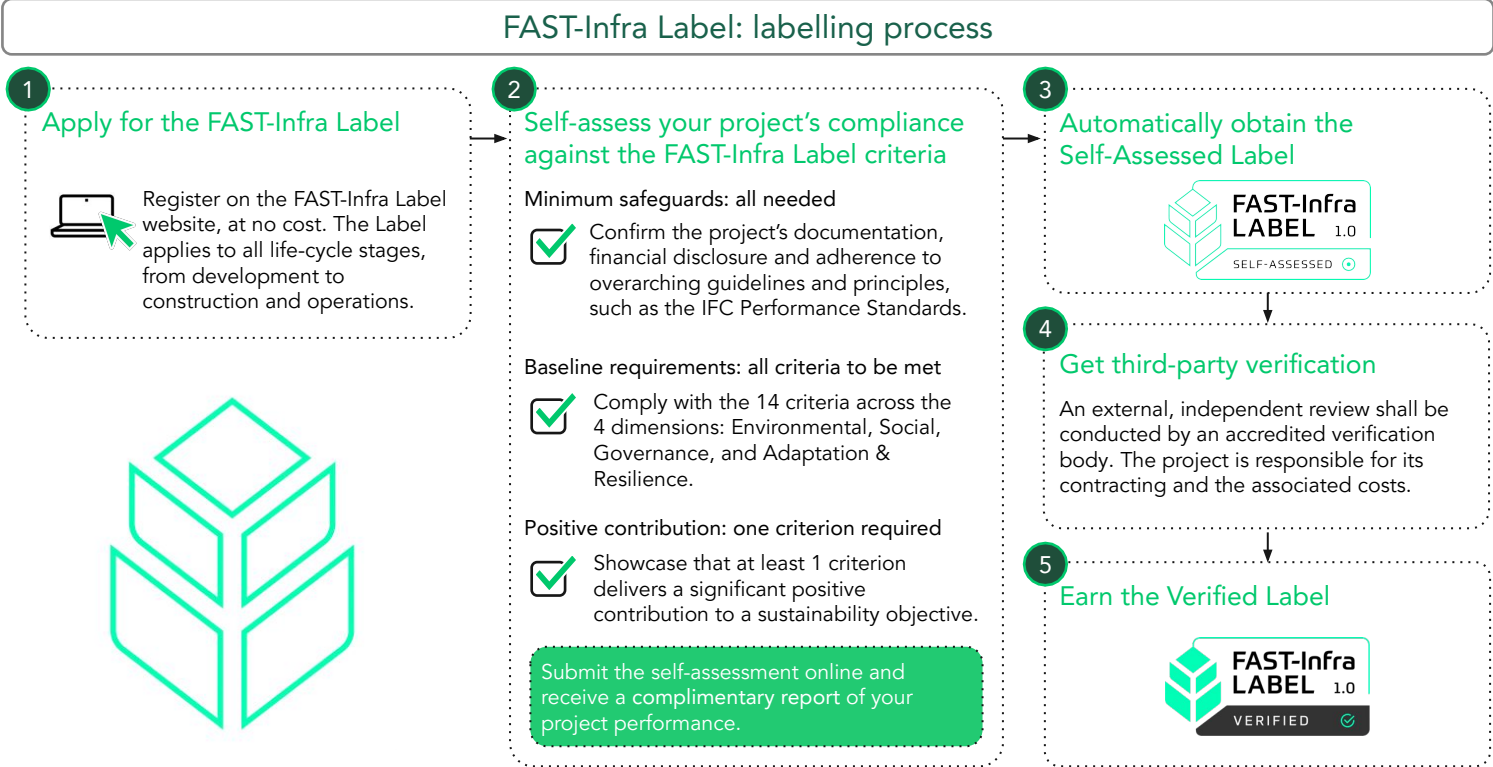
By creating a common ground for sustainable outcomes expected between asset owners, fund managers, governments and asset portfolio:

Private institutional investors will attract more capital seeking risk-adjusted commercial returns and world-class sustainability performance.

Public and development finance can catalyse their investments to develop sustainable, resilient, regenerative infrastructure.

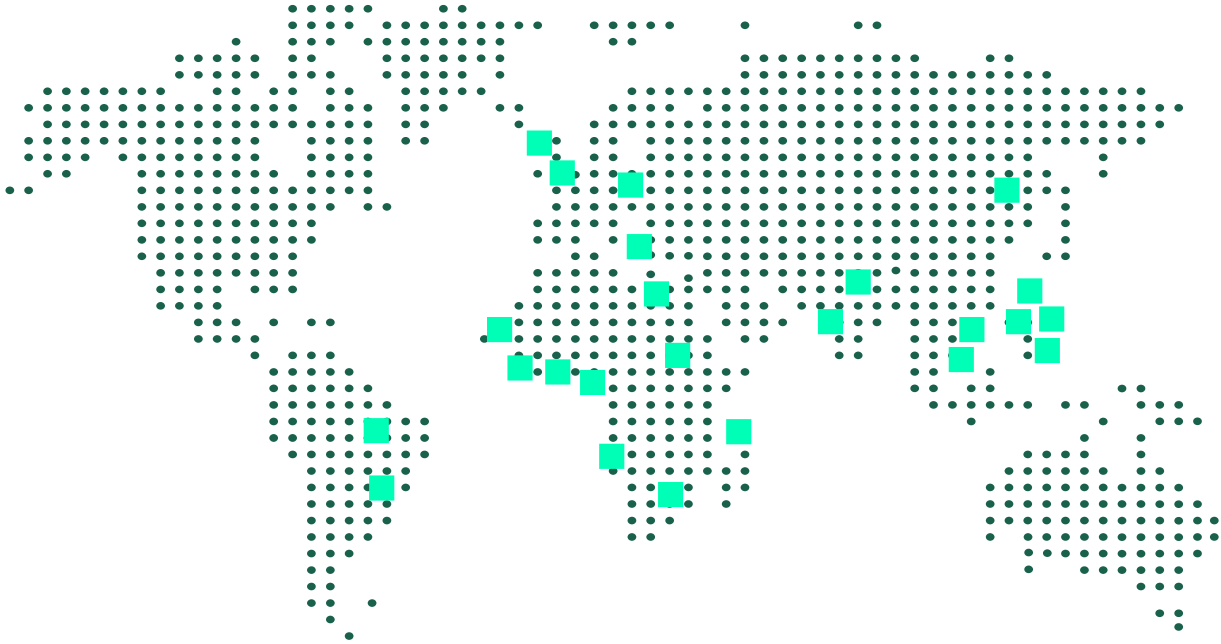
Project developers: improving the risk profile of the assets and aligning stakeholder interest (investors, government, communities, etc.) by delivering measured positive impact and ESG performance.

A comprehensive evaluation in a simple process



The pilot projects and partners

Global reach



Key financiers



Developers and PPFs



- 25 projects
- 17 countries
- Over USD 6.5 billion in CAPEX

Bloomberg's Application Portal to be launched on Q4 2024

Reliable database for the infrastructure market

- Compile transparent information of labelled projects, for multi-stakeholders' use, which supports growth of global asset class.
- Comparable data to generate market insights and to improve deal origination processes.

Secure data storage

- Bloomberg proprietary technology to handle data securely.

Intuitive and simple application tool

- Support throughout the Label lifecycle: follow the application status of your organization's projects and their approved label.

The image displays two screenshots of the Bloomberg Data Upload Portal. The top screenshot shows the login page for the FAST-Infra Label Application. It includes a login form with fields for 'Institutional Account Username', 'Your username', 'Password', and 'Your password', along with a 'Login' button and a 'Forgot' link. The bottom screenshot shows the application submission process for a 'Brazil Wind Farm' project. The page is titled 'Criteria 1: Protection and Enhancement of Biodiversity & the Natural Environment' and includes a 'Baseline' section with a progress bar at 25% completion. The 'INDICATORS' section lists various criteria such as 'Do you plan to include a biodiversity risk assessment in the ESR of your project?', 'Does the area of influence of your project overlap with one or more of the following areas? Select all that apply', and 'Please report the number of Critically Endangered Species in your project's area of influence'. The bottom screenshot shows a table of applications with columns for 'Applications', 'Percent Complete', 'ID', 'Last Updated By', and 'Last Updated On'. The table lists several applications, including 'Brazil Wind Farm', 'Solar Energy Farm Project', 'Solar Equipment Manufacturing', 'Carbon Reduction', 'EV Charging Infrastructure', 'PV Plant', and 'Solar Equipment Manufacturing'.



**Join FAST-Infra Label and accelerate
the development of sustainable
infrastructure!**

Get to know more at www.fastinfralabel.org

ALTEO Group Introduction

RENEWABLE CHAMPION ON THE RISE, EMBEDDED IN CENTRAL-EASTERN EUROPE



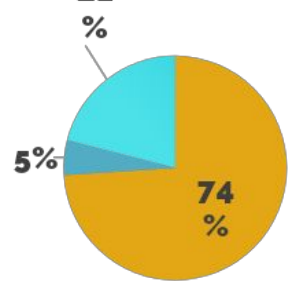
- ✓ During the past years ALTEO Plc. has become a prominent energy player in Hungary providing market leading sustainable and renewable energy services.
- ✓ Founded in 2008, ALTEO excels in energy production & management (VPP and AI based complex balancing as an aggregator) and provides customized corporate energy solutions, leveraging renewable sources like PV, wind and waste-to-energy plants.
- ✓ ALTEO is listed on the Budapest Stock Exchange and has seen substantial growth, particularly since joining the Exchange's Premium Category in 2018.



DYNAMIC GROWTH, STABLE FINANCIAL & OWNERSHIP BACKGROUND

SHAREHOLDER STRUCTURE*

- MOL Res, Fönix, Riverland consortium
- ALTEO ESOP organization
- Free float



247 million in REVENUE

48 million in EBITDA

30 million in CAPEX

(EUR) in the 2023 fiscal year

A brief history:

- 2008
Year of foundation
- 2010
BSE listing
- 2016
IPO (BSE)
- 2021
BUX membership (BSE)
- 2023
New ownership structure

From 2024
Our goal is to become a regionally dominant renewable energy player

 **Approx. 500 employees** *
 **ESG certification**
 **BBB- credit rating**



EUR 235 million market capitalization*



* based on September 2024 data

LEADER IN SUSTAINABLE SOLUTIONS & SERVICES



91,5 MW_e

ALTEO-owned
renewable capacity

1.100+ MW_e

Built-in balancing
capacity management

2.000 MW_e

VPP managed
renewable PV capacity

11 MW_e

Energy storage
facilities



PILLARS OF EXCELLENCE – ALTEO'S MAIN BUSINESS UNITS AND CORE COMPETENCES



ENERGY PRODUCTION & PRODUCTION MANAGEMENT

- Decentralized and diverse electricity production from a significant renewable- and natural gas-based portfolio
- Market leading balancing and production management services (Aggregator / VPP)



ENERGY SERVICES

- End-to-end integrated services comprising of Operation and Maintenance (O&M), design, development and construction (EPC) capabilities
- High-availability, reliable energy supply with an excellent industrial embeddedness



ENERGY TRADE

- Customer-oriented, flexible and scalable, balanced portfolio in the target segments of energy supply and trade



CIRCULAR ECONOMY & WASTE MANAGEMENT

- Market leading, uninterrupted ESG compliance with continuous improvement
- Wide range of organic and inorganic waste management services along the value chain, supported by innovative e-mobility solutions



BALANCED PORTFOLIO IN HUNGARY

NATURAL-GAS-POWERED 150 MW_e / 781 MW_{th}

RENEWABLES 91.5 MW_e

DISTRICT HEATING: 42 MW_e / 125 MW_{th}

Budapest (Zugló) heating power plant: 18.2 MW_e / 16.5 MW_{th}

Kazincbarcika heating power plant: 9.6 MW_e / 58.2 MW_{th}

Tiszaújváros heating power plant: 9.4 MW_e / 45.8 MW_{th}

Ózd heating power plant: 4.8 MW_e / 4.9 MW_{th}

INDUSTRIAL: 157 MW_e / 778 MW_{th}

Tiszaújváros (TVK power plant): 36 MW_e / 297 MW_{th}

Kazincbarcika (BC power plant): 47 MW_e / 206 MW_{th}

Kazincbarcika (BC Therm): 50 MW_e / 90 MW_{th}

Sopron power plant: 6 MW_e / 38 MW_{th}

Győr power plant: 18 MW_e / 24 MW_{th}

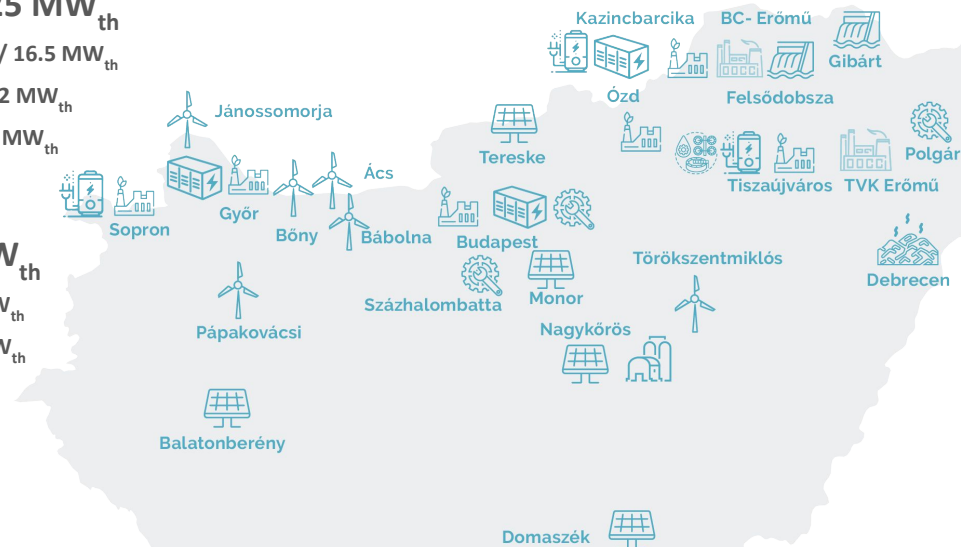
Energy storage: 89 MW_e

Budapest (6 MW_e)

Kazincbarcika (5 MW_e)

Győr (8 MW_e)

+ RRF development in progress 70 MW / 3 locations



WIND: 47.3 MW_e

Bőny: 25.0 MW_e

Bálorna: 15.0 MW_e

Ács: 2.0 MW_e

Pápakovácsi: 2.0 MW_e

Jánossomorja: 1.8 MW_e

Törökszentmiklós: 1.5 MW_e

BIO: 3.1 MW_e

Nagykőrös (biogas):

2.0 MW_e

Debrecen Civi1 (landfill gas):

0.6 MW_e

Debrecen Civi2 (landfill gas):

0.5 MW_e

SOLAR: 39.2 MW_e

Tereske: 20.0 MW_e

Nagykőrös: 7.0 MW_e

Balatonberény: 6.2 MW_e

Monor: 4.0 MW_e

Domaszék: 2.0 MW_e

HYDRO: 1.9 MW_e



Gibárt: 1.0 MW_e



Water Treatment Plant



Maintenance facility



Electrical boiler



Heating power plants



Industrial power plants



Hydro power plants



Wind farms



Landfill gas



Solar power plant



Biogas



Electricity storage



Hydro power plants



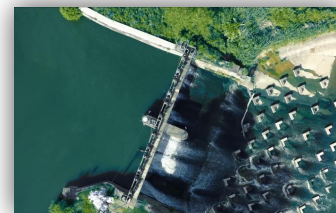
Landfill gas



Solar power plant

CUTTING-EDGE PRODUCTION MANAGEMENT SERVICES

ALTEO is a leading player on the Hungarian market in complex balancing solutions utilizing 1.100+ MW built-in capacity (conventional power plants, PV, BESS, Wind, Hydro) and managing up to 2.000 MW for our partners via a state-of-the-art Virtual Power Plant as an aggregator.



with the biggest built in
balancing capacity

on the Hungarian
balancing market

FLEXIBILITY & AVAILABILITY

CENTRAL CONTROL

DIVERSE BUILT-IN & MANAGED
CAPACITY BASE

Our near-future plans include the dynamic expansion of our own balancing capacities, which incorporates the development of the existing portfolio and storage capacities, and also the expansion of our managed 3rd party customer base.



DIVERSE AND BALANCED PORTFOLIO – SOLAR POWER PLANTS

ALTEO'S INSTALLED CAPACITY:



39.2 MW_e

Tereske: 20.0 MW_e

Nagykőrös: 7.0 MW_e

Balatonberény: 6.2 MW_e

Monor: 4.0 MW_e

Domaszék: 2.0 MW_e

PRODUCTION MANAGEMENT SERVICE INCLUDE:

- Power purchase
- Balancing group membership
- Forecasting and scheduling
- Covering the balancing energy fee
- Administrative tasks
- Production reports
- Inverter monitoring



Forecasting and scheduling
mainly for 3rd parties:

~2.000 MW_e (majority KÁT)

Balancing energy
provider group: ~1.100 MW_e

Autonomous, real-time, data-driven
decision-making and execution

Meteorological measurement network operation

Electricity trading and risk management

Control engineering design and integration

DIVERSE AND BALANCED PORTFOLIO – WIND POWER PLANTS

47 MW installed capacity

6 locations



47.3 MW_e

Bőny: 25.0 MW_e

Bábolna: 15.0 MW_e

Ács: 2.0 MW_e

Pápakovácsi: 2.0 MW_e

Jánossomorja: 1.8 MW_e

Törökszentmiklós: 1.5 MW_e

Top player in Hungary in Wind power

Significant Operation & Maintenance (O&M) experience

Actively looking for new Wind opportunities to balance portfolio

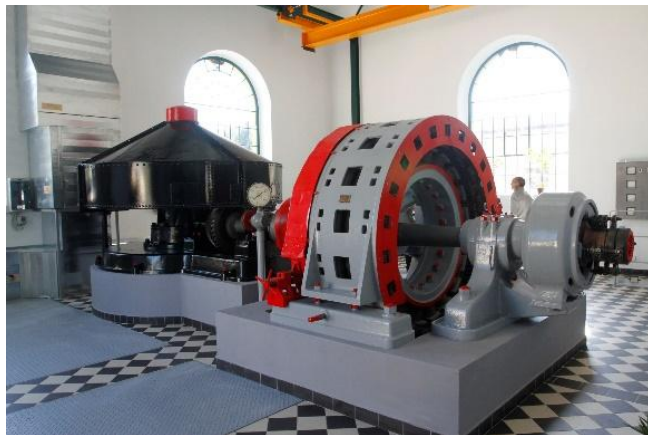
DIVERSE AND BALANCED PORTFOLIO – HYDRO POWER PLANTS

2 MW installed capacity

Two plants in Hungary:

Felsődobsza: 0.9 MW_e

Gibárt: 1.0 MW_e



DIVERSE AND BALANCED PORTFOLIO – BIOGAS POWER PLANT

3 MW installed capacity

Nagykőrös (biogas): 2.0 MWe

Debrecen Civis1 (landfill gas): 0.6 MWe

Debrecen Civis2 (landfill gas): 0.5 MWe

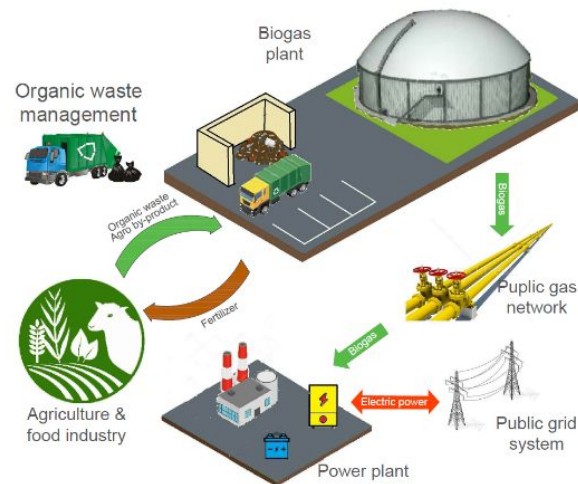


NAGYKŐRÖS BIOGAS PLANT:

- 45-60 kt/a organic waste
- 2 MW gas engines
- 12-14 GWh/a power

Intensification and reconstruction

- New fermentor
- Biogas filtering □ biomethane
- Gas grid connection



DIVERSE AND BALANCED PORTFOLIO – ENERGY STORAGE I.

THE ENERGY STORAGE SOLUTIONS ARE AN INTEGRAL PART OF THE ENERGY SUPPLY CHAIN AND BALANCING SERVICES: ALTEO is leading the industry in terms of development of storage facilities as well - in 2018 we have constructed and, as an integrated part of our virtual power plant, we operate the first industrial size electric energy storage unit in the region.

Total built-in capacity: 89 MW_e (from 2026)

Existing BESS facilities:

Budapest: 6 MW_e

Kazincbarcika: 5 MW_e

Győr: 8 MW_e

+ RRF development in progress: 70 MW / 3 locations

2024 HUNGARIAN RRF SUBSIDY FOR ENERGY STORAGE DEVELOPMENT:

- ~440 MW starting new commercial operations no later than 30th April 2026 from a 156,6 million EUR EU subsidy fund;
- All new storages shall operate at max power for at least two hours;
- CAPEX (45% or maximum ~340 EUR/kW) and OPEX (for 10 years) support;



50+10+10 MW confirmed, contracts signed with ALTEO – expected to be completed in 2026



DIVERSE AND BALANCED PORTFOLIO – ENERGY STORAGE II.

CENTRAL EASTERN EUROPE'S FIRST INDUSTRIAL SIZE ELECTRIC ENERGY STORAGE UNIT

Year of deployment: 2018

LOCATION: BUDAPEST, ZUGLÓ HEATING POWER PLANT

Technology data:

- Inverter + transformer (7,425 MVA), 3 db containers
- LG Li-ion accumulator (3,92 MWh storage capacity)
- 1 container □ 35 rack □ 595 modules □ 16.660 cells

We use it for:

- Primary electricity system balancing
- Balancing of weather dependent renewable production
- Peak-shaving



DIVERSE AND BALANCED PORTFOLIO – ENERGY STORAGE III.

LOCATION: KAZINCBARCIKA HEATING POWER PLANT

Technology data:

- 5 MW capacity
- Li ion accumulator (5 MWh storage capacity)

We use it for:

- Primary electricity system balancing
- Balancing of weather dependent renewable production
- Peak-shaving



LOCATION: GYÖR, NEW SITE

Technology data:

- 8 MW capacity
- Li ion accumulator (16 MWh storage capacity)

We use it for:

- aFRR, FCR
- Balancing of weather dependent renewable production
- Peak-shaving





THANK YOU FOR YOUR ATTENTION!