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Quantifying transition climate risks in real estate investment models: the development of the Preserve tool

ULI Europe webinar

Moderator
Aleksandra Smith-Kozłowska
Director, Research ULI Europe





**Urban Land
Institute**

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Shape the future of the built environment for
transformative impact in communities worldwide



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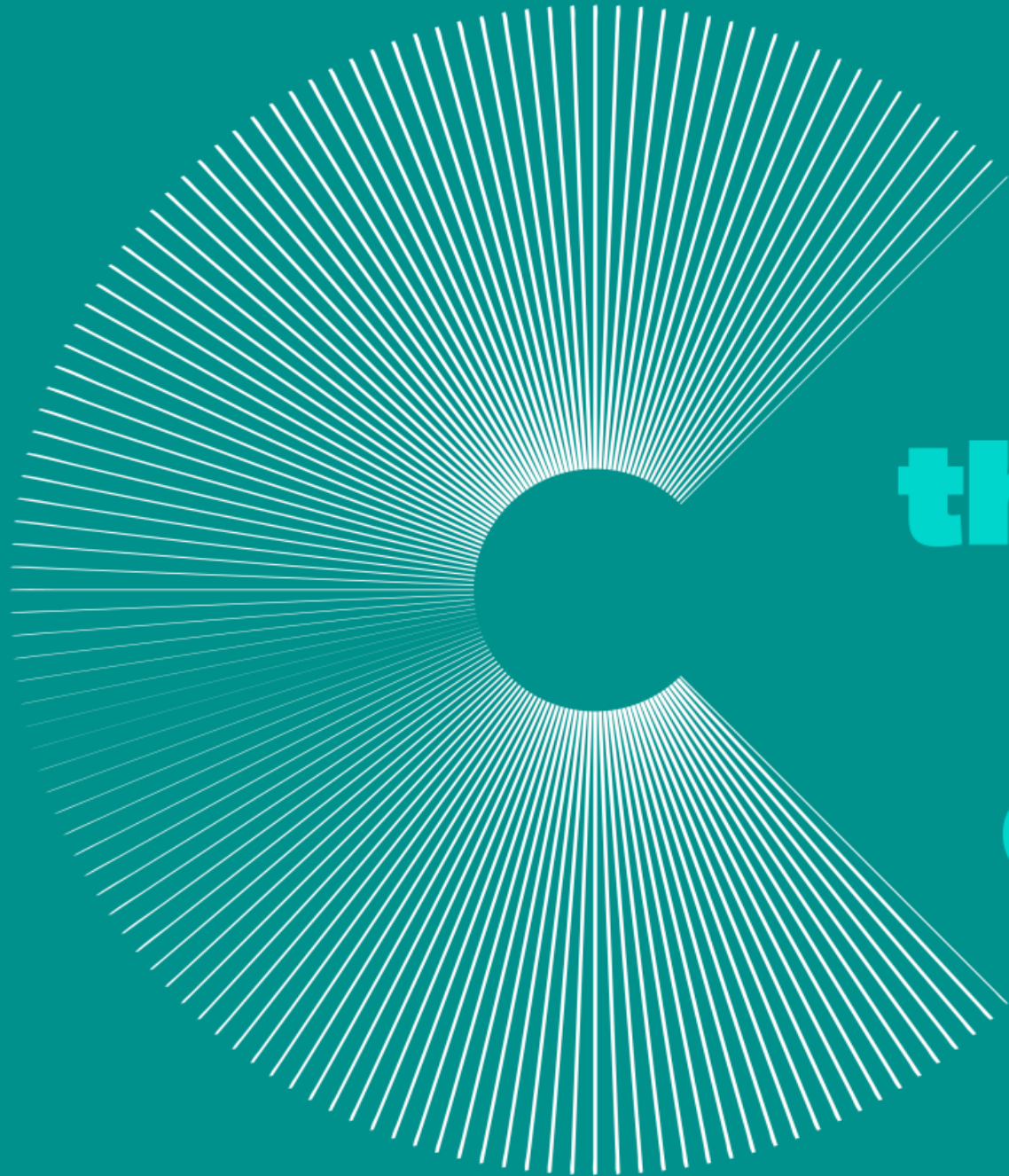
Active across the value
chain: investors, developers,
architects, city planners, etc



Thought leadership
& education



Quantifying transition climate risks in real estate investment models: the development of the Preserve tool



**Mobilising
the real estate
industry to
decarbonise.**

CChange

What is C Change

Mobilising the industry to speed up and scale up decarbonisation in Europe

Partners:

Hines

IPUT
REAL ESTATE
DUBLIN

J.P.Morgan
ASSET MANAGEMENT

PIMCO



REDEVCO

Schroders
capital

Supporters:



LONGEVITY
PARTNERS

OXFORD

PATRIZIA

Sierra
Sonae

Urban
Partners

We focus on systems change

We collaborate

We co-create solutions

The intervention points

Identified areas for action

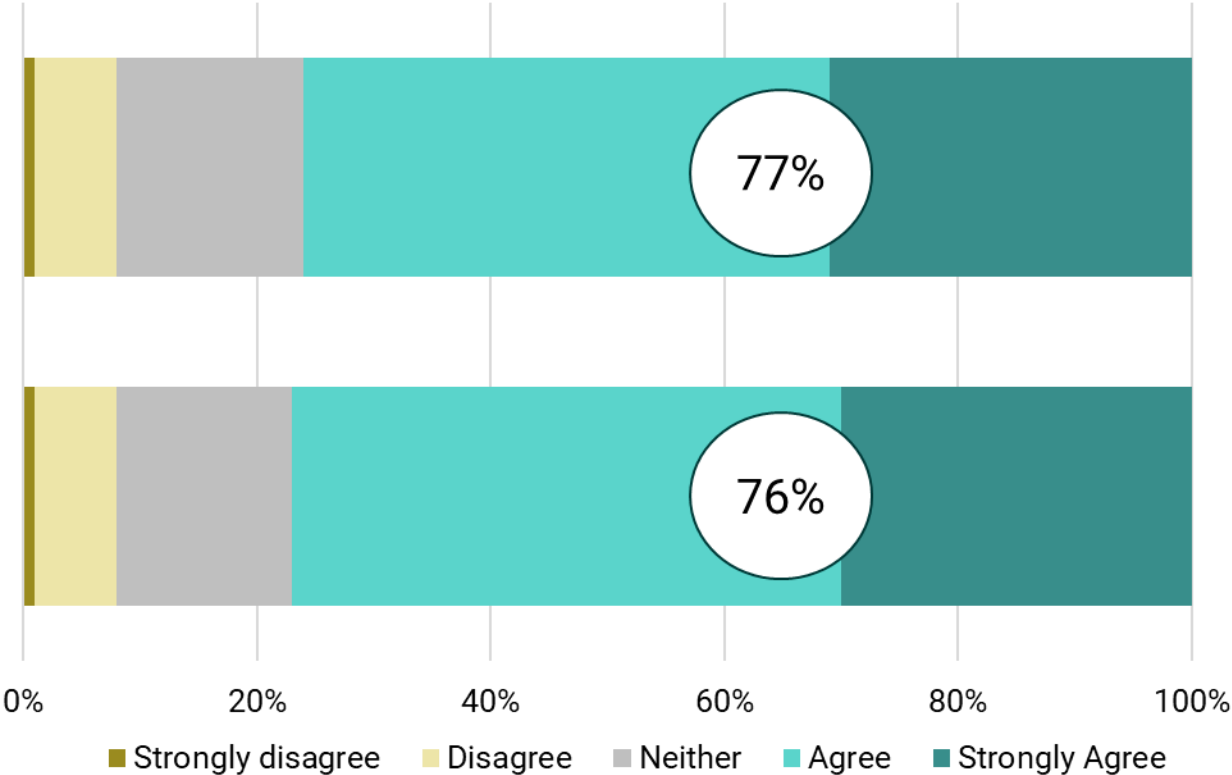
| | | | | | |
|-------------------------------------|--|--------------------------------------|------------------------------------|-----------------------------------|--------------------------------------|
| In progress – C Change | Assessing transition risk in valuations | Carbon pricing | Owner/ occupier alignment | City scale solutions | Co-ordinated investment voice |
| Needs industry action | Skills gap | Building renovation passports | Technology and first movers | Real estate industry voice | Roadmap: targets and actions |
| In progress – wider industry | Net zero building standards | Energy efficiency database | Whole life carbon | | |

The valuation challenge

Data from Emerging Trends in Real Estate 2025

ESG credentials will have a material effect on asset valuations in the next 12-18 months

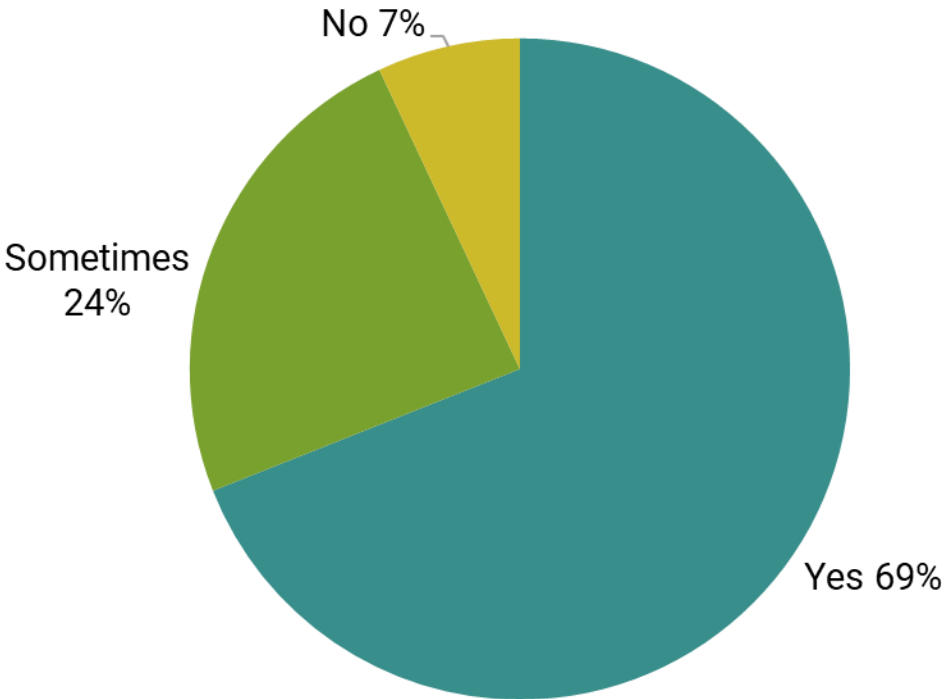
Current valuations do not accurately reflect current challenges and opportunities impacting real estate such as climate change, social impact and occupier demand fundamentals



The current situation

Transition risk assessment forms a part of investment process

Organisations factoring transition risk into investment decision-making



94%

of C Change survey respondents said that transition risks had affected their portfolio strategy in the past 12 months

51%

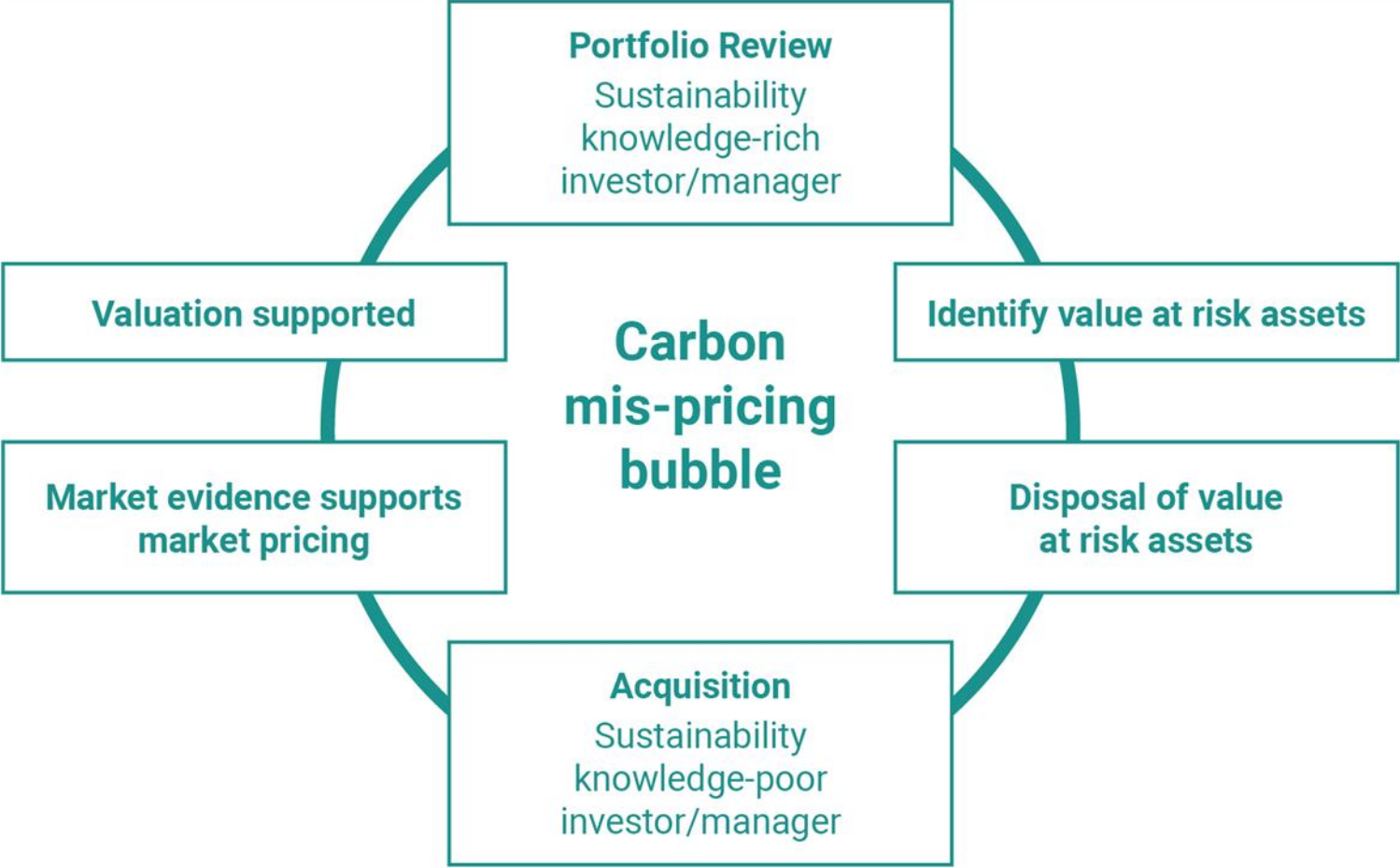
of respondents allocated capital to assets with greater transition risks

30%

of respondents divest from assets with greater transition risks

Acknowledging the carbon bubble

The need for a common, transparent methodology for transition risk assessment



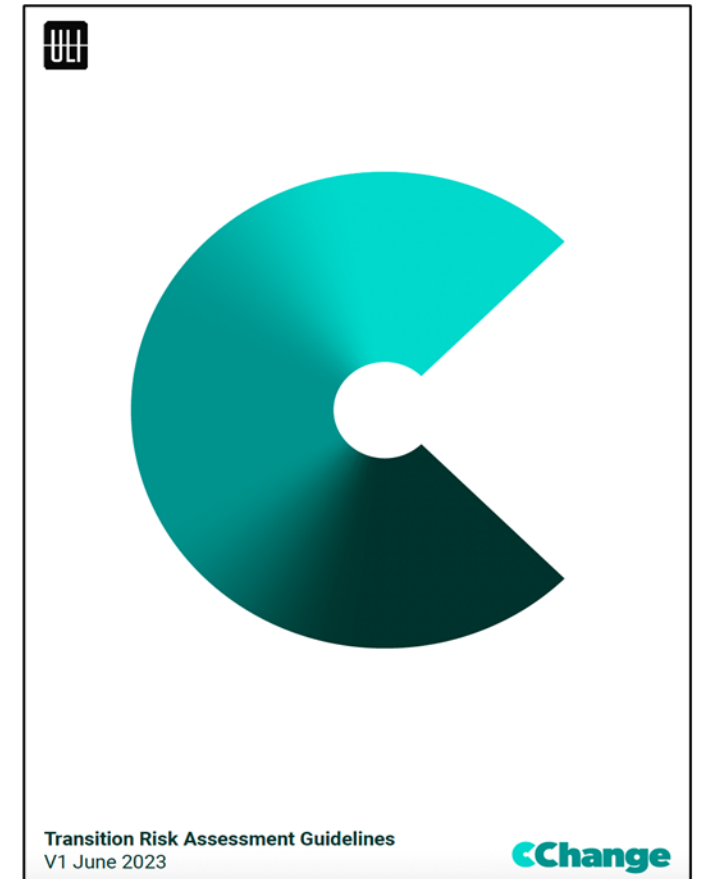
Unlocking the valuation issue was critical

Removing a major barrier to a fast, effective and just transition

Current property valuations do not price in transition risks, particularly the cost of doing nothing

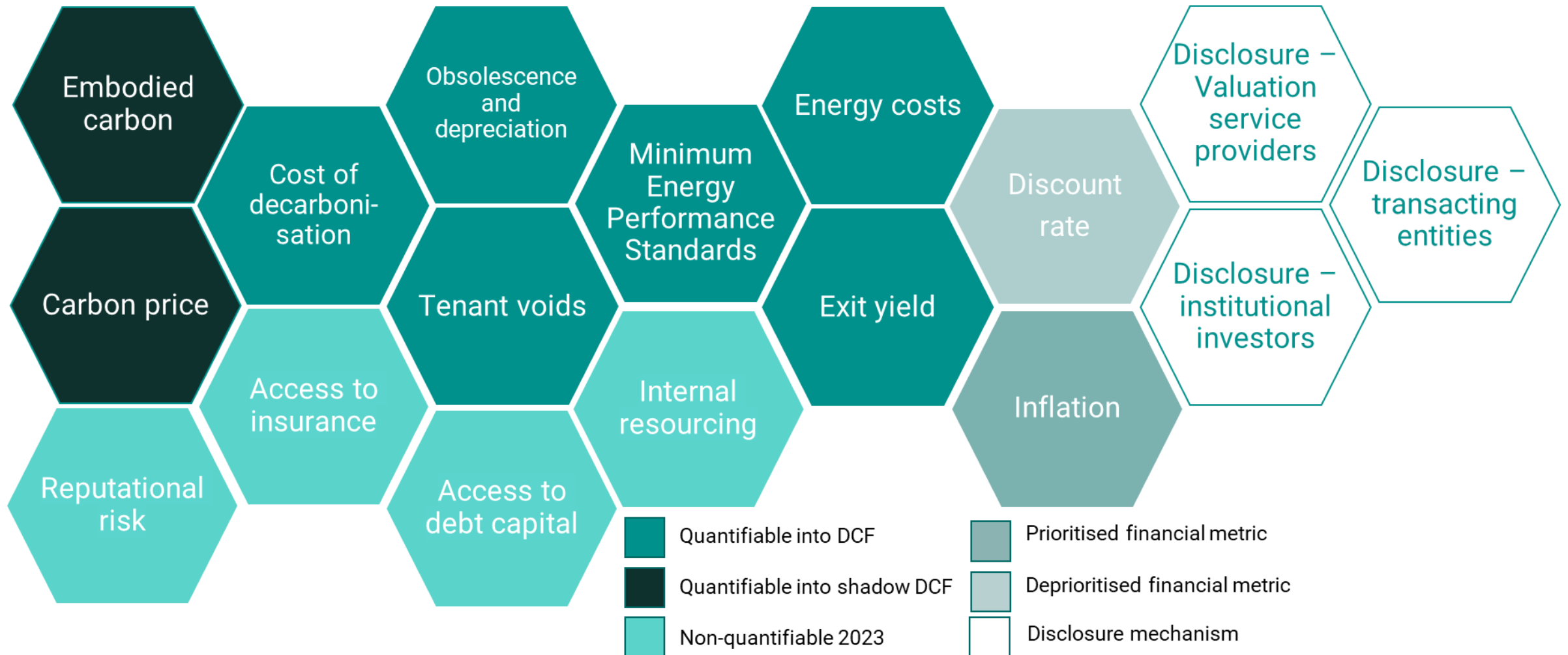
We need to level the playing field between investors to unlock investment in sector-wide decarbonisation

This prompted the development of the C Change Transition Risk Assessment Guidelines



Eight risks can be quantified and assessed

A standardised method for assessing and integrating transition risks in a DCF



Next steps: accelerating adoption

- **Pilot case studies** to gather feedback and test the guidelines in practice
- **Community of practice** to collaborate on shared challenges
- **Preserve tool** to enable easy incorporation of the guidelines into existing valuation processes



Urban Land Institute News Release

ULI Europe announces the development of 'Preserve' - a new tool from C Change to speed up the decarbonisation of real estate

Preserve will enable the consistent assessment and measurement of climate transition impacts in real estate investment models

SPECIFICATION

Seven sections and 60+ pages

1. **Introduction (6%):** Outline details of C Change and key Preserve interfaces, and the purpose of the PBS.
2. **The Problem (15%):** Summary of the problem statement and key issues to be considered or addressed by Preserve.
3. **The Solution (8%):** Strategic overview, first principles, and key solution requirements.
4. **Transition Risk Modelling (28%):** Detailed explanation of how each transition risk is treated and addressed in Preserve.
5. **Tool Architecture (21%):** Definition of architecture, data input/output, and the specific functions of each module.
6. **Development Roadmap (16%):** Updated plan for development of the tool and specification of future phases.
7. **Delivery Considerations (6%):** Summary of key opportunities, risks, and considerations for future phases.

SYNERGETIC **MOTT MACDONALD** **M M** **CBRE** **eChange**



**C is for come on
board and join
the movement.**

THE PROBLEM

1

Understanding: Property investment professionals aren't (usually) decarb experts and lack understanding of what net zero means for investment models.

2

Consistency: Reflecting the climate transition in financial models is wildly inconsistent, and makes evaluating investment opportunities difficult.

3

Complexity: There are so many tools, policies, and systems involved in the transition that the learning curve is steep with low 'return-on-effort'.

4

Transparency: The lack of standardised risk and opportunity assessment limits benchmarking and comparability between models.

THE SOLUTION

Preserve seeks to create a 'level playing field' on which **net zero becomes a deliverable commercial opportunity.**

OUR APPROACH: CORE PRINCIPLES

1

Frame net zero as a **commercial opportunity** to drive both climate action and value creation.

2

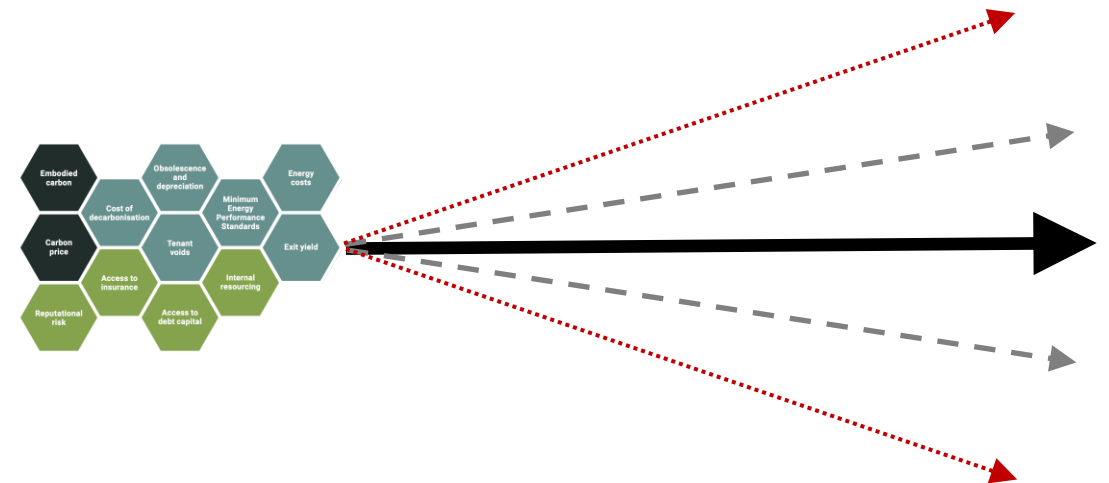
Make factoring transition risk into financial models and analyses **easy and consistent.**

3

Ensure **scalability** and **facilitate widespread** uptake across the industry.

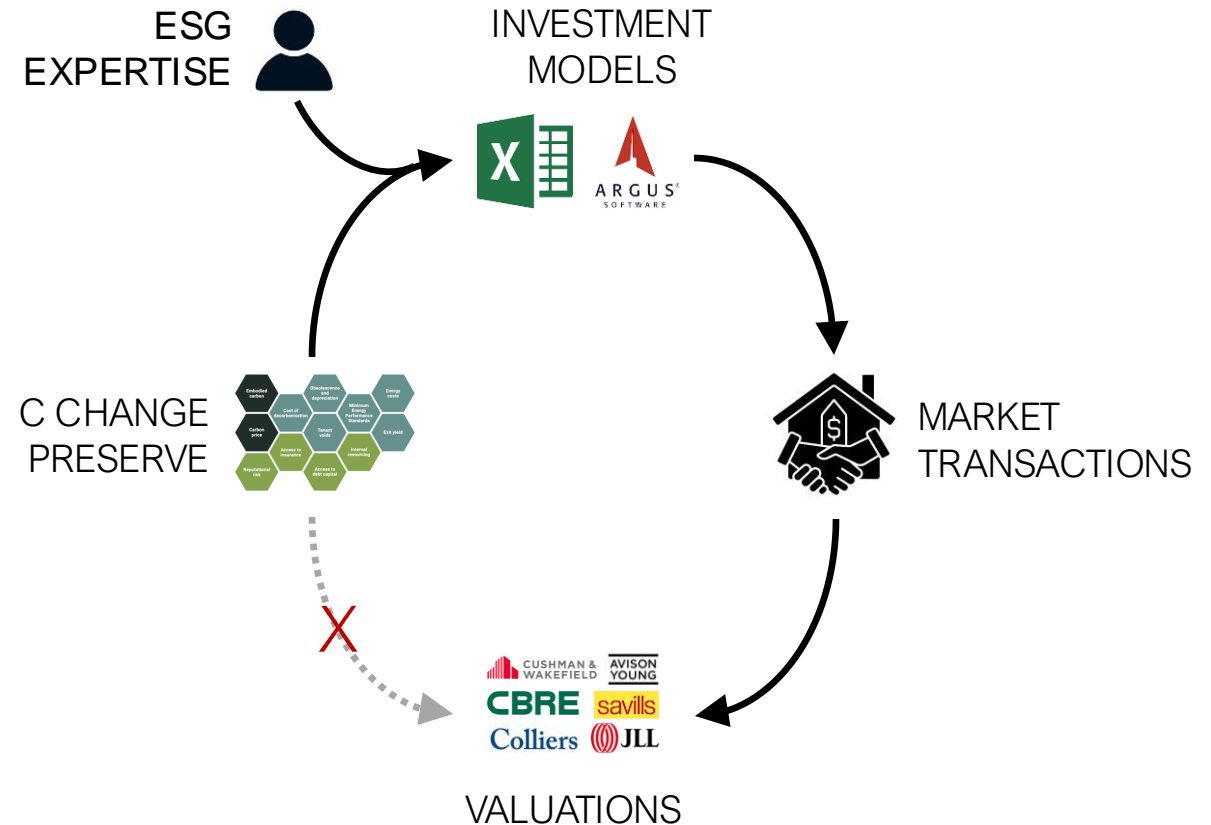
BALANCING CONSISTENCY WITH FLEXIBILITY

Preserve will quantify transition risk in a consistent way, but also allow for optional scenario testing and financial sensitivity analysis.



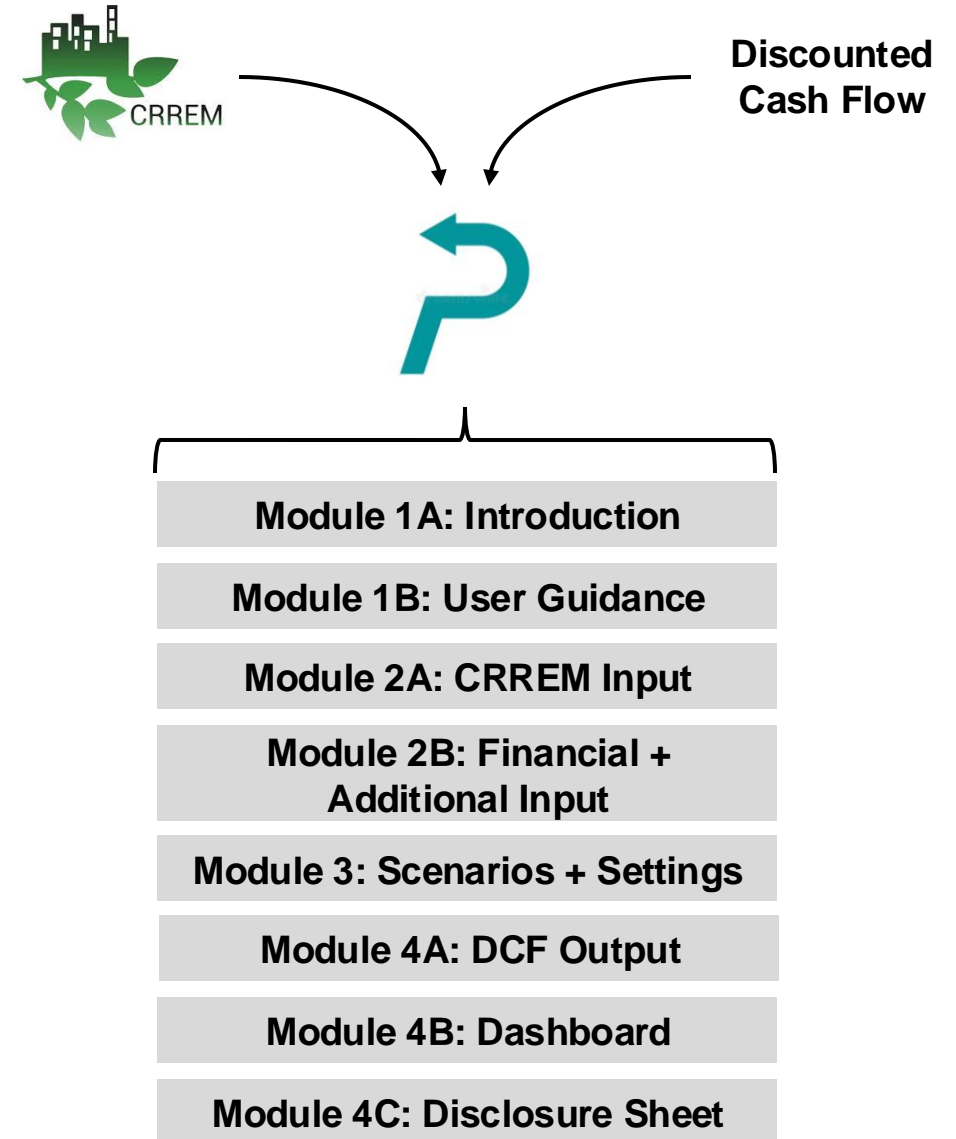
SHIFTING INVESTMENT MODELS, NOT VALUATION METHODS

Preserve is primarily designed for investment and asset managers, with sustainability professionals and valuers being secondary stakeholders.

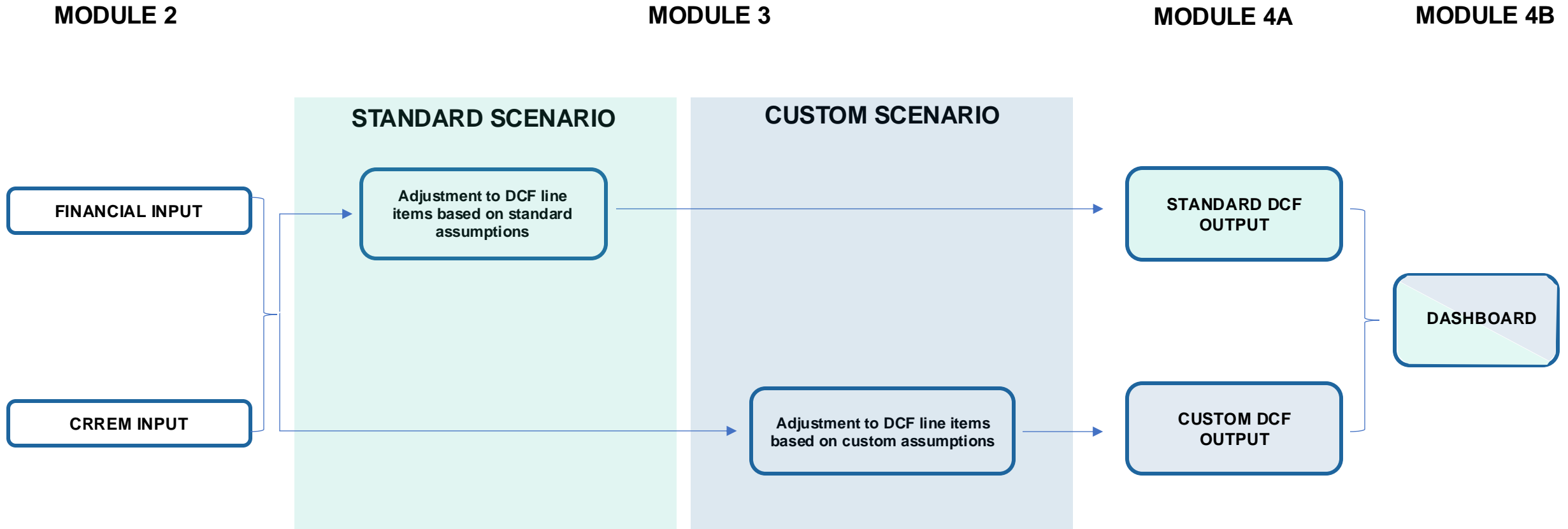


TOOL OVERVIEW

Preserve will be an eight-module Excel-based tool which integrates with CRREM and a range of DCF model formats.



DATA WORKFLOW



Module 2A: Decarb Input



Discounted Cash Flow



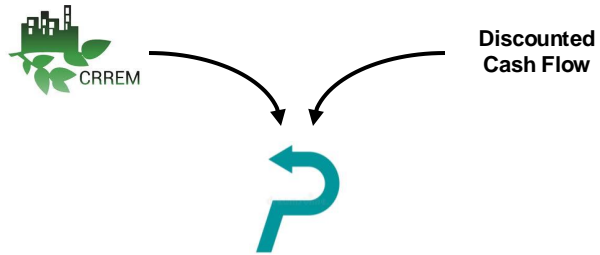
- Module 1A: Introduction
- Module 1B: User Guidance
- Module 2A: CRREM Input**
- Module 2B: Financial + Additional Input
- Module 3: Scenarios + Settings
- Module 4A: DCF Output
- Module 4B: Dashboard
- Module 4C: Disclosure Sheet

The screenshot displays the 'COMPLETED CRREM ASSESSMENT' spreadsheet interface. It features a top toolbar with standard software functions and a main grid divided into several functional tabs:

- From the 'Input' tab in CRREM Tool:** A table for asset details including Asset ID, Inclusion, Asset Name, Reporting year, Gross Asset Value (GAV), Reporting period, and Entity. It also includes fields for Location (Country, City, Zip Code, Address), Property type, and various Floor area share percentages for different property types in mixed-use buildings. Air conditioning and Asset size are also specified.
- From the 'Settings' tab in CRREM Tool:** A table for emission factors and prices. It includes sections for Electricity emission factor, District heating emission factor, District cooling emission factor, Electricity price, Gas price, and Oil price. Each section has dropdown menus and input fields for selecting methods and setting values.
- Additional information from sources different than CRREM:** A section for user-defined inputs such as Retrofit information, Embodied Carbon, External certifications, and Decarbonisation strategy.

At the bottom, a navigation bar allows switching between modules: Module 1A Introduction, Module 1B User Guide, **Module 2A Asset Info Input**, Module 2B DCF Input, Module 3 Scenarios, Module 4A DCF Output, Module 4B Dashboard, and Module 4C Disclosure Sheet.

Module 2B: DCF Input



- Module 1A: Introduction
- Module 1B: User Guidance
- Module 2A: CRREM Input
- Module 2B: Financial + Additional Input**
- Module 3: Scenarios + Settings
- Module 4A: DCF Output
- Module 4B: Dashboard
- Module 4C: Disclosure Sheet

Sketch Solution v2

Home Insert Draw Page Layout Formulas Data Review View Automate Acrobat

Themes Colours Margins Orientation Size Print Area Breaks Background Print Titles Page Setup Width: Automatic Gridlines Headings View View Print Print Height: Automatic

AE96

In this module the user can fill in DCF information by pasting information from their in-house Discounted Cash Flow Model.

| Energy Prices (as of 2024) | | | | | | Carbon Prices | | | | |
|----------------------------|-------------------------------------|--|------------------|------------------|-------------------------------|-------------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Asset ID | Purchased electricity price (€/kwh) | Electricity price for selling back to the grid (€/kwh) | Gas price (€/m3) | Oil price (€/m3) | District Heating price (€/Mj) | District Cooling price (€/Mj) | 2020 carbon price (€/tCO2) | 2030 carbon price (€/tCO2) | 2040 carbon price (€/tCO2) | 2050 carbon price (€/tCO2) |
| 1 | | | | | | | | | | |
| 2 | | | | | | | | | | |
| ADD NEW ROW | | | | | | | | | | |

If custom future energy prices are defined, they can be filled in below. Otherwise an estimate of future energy prices from CRREM will be used.

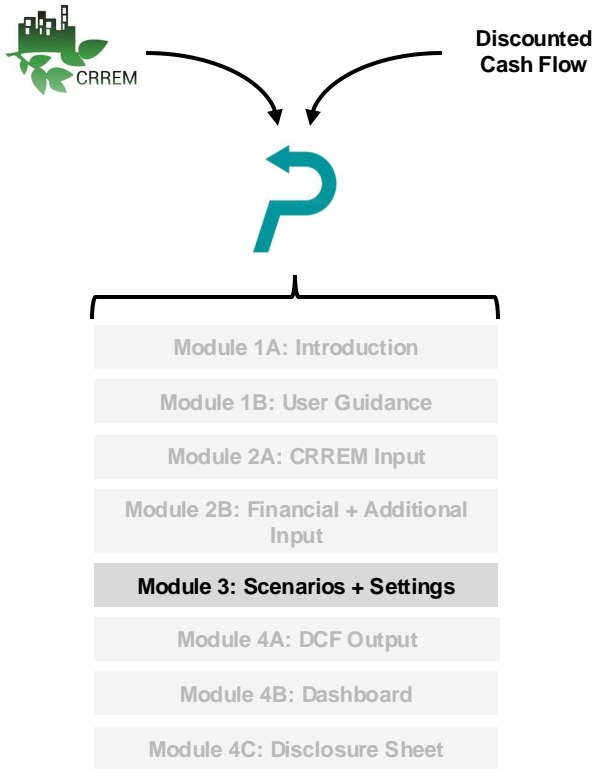
| User defined electricity prices set manually for each year | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Asset ID | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 | 2044 | 2045 | 2046 | 2047 |
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ADD NEW ROW | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ASSET 1

| YEAR | Investment | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|--|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gross Rental Revenue | | | | | | | | | | | | | | | | | | | | | |
| Vacancy Allowance | | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - |
| Energy costs (gas, electricity, DH/DG) | | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - |
| CapEx for standard maintenance | | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - |
| Decarbonisation CapEx | | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - |
| Carbon Price: Operational | | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - |
| Carbon Price: Embodied | | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - |
| MEPS Penalties | | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - |
| Other costs | | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - |
| Net Rental Revenue | | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - |
| Asset Disposal | | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - | € - |

Ready Accessibility: Investigate 80%

Module 3: Scenarios and Assumptions



AutoSave | Sketch Solution v2 | Search (Cmd + ...)

Home | Insert | Draw | Page Layout | Formulas | Data | Review | View | Automate | Acrobat

Themes | Colours | Margins | Orientation | Size | Print Area | Breaks | Background | Print Titles | Page Setup | Width: Automatic | Height: Automatic | Gridlines | Headings | View | Print

AL50 | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y

In this module the user can view the default assumptions for transition risk modelling and add custom assumptions for each transition risk scenario. Transition risk scenarios are defined by a combination of Decarb Scenario, Occupier Scenario, and Investor Scenario. Start by selecting the transition risk scenario you wish to view and/or customise by selecting a combination of the three input scenarios.

ASSET 1

DECARB SCENARIO

OCCUPIER SCENARIO

INVESTOR SCENARIO

SELECTED SCENARIO

LEVEL 1

LEVEL 2

LEVEL 3

HIGH PREMIUM

MED PREMIUM

NO PREMIUM

HIGH PREMIUM

MED PREMIUM

NO PREMIUM

SCENARIO EXPLANATION

DECARB

This scenario defines the level of net zero alignment of an asset. This will impact on the CapEx required to align the asset with CRREM pathway, cost of carbon and costs related to energy consumption. For each asset class a separate set of guidelines will be defined that will help the user categorise it as Level 1, 2 or 3 in terms of "greenness". The categorisation will be made based on the alignment with CRREM pathways and Energy Performance Certificates as a proxy in case CRREM data is lacking. The final decision on the selection of one of the three scenarios is left to the user and his/her understanding of the specific market situation and the position of the building in question within it.

OCCUPIER

This scenario defines the level of demand among tenants to occupy net zero buildings. This will impact on the tenant voids and rental premia/discounts within the DCF.

INVESTOR

This scenario defines the level of demand among investors to acquire net zero buildings and the degree to which they are willing to pay more for these properties. This will impact exit yield within the DCF.

SCENARIO VARIABLES

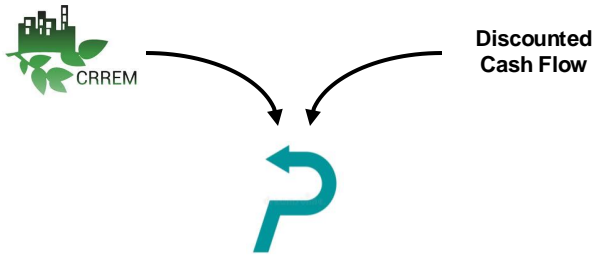
ASSET 1

| Variable | Standard Scenario | Custom Scenario | |
|---|-------------------|-----------------|---|
| | Proposed value | Own input | |
| Current Energy Price | | | |
| Energy Price 2030 | | | Price based on ORREM |
| Energy Price 2040 | | | Price based on ORREM |
| Energy Price 2050 | | | Price based on ORREM |
| Carbon Price 2030 | | | Price based on UJ Carbon Pricing workstream |
| Carbon Price 2040 | | | Price based on UJ Carbon Pricing workstream |
| Carbon Price 2050 | | | Price based on UJ Carbon Pricing workstream |
| CapEx adjustment for 1.5° CRREM pathway alignment | | | Calculated based on the selected Decarb Scenario and required % CO2 reduction to reach 1.5° CRREM alignment |
| CapEx adjustment for 2.0° CRREM pathway alignment | | | Calculated based on the selected Decarb Scenario and required % CO2 reduction to reach 2.0° CRREM alignment |
| Tenant void adjustment factor | | | Calculated based on the asset class and selected Tenant Scenario |
| Exit yield adjustment factor | | | Calculated based on the asset class and selected Investor Scenario |
| Rental premia/discount adjustment factor | | | Calculated based on the asset class and selected Tenant Scenario |

Module 1A Introduction | Module 1B User Guide | Module 2A Asset Info Input | Module 2B DCF Input | **Module 3 Scenarios** | Module 4A DCF Output | Module 4B Dashboard | Module 4C Disclosure Sheet

Ready | Accessibility: Investigate

Module 4A: DCF Output



- Module 1A: Introduction
- Module 1B: User Guidance
- Module 2A: CRREM Input
- Module 2B: Financial + Additional Input
- Module 3: Scenarios + Settings
- Module 4A: DCF Output**
- Module 4B: Dashboard
- Module 4C: Disclosure Sheet

Sketch Solution v2 - Search (Cmd + Ctrl + U) Comments

Home Insert Draw Page Layout Formulas Data Review View Automate Acrobat

Themes Colours Margins Orientation Size Print Area Breaks Background Print Titles Page Setup Width: Automatic Gridlines Headings View View Print Print Height: Automatic

AJ37

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46

This module shows the adjustment to the Discounted Cash Flow due to the inclusion of Transition Risks. In a form of a table, it shows the impact of the scenarios on the financial performance of an asset in question.

ASSET 1

Select your scenario

Decarb Scenario: LEVEL 1, LEVEL 2, LEVEL 3
 Occupier Scenario: NO PREMIUM, MED PREMIUM, HIGH PREMIUM
 Investor Scenario: NO PREMIUM, MED PREMIUM, HIGH PREMIUM

ADJUSTMENT: STANDARD ASSUMPTIONS

| YEAR | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|----------------------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|
| Rental Revenue Adjustment | | | | | | | | | | | | | | | | | | | | |
| Tenant Void Adjustment | | | | | | | | | | | | | | | | | | | | |
| Carbon Price - Operational | | | | | | | | | | | | | | | | | | | | |
| Carbon Price - Embodied | | | | | | | | | | | | | | | | | | | | |
| Decarb CapEx Adjustment | | | | | | | | | | | | | | | | | | | | |
| Energy Cost Adjustment | | | | | | | | | | | | | | | | | | | | |
| MEPS Penalties | | | | | | | | | | | | | | | | | | | | |
| Exit Valuation Adjustment | | | | | | | | | | | | | | | | | | | | |
| NET | | | | | | | | | | | | | | | | | | | | |

ADJUSTMENT

| | |
|-----|--|
| IRR | |
| NPV | |

ADJUSTMENT: CUSTOM ASSUMPTIONS

| YEAR | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|----------------------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|
| Rental Revenue Adjustment | | | | | | | | | | | | | | | | | | | | |
| Tenant Void Adjustment | | | | | | | | | | | | | | | | | | | | |
| Carbon Price - Operational | | | | | | | | | | | | | | | | | | | | |
| Carbon Price - Embodied | | | | | | | | | | | | | | | | | | | | |
| Decarb CapEx Adjustment | | | | | | | | | | | | | | | | | | | | |
| Energy Cost Adjustment | | | | | | | | | | | | | | | | | | | | |
| MEPS Penalties | | | | | | | | | | | | | | | | | | | | |
| Exit Valuation Adjustment | | | | | | | | | | | | | | | | | | | | |
| NET | | | | | | | | | | | | | | | | | | | | |

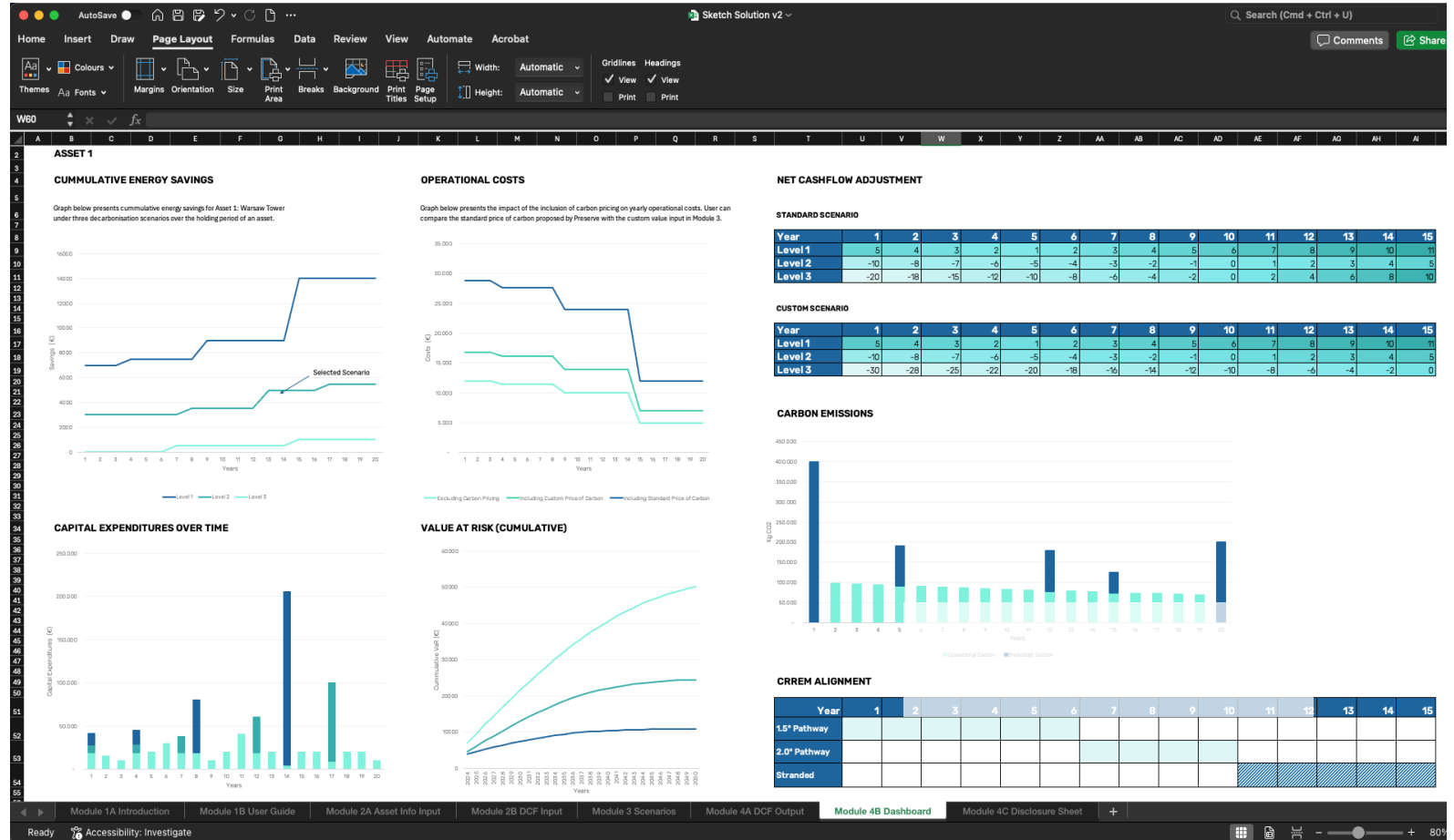
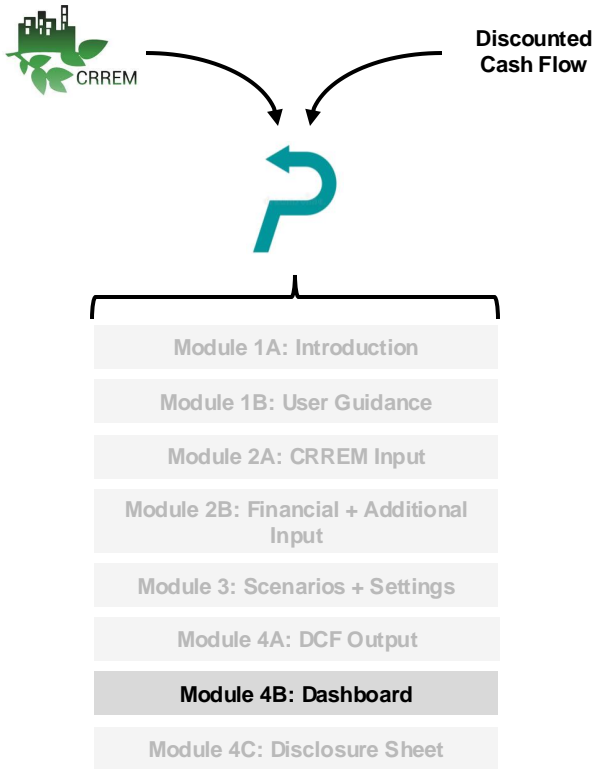
ADJUSTMENT

| | |
|-----|--|
| IRR | |
| NPV | |

Module 1A Introduction | Module 1B User Guide | Module 2A Asset Info Input | Module 2B DCF Input | Module 3 Scenarios | **Module 4A DCF Output** | Module 4B Dashboard | Module 4C Disclosure Sheet

Ready Accessibility: Investigate

Module 4B: Dashboard

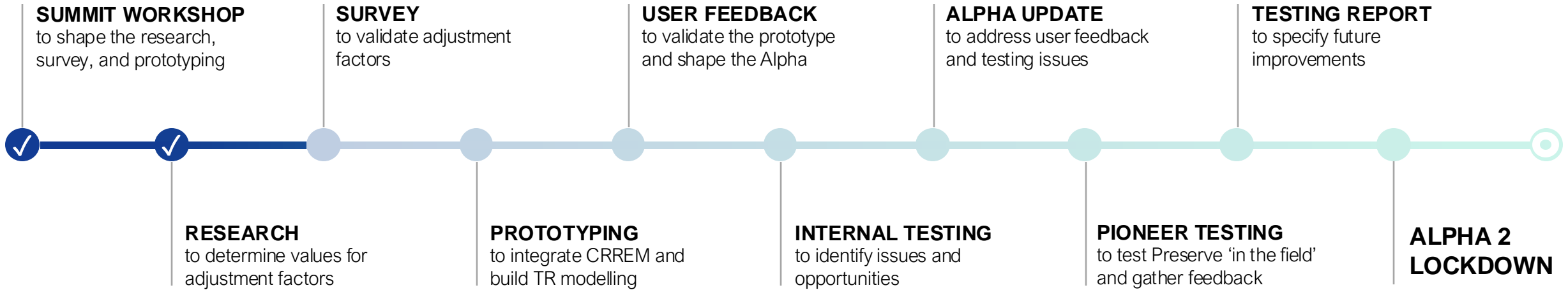


PROGRAMME OVERVIEW

FIVE PHASES TO DRIVE IMPACT



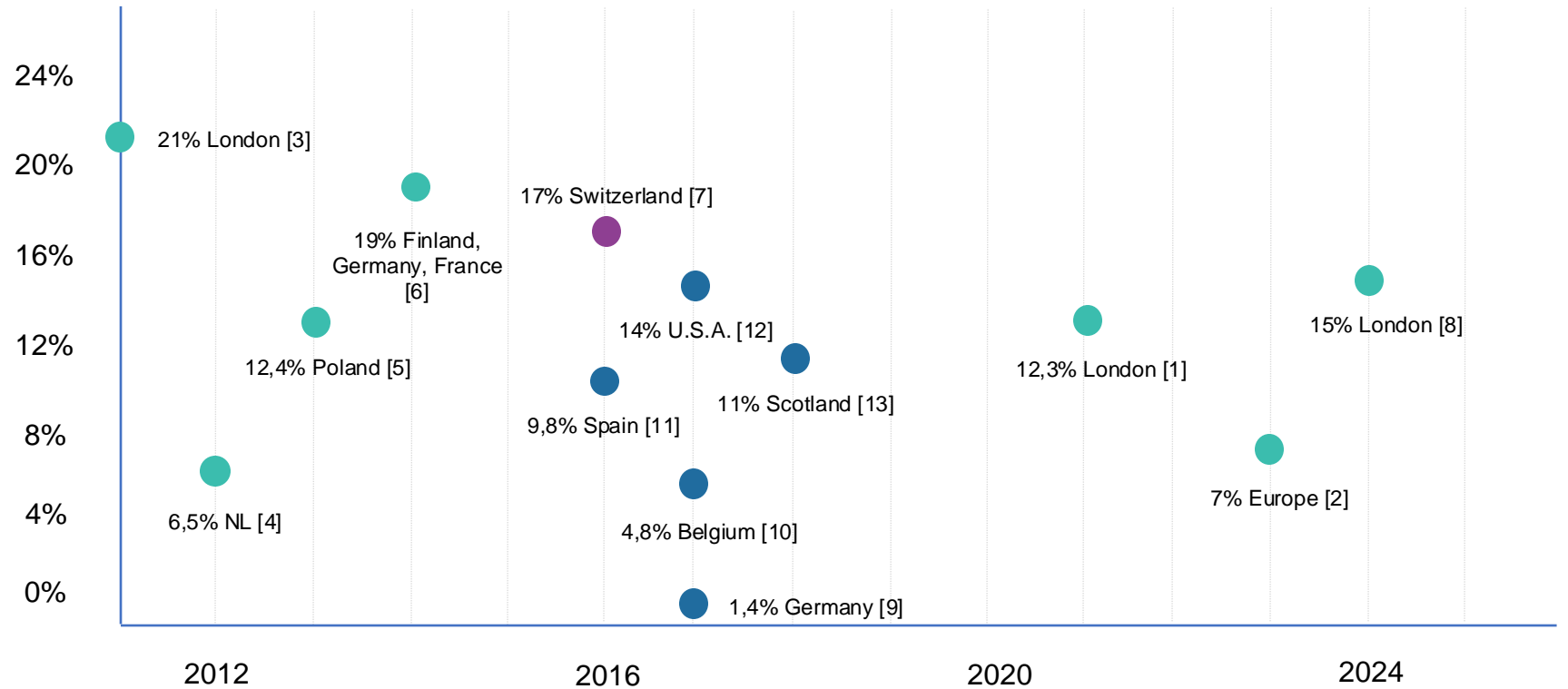
PHASE 2: DEVELOPMENT AND EARLY TESTING



RENTAL RATE DISCOUNTS ON 'BROWN' ASSETS

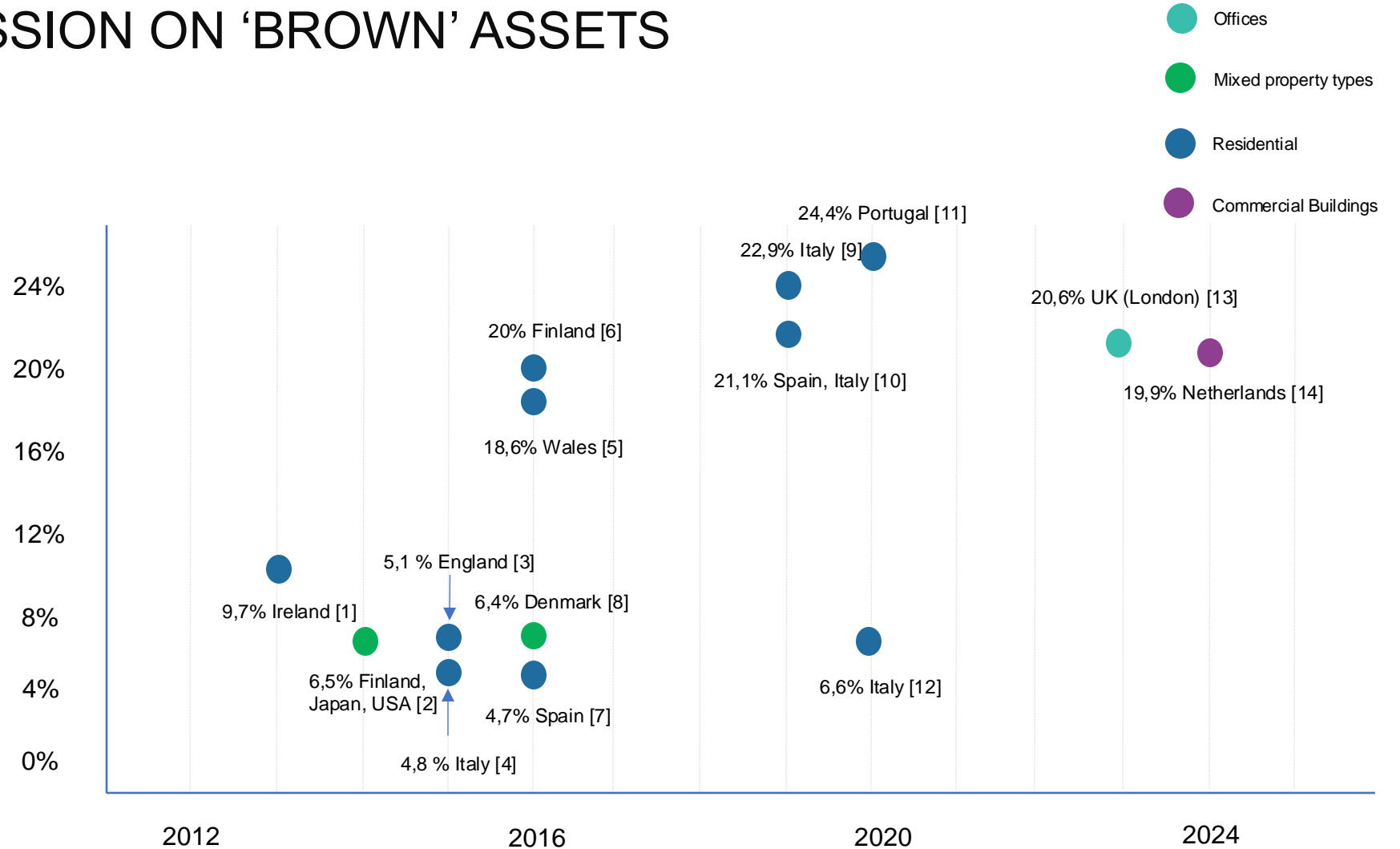
- Offices
- Commercial Buildings
- Residential

| Average | By Asset class |
|---------|-----------------------|
| 8.56% | Residential |
| 8.39% | Commercial |
| 3.35% | Mixed |
| Average | By Geography |
| 9.70% | Europe (including UK) |
| 6.00% | USA/Canada |
| 10.21% | UK only |



EXIT YIELD COMPRESSION ON 'BROWN' ASSETS

| Average | By Asset class |
|---------|-----------------------|
| 11.86% | Residential |
| 12.38% | Commercial |
| 6.4% | Mixed |
| Average | By Geography |
| 12.80% | Europe (including UK) |
| 8.36% | USA/Canada |
| 16.60% | UK only |



GET INVOLVED

Preserve is a collaborative project driven in partnership with industry.

Get involved by:

1. Completing the survey
2. Participating in future workshops
3. Joining as a C Change partner or supporter

GET IN TOUCH

For further info on Preserve and transition risk modelling, please reach out to:



DEREK WILSON

CEO

Synergetic

derek.wilson@synergetic.group

For further info on C Change and sponsorship opportunities:

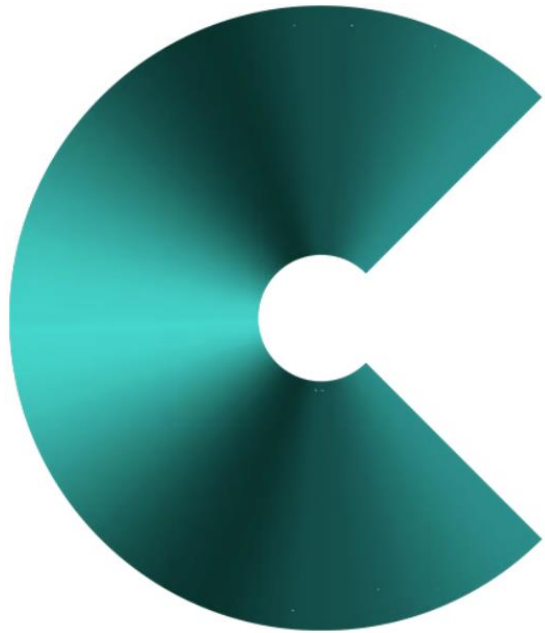


ALEKSANDRA SMITH-KOZŁOWSKA

Director of Research

ULI Europe

aleksandra.smith-kozłowska@uli.org



Change

PRESERVE

INTRO AND INSIGHTS

 **SYNERGETIC**

**MOTT
MACDONALD** ^M _M

CBRE

Panel Discussion



Daniel Chang
Hines Europe Ltd
Managing Director and
European Head of ESG



Marvie Haas
Catella Investment
Management
Head of Impact Investing



Paul Kennedy
JP Morgan Asset
Management
Managing Director



Derek Wilson
Synergetic B.V.
CEO



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Please check the chat box where you can find the link, remember to copy and save the link so you can fill in the survey after the webinar.



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Upcoming Webinars:

ULI Europe Climate Risk and Insurance Implications for Real Estate – Webinar

Wednesday 26 February 2025

13:00 GMT / 14:00 CET



Thank you for attending the webinar.

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will be available to members on
Knowledge Finder soon.

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