Decarbonisation Pathways for Real Estate Available for Public Consultation

Carbon Risk Real Estate Monitor (*CRREM*) announces the public release of decarbonisation pathways for the global real estate sector and the finalization of the tool to identify and manage transition risks for individual assets.

The pathways will help market participants meet the recommendations of the *Task Force on Climate-related Financial Disclosures (TCFD)*. The downscaling pathways published today on the *CRREM* website identify annual energy- and carbon-intensity trajectories until 2050 across real estate markets and sectors that are consistent with keeping global warming below 2 degrees Celsius. This is a policy goal endorsed by most municipal and national governments and thereby constitutes a plausible scenario against which future climate-related transition risk can be assessed.

The major investors supporting *CRREM* aim to establish it as a global standard for developing long-term decarbonisation pathways in the real estate sector based on a transparent and scientifically rigorous methodology. *CRREM* covers 28 countries in Europe, North America and Asia-Pacific across the commercial real estate sector, including retail, offices, and logistics, as well as the residential sector. *GRESB,* the ESG benchmark for real assets, is integrating the decarbonisation pathways into its range of information resources covering ESG risks in real estate markets, and the European Commission's high-level expert group referenced *CRREM* in its final report on the upcoming EU Taxonomy on sustainable finance in March.

Managing climate-related transition risk
Real estate plays a major role in combatting climate change. The construction and operation of buildings accounts for 39 percent of energy-related greenhouse gas emissions globally, and much higher percentages in densely populated urban centres. This exposes the real estate sector to significant climate-related transition risk as governments have started to impose increasingly stringent regulations on energy use and emissions from buildings to meet their own climate goals.

Regulatory risk around energy and carbon is shaping market and technology trends in the real estate sector. As temperature is projected to rise 3.8 degrees Celsius under current legislation, the decarbonisation pathways aligned with 1.5- and 2-degree global carbon budgets reflect significant reduction requirements beyond current legislative requirements. *CRREM* estimates that the carbon-intensity of the building sector will globally have to decline from currently approx. 52 kgCO2e/m²/pa to below 10 kgCO2e/m²/pa by 2050 in order to be in line with the 2-degree global carbon budget. Such a scenario would have significant implications for long-term asset planning and risk management in the sector – especially for developed countries which in some cases are facing 100 kgCO2e/m²/pa as a starting point for office buildings (based on a whole-building approach). Calculation of the global reduction targets and the derived national targets for different asset classes in the real estate sector create added-value for investors. Added value for example includes the transparent analysis of carbon risks, calculation of the abatement costs and analysing the correct timing of retrofit measures that are needed to minimize climate-related transition risk.

Using tools and science-based approaches
Besides the pathways, *CRREM* also finalized the development of a tool to manage stranding risk for individual buildings. All information required is aligned with the information *GRESB* collects at the asset level in order to assess and benchmark the performance of real asset portfolios. The software is Excel-based and has undergone a significant testing phase. It is available on the crrem.eu website.

CRREM participants
The decarbonisation pathways were developed by the Austria-based *Institute for Real Estate Economics (IIÖ)*, with technical support from *GRESB*. They were developed with the oversight of the newly instituted *CRREM Scientific Advisory Committee*, comprised of carefully selected academic experts with backgrounds in real estate and environmental sustainability across European, North American, and Asian markets.

The initiative was funded by *APG*, *PGGM* and *Norges Bank Investment Management (NBIM)* and received further support from Japan's *Government Pension Investment Fund* and *Ivanhoé Cambridge*. It builds on an initial project focusing on the commercial real estate sector in the European Union, which was funded by the European Commission. The *Scientific Advisory Committee* is comprised of the following members: Dr. Georgia Warren-Myers who is Senior Lecturer in Property at the *Melbourne School of Design*, Prof. Andy van den Dobbelsteen (PhD MSc) who is Professor of Climate Design & Sustainability at the *Delft University of Technology* and Dr. Paul Mathew who is a Staff Scientist and Department Head of Whole Building System at the *Lawrence Berkeley National Laboratory (LBNL)*.

Invitation to provide written feedback
CRREM calls on all relevant market participants, including investors, managers, real estate investment trusts (REITs), green rating systems and other stakeholders, to share their views on the methodology of the decarbonisation pathways and their usefulness in understanding and managing long-term climate-related transition risk in the global real estate sector.

We ask that written responses are submitted to crrem@iioe.at by June 15th 2020. A summary of consultation responses will be publicly released following the end of the public consultation period.

Link to *CRREM*'s decarbonisation pathways:
https://www.crrem.org/pathways/

Link to *CRREM*'s methodology:
https://www.crrem.org/about-crrem-phase-ii/

Link to information about *CRREM* the *Scientific Advisory Committee:*
https://www.crrem.org/sac/

Link to *CRREM*'s decarbonisation tool and further information:
https://www.crrem.eu/

About APG Group NV
APG is the largest pension provider in the Netherlands; its approximately 3,000 employees provide executive consultancy, asset management, pension administration, pension communication and employer services. *APG* performs these services on behalf of (pension) funds and employers in the sectors of education, government, construction, cleaning and window cleaning, housing associations, energy and utility companies, sheltered employment organizations, and medical specialists. *APG* manages approximately EUR 533 billion (as of February 2020) in pension assets for the pension funds in these sectors. *APG* works for approximately 22,000 employers, providing the pension for one in five families in the Netherlands (approximately 4.7 million participants). *APG* has offices in Heerlen, Amsterdam, Brussels, New York and Hong Kong. For more information see www.apg.nl/en.

About PGGM
PGGM is a cooperative Dutch pension fund service provider. Institutional clients are offered asset management, pension fund management, policy advice and management support. On December 31, 2019 *PGGM* had EUR 252 billion in assets under management and was administrating pensions of 4.4 million participants. Around 750,000 workers in the Dutch healthcare are connected to *PGGM&CO*, its members organization. Either alone or together with strategic partners, *PGGM* develops future solutions by linking together pension, care, housing and work. For more information see www.pggm.nl.

About Norges Bank Investment Management
Norges Bank Investment Management manages the Government Pension Fund Global according to a mandate set by the Norwegian Ministry of Finance. The mission is to safeguard and build assets for future generations. Ultimately, the fund's assets are held by the government on behalf of the Norwegian people. The Ministry determines the fund's investment strategy, following discussions in Parliament. The fund is invested 70.8 percent in equities, 26.5 percent in fixed income

and 2.7 percent in unlisted real estate. The fund's annualised return since the start of 1998 is 6.1 percent measured in a currency basket. Assets under management are USD 1 trillion. For more information see www.nbim.no.

About GPIF

As a Japanese public pension fund, Government Pension Investment Fund manages the reserve fund for beneficiaries with the mission of securing long-term returns with minimal risk. With approximately US$1.4 trillion currently under management and a globally diversified portfolio, GPIF outsources 100 percent of equity and most of its bond investment to external asset managers. As a universal owner, GPIF is committed to making the capital market sustainable by integrating ESG factors into investment and expecting sustainable returns with a long-term horizon. For more information see www.gpif.go.jp/en/.

About Ivanhoé Cambridge

Ivanhoé Cambridge develops and invests in high-quality real estate properties, projects and companies that are shaping the urban fabric in dynamic cities around the world. It does so responsibly, with a view to generate long-term performance. Ivanhoé Cambridge is committed to creating living spaces that foster the well-being of people and communities, while reducing its environmental footprint.

Vertically integrated in Canada, Ivanhoé Cambridge invests internationally alongside strategic partners and major real estate funds that are leaders in their markets. Through subsidiaries and partnerships, the Company holds interests in more than 1,000 buildings, primarily in the industrial and logistics, office, residential and retail sectors. Ivanhoé Cambridge held C$64 billion in real estate assets as at December 31, 2019 and is a real estate subsidiary of the Caisse de dépôt et placement du Québec (cdpq.com), one of Canada's leading institutional fund managers. For more information see: www.ivanhoecambridge.com.

About IIÖ Institute for Real Estate Economics

The *IIÖ Institute for Real Estate Economics* has a successful track record in the fields of research, valuation as well as strategy and transaction consulting for private and public customers. Professor Sven Bienert, Founder and Managing Director of *IIÖ*, has been involved in the development of national and international valuation standards. Together with *IIÖ* Head of Research, Jens Hirsch, he has authored many scientific and non-scientific publications on the topic of sustainable real estate and developed a geographic information system to assess natural hazards in Germany. *IIÖ* is leading the *CRREM* project that develops Paris-aligned decarbonisation pathways for the global real estate sector.

About GRESB

Mission-driven and investor-led, *GRESB* is the environmental, social and governance (ESG) benchmark for real assets. It works in collaboration with the industry to provide standardized and validated ESG data to the capital markets. The *GRESB* 2019 real estate benchmark covers more than 1,000 property companies, real estate investment trusts (REITs), funds, and developers. It's coverage for infrastructure includes 500 infrastructure funds and assets. Combined, *GRESB* represents USD 4.5 trillion in real asset value. More than 100 institutional investors, with over USD 22 trillion AUM, use *GRESB* data to monitor their investments, engage with their managers, and make decisions that lead to a more sustainable real asset industry. For more information see: www.gresb.com.

Contacts:

Prof. Dr. Sven Bienert
Managing Director
IIÖ Institute for Real Estate Economics
sven.bienert@iioe.at
+43 (676) 740 41 55

Erik Landry
Climate Change Specialist
GRESB, the ESG Benchmark for Real Assets
e.landry@gresb.com
+31 (20) 77 40 220