REAL ESTATE SUSTAINABILITY STANDARDS AND BENCHMARKING IN APAC

September 2021

IN A NUTSHELL

_ Government policies and legislations on climate related risk and resilience assessments for real estate are growing in both scale and scope.

_ Investors and asset managers are expected to demonstrate robust sustainability risk management and adoption of ESG benchmarks throughout the investment processes.

_ Tenants anticipated to drive demand for green buildings going forward given that an increasing number of organizations have corporate policies that influence the selection of business premises.

Investors' expectations around Environmental, Social and Corporate Governance (ESG), sustainability and climate related disclosures have gained significant momentum over recent years. DWS as a global asset manager recognizes that ESG data metrics are essential to accurately measure performance, improvements and developing strategies to ensure that the assets we manage remain resilient going forward. In this paper, we look at some of the sustainability standards and the framework used to measure real estate ESG performance in Asia Pacific.

The paper is organized into four sections. The first provides an overview of the key ESG issues and risks. The second relates to the responsibility towards the 2015 Paris climate agreement. The third details the main ESG and climate related reporting requirements while the fourth section analyzes the performances of green buildings.

Section I: Risk

In the Global Risk Report 2021 published by the World Economic Forum, environmental issues such as extreme weather events and climate action failure ranked as the top three most likely risks in the next ten years. The effect of these environmental issues are expected to cause severe and lasting damage to global economies over the next decade. Covid-19 has shown the consequences of being unprepared for risks that were recognised as infectious disease.

Against this backdrop, sustainable real estate investment that takes into account Environment, Social and Governance (ESG) consideration has been increasingly vital. ESG is no longer something good to have but has become a global priority and important part of the investment consideration for investors and asset managers. Climate change has also become a main priority for many major markets in Europe, the U.S and Australia and investors are expected to face increasing climate and sustainability related regulatory requirements.

EXHIBIT 1: TOP FIVE GLOBAL RISKS IN TERMS OF LIKELIHOOD

	2014	2015	2016	2017	2018	2019	2020	2021
1st	Income Disparity	Interstate conflict	Involuntary migration	Extreme Weather	Extreme Weather	Extreme Weather	Extreme Weather	Extreme Weather
2nd	Extreme Weather	Extreme Weather	Extreme Weather	Involuntary migration	Natural disasters	Climate action failure	Climate action failure	Climate action failure
3rd	Unem-ployment	Failure of governance	Climate action failure	Natural disasters	Cyber attacks	Natural disasters	Natural disasters	Human env. disasters
4th	Climate action failure	State collapse	Interstate conflict	Terrorist attacks	Data fraud/theft	Data fraud/theft	Biodiversity loss	Infectious disease
5th	Cyber attacks	Unem-ployment	Natural disasters	Data fraud/theft	Climate action failure	Cyber attacks	Human env. disasters	Biodiversity loss

Source: World Economic Forum The Global Risks Report 2021. As of August 2021.

Investors have also placed significant considerations for real estate asset managers that demonstrate commitments to social equity, as well as providing sustainable infrastructure for their communities.[1] Company's processes have typically embedded corporate governance, although in recent years policymakers have demanded better governance including disclosure on board diversity.

In China, rapid urbanization and economic transformation have placed enormous strain on the environment. In particular air quality and fine particulate matter (PM2.5) have posed serious threats to health. These have largely been the main driver of growth for green buildings in China as an increasing number of tenants have sought buildings with good air purification systems.[2] Buildings which use low amounts of energy also contribute less to air pollution through direct or indirect (electricity) burning of fossil fuels.

DWS recognizes the importance of incorporating ESG and climate related issues into our investment consideration. A key part of this process involves managing real estate assets around factors relating to ESG and climate risks which includes performing an ESG review on each asset prior to acquisition, annual business planning procedures, and building retrofit plans to improve performance and resilience of the assets.

Section II: Responsibility

Commitment to Net-Zero

The commitment to net-zero is a follow on from the Paris Climate Agreement in 2015 and is an international legally binding treaty on climate change. This requires responsibility on the part of investors to align their portfolios in a way that is consistent with achieving net zero Green House Gas (GHG) by 2050.

It is estimated that in 2018, real estate in Asia (ASEAN, China and India) accounts for 24 percent of the CO2 emissions.[3] According to the IPCC's Special Report on Global Warming of 1.5°C (SR15), in order to limit global warming to no more than 1.5°C, global CO2 emissions need to halve from 2010 levels by 2030 and reach net-zero by 2050.

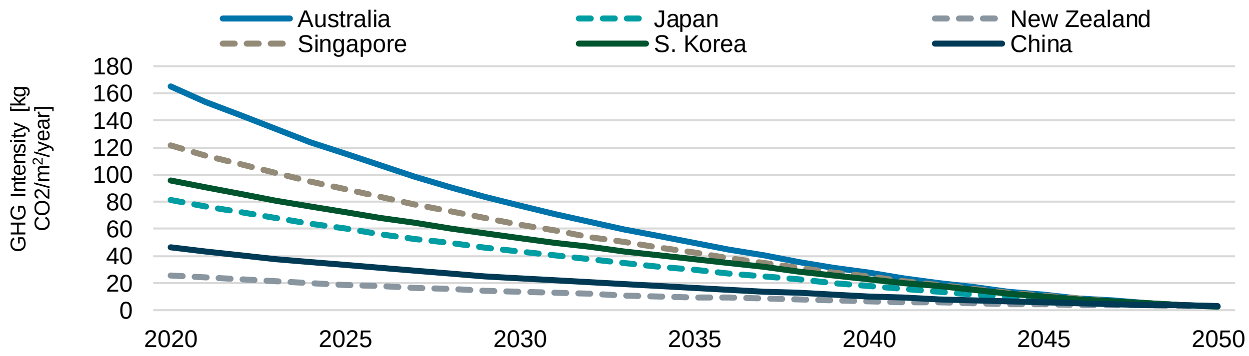
Within APAC, New Zealand, Japan and South Korea have led the charge towards net-zero targets and have either passed their carbon neutral targets into law or have proposed legislation in the works. Meanwhile, China has also pledged to achieve the net zero target by 2060.[4]

[1] Sustainable Investing, PERE, 2020
[2] China Green Building Report, CBRE, 2017.
[3] GlobalABC Regional Roadmap for Buildings and Construction in Asia 2020-2050, Global Alliance for Building and Construction, 2021.
[4] Climate Action Tracker, 2021.

For the real estate sector, the Carbon Risk Real Estate Monitor (CRREM) has become a key tool used by investors to determine the alignment of their real estate assets within the 1.5°C pathway. CRREM uses GHG emissions and energy consumption of an individual asset to determine its intensity transition pathway.

The current GHG intensity varies by country based on the building sectors existing energy mix. As such, the starting point for asset owners differs depending on the country's GHG intensity target. CRREM has been integrated into the GRESB real estate assessment (see chapter 3 on GRESB) and participants can utilize their asset-level reporting to identify and manage transition risk for individual assets against the CRREM pathways.

EXHIBIT 2: 1.5°C DECARBONISATION PATHWAYS FOR OFFICE BUILDINGS



Source: Carbon Risk Real Estate Monitor (CRREM). As of August 2021.

Section III: Reporting

Green Rating Certifications

Sustainability reporting requirements have grown in many jurisdictions. This will enable investors to make informed investment decisions as consistency and standardization of sustainability benchmarks align with international frameworks.

Green rating certifications are used to assess a buildings sustainability performance. In major markets in Asia Pacific, there are a number of building ratings systems that are used across a range of building types and can be applied to both existing buildings and new construction. Country specific ratings such as the Green Star and NABERS rating system are widely used in Australia while CASBEE rating system is specifically used in Japan and based on the Japanese building code. Meanwhile, the Green Mark and G-SEED (Green Standard for Energy and Environmental Design) rating system are the most common certification in Singapore and South Korea respectively. Some internationally recognized green building certifications such as LEED (Leadership in Energy and Environmental Design) is also widely recognized in South Korea while the BREEAM (Building Research Establishment Environmental Assessment Methodology) certification is commonly used in China.

Given the increasing awareness towards more sustainable assets, regulatory changes are likely to favor buildings with green rated certification. In addition, some tenants have Green Lease policies such as the requirement by the State and Federal departments of Australia to occupy office buildings with a minimum NABERS energy rating of 4.5 star.

EXHIBIT 3: GREEN BUILDING CERTIFICATION

	Green Star	NABERS ENERGY	NABERS WATER	CASBEE	Green Mark	G-SEED	LEED	BREEAM
Country	Australia			Japan	Singapore	S. Korea	US/Global	UK/Global
No. of certificates	2,827	2,041	1,066	26,107*	3,000	15,584	100,141	2.3 mil.
Ratings	6 Star	6 Star: Market Leader		S: Excellent	Platinum	Green 1	Platinum	Out standing
	5 Star	5 Star: Superior Performance		A: V. Good	Gold Plus	Green 2	Gold	Excellent
	4 Star	4 Star: High Performance		B+: Good	Gold	Green 3	Silver	V. Good
	3 Star	3 Star: Market Standard		B-: Fairly Poor	Certified	Green 4	Certified	Good
	2 Star	2 Star: Opportunities for Upgrades		C: Poor				Pass
	1 Star	1 Star: Making a start						

Note: Number of CASBEE certificates in Japan includes certifications by prefecture-level CASBEE.
Source: DWS, World Green Building Council, Green Star, NABERS, CASBEE, Green Mark, G-SEED, LEED, BREEAM. As of August 2021.

Green Building Assessment Indicators for Existing Buildings

The main focus across all green building assessments is to reduce energy intensity and the reduction of carbon emissions. As can be seen in the table below, the weightings for both of these components make up between 25-30% of the assessment criteria.

Health, wellbeing and productivity of a buildings occupants are also crucial with indoor environmental quality accounting for the second largest component of the assessment comprising between 15-20% of the weighting. The assessment encompasses the air quality, lighting comfort, natural daylight and thermal conditions of the building. Occupants satisfaction survey are widely used to assess the overall level of comfort and satisfaction of the building.

Another important element of the green building certification is the ‘Transport’ category where it looks at influencing commuting habits. This component is particularly evident for the Green Star and LEED certifications where the percentage of occupants using public transport, cycling or walking to work is considered.

Looking ahead, we expect tenants to drive demand for green buildings given that an increasing number of organizations have corporate policies that influence the selection of business premises. Besides the energy cost savings, tenants are also seeking space with strong sustainability ratings or certifications in part to bolster their own environmental reputations with clients, customers and shareholders. Further, there is growing evidence that green buildings with better quality of indoor environment can create health and wellbeing benefit and improved worker productivity. We expect this trend to continue going forward given tenants increasing focus on wellness and sustainability.

EXHIBIT 4: GREEN BUILDING COMPONENTS FOR EXISTING BUILDINGS

	Green Star	CASBEE	Green Mark	G. SEED	LEED	BREEAM
	Australia	Japan	Singapore	S. Korea	Global	Global
Management	20%	n.a.	25%	8%	-	17%
Indoor Environment Quality	20%	15%	17%	20%	15%	8%
Energy	25%	35%	25%	25%	35%	23%
Transport	10%	5%	-	4%	14%	7%
Water	12%	10%	7%	12%	11%	7%
Materials	4%	15%	15%	16%	7%	9%
Land Use & Ecology	4%	15%	-	15%	9%	8%
Emissions	5%	-	-	-	-	10%
Innovation	-	-	8%	-	5%	8%
Waste	-	5%	3%	-	-	5%
Others	-	-	-	-	4% [a)]	-

Notes: a) Regional priorities are credits that is awarded for the achievement of geographically specific environmental, social equity and public health priorities.
Source: DWS, World Green Building Council, Green Star, NABERS, CASBEE, Green Mark, G-SEED, LEED, BREEAM. As of August 2021.

Key Elements of GRESB

A GRESB rating is an overall measure of how well ESG issues are integrated into the management and practices of property companies and funds. In 2020, Australia and New Zealand continued to lead the Global Real Estate Sustainability Benchmark (GRESB) Real Estate global rankings for the tenth consecutive year with an average score of 77. The Asia region came in second with an average GRESB score of 72, ahead of Europe and Americas with scores of 69.5 and 69 respectively. Notwithstanding, participation in the 2020 GRESB assessment continued to be led by the Americas with more than USD 2.1 trillion of gross asset value (GAV) – almost double the levels for Europe and APAC.

The Building Energy Efficiency Disclosure Act 2010 is unique to Australia and has been the main driver of Australia's outperformance in the last decade. This is also evidenced in the performance category of the GRESB assessment in which Australia and New Zealand have continuously outpaced other regions.

EXHIBIT 5: GRESB REAL ESTATE GLOBAL SCORE

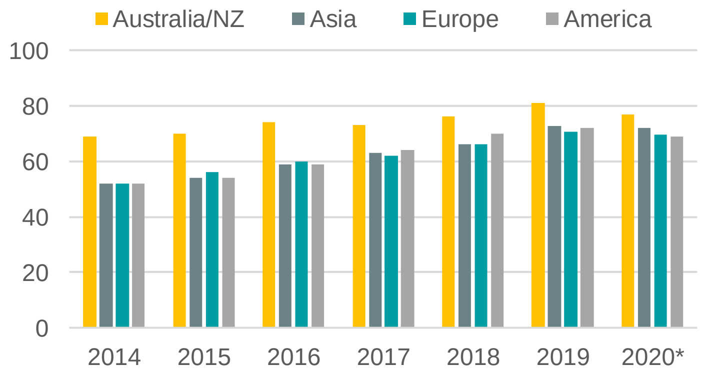
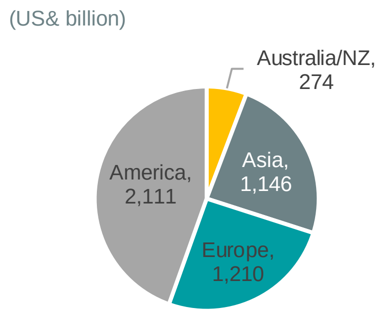


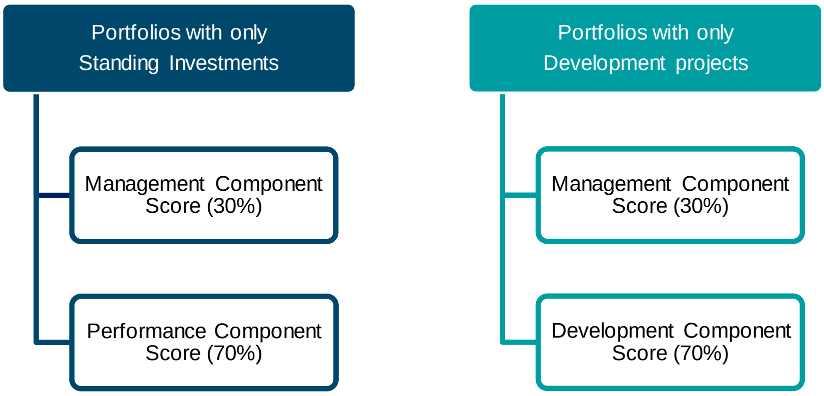
EXHIBIT 6: GRESB BENCHMARK SIZE BY GAV



*Change in methodology primarily due to increased granularity in the key performance indicators (now broken down into Energy, GHG, Water and Waste).
Source: GRESB. As of August 2021.

GRESB performance provides a standardized approach to measuring ESG performance in the real estate sector. It provides ESG performance on an absolute and comparative score relative to its peers. The assessments are typically grouped within the same property type and are analyzed by intensity metrics, performance against comparable asset type, and year-on-year improvements.

EXHIBIT 7: GRESB SCORE BY PORTFOLIO



Source: GRESB. As of August 2021.

The indicators can be divided into the management component and performance component. The management component which comprises 30% of the total score includes information at the entity level such as stakeholder engagement, leadership and policies. The weightings of the GRESB benchmark places a heavy emphasis on improving performance of the assets and accounts for 70% of the total score.

For entities with new construction and major renovation projects, the development factor in the GRESB score comprises 70% of the total score on top of the management component. It takes into consideration the ESG strategy during development, green building certification, energy efficiency requirements and community impact and engagement amongst other things.

At the portfolio level, the ratings are based on its quintile position relative to the GRESB universe. Scores are calculated relative to the global performance of all reporting entities and property type and/or geography is not taken into account. If the entity is placed in the top quintile, it will have a GRESB 5-star rating and alternatively, if it is in the bottom quintile, it will have a GRESB 1-star rating.

In addition, entities with a score higher than 50 for both the management and performance components will be awarded the Green Star designation. Unlike the GRESB Rating, which is a relative rating, the GRESB Green Star is a rating based on the absolute performance.

Many institutional investors are increasingly requiring integration of sustainability into the investment process and the GRESB score and rating has become an important tool to make decisions on an investment manager's selection by comparing the performance of the managers relative to its peers.

EXHIBIT 8: GRESB SCORE BY COMPONENT

Component	Aspect	Points	Component	Overall Score	
Management	Leadership	7	23%	7%	Entity/Portfolio Level
	Policies	4.5	15%	5%	
	Reporting	3.5	12%	4%	
	Risk Management	5	17%	5%	
	Stakeholder Engagement	10	33%	10%	
	Total	**30**	**100%**	**30%**	
Performance	Risk Assessment	9	13%	9%	Asset Level
	Targets	2	3%	2%	
	Tenants & Community	11	16%	11%	
	Data Monitoring & Review	5.5	8%	6%	
	Energy	14	20%	14%	
	Green House Gas (GHG)	7	10%	7%	
	Water	7	9.50%	7%	
	Waste	4	5.50%	4%	
	Building Certifications	10.5	15%	11%	
	Total	**70**	**100%**	**70%**	
Development	ESG Requirements	12	17%	12%	Entity/Portfolio Level
	Materials	6	9%	6%	
	Building Certifications	13	19%	13%	
	Energy	14	20%	14%	
	Water	5	7%	5%	
	Waste	5	7%	5%	
	Stakeholder Engagement	15	21%	15%	
	Total	**70**	**100%**	**70%**	

Source: GRESB. As of August 2021.

Climate Risk

Climate risk is increasingly becoming an important consideration when determining the strategy of a portfolio. From a real estate perspective, climate related risk could affect investments in two ways. The first is via the physical climate impact arising from extreme weather events such as hurricanes, floods or wild fire. The second climate related risk relates to transition risk arising from the increasing scope in climate change regulation, technological advancement and the shift in occupier's preference.

While insurance has been used as the main protection for physical climate risk, the increase in the frequency and intensity of severe weather related events has shown that climate risk could present a threat to real estate owners. These could include business interruptions and higher insurance costs and greater operating expenses for repairs which are not covered by insurance.

Meanwhile, the CRREEM tool (see section 2) has been widely used to measure transition risk. For real estate owners, non-compliance of the GHG intensity reduction targets could risk assets becoming obsolete as they fail to meet future regulatory standards or market benchmarks.

Information on climate related risks are often used during due diligence prior to acquisition and the same principle can be applied to determine whether an asset should be divested or refurbished.

Using the physical climate risk tool available through Measurabl, the following seven risks category are identified.

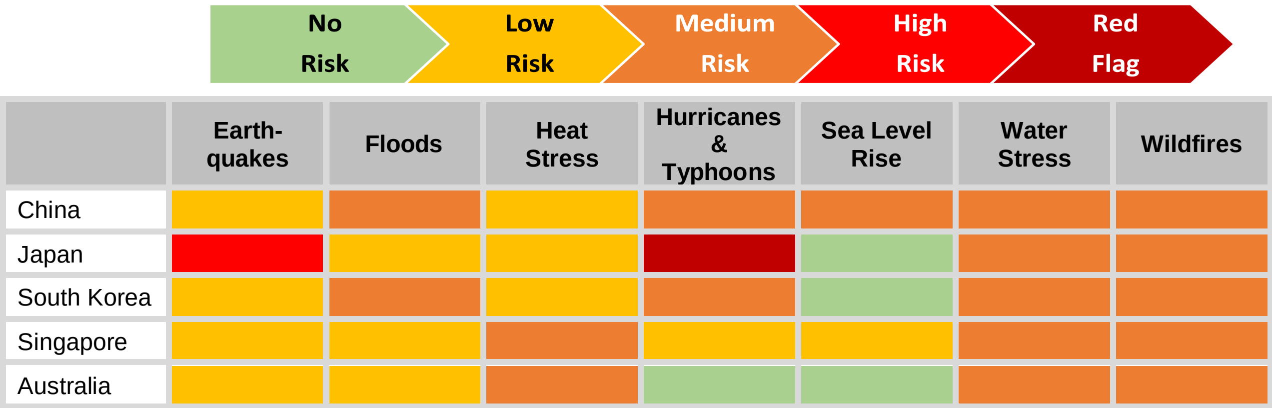
EXHIBIT 9: RISK CATEGORY

Risk Category			
Earthquakes	Sea level rise	Floods	Water stress
Heat Stress	Wildfire	Hurricanes & Typhoons	

Source: Measurabl. As of August 2021.

The physical climate risk for each country evaluates the risk exposure for the period 2030-2040, using the period of 1975-2005 as a historical baseline. For instance in Japan, due to its geographical circumstances, the table below indicates that it is particularly exposed to typhoons as well as earthquake risk based on past occurrence. Having said that, most institutional real estate investors in Japan have implemented numerous countermeasure strategies to improve the resilience of buildings including the installation of anti-flood and other disaster response measures. While earthquake risk is generally distinguished from climate risk, the vulnerability of buildings exposed to earthquake risk in Japan is typically low and mitigated by the well-developed seismic engineering building standards. Additionally, earthquake risks are well insured in Japan and periodic disaster risk assessments are conducted at the time of acquisition and during the holding period.

EXHIBIT 10: PHYSICAL CLIMATE RISK BY COUNTRY



Note: China based on average score for Beijing and Shanghai.
Source: DWS, Measurabl. As of August 2021.

It's also worth noting that the impact of climate risk can be nuanced within sectors. For instance, higher than average temperatures may not directly have a physical impact on the logistics properties but rather indirect effect through increasing operational costs where additional cooling is required. The hotel sector on the other hand are more exposed to water stress particularly in areas with reduced precipitation, thereby affecting the availability of drinking and potable water.

Real estate specific regulations

In Australia, under the Building Energy Efficiency Disclosure Act 2010 sellers and lessors are required to disclose energy efficiency information to prospective buyers and tenants when they sell, lease or sublease office space of more than 1,000 square meters of net lettable area (NLA).

In Japan, The Ministry of Land, Infrastructure, Transport and Tourism is encouraging the real estate sector to disclose the financial impact accompanying climate change based on the Task Force on Climate-related Financial Disclosures (TCFD) framework starting from 2021 onwards.[5]

Financial Regulations Related to Climate Change

The Task Force on Climate-related Financial Disclosures (TCFD) is the main framework used by companies, banks, and investors to provide consistent and transparent climate-related financial risk disclosures.

In Singapore, the Monetary Authority of Singapore (MAS) has set out additional guidelines for asset managers given investors increasing expectations on climate risk management. These include incorporating environmental risk considerations in its investment research, portfolio construction, and risk management. Asset managers will also need to map out the potential impact of relevant environmental risk on an investment's return potential.[6]

Similarly, the Australian Prudential Regulation Authority (APRA) has outlined its plans to develop a guide focusing on climate-related financial risks for banks, insurers and superannuation trustees. The draft Prudential Practice Guide CPG 229 Climate Change Financial Risks (CPG 229) provides guidance on climate change vulnerability assessment alongside traditional threats such as credit risk, underwriting risk and liquidity risk. The framework is largely aligned with the Task Force on Climate-related Financial Disclosures (TCFD) disclosure and is expected to be finalized in late 2021.[7]

Given the rise in terms of both scale and scope of government policies relating to climate risk and resilience assessment for real estate, the implication of this to investment managers would include the requirement to publish net zero carbon pathways, disclosure of climate related risk, as well as to illustrate climate resilience strategies to comply with regulations.

Section IV: Return

Green Property Benchmark

Looking beyond energy cost savings and the broader benefits of green buildings, there is growing evidence that sustainable buildings have achieved higher total returns. In Japan, the Nikkei ESG J-REIT index outperformed the overall J-REIT index by 0.6% as of June 2021 while in Australia, Green Rated office buildings have outperformed the All Property Index (Office) by 12% over a 10 year horizon. While we believe that this trend will only intensify as occupier and investor demand for green buildings increases, today reservations remain about the outcome of this analysis, given that Green Star rated office buildings tend to have higher specifications to begin with and hence the outperformance of green rated office buildings so far could mainly be derived from better building specifications rather than the overall sustainability metrics.

[5] Guidance for Real Estate TCFD, The Ministry of Land, Infrastructure, Transport and Tourism, 2021.
[6] Guidelines on Environmental Risk Management for Asset Managers, Monetary Authority of Singapore, December 2020.
[7] Prudential Practice Guide CPG 229 Climate Change Financial Risks (CPG 229), The Australian Prudential Regulation Authority (APRA), April 2021.

EXHIBIT 11: J-REIT AND NIKKEI ESG J-REIT INDEX (SEP 20=100)

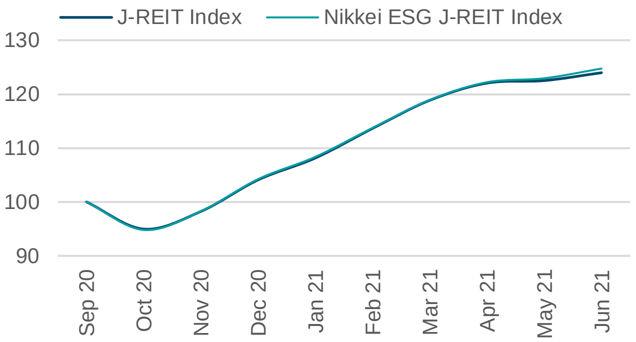
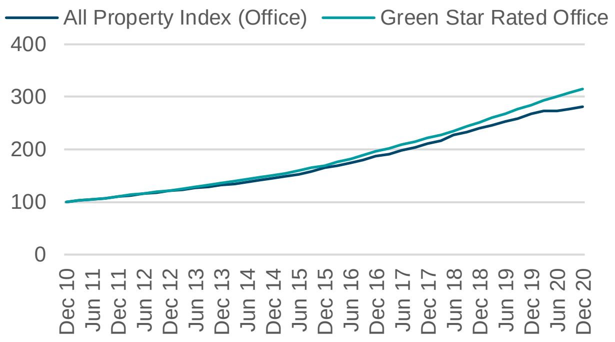


EXHIBIT 12: AUSTRALIA MSCI ALL PROPERTY (OFFICE) AND GREEN PROPERTY INDEX (DEC 10=100)



Source: DWS, Nikkei, MSCI. As of August 2021.

ESG Risk Premium

The Japan Investment Survey showed that investors believe that ESG related factors will have an impact on investment return. In particular, investors anticipate that ESG initiatives will increase rental growth by 10-50 basis points per annum and cap rate premiums of between of 10-50 basis points over the next ten years.[8]

EXHIBIT 13: DIFFERENCE IN RENTAL INCOME BETWEEN ESG AND NON-ESG OFFICE PROPERTIES

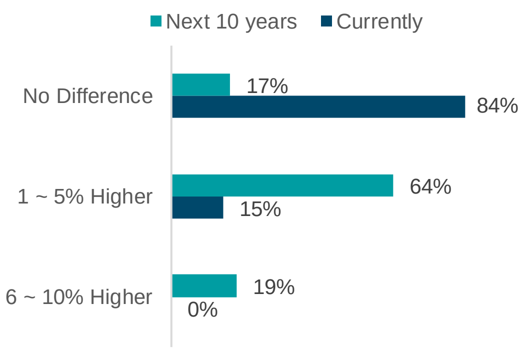
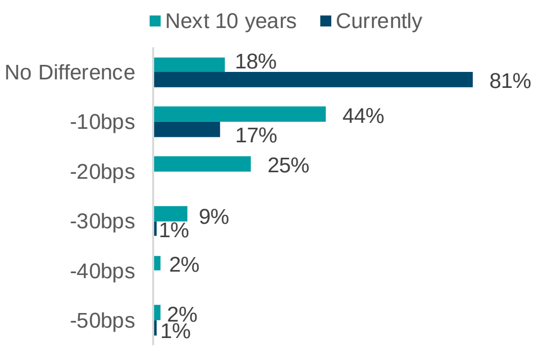


EXHIBIT 14: DIFFERENCE IN MARKET YIELD BETWEEN ESG AND NON-ESG OFFICE PROPERTIES



Source: Japan Real Estate Institute. As of August 2021.

Conclusion

The analysis highlights that given the new regulation on sustainability related disclosure, the implications for investors are that ESG and climate related disclosure will become an obligation as part of the growing shift towards more sustainable real estate investment. Investors and asset managers are increasingly expected to demonstrate robust sustainability risk management and the adoption of ESG benchmarks throughout the investment process as well as portfolio risk management.

Sustainability factors have also become an important consideration for tenants given that an increasing number of organizations have corporate policies that influence the selection of business premises. Besides the energy cost savings,

[8] Vol.42 Special Investor Survey, Japan Real Estate Institute, May 2020.

tenants are also seeking space with strong sustainability ratings or certifications to strengthen their own environmental reputations with clients, customers and shareholders.

Indeed, DWS has designed strategies globally to ensure the real estate assets that we manage continue to remain relevant. Sustainability initiatives are incorporated across the investment process. This starts from research where we develop our market house view and strategic themes to meet sustainability standards. In addition, prior to the acquisition of a new asset we identify ESG risks and opportunities using an ESG checklist during the due diligence process. Examples include exposure to physical climate risk and green label certifications, in addition the budget impact of these requirements on DWS is also included into recommendations. Within asset management, sustainability plans are incorporated and monitored into the asset level plan while at the portfolio level, sustainability progress is tracked through the GRESB submission to provide transparency to our investors.

References

World Green Building Council, 2021. The Benefits of Green Building.

World Green Building Council, 2021. Rating Tool.

Deutsche Asset Management, 2017. Sustainable Finance Report Issue No.2.

United Nations Climate Action, 2021.

Climate Action Tracker, 2021.

Energy and Climate Intelligence Unit, 2021.

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